Development of a Framework for Customer Relationship Management (CRM) in the Banking Industry

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Although Customer Relationship Management (CRM) is arguable the most important area of concern to enterprises in an era of electronic commerce (EC), few studies have explored it from an industry-specific perspective to develop usable action plans. The banking industry is one of the major beneficiaries of the 'explosion' in CRM across all sectors of the economy, but there is an absence of information and support for it in Taiwan. Embracing CRM requires changes in many aspects of enterprises. This paper employs a four-strategic framework; of contact channel management, enterprise-wide management, customer data management, and information technology management, in its review of what constitutes best practice in the leading banks in Taiwan with respect to CRM. It is argued that if Taiwan's banking industry adopts this framework it should be able to respond effectively to the various internal and external challenges identified in this study as well as to develop its own CRM initiatives.

1. Customer Relationships in the Banking Industry

The banking industry in the United States and Europe is at the forefront in responding to opportunities provided by the Internet. These responses are coming to fruition in the way they deal with customer-oriented challenges emanating from E-commerce. For instance, a study in the U.S. banking industry reported that those banks that develop a customer-oriented strategy in this area obtain higher profits (Lamparello, 2000). Other studies have shown that banks with 'good' CRM retain their substantial competitiveness in the market place (Gandy, 2000; Melnick, Nayyar, Pinedo, & Seshadri, 2000). Although domestic banks in Taiwan are now grappling with some of the issues involved, they do not yet face worldwide competition. Because of this and the lack of sophisticated applications and professional support in the area, their adoption of CRM is progressing at a slower pace than that of foreign banks (NICI, 2004, p. 198; Liu, 2003).

The performance of Taiwan's banking industry was worse than before in 2002, with most banks having lower ROE and EPS than foreign banks. In 2003 and 2004 Taiwan's economic condition was better than in previous years, with foreign banks still doing better their Taiwanese rivals (TBIPR, 2004, 2005). It has been shown that the strength of foreign banks is in the extent of their front-office and back-office automation, in their integration, customer segmentation and service (Shive, 2005), all of which are activities that are related to CRM.

2. Exploiting Customer Relationship Management

Achieving 'customer intimacy' is an essential strategy in EC, with CRM being the key means of achieving this goal (Reynolds, 2002, p. 2; Tracy & Wiersma, 1997: chap. 8). The concept of CRM was derived from "contact management' in the 1980s, with its emphasis

on collecting all possible information about customers when---at the time---customers come in contact with companies. Although there is no one widely accepted definition of CRM (Knox, Maklan, Peppard, & Ryals, 2003, p.1), for our purposes it can be regarded as the business strategies, processes and information technology that enable a company to optimize revenue and increase value through understanding and satisfying the individual customer's needs. Local, small-town stores provide a CRM-like service, anticipating the needs of customers based on their intimate knowledge of the customers' circumstances and preferences, and treating different customers in different ways. CRM is the driving force that enables the delineation of customers and an increase in the value attached to customers. If done correctly CRM enables enterprises to retain the loyalty of their customers. CRM is about more than simply managing customers and monitoring their behavior. It has the potential to change a customer's relationship with a company and increase revenue as well (Dyché, 2002, p. 4). In many industries, CRM is not only one of the most important applications of E-commerce but also the 'key driver' in the success of many enterprises (Badgett, Ballou, & LaValle, 2004; Bielski, 2000; Knox et al., 2003, p. 3; Liu & Lai, 2004; Romano & Romano & Fjermestad, 2003; "The cart pulling", 2005). By contrast, domestic businesses (including banks) in Taiwan are still struggling with their image of what CRM is all about (Chen et al., 2001; Liu, 2003).

Research about CRM is still in its infancy in the literature (Romano & Fjermestad, 2003). What few studies there are have dealt with the functional, operational, technological and strategic aspects of CRM, using mainly case studies (Brown, 2000; Dyché, 2001, p. xix; Freeland, 2003; Reynolds, 2002; Rosenoer, Armstrong, & Gates, 1999; SCN Education, 2001, pp. 23-26; Swift, 2000), but have they seldom explored CRM from an industry-specific perspective. A major survey among the biggest 2,000 enterprises in the world found that most of them think very highly of CRM, but lack the requisite knowledge, especially in terms of developing corporate-wide strategies (Knox et al., 2003, chap. 1; Meta Group, 2000, as cited in Brown, 2000, pp. 3-5). It is because most CRM projects are highly fragmented, lacking in integration and customer focus, that they fail to meet their objectives (McDonnel, 2001). This paper is an exploratory study of 'best practice' in the area among Taiwanese domestic banks based on the existing CRM and EC literature, with the aim of developing ideas for further study and developing plans for implementing CM

2.1 Building CRM Context

Knox et al. (2003, p. 19) addressed that CRM is a strategic approach designed to improve stakeholder value through developing appropriate relationships with key customers and customer segments. CRM involves an enterprise-wide marketing strategy, technology platform, and relationship management system (Lamparello, 2000). Peppard (2000) studied the CRM and EC issues of financial institutions from the enterprise-wide perspective and emphasized the importance of the integration of contact channels and front-office and back-office systems. Brown (2000) also mentioned the importance of the integration of processes, techniques, organization, and 3W (web, work flow management, and data warehousing). Melnick et al. (2000, chap. 1) stressed further

that the value created in finance is from the processes and the interactive connection of customer-centric strategy, service processes, and application systems (transactions analysis in customer loyalty, customer life-long value, etc.).

