

Customer Knowledge Management

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Abstract

Customer knowledge is one of the most important knowledge bases for an organisation. Organisations need a simple framework for integrating customer knowledge management processes. The article starts by examining the two key disciplinary and process contributions from knowledge management (KM) and customer relationship management (CRM). In the context of KM the need to integrate data, information and knowledge management, the diversity of models of knowledge management processes, and types of customer knowledge are explored. In relation to CRM, the distinction between notions of relationship marketing and the embodiment of customer relationship management in systems is surfaced, together with the recognition that CRM systems can operate at operational, analytical or collaborative levels. Recent research on customer knowledge management includes work that includes perspectives on systems, marketing and learning. A customer-centric organisation needs to articulate a model of its CKM processes that embraces knowledge for, about and from customers. This needs to inform the architecture of integrated business and organisation processes, including those processes associated with CRM and KM systems. An important aspect of this architecture is the relationship between data management, information management and knowledge management.

Introduction

The changing organisational environment has driven interest in organisational learning and knowledge management (KM) (Prusak, 1997). The basic economic resource is no longer capital, natural resources or labour, but is and will be knowledge (Drucker, 1993). Many studies have

confirmed customer knowledge as one of the most important knowledge bases for an organisation, and a category of knowledge that should be at the forefront of knowledge management initiatives. (Bennet and Gabriel, 1999, Chase, 1997). There is no doubt that customer data exists in organisations and business processes, and that without any new interventions that data is converted into information, and knowledge. Such processes have always existed. The objective of Customer Knowledge Management (CKM) is to establish whether these processes are optimal. Ultimately any model of CKM and its processes, and any mappings between such processes and business processes should provide a basis for a customer knowledge competence audit, so that businesses can assess the performance of their CKM.

Customer knowledge management is at the origin of most improvements in customer value (Novo, 2001). Vendors of Customer Relationship Management (CRM) and business intelligence solutions claim that data collected at the customer interface can be translated into business intelligence and customer knowledge, yet the success rate with CRM implementations has been notoriously low (Winer, 2001). Recent research by the Gartner Research Group in North America found that 55% of all CRM projects fail to produce results (Rigby et al, 2002) Another study found that the two biggest challenges in implementing CRM strategies were internal organisational issues and the ability to access all relevant information. The evidence suggests that for CRM to be successful organisations need to examine how they manage customer information internally; many organisations have a lot of data about their customers but less insight into how they might use this information to support knowledge based processes.

Various authors have recognised the need for, and absence of, a simple and integrated framework for the management of customer knowledge (Winer, 2001, Bose and Sugumaran, 2003, Massey et al, 2001, Parasuram and Grewal, 2000). Whilst KM systems manage an organisation's

knowledge through the processes of creating, structuring, disseminating and applying knowledge to enhance organisational performance and create value, traditional CRM systems have focussed on the transactional exchanges that manage customer interactions. There is a need for a single, unified and comprehensive view of customer needs and preferences across all business functions, points of interaction, and audiences (Shoemaker, 2001, Tiwana, 2001, Wiig, 1999).

Despite some recent work on the integration between traditional CRM systems and their functionalities and the management and application of knowledge (Bose and Sugumaran, 2003, Gebert et al, 2003) as discussed later in this article, understanding of customer knowledge management processes and competencies is at an early stage, and merits further attention. The purpose of this article is to review current research and developments in the area of customer knowledge management with a view to the identification of future research and development agendas. It is anticipated that customer knowledge management processes are inimitable and immobile (Campbell, 2003, Li and Calantone, 1998), so ultimately each organisation will need to develop its own unique customer knowledge management process. The purpose of academic deliberation and theory-making is to provide some general models and conceptual frameworks that pose questions on which organisations can deliberate in the development of their own solutions.

Different authors have come to customer knowledge management from a range of different perspectives, and there are a multitude of different models of key paradigms such as knowledge management (KM), and customer relationship management (CRM). Some emphasise technology, and business processes, others are more interested in human aspects of knowledge and relationships, and broader organisational processes. In addition, authors bring different professional and academic disciplinary backgrounds to their understating of customer knowledge

management. Figure 1 is a mind map of some of the disciplinary and process perspectives that are likely to interact with the concept and processes of customer knowledge management.

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Two key disciplinary and process contributions to customer knowledge management derive from KM and CRM. Accordingly, this article commences with a review of some key aspects of KM and CRM, respectively. Specifically in the context of KM the need to integrate data, information and knowledge management processes, and the diversity of models of knowledge management processes are explored. The question of which type of customer knowledge is being managed is also pivotal. In relation to CRM, the distinction between notions of relationship marketing and the embodiment of customer relationship management in systems is surfaced, together with the recognition that CRM systems can operate at operational, analytical or collaborative levels. The article then reviews a range of recent research on customer knowledge management, with a view to exploring approaches that have been proposed in pursuit of customer knowledge management. The conclusion identifies areas for future research and development at the core of which is a need for customer-centric organisations to articulate a model of its KM processes that embraces knowledge for, about and from customers.

Perspectives on knowledge management

The nature of knowledge management is pivotal to discussions of customer knowledge management. Some would suggest that customer knowledge management is one aspect of knowledge management, whilst others might argue that it has a number of distinct facets. Whatever the precise relationship between these two concepts, paradigms, philosophies or strategies, the various models of the nature of knowledge management can assist in the development of an understanding of the potential elements and processes of customer knowledge management.

To start with an important and often rehearsed building block and that is the distinction that needs to be made between data, information and knowledge. Data are unorganised and unprocessed facts. Information is an aggregation of data that has been sorted, analysed and displayed (Dixon, 2000), or has meaning (Dickerson, 1998). The definitions of knowledge are somewhat more diverse. For example, Awad and Ghazi (2004) use knowledge as *‘human understanding of a specialised field of interest that has been acquired through study and experience. It is based on learning, thinking, and familiarity with the problem area in a department, a division, or in the company as a whole’* (p.37).

