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A BUSINESS MODEL AND FRAMEWORK FOR ELECTRONIC CUSTOMER RELATIONSHIP MANAGEMENT

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Abstract

With the just-a-click-away competition in today's e-era, to better understand a firm's customers and serve them correspondently is one of the key factors for business success. Customer Relationship Management (CRM) emerges quickly in recent years under this circumstance. Despite its popularity, there is still a significant failure rate of CRM implementation projects. This paper proposes a Customer-Product model to guide the pre-adoption evaluation of CRM projects and an ERP/CRM integrated framework for CRM adoption.

Keywords: Customer relationship management, eBusiness, eCommerce, framework, business model

Introduction

Business efficiency has been continuously improved over the decades through the implementation of MRP, ERP, SCM, BPR, etc. Companies have been enjoying the low cost and efficiency in the past. Research shows that the brilliant performance companies have achieved in the past decade is mainly due to cost-cutting. While in the era of eBusiness, the key competitive advantages are shifting from optimizing the internal resources and supply chain to taking control of the demand chain, and are shifting from business efficiency to business effectiveness.

Reducing more inefficiency in the whole business process has become more and more difficult for companies after so many years' effort in ERP, while taking control of demand chain is a new profit growth point. A good demand chain management involves excellent customer relationship management (CRM). Excellent CRM helps companies identify highly profitable customers and then do smart business around them to obtain high return. Also, an excellent CRM holds a company and its customers closer than ever to achieve a higher level of intimacy so that long-term loyalty and trust are engendered. In one word, CRM helps companies do business effectively.

In order to become customer-savvy, a company must rethink corporate and business strategies to become more customer-centric than product-centric. Product-centric companies focus on business efficiency, while customer-centric companies focus more on business effectiveness and intelligence without losing efficiency. Actually, customer-focused companies were found to be almost 7% more productive than their competitors (Brynjolfsson and Hitt 1999).

Customer-Product Model

According to Porter's five competitive forces model and its response strategies, a company could analyze its competitiveness and adopt a corresponding strategy, such as cost leadership, differentiation, and focus. Companies falling in the categories of differentiation and focus could benefit most from CRM because they focus more on customer needs than cost-cutting. CRM is basically a simplified idea of "Treat different customers differently", and usually is referred to as one-to-one marketing. CRM helps a company to identify high value customers, establish a direct dialog with individuals, understand their needs, and develop a strategy to retain them.

Not every company is suitable to fully adopt CRM, it depends on the business model or strategy a company adopts. What kind of business model fits what kind of relationship management, and how, are two interesting questions. Romano and Fjermestad (2001) identify 5 major non-mutually-exclusive eCRM research areas; eCRM within business model is one of them. In some cases, mass marketing or targeted marketing (marketing to certain customer groups or segments) is more appropriate than one-to-one marketing for a certain company. To fully benefit from complete CRM, a company should have products to which different customers contribute different profit, and should be able to flexibly configure their products or services based on the needs of individual customers. Credit card services and airline services are two good examples. A credit card issuer could issue credit cards with different membership fees and APRs that are tailored to different cardholders. Airline companies sell different class seats, such as first class seats, business class seats and economy class seats to different customers.

Understanding the diversity of customers' contribution to the profit of a firm's products and understanding the configuration flexibility of the firm's products are fundamental in deciding whether or not the firm should employ a complete CRM. The Customer-Product model, which I propose, states the different strategies to the companies sitting in different situations (Exhibit 1). Companies having customers contribute different profits to a same product line will benefit greatly by fulfilling CRM. In addition, companies having highly configurable products could benefit more from CRM because they are able to create more niche markets by configuring their products to match individual needs.
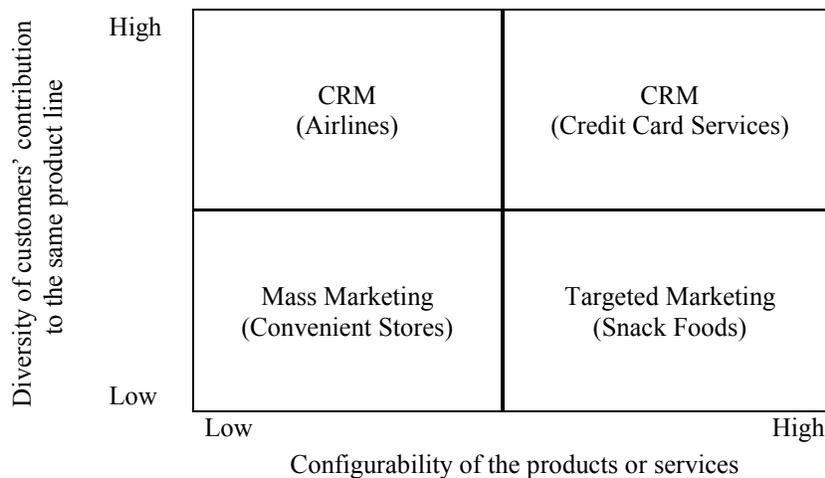
	Low → High
High	CRM (Airlines) / CRM (Credit Card Services)
Low	Mass Marketing (Convenient Stores) / Targeted Marketing (Snack Foods)