2.2 CRM Initiatives

CRM starts with contacting customer through contact channels (or media) to provide goods or services, which is the content of "contact channel management" in this study. An enterprise-wide database then collects and integrates the data, i.e., "customer data management," from the front-office system (data of customer activities with the channel) and the back-office system (data of the internal part in the enterprise and the external part with collaboration). The enterprise can analyze its situation and make its strategy precisely with data mining from the database. The activities of contact channel management or customer data management should be guided with the strategy of being customer-centric in order to integrate the systems between front-office and back-office, to make use of data from the customer, and to convert the data into the meaningful information for improving customer relationships. These actions that involve the enterprise-wide perspective and re-engineering of business processes are in the content of "enterprise-wide management." All the three contents above are based on a fourth content, "IT management," which enables the activities in the other contents to be efficient. Therefore, the content of CRM development should be as follows:

2.2.1 Contact Channel Management

Every contact between a bank and its customer is a chance for the business to learn more about the customer and to deepen the relationship between the two. Many companies fail to provide consistently high standards of service across different contact channels. Banks contact customer with the activities of selling and providing services and all of these activities are recorded as customer data from the front-office system. These data are transferred into the database of the back-office system for further integration. This management can thus provide a decision support system to select the best market access on suitability, distribution structure, and integration of contact channels (Knox et al., 2003, pp. 26-29).

2.2.2 Enterprise-wide Management

A successful, useful, and profitable CRM initiative always starts with a business strategy that can serve to drive change, including customer-centric culture, within the company. Everyone in the company can improve the behavior, satisfaction, and profitability of the customer. Banks should integrate their front-office and back-office systems from the customer's point of view and redesign business processes from the outside in. They should start by identifying the end customers, streamline the process from the end customer's viewpoint and for key stakeholders, continuously improve the process based on customer feedback, and give everyone involved a clear view of the CRM strategy and business process (Formant, 2000; Seybold & Marshak, 1998, pp. 33-34, 139). This drives the move away from searching for an operation excellence or a product leadership toward a customer intimacy (Treacy & Wiersema, 1997).

2.2.3 Customer Data Management

Understanding and managing customer relationships depend on the proper integration of a wide variety of data sources. An approach to define data requirements starts with what a company knows, defines what it wants to do with the gathered information, and then defines what it does not know. Enterprise-wide business data are collected from customer data in the front-office, the internal operational data works inside the back-office, and the external data from collaboration goes with others. This data management platform, as an enterprise's most valuable asset, enables firms to access the data to fill in the gaps in the customer knowledge and to gain new insight into their customers through a variety of analysis methods. All the activities in implementing a customer's data architecture to support business operations, business intelligence, and business management are involved in customer data management (Reynolds, 2002, pp. 169-185).

2.2.4 IT Management

All services in the banking industry can be managed theoretically by IT applications on the Internet. CRM requires firms to invest in IT infrastructure and specialized software to record, track, and analyze customer interactions. IT management is critical when putting the aforementioned management strategies into practices. For instance, CRM uses sophisticated voice and online media routing hardware/software to direct customers to staff or to an M (interactive voice response) system or web-based self-service information to get answer to questions, fulfill orders, take comments, etc. Redesigning an underlying technical infrastructure helps provide an enterprise-wide view and customer value-focused information systems.

2.2.5 Processes as CRM Assets

Relationships depend on processes that cover both the routine and the exceptional. Business processes determine the nature of a company's capabilities and its core competencies for CRM. A process is primarily a matter of first prioritizing and then sourcing processes, using a combination of. (1) software to convert what used to be done by people into an interaction at the website, (2) electronic links to partners, and (3) people, workflows, and software that provide exceptional handling of the situations that make or break the customer relationship (Keen & McDonald, 2000, p. 5). Some processes are major business assets (for example, Priceline.com's patented pricing processes), and some may be a key part of the company's very identity (for example, Federal Express's on-time delivery). Any process that is the key to the customer relationship must be treated as a priority and made an asset or identity The issue is not whether to make the investment, but how to source the process in a way that best generates value and is most cost efficient. It has to be looked at as a critical part of an enterprise-wide management strategy.

