

Proposing a Conceptual Model of Customer Knowledge Management: A Study of CKM Tools in British Dotcoms

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Abstract—Although current competitive challenges induced by today's digital economy place their main emphasis on organizational knowledge, customer knowledge has been overlooked. On the other hand, the business community has finally begun to realize the important role customer knowledge can play in the organizational boundaries of the corporate arena. As a result, there is an emerging market for the tools and utilities whose objective is to provide the intelligence for knowledge sharing between the businesses and their customers. In this paper, we present a conceptual model of customer knowledge management by identifying and analyzing the existing tools in the market. The focus will be upon the emerging British dotcom industry whose customer based B2C behavior has been an influential part of the knowledge based intelligence tools in existence today.

Keywords—Customer Knowledge, Customer Knowledge Management, Knowledge Management, B2C Ecommerce.

I. INTRODUCTION

WITH emphasis on knowledge as a key asset and only sustainable source of competitive advantage in the knowledge economy [7], businesses have come to realize the critical importance of organizational knowledge, but may be overlooking Customer Knowledge (CK) as a brilliant element [10], [18].

Customer knowledge is at the origin of most improvements in customer value [14]. In order for organization to be more efficient and effective in delivering products or services to customers, and thus creating customer delight, knowledge on customers will have to be managed to ensure that the services organizations provide are those that will address customer needs [11].

Although Customer Knowledge Management (CKM) has been discussed in various circles we still face considerable questions that are not yet answered, or enough attention has not been paid in the CKM literature regarding some fundamental issues. For instance we may still be asking: "What is the exact definition of CK and CKM? How does customer knowledge form? What are our suppositions in relation to the various kinds of customer knowledge? Should all kinds of customer knowledge be manageable by businesses?" We shall try to answer the aforementioned critical questions in our study presented below. We begin by presenting a conceptual model of customer knowledge management which can be used for scrutinizing manageable customer knowledge tools. The model encompasses an

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extensive look at the three different dimensions of customer knowledge in more details than prior CKM researches. As a result we can help Businesses identify different aspects of CK, and thus be able to manage them better accordingly. We have utilized the theoretical aspects stemming from the information retrieval and analysis of the latest results in related Literature.

This paper is organized as follows: After introduction, Section 2 deals with the literature, specially our points of view about CK and CKM. We then, discuss the research methodology. In section four the conceptual model is introduced as our reference model in this paper. Moreover, the examination of CKM tools in 10 successful British dotcoms is discussed. Finally, we present the conclusion of this work.

The paper has important implications for e-commerce web sites seeking to improve their Business and customer value through CKM.

II. LITERATURE REVIEW

Throughout the history of the Western Philosophy, from the time of the Greeks, the significant question has been raised, "What is knowledge?" In general, Western philosophy has agreed that knowledge is "justified true belief", a concept introduced by Plato in his *Meno* [15].

Companies recognize knowledge as a crucial resource in the competition and the importance of utilizing knowledge to gain a competitive advantage, but many of them still ignore customer knowledge. In order to have a good relationship with their customers, customer-focused companies specifically e-companies have to communicate and interact with them in a satisfactory manner, and continuously meet customers' changing needs. This requires the management of 'customer knowledge' [5], [9].

A. Data, Information and Knowledge

Information systems literature makes a difference between data, information and knowledge [3] elaborated on the disparities:

"Data is a set of discrete, objective facts about events. In an organization context, data is described as structured records of transactions. Information is data endowed with relevance and purpose. It is a message with a sender and a receiver. Information is meant to change the way the receiver perceives something, to have an impact on his judgment and behavior. It must inform. Knowledge is a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information." [2], [13].

In organizations, it often becomes embedded not only in documents and repositories but also in organizational routines, processes, practices, and norms.

Despite the differences between these concepts, we argue data and information under concept of knowledge.

B. Knowledge Management

Today, it is unlikely to find an organization which does not articulate and publish its knowledge products. Usually, organizational knowledge is catalogued in organizations' websites as well as marketing and other documents. However, the crucial questions which have to be taken into account can be classified as follows: What is the role of this knowledge in organizations? Where does this knowledge come from? How can this knowledge be distributed? How do organizations gather knowledge which customers need?