Diversity of customers' contribution to the same product line (vertical axis, Low to High)
Configurability of the products or services (horizontal axis, Low to High)

Exhibit 1. Customer and Product Model

ERP, SCM and CRM/eCRM

CRM doesn't just mean taking care of customers at the customer contact points such as phone call, fax, email, etc. CRM is an enterprise-level business strategy. Companies fully adopting CRM must organize themselves around customer segments to listen to customers, talk to customers and provide products needed by individual customers (Rigby et al. 2002). Companies in the transition from a product-centric model to a customer-centric model are also facing structure reorganization, business process reengineering, etc.

ERP and SCM help companies manage internal and external resources to optimize the production process. ERP answers the question of "how can I best fulfill your order?", SCM answers the question of "Should I take your order?", and CRM answers the question of "where, when and how to take a order?" CRM links a company and its customers together into a long-term intimate relationship, paves a channel through which customers "talk" to companies about their needs and helps companies to do business effectively.

CRM is not a stand-alone front-office application; it ought to be linked to the back-office ERP/SCM system to efficiently organize the production activities. Exhibit 2 shows the relationship between CRM and ERP/SCM. CRM helps to take orders from customers, then it triggers the raw material supply and manufacturing activities that are managed by ERP/SCM. Marketing/Sales activities are no longer blindly conducted; those activities go through CRM first to pull out customer information and test the idea on it to predict the success rate of the marketing campaign. CRM system manages customer accounts along with the accounting

department, such as payment, installment, credit service, etc. CRM system links to warehouse database to access the product availability information, product delivery information, etc. Senior managers in headquarters have access to the CRM system to check the customer satisfaction rate, and to better understand customers' needs, etc.

A well-implemented CRM system integrates all customer touch points together and stores all customer data in a central database so that the customer service representatives (CSRs) at different contact points are able to retrieve the same information about the contacting customer. By using the Internet as an extra contact channel, companies are able to initiate more personalized contact with their premium customers. Intelligent agents could trace and record customers' activities when they are browsing a company's website and analyze the customers' behavior and needs. Then, the company could set up a personalized webpage for each premium customer to enhance the communication. The personalized premium page could include everything related to a customer's needs, such as promotion information of the products in which the customer is or might be interested, product availability information, status of online orders, product delivery information, product support documentation, online chat with CSRs, etc; It acts like a real and personal CSR assigned to an individual customer. The Internet takes the traditional CRM into the era of electronic CRM (eCRM) which is one of the key components of electronic business.
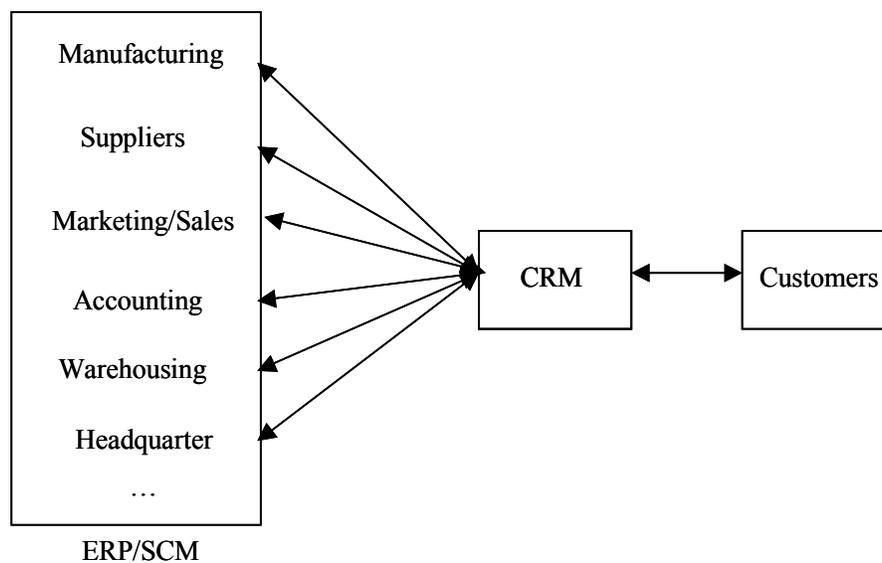

Exhibit 2. Links Between ERP/SCM and CRM

Under CRM, a customer also proactively participates in product development or marketing activities, either implicitly or explicitly. In Porter's value chain model, the marketing and sales occur at the fourth stage, but they could happen before the first stage (Inbound logistics) in the world of eBusiness. According to Kalakota and Whinston (1997), eCommerce transforms the supply chain from a traditional push model to a pull model. Under the push model, a company manufactures the product, delivers to the distribution centers, then to the retail stores. At the same time, the company holds marketing and sales campaigns to attract customers, and then the attracted customers purchase the product in retail stores. Under pull model, customers make a purchase order first, either through a retail store or contacting company directly, and then the company makes the product and delivers to the customer. Dell Computer's success is the best example of a pull model. The emergence of eCommerce facilitates the development of a pull model. Both push and pull models exist in eBusiness era, CRM utilizes the pull model most.