3. CRM Best Practices in the Banking Industry

Many studies have reported that banks which develop a customer-centric strategy get higher profits (Formant, 2000; Lamparello, 2000; Melnick et al., 2000). Starting from the early service of ATMs, the banking industry then began to offer telephone banking,

network banking, customer care centers, etc., which have gradually increased the investment in front-office systems, which itself is directly related to customers. Best practices can be the groundwork when constructing a correlated CRM (Laudon & Laudon, 2004, p. 316), but this study argues that CRM has few industry and best practice examples in Taiwan. Banking industries in the United States and Europe in general are ahead in responding to opportunities provided by the Internet. Banks like Wells Fargo, Wachovia, and Bank One in the U.S., Royal Bank of Canada, Merita-Nordbanken in Finland, and Taiwan-based Chinatrust Commercial Bank and Bank SinoPac are viewed as the role models of the banking industry (Brown-Humes, 2000; Formant, 2000; Gandy, 2000; George, 2000; Knox, 2003, Laudon & Laudon, 2004; MIC, 2005; Swift, 2000; Turban et al., 2002). The best practices of other leading banks are reported, but the depth and width of cases are insufficient or similar for analysis and are not referred to in this study.

3.1 Wells Fargo, Wachovia and Bank One in the United States

Wells Fargo, founded in 1852, brought in on-line services in 1989, banks services via the Internet in 1995, and it has become the prime exploiter of Internet services and the largest Internet banking (iBanking) entity in the world. Fargo prides itself on leading the pack in service and convenience to its 16.4 million customers, and has halved its cost per transaction and reduced customer defections by 50% for its online customers business with higher average balances per customer. Focusing first on serving its high net-worth customers better, Wells Fargo pulls together all customer information and applications so that customer sales and service representatives can provide one-stop shopping for any banking service or transaction. It can quickly leverage that infrastructure to provide one-stop shopping via the Internet for all its customers. Wells Fargo's online banking services are the fastest~growing part of its business.

Wachovia, founded in 1879 with over 95,000 employees and 2.6 million active online customers, is well-known for its CRM strategy with PRO (profit, relationship, and optimization) and with its cross-analysis and segments of evaluating the existing and potential profits of customer instead of existing profits of a company. PRO is a combination of customer profiling, customer targeting, marketing engine, and sales contact planning. Wachovia has commenced a program geared to developing specific channel and product offerings to all groups within its customer base (for example, the preferences of new technology) so as to analyze the value of individual customers and to estimate how much to invest. It has increased the customer retaining rate by one-third with applications of customer information and technology.

Bank One is part of the new JPMorgan Chase created on July 1, 2004, and is famous for its "Service Quality". It takes its value discipline as the financial institution which provides omni-bearing services, and adjusts its strategy to develop CRM and the Internet from mergers and acquisitions (M&A). Furthermore, it has built up its virtual organization with strategic alliances and collaborative relationships (Intel, Metro Group, Merchants Group, etc.) to find out and satisfy the customers' needs quickly and directly. It has expanded its services with the promise of "no satisfaction, no charge."

3.2 Royal Bank of Canada in Canada

Chartered in 1869 as the Merchants' Bank of Halifax and renamed The Royal Bank of Canada (RBC) in 1901, RBC is one of North America's leading diversified financial services companies and Canada's largest bank. In total, it serves more than 12 million personal, business, and public sector clients worldwide from offices in more than 30 countries. Installing the first computer in Canadian banking in 1961, the RBC began collecting customer data in 1978 and by the early 1990s had implemented client segmentation in its data warehouse, dividing its customers into distinct profitability segments and hundreds of micro-segments. It has expanded its Internet business in 1998 and then developed a CRM system and media interactive technology to integrate the transactions to offer their services more quickly and conveniently. The bank uses net interest revenue (income, expenses, and risk), other revenue (fees, commissions), direct expenses ~able costs) and indirect expense (overheads), and risk provision to analyze customer information. The customer data also allow it to move from assessing current customer value to potential value, by taking into accountant such factors as lifestyle change. RBC has moved towards its objective of one-to-one marketing to establish what works and what does not, and it tests refinements on an ongoing basis. The customer response rate has improved by about 40%.

3.3 Merita-Nordbanken Bank in Northern Europe

Merita-Nordbanken, Northern Europe's largest bank from the merger between Finland's Merita Bank and Nordbanken of Sweden in 1997, is arguably the most developed electronic bank in the world. It offers customers an array of e-banking access devices, a multitude of customer-centric financial offerings, and has developed its business strategy to leverage its existing 15 million customers. It was awarded the "Best Online Business Strategy" and the "Best Multi-channel Banking" from The Banker. It launched telephone banking in 1982, PC banking in 1984, and a mobile payments service was added to the overall mix. It opening of EC networks took place in 1996, and then e-billing and Internet TV were added. The bank has developed a set of electronic identification and signature codes whereby 5 millions of Internet customers can now use across multi -platforms. Directed by CRM, Merita-Nordbanken has developed multi-contact channels of e-banking, which is convenient for customers, through the application of WAP (wireless application protocol), such as ATMs, telephone, GSM mobile, PC, and web TV. It has created a service of "A single service agreement and password over all devices."