Davenport and Prusak (2000) define knowledge as a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information.

Organisations need to manage data, information and knowledge. IT systems, such as the CRM systems discussed below are good at managing data, and with human intervention can be used to analyse and organise data into meaningful information. Knowledge management is however essentially a social process, that draws on and uses data and information, and depends upon the quality of the data and information management processes in the organisation. There are a number of definitions of knowledge management, and models of the processes that are inherent in knowledge management (see Figure 2). Kakabadse et al (2003) suggest that a consistent theme in all definitions of KM is that it provides a framework that builds on past experiences and creates new mechanisms for exchanging and creating knowledge. Many models exist for linking these processes together. Figure 3 offers an exemplar model.

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It is important to note however, that these models tend to privilege the cognitive model of KM, in which knowledge is objectively defined and codified as concepts and facts, and the focus is on knowledge creation, capture, storage and sharing, with a view to application of knowledge in problem solving and exploiting opportunities (Kakabadse et al, 2003, Swan and Newell, 2000). They also accommodate to some extent the community model, in which knowledge is constructed socially and based on experience, the focus being on knowledge creation and application, and the promotion of knowledge sharing. It would however, be a mistake to overlook the philosophy-based model of KM, that explores the epistemology of knowledge or what constitutes knowledge, and how information about social and organizational reality is gathered (Carter and Scarbrough, 2001). Polanyi (1996), for example, argues that the integrated nature of explicit and implicit knowledge may mean that whilst it is possible to manage or support processes of learning, it may not be possible to manage knowledge.

A further pivotal issue is which customer knowledge is to be managed through customer knowledge management. Knowledge relating to customers can be classified into the following four categories:

- Knowledge for customers, to satisfy customers' knowledge needs. Examples include knowledge on products, markets and suppliers (Garcia-Murillo and Annabi, 2002)
- Knowledge about customers is accumulated to understand customer's motivation and to address them in a personalised way. This includes customer histories, connections, requirements, expectations and purchasing activities (Day, 2000, Davenport et al, 2001)
- Knowledge from customers, such as customer's knowledge of products, suppliers and markets. Through interactions with customers this knowledge can be gathered to support continuous improvement (Garcia-Murillo and Annabi, 2002).

- Knowledge retained by customers, for their own purposes, but which may be used in a co-learning or innovation process.

Knowledge for and from customers is likely to derive from explicit data, and depending on the processes of interpretation and use, may be explicit at the knowledge level. Knowledge retained by customers, and knowledge about customers is more likely to be at least partially implicit. Knowledge retained by customers, may, for example, be tightly coupled with the customer's experience and competences. The important differentiation is between data, information and knowledge that can be extracted, and that which is embedded, and can only be enlisted with the permission of its owners.

Finally, organizations need to select the customers for, about, from and with whom they choose as the focus of their customer knowledge activities. Many organizations have a range of stakeholders, who may be consumers, other businesses, or customers in some other sense. There is often overlap between stakeholder or customer groups, and members of one group will influence the attitudes and behaviours of members of other groups through word of mouth across family and social networks.

Other considerations in defining the customer knowledge to be managed include:

- The attention to be given to knowledge relating to or associated with lapsed and potential customers
- Whether some customers, possibly on the basis of their customer lifetime value, or a related measure, are deemed to have greater significance than others
- Whether the same approaches and models for customer knowledge management can be applied to both customer-to-customer and business-to-business relationships.

Perspectives on Customer Relationship Management

Several authors have started the search for effective CKM by exploring CRM, and more specifically CRM systems, as discussed in the next section. If such systems and processes are to be used as a platform for CKM, it is important to be clear about the objectives and processes associated with CRM and CRM systems.

There are a number of different definitions of CRM, and as Law et al (2003) argue there are some paradoxes between the different definitions and models of CRM. Some authors define CRM as an overarching business philosophy, or perhaps process. For example, Shaw (1999) defines CRM as an interactive process that achieves optimum balance between corporate investment and the satisfaction of customer needs to generate maximum profit. It entails:

- measuring inputs across all functions, including marketing, sales, and service costs and outputs in terms of customer revenue, profit and value
- acquiring and continuously updating knowledge on customer needs, motivation and behaviour over the lifetime of the relationship
- applying customer knowledge to continuously improve performance through process of learning from successes and failure
- integrating, marketing, sales and service activities to achieve a common goal
- the implementation of appropriate systems to support customer knowledge acquisition, sharing and the measurement of CRM effectiveness, and
- constantly constructing the balance between marketing, sales, and service inputs with changing customer needs in order to maximise profit.

Galbreath and Rogers (1999) on the other hand, offer a definition of CRM which is more focussed on customer interaction, and the modification of customer behaviour:

'Activities a business performs to identify, acquire, develop and retain increasingly loyal and profitable customers by delivering the right product or service, to the right customer, through the right channel, at the right time and the right cost. CRM integrates sales, marketing, service, enterprise resource planning and supply-chain management functions through business process automation, technology solutions, and information resources to maximise each customer contact. CRM facilitates relationships among enterprises, their customers, business partners, suppliers and employees' (p.162).

Swift (2001) continues the focus on the modification of customer behaviour, but with reference to aspects of the customer relationship:

'CRM is an enterprise approach to understanding and influencing customer behaviour through meaningful communications in order to improve customer acquisition, customer retention, customer loyalty, and customer profitability.' (p.12).