Companies are advised that they will not endure in the new knowledge age if they can't find a way to manage and control the information that flows in the company and its environment. Authors such as Drucker (1993), Toffler (1990) had anticipated knowledge to become the most important resource in the "knowledge society". Subsequently companies have come to use knowledge management [7], [8], [19].

Knowledge management systems are now essential to ensure that value is extracted from knowledge internal and external to the organization [18]. Knowledge management is the conscious and active management of creating, disseminating, and applying knowledge to strategic ends [6]. Knowledge management spans product and service knowledge, industry knowledge, competitor knowledge, methods and process knowledge and customer knowledge.

C. CK and CKM

To date, most companies have focused on collecting massive amounts of data about their customers but they don't know how to cope with them [4]. we have identified two key articles in customer knowledge management: the *Customer Knowledge Management Concept* (University of St. Gallen) and *Five Style of Customer Knowledge Management* (Gibbert, Leibold and Probst, 2002). The point of view from the University of St.Gallen derives from reflections about customer relationship management (CRM). An essential idea is to use knowledge gathered to encounter with customers in order to support business processes. In accordance with authors of St. Gallen conception, the task of customer knowledge management is to design knowledge flow inside and between the CRM processes. A further task is to allocate relevant knowledge gained from customer-related processes to others. The authors of "*Five Style of Customer Knowledge Management*" proposed five style of CKM and exemplify them. Their research shows that by managing the knowledge of their customers, corporations are more likely to sense emerging market opportunities before their competitors, to constructively challenge the established wisdom of "doing things around here", and to more rapidly create economic value for the corporation, its shareholders, and last, but not least, its customers. In their approach CKM refers to the management of knowledge from the customer i.e. knowledge residing in the customer, in contrast to knowledge about customers. Moreover they discuss that their approach is different from traditional

as traditional knowledge management is about efficiently gains (avoiding of re-inventing the wheel), CKM is about innovation and growth" [6], [10].

In order to acquire and monitor customer knowledge, a number of practices, instruments and measures have been suggested in the knowledge management literature. Beijerse proposes the following:

- Assess customers
- Carry out customer satisfaction research
- Obtain knowledge from customers
- Interview customers [20]

We define Customer knowledge as a kind of knowledge in the area of customer relationship, which has direct or indirect effect on our organizational performance (The proposed CK formation model is shown in the fig. 1). According to our point of view, Customer knowledge management is a process of planning, organizing, leading and controlling manageable customer knowledge which has direct or indirect effect on our organizational performance.

When we talk about customer knowledge, we mean knowledge of our customer. One of the most important messages of the paper is that customer knowledge can be formed by informational interaction between customers and diverse entities like: our company, our other customers, our competitors and information consulting institutes. It is important to know that we can not manage all of these interactions. For example, our customers' knowledge may be affected and formed by interactions between them and our competitors, but we can not have considerable control over it. In CKM, it seems that we have to focus on managing informational interaction between ourselves and our customer or between our customers. Although, CKM is mainly about knowledge, it is also about data and information that can be analyzed, interpreted and eventually converted to knowledge. below we explain our attitude and definition of three types of CK.

1) Knowledge for Customer:

Knowledge for customer is a kind of knowledge (also data or information which can be analyzed, interpreted and eventually converted to knowledge) that our targeted customer attains in order to know us better. [9] Often in the literatures, sources that provide knowledge for customer are overlooked. Data, information or knowledge for customers can be gained from our other customers, information consulting institutes, our competitors and the company itself to provide information needs of customer(as shown in fig. 1). We should bear in mind that a company isn't able to manage all of these knowledge flows (e.g. knowledge that is streamed from competitors). We tend to mention that all arrows of knowledge for customer, as it is shown in CK model, lead to our targeted customer [12].

2) Knowledge from Customer:

Knowledge from customer is a kind of knowledge (also data or information which can be analyzed, interpreted and eventually converted to knowledge) that the company attains in order to enhance its products and services [9], [16].