3.4 Chinatrust Commercial Bank and Bank SinoPac in Taiwan

Taiwan-based Chinatrust Commercial Bank Co., founded in 1966, has confirmed the value of treating customers as members of a big family, as expressed by an excellent motto 'We are family." It was the first to bring credit cards to Taiwan and has maintained its position as the largest credit card issuer by introducing a series of new products and services, boosting its market share in Taiwan to over 17% (more than 6 million credit cards in circulation). Engaged consultancy McKinsey to make organization re-engineering, Chinatrust was the first bank in Taiwan to extend business hours to 7 pm, first to open a

mini-branch, first to have banks without staff, first to conduct business on weekends and holidays, first to provide Adjustable Rate Mortgages (ARMs) and collective investment funds. With the rapid development of IT, Chinatrust with its 101 branch offices allocates more resources to enhancing phone-banking and internet banking services and explores new contact channels in EC by forming strategic alliance with partners and providing business-to-business (13213) payable and receivable management and on-line payment services to assist enterprises in efficient capital management. It implements new core banking systems with NT$1B and has created the largest transaction volume among local banks by introducing new Internet platforms. Chinatrust has received many best or excellence awards from Asiamoney, Euromoney, Finance Asia, Global Finance and other well-known magazines.

Taiwan-based Bank SinoPac is one of the new private banks licensed by the Taiwanese government after the deregulation of banking in 1989. It is renowned for its outstanding performance and vision of making itself the best full-service commercial bank in the Asia Pacific region. It was the first bank to successfully integrate a financial operation platform and provide a Money Management Account (MMA), combining deposits, securities, mortgages, credit cards, and mutual funds into one single account. It was also the first Taiwan-based bank with customer service representatives available 24 hours a day, the first to provide factoring services, and is the No. 1 bank in maintaining the lowest non-performing loan rate. SinoPac collaborates with IBM China Research Center to integrate the banking services of all Pacific Rim strongholds and has launched the CrossPacific Account (CPA), offering solutions to small and medium businesses in cross-border cash management and financing. Benefiting from a data mining mechanism and one-to-one marketing, SinoPac has successfully attracted more and more clients to its networks, emerging as a virtual reality branch bank in coordination with its MMA products and Internet channel. Its MMA online services, MMAb2b website, and other convenient innovative services have been awarded "Best Corporate/Institutional Internet Bank in Taiwan", "Asia-Pacific's Best Consumer Banking Integrated Site", "Taiwan's Best Consumer Internet Bank", "Best Commercial Bank in Taiwan", and other honors.

3.5 Synergizing CRM Action Plans

This study employs a literature search of the aforementioned leading banks from the Academic Universe, China Times (in Chinese), Lexis-Nexis, and United Daily News (in Chinese) databases and examines other studies of the development of CRM in order to identify action plans that define each of the four management strategies shown in Table 1.

4. The CRM Architecture for the Banking Industry

There are as many definitions of CRM as there are firms offering services to implement it (Molineux, 2002, chap. 2). This has made things difficult for CRM since its inception. The CRM strategy developed for the banking industry in this study includes action plans for adapting EC to facilitate customer contact with businesses, more conveniently and intimately. Constructing an industry's own CRM architecture and functionality is

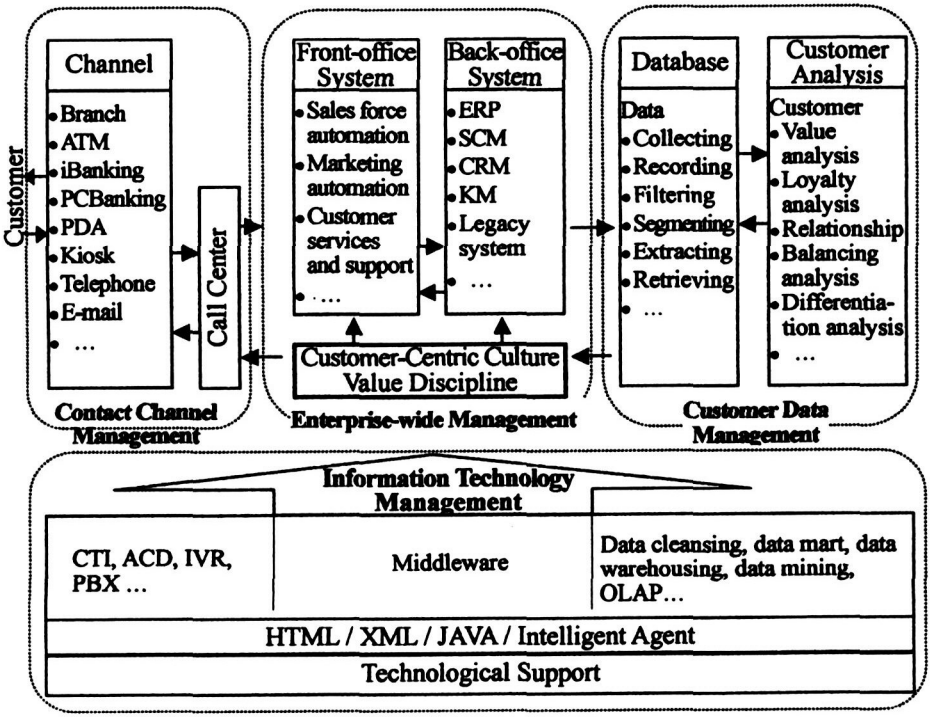
Table 1. Action Plans of CRM Best Practices in the Banking Industry