Hamilton (2001) takes a different approach, citing the role of data and its management in treating customers differently:

The process of storing and analysing the vast amounts of data produced by sales calls, customer-service centres and actual purchase, supposedly yielding greater insight into customer behaviour. CRM also allows businesses to treat different types of customers differently.' (p.T4)

These different definitions of CRM variously emphasis enterprise level issues, customer interaction and relationships, influencing customer behaviour, and data collection and use. These differences in perspective can be partly ascribed to the disciplinary origins of their authors, but may also be related to the specific characteristics of the CRM systems that support CRM across specific organisations, or within specific business sectors.

Stefanou et al (2003) offer a model of CRM development stages that show the evolution of CRM systems, from an IT applications perspective. The traditional view of CRM systems as stand alone front-end customer facing systems is changing as integration with back office systems such as enterprise resource planning systems. These are also undergoing transformations from transactional back-office systems to give ERP extended knowledge management capabilities for capturing, analysing, and sharing market and customer data and creating value for customers. CRM is often also a major part of an organisation's e-business strategy, with web presence and Internet-based interactions with customers integrated with front office company functions, such as marketing, sales and service, in pursuit of excellent customer experiences.

As the functionality of CRM systems has developed it has become possible to classify them in terms of their functionality. Schwede (2000) offers the following three categories:

- operational CRM systems that improve the efficiency of CRM business processes, including solutions for sales force automation, marketing automation and call centre/customer interaction centre management
- analytical CRM systems that manage and evaluate knowledge about customers to gain an enhanced understanding of each customer and their behaviour, including data warehousing and data mining solutions
- collaborative CRM systems that manage and synchronise customer interaction points and communication channels (e.g. telephone, e-mail and Web).

These different categories of CRM systems offer different opportunities for customer knowledge processes.

Perspectives on recent research on Customer Knowledge Management

Research on CKM is limited, and uncoordinated, with different authors taking different perspectives. This section reviews these contributions in three categories: systems, marketing knowledge and learning (See Figure 4)

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Systems

Analysis of customer knowledge based processes and systems is one way to explore the ways in which organisations develop customer knowledge competence. This is an approach favoured by a number of researchers, but their contributions do not map easily onto one another.

Gebert et al (2003) develop a CKM model that describes the basic elements for successful knowledge management in customer-orientated processes. This model serves as a frame of reference for integrated CKM activities at both the enterprise and project level. Their objective is to align a KM model to the business processes in the CRM process framework, and thereby to achieve knowledge management through CRM processes. Such an approach requires an analysis of both KM and CRM processes, and definition of the types of customer knowledge to be embraced by CKM. Bose and Sugumaran (2003) undertook a related piece of research in which they provide a technology-based view of knowledge management in CRM. They produce a model that identifies knowledge management capabilities for CRM in terms of knowledge sources and KM capabilities, with associated techniques and tools to support those capabilities. This model is a useful reminder of the range of tools necessary to support knowledge based processes.

Taking a different approach, Blosch (2000) argues that customer knowledge can be better understood by examining the points at which different customers interact with the organisation. He suggests that customers should be segmented on the basis of their points of interaction.

Understanding these interactions and their relationship to business processes are the key components in the development of the customer knowledge base.

Massey et al (2001) describe a four year project *Inside IBM*, in which CRM processes were re-engineered in order to capitalise on knowledge based resources. *Inside IBM* featured:

- knowledge acquisition - through customer profiles, including firm, and industry demographics, contact names, entitlement information, general product interests, installation problems, diagnosis and fixes
- knowledge distribution - through customer access via a direct link to IBM's Intranet, and backend, cross functional knowledge-based resources, including human knowledge-based resources at point of need
- IBM human experts informed by knowledge-based resources and customer profiles.

This project which enriched CRM processes through enhanced knowledge based resources led to enhanced customer satisfaction with their relationship with IBM.

The work conducted on knowledge based processes in CRM systems contributes to the exploration of customer knowledge management, but tends to derive from a systems perspective. Further, this systems perspective is mediated by current technologies. The outcome is also contingent upon the models of CRM and KM that are adopted.

Marketing Knowledge

Marketing knowledge competence is a concept that has a longer history than CKM, and work on this concept may offer some insights into CKM. The importance to competitive advantage of the organisational processes that generate and integrate market knowledge has been acknowledged by Day (1994), Glazer (1991), and Hunt and Morgan (1995). Li and Calantone (1998) define

marketing knowledge competence as the processes that generate and integrate marketing knowledge. This approach that identifies competence as a series of processes derives from earlier studies. For example, Day (1994) defines competence as complex bundles of skills and collective learning, exercised through organisational processes. Prahalad and Hamel (1990) identify the business processes of market interaction and functional integration as core organisational competencies. The characteristics of these processes mean that market knowledge competence is not transferable, but is inimitable and immobile (Day, 1994, Prahalad and Hamel, 1990). Other authors suggest that there are three core marketing processes: product development management, supply chain management, and customer relationship management (Srivastava et al, 1999, Hanvanich et al, 2003).

Focussing specifically on the processes in new product development, Li and Calantone (1998) suggest that market knowledge competence in new product development is composed of three processes: customer knowledge process, competitor knowledge process, and the marketing research and development (R&D) interface. They define a customer knowledge process as: *'the set of behavioural activities that generates customer knowledge pertaining to customer's current and potential needs for new products.'* (p.14).

Customer knowledge processes have been defined as comprising three sequential aspects: customer information acquisition, interpretation and integration (Huber, 1991).

Campbell (2003) introduces the concept of customer knowledge competence, using a point of departure a definition of market knowledge competence in terms as: the processes that generate and integrate market information *in aggregate*. They define customer knowledge competence in terms of the processes that generate and integrate information about *specific* customers.