3) Knowledge about Customer:

Knowledge about customer is a kind of knowledge (also data or information which can be analyzed, interpreted and

eventually converted to knowledge) that the company attains there isn't a simple framework for understanding it [21]. we in order to know its targeted customer better [4], [17]. Companies not only capture knowledge about customers but also purchase data, information and knowledge about customers.

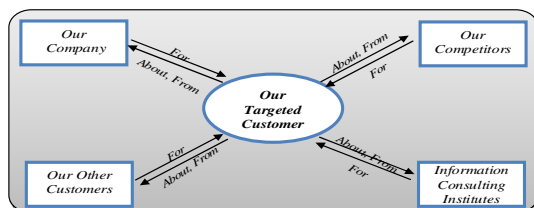


Fig. 1 CK Formation Model

D. E-Commerce and Dotcoms

With the development of the internet and budding of dotcoms, knowledge management in e-commerce is becoming increasingly important [1]. Emergence of e-commerce and dotcom companies which do most of their business on the internet usually through their websites, changes the way businesses collect, store and process on data, information and knowledge [13]. Electronic commerce is defined as the conducting of business communication and transactions over networks and through computers. Electronic commerce (e-commerce) consists of buying, selling, marketing, and servicing of products or services over computer networks. In this work we notice to customer knowledge management in dotcoms and types of knowledge they should capture, manage, utilize and disseminate over the web [14].

III. RESEARCH METHODOLOGY

The research described in this paper aims to concentrate on customer knowledge definition, branches and degree of usage in e-commerce websites.

To achieve our main research goal, we employed a two-phase research strategy in this paper.

At first, we used knowledge derived from an analysis of CKM Literature in order to propose our conceptual model of customer knowledge management. The model covers aspects referring to knowledge "for", "from" and "about" customer in depth. Therefore, the phase provides us with suitable framework for our case study in the second phase.

This second phase consist of an explanatory multiple-case study approach. Exploratory studies are appropriate when the subject of study is itself relatively new and unstudied.

IV. RESEARCH FINDING

Our research findings can be divided into two parts: The conceptual model and our case study results. Conceptual model is based on our findings through articles and the literature. In this theoretical model, some conceptions which are gleaned from researches are extended and categorized. In the case study we focused on top ten British dotcoms to investigate how much these companies utilize diverse CKM tools.

A. Conceptual Model

Many companies find CKM a difficult concept to grasp and few are Doing it well [4], [10]. This is partly because

we suppose a customer knowledge management conceptual model to help companies understand distinctive types of customer knowledge.

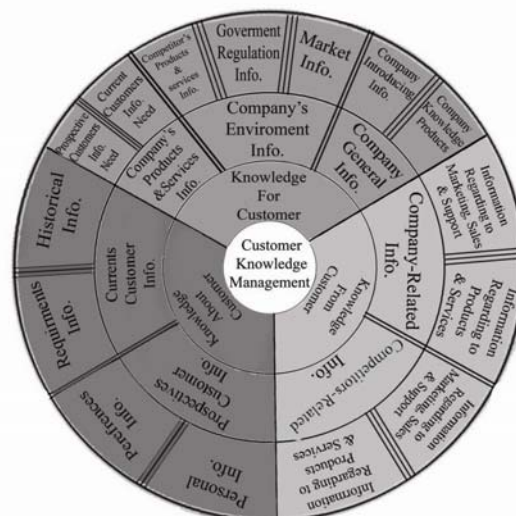


Fig. 2 The Conceptual Model of Customer Knowledge Management

In this section, we are going to explain the important knowledge product of this work. In fact, the theoretical based model that we created through literature is presented. In our conceptual model (as shown in fig. 2) we distinguished customer knowledge in three types similar to other authors' statements in CKM literature: knowledge for customer, knowledge from customer and knowledge about customer. We then break each type of customer knowledge in to more detailed knowledge-based parts. Indeed our model has three layers. In the first layer, we separated three kinds of customer knowledge, in the next layer we separated knowledge for customer into company general information, company products and services information and company's environment information. We believe that knowledge from customer involves company-related information or competitors-related information and knowledge about customer can be divided in prospective customer information and current customer information. In the third layer we include more detailed parts of each branch. An important point to keep in mind is that we recognize and notify manageable section within customer knowledge.