Strategy / Bank	Contact Channel Management	Enterprise-wide Management	Customer Data Management	Info. Tech. Management
Wells Fargo	- Setting omni-bearing services - Securing transaction environment - One-stop shot - Updating service on needs - Enhancing channel convincing - Building call center to integrate the channels	- Building the interactive trust - Redefining the business goal, rules and objectives - Integrating the customer data/ applications systems - Integrating by customer centric - Developing Customer Info. Viewpoint Sys.	- Segmenting customers - Analyze the profits of each segment - Expanding the customers on the Internet - Segmenting the high-profit customers - Collecting the customer data from automatic billing	- Constructing the objectives model with the same platform - Integrating and automating the processes from front-office and back-office with object agents - Constructing comprehensive IT framework
Wachovia	- Recognizing the customer's preference of channels - Offering differential channels on customers - Integrating channels dynamically - Building centric call center	- Reviewing the customer relationship from an enterprise-wide perspective - Redesigning the service outside-in from the view of customers	-Segmentingcustomers on potential profits - Evaluating the existing & potential profits with the establishment of criterion, models, and systems	-Developing profit-relationship-optimization system to target the customers - Strengthening IT applications in new branches and implementing DW
Bank One	- Endeavoring to develop electronic channels - Offering differential services upon the customer - Building centric call center	- Building the virtual enterprise by strategic alliances - Multiple brands marketing - Quality first with consistent services	- Examining the needs of customers pro-actively and timely - Analyzing the profits and preferences of customers - Assisting customers to have financial services suitable for them - Offering personalized services and advice	- Developing the Internet technologies - Adopting the technologies of channel marketing
Royal Bank of Canada	- Reshaping channels for CRM - Improving the quality of channels continuously	- Integrating the viewpoints of the technical staffs and the users - Automatic operations - Integrating all functions with event-driven evaluations - Putting efforts on the EC's R&D	- Narrowing the customersegmentation on channels and behaviors - Establishing the measurement of existing and long-life values of customers	- Applying and integrating software packages - Developing intelligent CRM - Constructing centralized inter active technology - Adopting data warehousing
Merita-Nord-banken	- Concentrating on mobile channels - Speeding up transactions - Centric call center	- Redefining the business disciplines rules and objectives to integrate the front-office and back-office - Active in innovation and IT applications - Using WAP as the core competence - Emphasizing on the long term profits of IT investment	- Approaching customers with the mobile services - Integrating the customer data across functions and departments - Offering personalized services and advice	Applying IT to develop and integrate the contact channels and front-office and back-office systems - Adopting WAP, data mart, data ware housing, and data mining

fundamental in these plans. Based on CRM development and the best practices in the banking industry, the architecture focuses on maintaining customer intimacy with the streamlined (arrowed) business process, as shown in Figure 1.

Chinatrust Bank	- Enhancing phone-banking & Internet banking - Aggressively devel-opingstrategicalliances -0peningmini-branches or banks without staffs - Offering co-branding credit cards	- Treating customers as members of a big family - Setting a dedicated department to EC development - Developing SOPS - Re-engineering organization	- Implementing scalable customer database and credit card database - Integrating the customer data across functions	- Building B2B networking - Adopting data warehousing - Allocating more resources to support IT applications
Bank SinoPac	- Offering integrated Money Management Account and Crosspacific Account - Tightly integrating website and 24/7call center	- Upholding the corporate philosophy of one-stop service and value-added performance - Tuning organization to customer-centric - Driving comprehensive CRM training & e-learning program	Setting data mining mechanism - Integrating the customer data across functions - Analyzing and initiating the customer's needs	- Building B2B & B2C platforms - Adopting data warehousing - Applying analytical & collaborative tools

Figure 1 CRM Architecture in the Banking Industry



4.1 Contact Channel Management Strategy

This strategy focuses on contact channel unification and concentrates on strengthening channels through value-added services. Most successful firms deliberately restrict channel access and only recruit customers who are willing to connect through a specified channel. This strategy should reflect where and when the customer wants to connect with the bank, from a streamlined process perspective. It is not necessary to allow access at any time, at any place, and anywhere.