Campbell (2003) conceptualises customer knowledge competence as being composed of four

organisational processes, which together generate and integrate customer knowledge within the organisation:

- a customer information process
- marketing-IT (information technology) interface
- senior management involvement, and
- employee evaluation and reward systems.

The first of these components, customer information process, is an organisational process that generates customer knowledge, whereas the other three components are organisational processes that integrate customer knowledge throughout the organisation. In other words these last three are the organisational processes through which the knowledge based processes associated with customer information integration are executed. Campbell's study identifies the relationship between data, information and knowledge management, the importance of which is acknowledged by other authors (Abell and Oxbrow, 2001, Knox et al, 2003). Interestingly, there was a tendency for managers to overemphasise the process of customer data acquisition and underemphasise information interpretation. Organisations tended to expect that because the information was available, and the technology (intranet) in place to access it that the information was being communicated and understood, leading to insufficient attention being paid to information interpretation. Figure 5 summarises the relationships between some of these concepts.

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Learning

Other commentators on CKM have approached the concept and its processes from a variety of different perspectives, all of which develop the theme of learning with customers.

Davenport et al (2001), in discussing CKM, focus on the gap between knowing about customers, through collecting transaction data, and knowing customers, through recording what customers do during sales and service interactions. By examining 'human data' they can better understand and predict customers' behaviours. They suggest that customer knowledge management mixes human and transaction data, and that businesses that are successful in customer knowledge management were: focussing on the most valued customers; prioritising objectives; aiming for the optimal knowledge mix; avoiding one repository for all data; thinking creatively about collection of human knowledge, through human intermediaries; looking at the broader context; and, establishing processes and tools.

Gibbert et al (2002) define CKM as the management of knowledge from customers, and distinguish between CKM and CRM, on the basis that CRM is concerned with the management of knowledge about customers. The central axiom of CKM they propose is 'if only we knew what our customers know'. They suggest:

'CKM is the strategic process by which cutting-edge companies emancipate their customers from passive recipients of products and services, to empowerment as knowledge partners. CKM is about gaining, sharing, and expanding the knowledge residing in customers, to both customer and corporate benefit.' (p.460).

This rather different approach to CKM provides a basis for the definition of five different styles of CKM, each of which defines a different kind of knowledge-based relationship between organisations and their customers: *Prosumerism, Team based co-learning, Mutual innovation, Communities of creation, and Joint Intellectual Property.*

Sawhney et al (2003) introduce the concept of the innomediary. Innomediaries are knowledge brokers that help companies to acquire different forms of customer knowledge by aggregating

and disseminating customer-generated knowledge using the Internet. Innomediaries may be valuable in fragmented markets, in business markets where customer preferences are poorly understood, and in lifestyle fashion-oriented markets. On the other hand there are genuine questions concerning the extent to which customer knowledge processes can be 'outsourced' if, as other authors suggest, they are integral to business and organisational processes.

Conclusion

CKM and customer knowledge competence are embedded in the business and organisational processes of any specific organisation, and are tightly coupled with value generation and competitive advantage. CKM is therefore likely to be inimitable, and immobile. Nevertheless, sharing of case study experience, and models, and the search for general or transferable models that offer insight into the path toward CKM may play a role. This article has identified some key aspects of KM and CRM that constitute some of the building blocks of CKM. It has then reported on, and organised some of the recent research and development relevant to CKM. This reveals a range of different perspectives on CKM. Given the diversity of perspectives in both KM and CRM this is not surprising. Indeed the approach taken to CKM by different researchers may be contingent upon the value generating processes and the nature of customer interactions with business and organisational processes in different businesses. Some researchers are concerned with the relationship between CRM and KM. Several authors have taken the view that KM can be used to enhance CRM, in pursuit of a later generation of CRM systems. Some researchers are concerned to operate at the systems level, whilst others have recognised that effective KM and CRM, and therefore CKM, requires more than technological tools, and have focussed on human aspects of CRM from an organisational process and customer interaction perspective.

A customer-centric organisation needs to articulate a model of its CKM processes that

1. Embraces knowledge for, about, from, and retained by customers.
2. Informs the architecture of integrated business and organisational processes, including, but not exclusively those processes associated with CRM and KM systems.
3. Articulates the relationship between data management, information management and knowledge management. Indeed there is evidence to suggest that information management, as the interface between data management and knowledge management, and as the processes that are at the people-technology interface can not be taken for granted. A pivotal competence is the ability to ask the right questions, and to be able to use the technology to collect information to drive forward innovation, and knowledge creation.
4. Encompasses all of the relevant KM processes, mapping each of these onto appropriate business and organisational processes, including CRM processes. Models of CKM that focus only on knowledge creation, and storage, or only on dissemination are partial.
5. Is appropriate to the organisational behaviour of the organisation, including, culture, structure, leadership style, approach to learning and innovation and change environment.

As Campbell (2003) says: '*customer knowledge competence requires a new way of doing business*' (p.6). Successful CKM requires a clear view of what it means for an organization to be customer-centric, and business and organisational processes that deliver. Further investigation, sharing of good practice, research and development therefore needs to prioritise:

1. The further development of models of relevant business processes in areas such as KM and CRM that contribute to the development of understanding of such processes.

2. The enhancement and refinement of understanding of the nature of customer knowledge, and its role in co-production, co-learning, and innovation
3. The rigorous articulation of the difference between data management, information management and knowledge management, and their associated processes.
4. In pursuit of understanding the association between knowledge management processes, and relationship management processes, the further development of models of the distinction between knowledge and knowing. Knowledge (or even data or information) can shape behaviour to dispose towards a relationship, but does not amount to 'knowing'
5. The development of a series of linked models of CKM processes that can be applied to different categories of CKM, based on the nature of the customer relationship, and the dynamics of the co-learning process.
6. The definition of knowledge quality and other approaches to the measurement of the performance of knowledge based processes.