An eCRM Framework

Exhibit 3 shows an eCRM framework for eBusiness, it consists of 5 parts: Touch points, Channel Operation, A Customer Information Data Warehouse, Customer Intelligence and Applications.
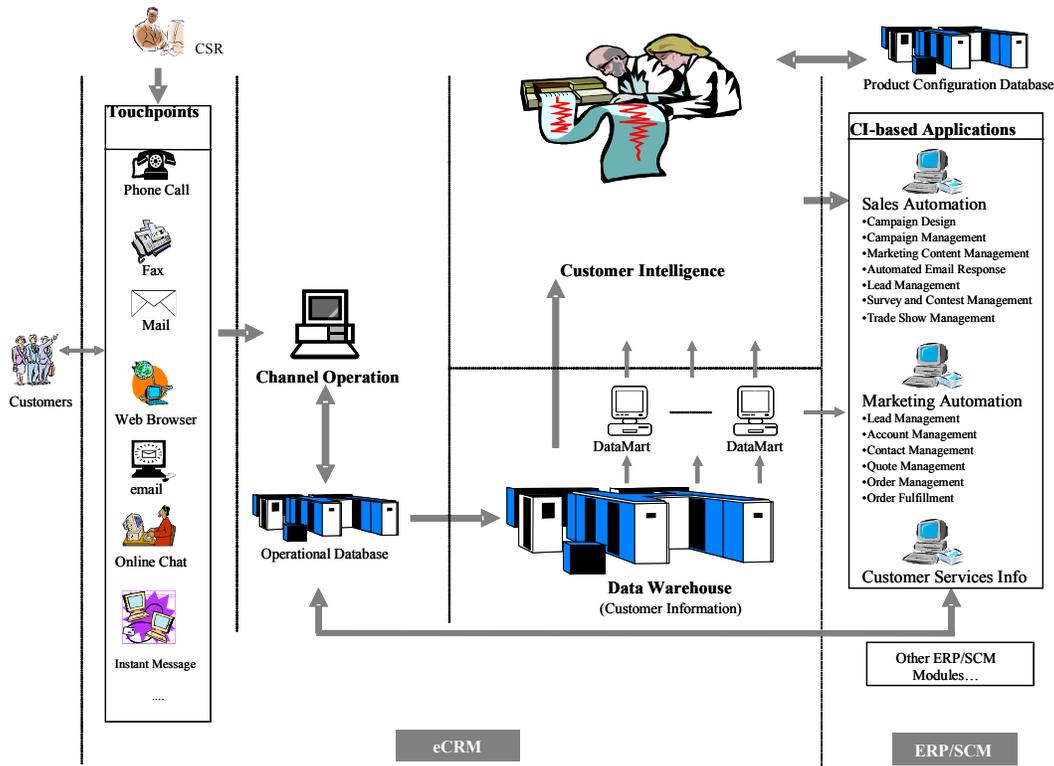
Exhibit 3. An eCRM Framework

Touch Points

Touch points are where a customer makes contact with a company. Phone call, fax and mail are traditional contact channels. The Internet brings the other four: web browser, email, instant message, and online-chat. The customer information viewed by a CSR should be identical no matter which channel is used. The CSR handles all types of contacts regarding sale, marketing, customer services and other information at these points.

Channel Operation

Channel operation module is responsible for establishing effective communication channels. Applications at this level retrieve customer business records and control information from an Operational Database, and establish a contact to a right CSR in a right division. Also, applications collect and record the customers' activities that have occurred at this contact into the Operational Database.

For example, once a customer gets on a company's website, a channel operation application launches an intelligent web monitoring agent to watch the customer's browsing behavior on the website. When the agent finds the customer filling out an online request form for a product, the agent retrieves the customer's phone number from the form and immediately establishes a phone call between the customer and a live CSR; the CSR then answers the customer's questions either by talking over the phone or guiding the customer through more web pages to get more information such as product performance, price advantages against competitors' products, and so on. Once the customer decides to make a purchase order, the channel operation application trigs a product delivery or a "produce" activity to the back-office ERP/SCM system to deliver or manufacture the product, and then sends a confirmation email to the customer. The channel application then personalizes the company's webpage for the customer according to his or her browsing behaviors recorded in the operational database and product he or she ordered, so next time when the same customer visits company's website again, he or she will see the personalized website.