4.1.1 Building a Friendly Way for Customers to Connect with Business

Banks should build multi channels to expand their services, using the 'richness' of financial services available to them, such as branches, call centers, ATMs (automatic teller machines), IVR, iBanking, PCBanking (personal computer banking), FEDI (financial electronic data interchange), PDA (personal digital assistant), digital net-meeting, websites, Kiosks, telephones (wired, GSM, or WAP), to connect to customers and improve the security and convenience of all the channels. They need to recognize the characteristics and cost-effectiveness of each channel and offer services suitable to customers by 'catching onto' the customers' preferences for different channels. The critical channels in the future will be websites and mobile devices.

4.1.2 Integrating and Utilizing Various Cost-effective Contact Channels

Banks should integrate all the contact channels from a customer-oriented perspective and should build standard operating procedures (SOPs) among the various channels to process and integrate customer data. The more consistency there is between processing customer data and various channels, the more information there will be that all channels can share, and the more business resources there will be that can be used. The call center is a place to reduce operating expenses and provides a necessary service for bank customers. However, only a few banks appear to perceive it as a profit center. Call centers, the major integrated connection point between banks and customers, are now the focal point for integrating all contact channels.

4.2 Customer Data Management Strategy

If banks want to improve their relationship with customers, they must recognize the preferences and different behaviors of customers and satisfy the needs of individuals by integrating all the interactive data as database in such a way as to support customer analysis and decision-making. When banks build up a proactive database, then customer data can be updated automatically. They should establish criteria and systems to segment customers, interpret the difference among them (for instance, the profits, costs, preferences, loyalties, etc.), and then to offer personalized services.

4.2.1 Collecting and Integrating Customer Data

Banks have to collect and integrate customer data from all the various sources with data from the internal operations of the enterprise, and with external data from 'collaboration' with the database. This is done so the enterprise can analyze its situation precisely and decide upon the best strategy, from 'mining' of all the relevant data. With some internal

data it is possible to use data cleansing tools to standardize and validate the data or to obtain new data that provides additional capabilities for to analyzing customers.

4.2.2 Analyzing Customer Data

The approach includes evaluating the actual and potential value of customers, evaluating their loyalty by estimating the degree of customer satisfaction with goods and services, identifying the targeted customers to balance the relationship, and calculating the cost/revenue/actual contributions of each customer.

4.3 Enterprise-wide Management Strategy

Banks have to create a business strategy in the value discipline of customer intimacy and put the benefits of customers first. This is critical for the success of CRM. They can then re-engineer their business processes from the point of view of customers and integrate all the systems/contact channels. The latter requires the unification of business goals, rules, and objectives for transforming 'data centered' solutions into customer-centered' ones. This business strategy to which this gives rise is based on customer intimacy, the integration of front office and back office systems, and the re-engineering of business processes.

4.3.1 Re-engineering Processes and Formulating a Customer-centered Strategy

Banks should aim to move from mere operational excellence or just product leadership to a situation where they manage customer data in such a way as to allow every unit (person or department) in the enterprise to use the resulting integrated and consistent information. Business processes used to be designed from the inside out with the aim of improving efficiency, but this did not prove profitable. If banks do things in the opposite direction, from the outside to the inside based on the view of customers, then the increase in transactions should lead to greater profits than previously.

4.3.2 Integrating Front-office and Back-office Systems

The front-office activities that connect with customers connecting can be divided by their function into three different kinds of activities; sales force automation, marketing automation, and customer services/support. The customer data that support these activities are 'produced' from the internal operations and from external data emanating from the back-office. If banks are unable to integrate their front office and the back office systems, then the problem of a mismatch or inconsistency can lead to losses from a failure to retain or keep customers.

4.4 IT Management Strategy

CRM-related IT with its operational, analytical, and collaborative support systems complements the processes involved in all aspects of customer interactions. An effective CRM architecture, one that is suitably comprehensive, is founded upon such an IT infrastructure and upon customer data management and enterprise-wide management. What is necessary is the embedding of business rules in IT applications to increase asset efficiency, with Middleware being used to seamlessly integrate all processes or application systems.

4.4.1 IT-related Contact Channel Management

The major IT applications involved in contact channel management are Telephone Centers, Automatic Call Distribution (ACD), Interactive Voice Response (IVR) and Private Branch Exchanges (PBX). Computer Telephony Integration (CTI) is another important application that can help to integrate computers, telephones, fax lines, and websites.