This article has focussed on the organisation as if it were a bounded entity. Shaw et al (2001) identify the management of knowledge that crosses organisational boundaries, and is distributed across supply chain partners as a further area for research and development. Jeppensen and Molin (2003) discuss consumers as co-developers. Rowley (2002) also raises the issue of boundaries of on-line communities in e-business contexts, and associated knowledge ownership issues. Continuing with the e-business context, Plessis and Boon (2004), in discussing knowledge management in e-business and customer relationship management highlight the impact of social, cultural, economic and technological development in specific countries, on knowledge based processes. These are other important agendas for further research in customer knowledge management.

References

- Abell, A and Oxbrow, N (2001) *Competing with knowledge*. London: TFPL and Library Association Publishing.
- Awad, E M and Ghaziri, H M (2004) *Knowledge management*. Pearson Education International.
- Beckman, T (1997) A methodology for knowledge management. *International Association of Science and Technology for Development (ASTFD) AI and Soft Computing Conference, Banff*.
- Bennett, R and Gabriel, H I (1999) Organisational factors and knowledge management within large marketing departments: an empirical study. *Journal of Knowledge Management*, 3 (3) 212-225.
- Blackler, F (1995) Knowledge, knowledge work and organisations: an overview and interpretation. *Organisation Studies*, 16 (6), 1021-1046.
- Blosch, M (2000) Customer knowledge. *Knowledge and Process Management*, 7 (4), 265-268.
- Bohn, R E (1994) Measuring and managing technological knowledge *Sloan Management Review*, 36 (1), 33-42.
- Bose, R and Sugumaran, V (2003) Application of knowledge management technology in customer relationship management. *Knowledge and Process Management* 10 (1), 3-17.
- Campbell, A J (2003) Creating customer knowledge competence: managing customer relationship management programs strategically. *Industrial marketing management*, 32 (5), 375-383.
- Carter, C and Scarbrough, H (2001) Regimes of knowledge, stories of power: a treatise on knowledge management. *Creativity and Innovation Management*, 10 (3), 210-221.
- Chase, R L (1997) The knowledge-based organization : an international survey. *Journal of Knowledge Management*, 1 (1) 38-49.
- Christopher, M, Payne, A and Ballantyne, D (1991) *Relationship marketing*. Oxford: Butterworth Heinemann.

Cook, S and Brown, J (1999) Bridging epistemologies: the generative dance between organisational knowledge and organisational knowing. *Organisation Science*, 10 (4), 381-400.

Davenport, T H, DeLong, D W and Beers, M C (1998) Successful knowledge management projects. *Sloan Management Review*, Winter, 39 (2), 43-57.

Davenport, T H and Prusak, L (2000) *Working knowledge*. Boston, MA: Harvard Business School Press.

Davenport, T H, Harris, J G, Kohli, A K (2001) How do they know their customers so well? *MIT Sloan Management Review*, 42 (2), 63-73.

Day, G S (1994) The capabilities of market-driven organisations. *Journal of Marketing*, 58, 37-52.

Day, G S (2000) *Capabilities for forging customer relationships*. Cambridge, MA: Marketing Science Institute.

Demerest, M (1997) Understanding knowledge management. *Journal of Long Range Planning*, 30 (3), 374-384.

Dixon, N M (2000) *Common knowledge*. Boston, MA: Harvard Business School Press.

Drucker, P F (1993) *Post-capitalist society*. Oxford: Butterworth-Heinemann.

Eschenfelder, E, Heckamn, R and Sawyer, S (1998) The distribution of computing: the knowledge markets of distributed technical support specialists. *Information Technology and People*, 11 (2), 84-103.

Galbreath, J and Rogers, T (1999) Customer relationship leadership: a leadership and motivation model for the twenty-first century business. *The TQM Magazine*, 11 (3), 161-171.

Garcia-Murillo, M and Annabi, H (2002) Customer knowledge management. *Journal of the Operational Research Society*, 53, 875-884.

Gebert, H, Gelb, M, Kolbe, L and Brenner, W (2003) Knowledge-enabled customer relationship management: integrating customer relationship management and knowledge management concepts. *Journal of Knowledge Management*, 7 (5), 107-123.

Gibbert, M, Leibold, M, and Probst, G (2002) Five styles of customer knowledge management, and how smart companies use them to create value. *European Management Journal*, 20 (5), 459-469.

Glazer, R (1991) Marketing in an information-intensive environment: strategic implications of knowledge as an asset. *Journal of Marketing*, 59, 58-72.

Hamilton, D P (2001) Making sense of it all. *The Asia Wall Street Journal*, 21, May p.T4.

Hanvanich, S, Droge, C and Calantone, R (2003) Reconceptualising the meaning and domain of marketing knowledge. *Journal of Knowledge Management*, 7 (4), 124-1135.

Huber, G P (1991) Organisational learning: the contributing processes and literatures. *Organisation Science*, 2, 88-115.

Hunt, S D and Morgan, R M (1995) The comparative advantage theory of competition. *Journal of Marketing*, 50, 1-15.

Jeppensen, L B and Molin, M J (2003) Consumers as co-developers: learning and innovation outside the firm. *Technology Analysis and Strategic Management*, 15 (3), 363-383.

Johnston, R and Blumentritt, R (1998) Knowledge moves to centre stage. *Science Communication*, 20 (1), 99-105.

Kakabadse, N K and Kakabadse, A and Kouzmin, A (2003) Reviewing the knowledge management literature: towards a taxonomy. *Journal of Knowledge Management*, 7 (4), 75-91.