Customer Information Data Warehouse

The Customer Information Data Warehouse is updated periodically based on customers' activities recorded in the Operational Database. The data warehouse provides the data source for Customer Intelligence module to do further research on customer behaviors and patterns. The Operational Database stores the transaction data of all business activities, its size grows very quickly on the daily basis. Before the data in the operational database is transferred and updated to the data warehouse, the data needs to be abstracted and extracted to eliminate redundancy and unnecessary information.

The data warehouse stores customer profile information, rather than transactional or operational information; it is the source of all CRM activities. The data models and data structure should be very well designed. According to research, up to 80 percent of service costs involve finding the right data, transforming and cleansing data, and building the data repositories to support analysis (CIO 2000). To build multidimensional data marts on top of the data warehouse could help achieve slicing and dicing of data by using OLAP query tools.

Customer Intelligence

The Customer Intelligence (CI) is the soul of Customer Relationship Management. The concept of "Treat different customers differently" is mainly realized in this module. Customer Intelligence involves four steps: gathering customer data, analyzing customer data, deliberating or creating product configurations, business rules and plans and trigging marketing/sales/ manufacturing activities.

Customer data is stored in a data warehouse and corresponding data marts. Analytical tools and data mining tools retrieve the data, model the data, and then apply the algorithms to discover convenience, insight and recommendations for offering a right product with a right configuration to a right customer. CI finds:

- who needs, will need, might need what
- which product is profitable and which isn't
- who is the profitable and who isn't
- how to price a product to an individual
- how to best acquire, enhance, and retain profitable individuals
- how to best develop product lines

The research results in this Customer Intelligence module are then fed into the product configuration database to guide product or service design and to arrange the back-office manufacturing. They are also fed into the CI-based marketing/sales applications to guide marketing campaign and sales activities.

CI-based Applications

Customer Intelligence module creates product configurations, business plans and rules; CI-based applications help to implement those.

Marketing Automation application initiates marketing activities or campaigns based on the rules and plans designed by the CI module. The marketing information to all targeted individual customers is recorded in the operational database and the customers' responses are also recorded in the operational database through the channel operations connecting all the touch points. Campaign Management application keeps track of the effects of campaigns.

Sales Automation helps the sales personnel to get the consistent and latest information on customers, product information, marketing information, and so on. It also helps to handle customer accounts, quotes, orders, and order fulfillments, etc.

Under CRM environment, marketing, sales and customer service activities are more integrated and coordinated across the channels. eCRM also provides ubiquitous access of the customer information, marketing and sales person, etc. could operate those applications from anywhere as long as the Internet connection is available.

Future Research Direction

There is much research which can be conducted down the road. The Customer-Product model needs to be empirically validated; the model would provide some grounding for pre-adoption evaluation to firms seeking CRM.

The success factors for implementing CRM projects are worth being explored. Wixom and Watson (2001) suggest that most of the traditional factors from the implementation literature also affect the success of a data warehouse. However, the study also shows that implementation success models cannot be used to investigate data warehousing without some modification. Projects like TQM, BPR, ERP, etc. all have their own features; it will be very valuable to explore theoretical and practical guidelines regarding successful CRM project implementations. After all, we are on way of shifting from a transaction-based economy to a relationship-based economy (Keen 1999); relationship management, at different scales, is what many businesses are pursuing.

CRM converts a company from product-centric to customer-centric. It is highly possible that the CRM initiative would bring changes towards organizational culture, organizational structure, etc. during the implementation and after, because investing in CRM without a customer-oriented culture mindset is pretty much like wasting money. What kind of organizational culture is needed to fully exploit the benefits of CRM is worth looking into.

Conclusion

Companies switching from product-centric to customer-center need to effectively manage their customers. Not all companies are suitable to transform themselves to a customer-centric business model. Only those who have highly configurable products and high diversity of customers with different profit contribution could better most from CRM.

Internet provides ubiquitous access to the customer information and product information to firms and their customers. eCRM takes the traditional CRM into a whole new world of application. Web-based touch points and applications connect companies and their customers from anywhere at anytime. Tremendous amount of data and information, which is the soul of CRM, could be provided or collected via Internet for analysis.

CRM itself is not a technological term. Instead, it is a business strategy, technology is the enabler of this strategy; firms which are going to adopt CRM need to set their customer-centric strategy first. Speaking of strategy, the CRM systems should be linked or integrated to enterprise-level ERP/SCM systems to streamline the whole business process of a firm; this ensures that the CRM helps companies to achieve business effectiveness without losing efficiency. ERP/SCM helps to fulfill orders; but CRM is the one which helps to acquire the orders.

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