4.4.2 IT-related Customer Data Management

The collection, integration, and analysis of customer data are founded upon database technology, including data cleansing, data mart, data warehousing, data mining, and OLAP. XML has passed from the early adopter phrase into the mainstream acceptance phase and may become the primary syntax for all enterprise data development. The primary use of XML is for data exchange between organizations, with it functioning as an interoperability mechanism.

4.4.3 IT-related Enterprise-wide Management

The technology related to the integration of messages between front office and back office includes FEDI, CORBA, COM/DCOM, RMI, and other transmission technologies, with Middleware.

5. A CRM Agenda for Taiwan's Banking Industry

According to our estimates, for every US$1 that a bank spends on a CRM system, it also spends between US$2 and US$5 on implementation and maintenance. This may sound costly, but in our opinion the investment is typically worthwhile and does not necessarily need to be a budget-buster A survey of banks in the United States found that almost 50% had CRM projects with budgets of less than US$500,000 (Reynolds, 2002, pp. 20, 26). What the Taiwanese banks should be thinking about in planning their own CRM strategy is providing one-stop shopping, retaining and using everything the bank knows about its customers, ensuring that staff in the company have access to consistent customer profiles, and putting an underlying IT infrastructure into place to provide an enterprise-wide view These major CRM activities are described with the business processes and illustrated with the relevant architecture in Figure 1.

The Taiwanese banking industry in 2004 comprised 49 domestic banks, 35 foreign banks, 3 trust and investment companies, 14 finance companies, and 311 credit cooperatives, including credit departments of farmer's associations, and credit departments of fishermen's associations, with 4,511 total branches of banks (FSC, 2005, p. 70). The marketing share of the top three domestic banks is less than 20%. Comparing to the leading international leading banks, domestic banks are relatively small and medium-sized (Shive, 2005). This limits their investment in CRM and also makes them less competitive in terms of size.

In the global study by Badgett et al (2004), almost 50% of companies estimated that their CRM initiates should reach breakeven in one to three years. CRM can be both a

revolution and an evolution. It is something that appears, in our view, to have shifted from process automation to comprehensive re-engineering and to have moved from simple contact management software to enterprise-level e-business suites. There are large differences between banks in CRM, not only in pre-implementation aspects (evaluation, presentation case, mapping strategies), but also in choice of solutions (self-development, software packages customization, outsourcing, or hosted solution), and in CRM implementation and development, besides that of costs (which vary greatly depending largely on the type of CRM solutions). A point solution or pilot project within CRM architecture that does not require an integration of various systems will usually cost less than a project that requires integration. This is shown in a recent survey in which 43.8% of respondents in Taiwan's banking industry claimed to have adopted CRM, but only 22.9% had an actual data warehouse.

Finding the right fit (in respect of the architecture) requires that a bank meets the specific business requirements (including marketing, required functionality, and the needs of the company's IT staff, of the marketing manager, and of the sales or call center employees, in addition to other end users), an understanding of the corporate culture, and the application of the appropriate management strategies both before and after the CRM initiatives. The CRM team should then determine which competencies, skills, and technology are needed to deliver the customer and marketing messages effectively and profitably. A truly effective CRM 'delivers' all the customer information needed to achieve greater ROI from IT. It does so by 'enriching' customer data with attitudes, awareness, and preferences and then seamlessly integrating the latter into the overall solution.

For a strategy to be successful, it must be consistent with a bank's goals and values, its resources and capabilities as well as its structure and systems, and also be appropriate for the environment of the banking industry. The SWOT (strengths, weakness, opportunities, and threats) framework is a well-known approach to the design and evaluation of business strategies. However, in the case of CRM among banks it is difficult to distinguish internal strengths from weaknesses and external opportunities from threats. Therefore, an approach based on a simple classification of internal and external factors is more suitable for analyzing individual banks and for examining the implications of the analysis (Grant, 2002, p. 15). A number of studies of Taiwan's banking industry (Chen, 2003; Liu, 2003; NICI, 2004; NICI, 2005, pp. 200-202, 254-256; Shive, 2005; Sung, 2002, TBIPR, 2005) have identified the internal and external challenges faced by managers in their attempts to develop an appropriate CRM for their particular banks.

5.1 External Challenges for Taiwan's Domestic Banks

56% and 29% of Taiwan's domestic banks reported competitive treats from other financial firms and cross-industry/globalization respectively, higher than that perceived by foreign banks and trust & investment companies. The establishment of financial holding companies locally has raised integrated operations to a higher level in Taiwan's banking industry. Over 82% of the banks believe that they must expand their service and customer base via mergers and acquisitions. The latter affects their development of CRM

as part of their enterprise-wide strategies. Foreign banks already utilize customer-oriented strategies and integrative systems to 'streamline' their business processes, especially when making extensive organizational changes. Few Taiwanese domestic banks put forth such efforts in the management of the total enterprise. They typically make small changes slowly, at a pace which carries few risks, rather than make the radical changes that are often necessary-changes that often require re-engineering or even paradigm shifts which carry high rewards but also substantial chances of failure.