Karimi, R, Sommers, T M and Gupta, Y P (2001) Impact of information technology management practices on customer service. *Journal of Management Information Systems*, 17 (4), 125-158.

Knox, S, Maklan, S, Payne, A, Peppard, J and Ryals, L (2003) *Customer relationship management: perspectives from the marketplace*. Oxford: Butterworth Heinemann.

- Law, M, Lau, T and Wong, Y H (2003) From customer relationship management to customer-managed relationship: unravelling the paradox with a co-creative perspective. *Marketing Intelligence and Planning*, 21 (1), 51-60.
- Li, T and Calantone, R (1998) The Impact of market knowledge competence on new product advantage: conceptualisation and empirical examination. *Journal of Marketing*, 62 (Oct.), 13-29.
- Massey, A P, Monotoya-Weiss, M M and Holcom, K (2001) Reengineering the customer relationship: leveraging knowledge assets at IBM. *Decision Support Systems*, 32, 155-170.
- Murray, P and Myers, A (1997) The facts about knowledge. *Information Strategy* 2 (7), 29-33.
- Nonaka, I and Takeuchi, H (1995) *The knowledge-creating company*. Oxford: Oxford University Press.
- Novo, J (2001) *The source of customer value – customer knowledge*. Available at www.crm-forum
- O'Dell, C and Jackson, C (1998) *If only we knew what we know: the transfer of internal knowledge and best practice*. New York: Free Press.
- Peck, H, Payne, A, Christopher, and Clark, M (1999) *Relationship marketing: strategy and implementation*. Oxford: Butterworth Heinemann.
- Plessis, M du, and Boon, J A (2003) Knowledge management in eBusiness and customer relationship management: South African case study findings. *International Journal of Information Management*, 24 (1), 73-86.
- Polanyi, M E (1966) *Personal knowledge: towards a post critical philosophy*. London: Routledge and Kegan Paul.
- Prahalad, C K and Hamel, G (1990) The core competence of the corporation. *Harvard Business Review*, 68, May/June. 79-91.
- Prusak, L (1997) *Knowledge in organisations*. Butterworth-Heinemann.

- Rowley, J (2002) Reflections on customer knowledge management in e-business. *Qualitative Market Research: An International Journal*, 5 (4), 268-280.
- Rowley, J (2001) Knowledge management in pursuit of learning: the Learning with Knowledge Cycle. *Journal of Information Science*, 27 (4), 227-237.
- Sawhney M, Prandelli, E and Verona, G (2003) The power of innomediatio. *MIT Sloan Management Review*, 44 (2), 77-83.
- Schwede, S (2000) Vision and reality of CRM. *Information Management & Consulting*, 15 (1), 7-11.
- Shaw, M J, Subramaniam, C, Tan, G W, and Welge, M E (2001) Knowledge management and data mining for marketing. *Decision Support Systems* 31, 127-137.
- Shaw, R (1999) *Measuring and valuing customer relationships*. London: Business Intelligence.
- Shoemaker, M E (2001) A framework for examining IT-enabled market relationships. *The Journal of Personal Selling & Sales Management*, 21 (2), 177-185.
- Srivastava, R K, Shervani, T A and Fahey, L (1999) Marketing, businesses processes, and shareholder value: an organisationally embedded view of marketing activities and discipline of marketing. *Journal of Marketing*, 63, 168-179.
- Stefanou, C J, Sarmaniotis, C, and Stafyle, A (2003) CRM and customer-centric knowledge management: an empirical research. *Business Process Management Journal*, 9 (5), 617-634.
- Swan, J and Newell, S (2000) Linking knowledge management and innovation. In: Hansen, H R, Bichler, M and Mahrer, H (eds.) *Proceedings of the 8th European Conference on Information Systems*. Vienna, University of Economics and Business Administration, pp.591-598.
- Swift. R S (2001) *Accelerating customer relationships: using CRM and relationship technologies*. Englewood Cliffs, NJ: Prentice Hall.
- Tiwana, A (2001) *The Essential guide to knowledge management: e-business and CRM applications*. Upper Saddle River, NJ: Prentice Hall.

Wiig, K M (1999) What future knowledge management users may expect. *Journal of Knowledge Management* 3 (2), 155-166.

Winer, R S (2001) A framework for customer relationship management. *California Management Review*, 43 94), 89-107.

Zack, M H (1999) Managing codified knowledge. *Sloan Management Review*, 40 (4), 45-58.