B. Case Study

The following cases demonstrate utilization of each mentioned branch of our CKM conceptual model in top ten British dotcoms (This document can be seen in Guardian Unlimited: Top 10 dotcoms to watch by Bobbie Johnson, July 30 2007). First, these companies' tools which also cover one of the aforementioned kinds of knowledge (knowledge for, from and about customer) were scrutinized. Then, these tools were placed in mentioned conceptual model. Finally, we got the frequency of tools in each kind of customer knowledge and compared and analyzed gathered data (this comparison is shown in fig. 6). In such a way, we calculated sum of each company's tools.

Table I shows how much these dotcoms are using "knowledge for customer" tools such as "FAQs", "Media Room", "Blogs", "News" and "Thoughts".

Fig. 3 depicts an analysis based upon the information knowledge is most affected by “Company General Information”, sharing 60% of the total population studied within the cases.

TABLE I
KNOWLEDGE FOR CUSTOMER TOOLS

SUM	Knowledge For Customer							Company's URL
	Company's Products & Services Info.		Company's Environment Info.			Company General Info.		
	Prospective Customers Info. Need	Current Customers Info Need	Government Regulation Info.	Market Info.	Competitor's Products and Services Info.	Company Introducing Info.	Company Knowledge - Products	
2	2	-	-	-	-	3	4	Dopplr.com
7	2	-	-	-	-	2	3	Extate.com
14	3	1	-	1	-	5	4	Garlik.com
6	1	-	-	-	-	1	4	MindCandy.com
17	3	-	-	-	-	5	7	Moo.com
13	3	2	-	1	-	3	4	OnOneMap.com
12	2	2	-	1	-	4	3	Touch Local.com
12	3	2	-	1	-	4	2	Trusted Places.com
31	7	2	-	3	2	11	6	Zopa.com
14	4	4	-	1	-	3	2	Zubka.com

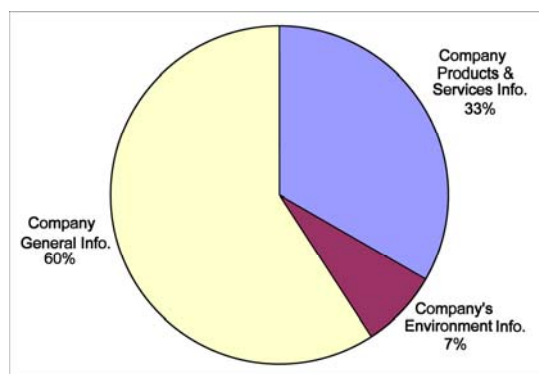


Fig. 3 Knowledge for Customer Pie Chart

In Table II, the frequency of “knowledge from customer” based on key indicators is displayed. The data is based upon “Feedback”, “Discussion Board” and “Member Data” gathered from British dotcoms.

TABLE II
KNOWLEDGE FROM CUSTOMER TOOLS

SUM	Knowledge From Customer				Company's URL
	Company-Related Info.		Competitor-Related Info.		
	Information Regarding to Products and Services	Information Regarding to Marketing, Sales and Support	Information Regarding to Products and Services	Information Regarding to Marketing, Sales and Support	
10	4	4	1	1	Dopplr.com
4	1	1	1	1	Extate.com
4	1	1	1	1	Garlik.com
8	3	3	1	1	MindCandy.com
11	5	4	1	1	Moo.com
7	3	2	1	1	OnOneMap.com
8	2	2	1	3	Touch Local.com
6	2	2	1	1	Trusted Places.com
12	5	5	1	1	Zopa.com
9	4	3	1	1	Zubka.com

Fig. 4 depicts an analysis based upon the information provided in Table II. As shown in the Fig. 4, “knowledge from customer” is much more affected by “Company

Related Information” than by “Competitor Related Information”.