For many years foreign banks have had more advantages than Taiwanese banks in B2B (business to business). Also, in B2C (business to customer) operations foreign banks intend to almost double what they did in 2004, whereas over the same period Taiwanese banks only intend to maintain what they have done so far. The contrast between the two is significant, suggesting that foreign banks are more aggressive in seeking customers and then 'looking after' them better than Taiwanese banks. In a recent study 47% of Taiwanese banks said that their strength was in the number of their branches, despite the fact that there is evidence from Taiwan as well that the more branches a bank has, the lower its cost efficiency. It is therefore not surprising therefore that 80% and 50% of Taiwanese banks have applied to do internet banking and to operate call centers respectively. Nevertheless, if they are to be successful, as we have shown in this paper, Taiwanese banks must still integrate both Internet banking and call centers with CRM architecture. As we have demonstrated, the latter must be based on a comprehensive and accurate customer database and differentiated channels so as to take advantage of the cross-selling and up-selling opportunities that arise during customer service contacts. No more than 60% and less than 23% of Taiwanese banks have implemented a customer-centric database and data warehousing respectively, In contrast foreign banks have created much 'richer' customer data bases using sophisticated IT applications.

The national c-Taiwan Construction Plan has been allocated funding of NT$36.6 billion over the period from 2002 to 2007. The plans of Promote e-Commerce (a program of the e-Taiwan Plan) include the establishment of R&D and design systems, the strengthening of supply chains and of logistic management mechanisms, the expanding of international marketing channels and financial and customer services, and the paying of more attention to user-oriented B2C applications. Taiwanese banks should benefit from these plans to promote e-Commerce, provided they can 'keep up' with developments in the area.

5.2 Internal Challenges to Taiwan's Domestic Banks

A survey of Taiwan's financial holding companies revealed that the five main rewards they believe to come from mergers and acquisitions are cross selling, resource sharing, business integration, organization re-engineering, and information integration. All these activities are involved in the architecture of CRM. From the same survey, 55% and 19% of respondents believed their main opportunities as well as their main threats respectively to come from e-commerce. Based on the integration of front office with back-office systems and on customer data analysis from customer databases, banks should first define their core values value in terms of customer experiences and then

expand the scale of their operations via mergers and acquisitions or strategic alliances, before finally streamlining their business processes.

Customers are increasingly astute purchasers of goods and services in the era of E-commerce. In response, CRM systems typically consolidate customer information from a variety of systems into large data warehouses, and use various analytical tools to 'slice up' their market into segments in order to understand who they are, what they do, and what do want like from a multifaceted perspective for one-to-one marketing. We estimate that about 60% of Taiwanese banks still struggle to grasp what CRM is really about, while about 50% of them actually said that changes in customer behavior provide little opportunity for more businesses. Based on the analysis in this paper, it is our view that if an analysis of customer behavior is unable to provide relevant information or if staff in the bank are not able to respond to that information, then the banks will lose customers.

In our view, training is the most important requirement if CRM is to be effectively implemented and deployed. For this reason bank staff should be trained to collect and understand all relevant customer information. It is estimated that only 15% of Taiwanese banks provide appropriate on-the-job training, compared to over 50 % of foreign banks that do so. Furthermore, 64% of Taiwanese banks claim note that they have an advantage in how they serve their customers, slightly lower than the 67% of foreign banks who make this claim. Not surprisingly, in the light of our analysis, foreign banks have the lead in customer profitability in a number of surveys. In a related finding, an average of 83% of the foreign banks that responded to these surveys said they had an advantage in that they segmented their customer market, whereas an average of only 53% of domestic banks said this of themselves. A possible reason for this may be that Taiwanese businesses (including banks) are still struggling to fully understand CRM and the advantages it can bring. Despite this, it is our view, based on the analysis in this paper, that Taiwanese banks need to make a bigger effort to educate their staff about CRM.

6. Moving Ahead

To embrace CRM a bank must transform its focus from a product-oriented view to a customer-oriented view, something that requires an architecture that is able to change the organizational culture and operations as well, in order to bring about closer cooperation between CRM and the various stakeholders. In response to this, in this paper we have developed an appropriate CRM architecture for Taiwanese banks in the hope of helping them move forward in this area. Because the business environment and IT infrastructure are different among countries, regions and industries, in order to implement the lessons from this paper, Taiwan's banking industry needs to develop and examine its own CRM. Banks may start their CRM efforts by focusing on only one part of their business, such as a CRM for a particular a call center or field service, or by developing enterprise-wide solutions. The development of the appropriate architecture for will also benefit by further studies in the area, especially ones which try to identify the 'readiness' of different businesses for CRM.

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