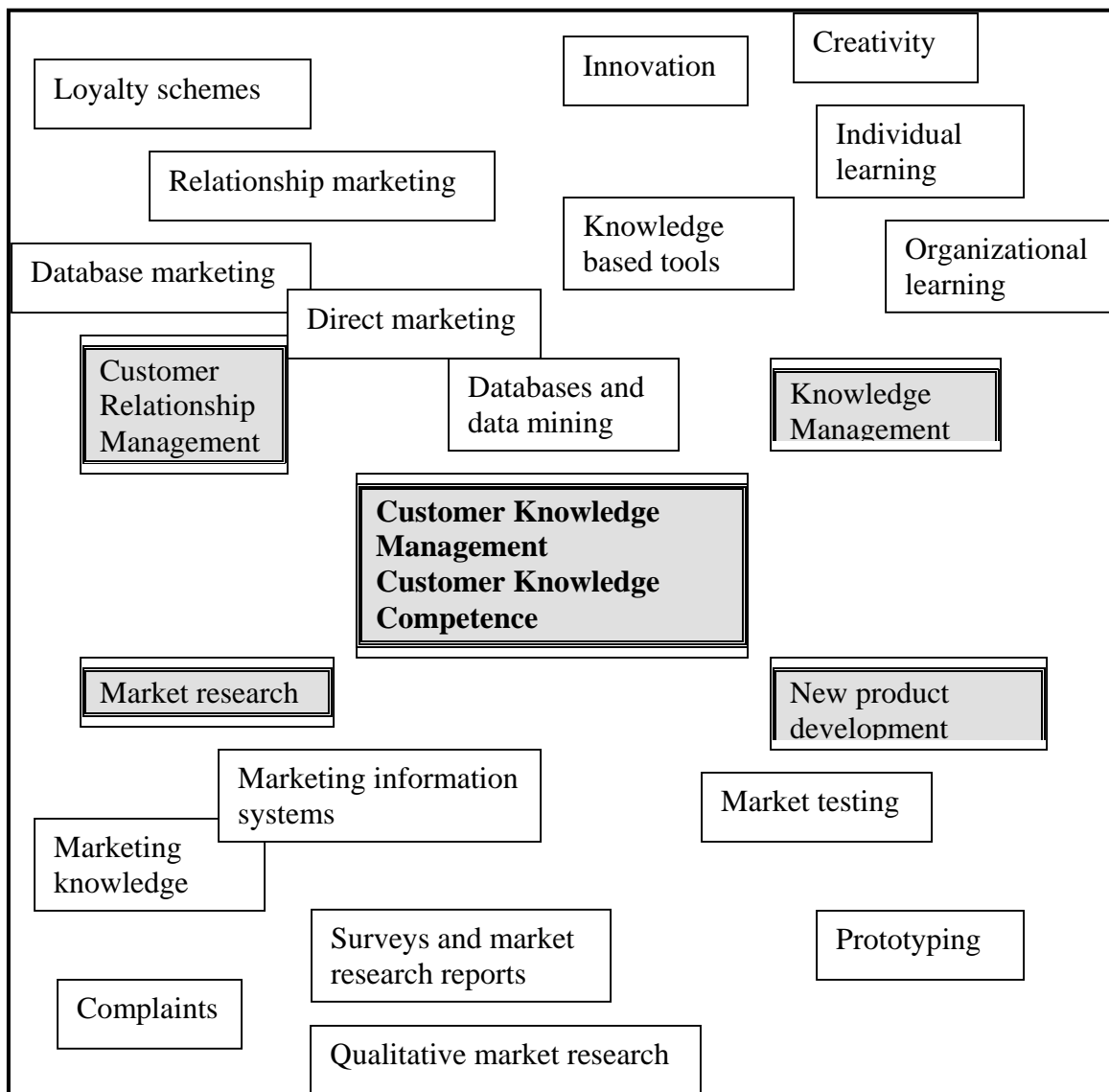


Figure 1: Disciplinary influences and process impacts

- knowledge construction, knowledge dissemination, knowledge use, and knowledge embodiment (Demerest, 1997)
- knowledge capture, organisation, refinement, and transfer (Awad and Ghaziri, 2004)
- knowledge acquisition, creation and construction, knowledge articulation and sharing, knowledge repository updating, knowledge diffusion, access and dissemination, knowledge use, and knowledge revision (Rowley, 2001)
- socialisation, externalisation, combination, internalisation (Nonaka and Takeuchi, 1995)
- knowledge identification, acquisition, generation, validation, capture, diffusion, embodiment, realisation, and cultivation/application (Johnson and Blumentritt, 1998)
- acquisition, refinement, storage/retrieval, distribution and presentation (Zack, 1999).