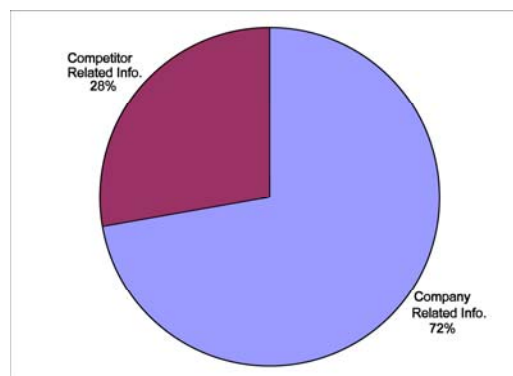


Fig. 4 Knowledge from Customer Pie Chart

In Table III information based upon indicators such as “Contact Us”, “Cookies” and “Registration Forms” are gathered. This information is used to help companies better understand the needs of their current and perspective customers.

TABLE III
KNOWLEDGE ABOUT CUSTOMER TOOLS

SUM	Knowledge About Customer				Company's URL
	Prospective customer info.		Current customer info.		
	Preferences info.	Personal info.	Historical info.	Requirement	
8	2	1	1	3	Dopplr.com
10	2	3	3	2	Extate.com
7	1	2	2	2	Garlik.com
12	2	2	3	5	MindCandy.com
13	2	2	5	4	Moo.com
11	2	3	3	3	OnOneMap.com
6	2	1	1	2	Touch Local.com
8	1	2	3	2	Trusted Places.com
8	2	1	2	3	Zopa.com
14	3	3	4	4	Zubka.com

Fig. 5 depicts an analysis based upon the information provided in Table III. As shown in the Fig. 5, the British dotcoms studied show a near correlation between current customer information and prospective customer information.

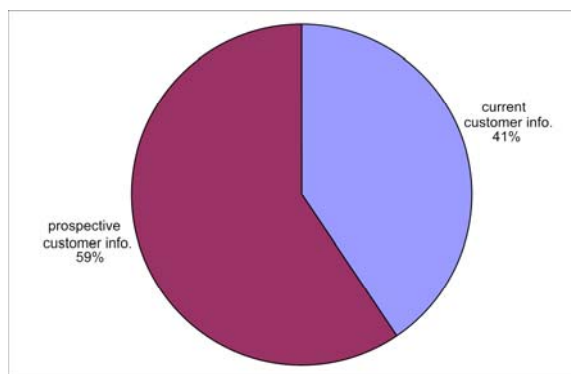


Fig. 5 Knowledge about Customer Pie Chart

Finally, Fig. 6 depicts the customer knowledge amongst the top ten British dotcom companies. As the data indicates, the share of customer knowledge is more evident in “knowledge for customer” tools and least evident in “knowledge from customer”.

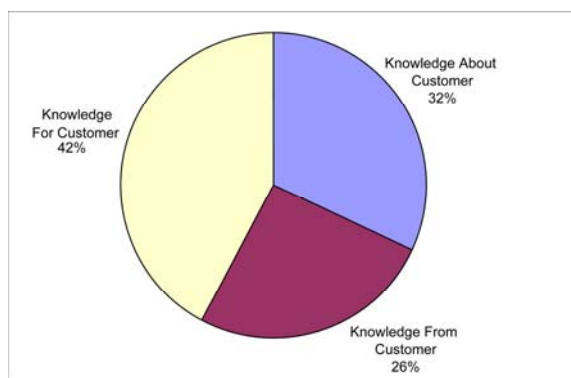


Fig. 6 Customer Knowledge Pie Chart

V. CONCLUSION

As a result of the research effort, we proposed our definition of customer knowledge and customer knowledge management. Then we established a conceptual model of CKM. The model helps businesses successfully identify and utilize all kinds of customer knowledge in order to enable their customers to move from passive information sources and recipients of products and services to empowered knowledge partners.

One of the most important messages of the paper is that customer knowledge can be formed by informational interaction between customers and diverse entities such as: our company, our other customers, our competitors and information consulting institutes. It is important to know that we can not manage all of these informational interactions. In CKM, it seems that we have to focus on

managing interaction between ourselves and our customer or between our customers. The case study highlights that CKM tools prevail among the leading British dotcoms. The research result in the selected cases also reveal that among three main kinds of customer knowledge (knowledge for, from and about customer), “knowledge for customer” has the highest utilization percentage. It will remain for future research to refine and expand the proposed model.

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