Figure 2: Processes in Knowledge Management

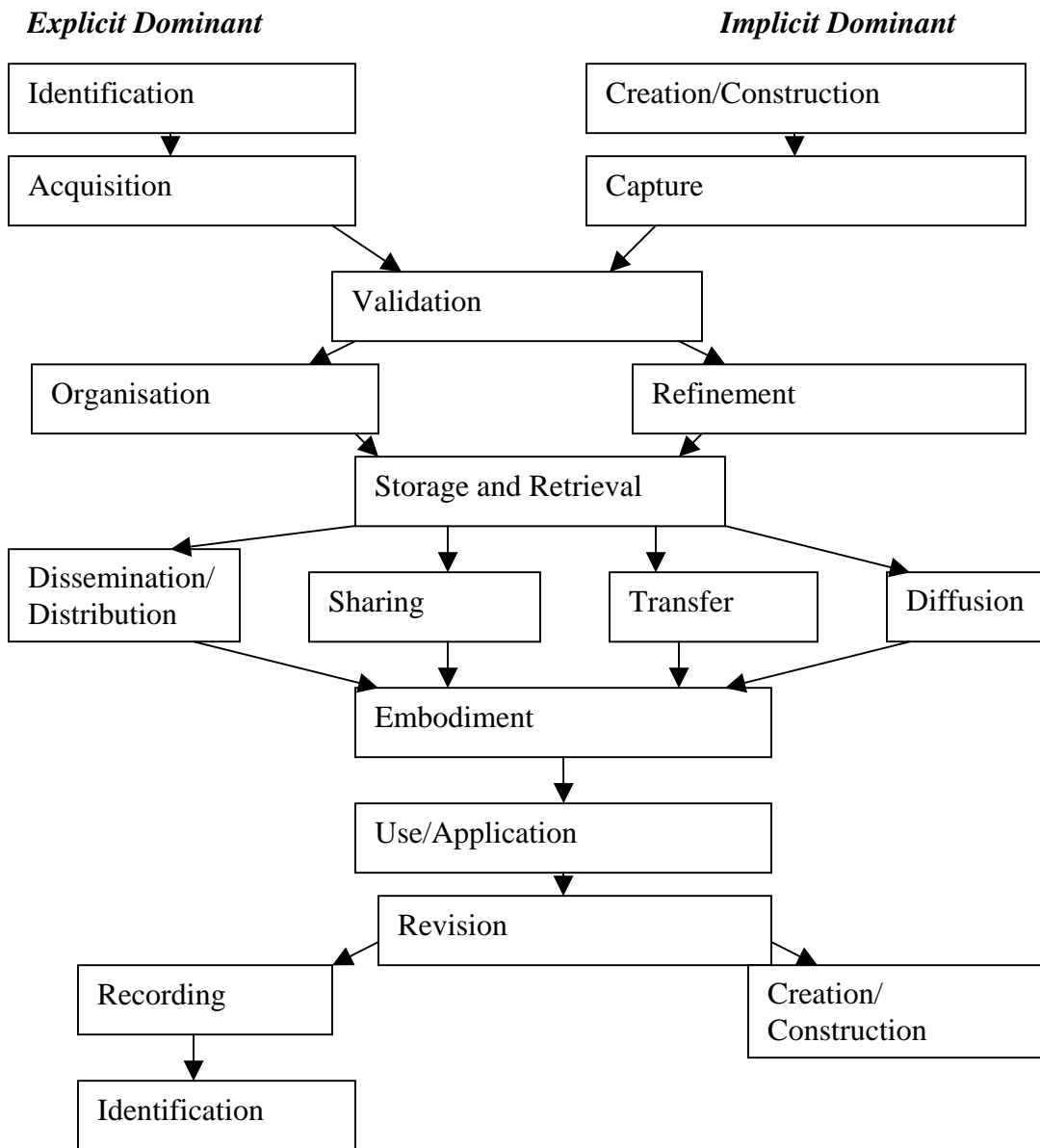


Figure 3: A Model of Knowledge Management Processes

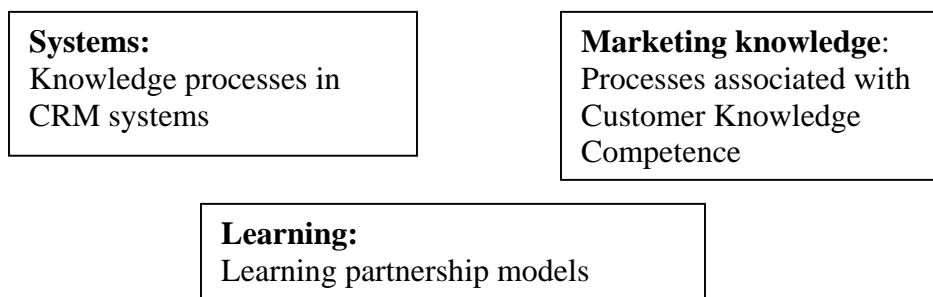


Figure 4: Towards Customer Knowledge Management

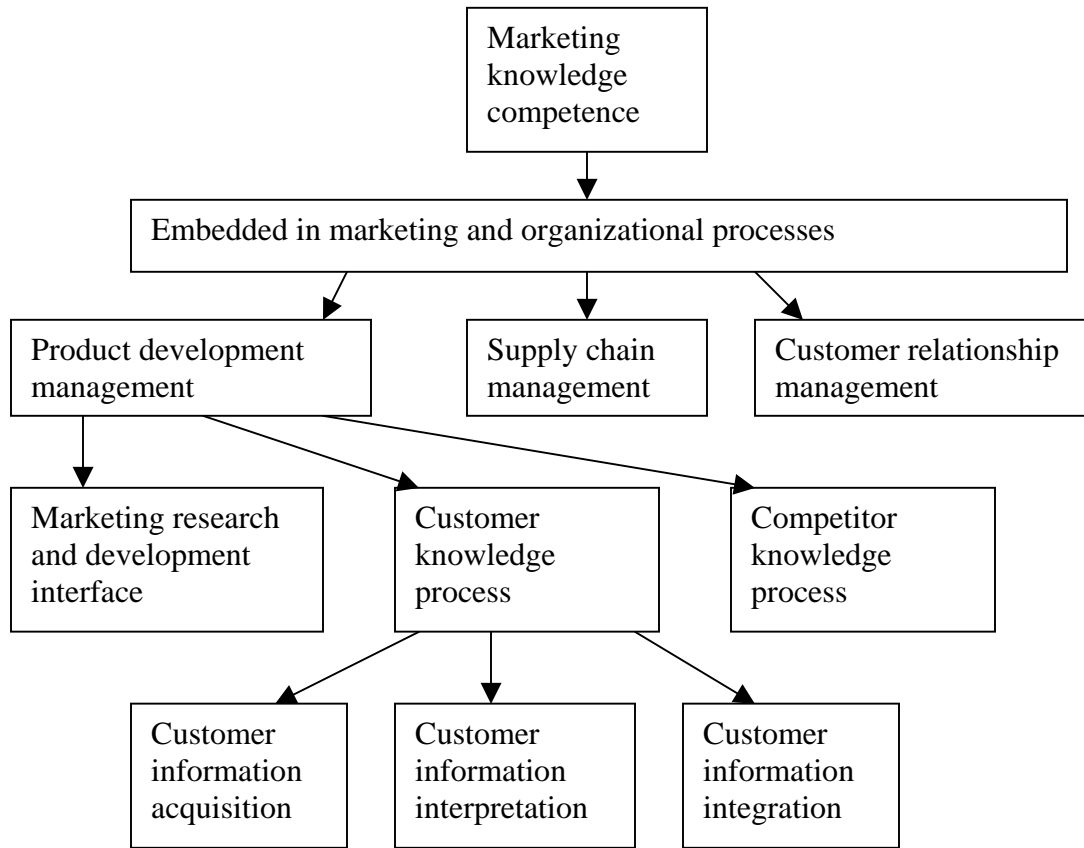


Figure 5: From Marketing Knowledge Competence to Customer Knowledge Processes