Exploring the Effects of Integrated Service Resources upon Financial Institutions' CRM Performance

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ABSTRACT

It is imperative that financial institutions improve their performance in service-based customer relationship management (CRM) to stay competitive in a rapidly changing, highly competitive market. To help achieve such improvement, 360 copies of questionnaire were distributed in an August 2009 survey of salespersons and customers at several financial institutions, with the results statistically processed and hypotheses verified using the interactive regression approach, combined with Structural Equation Modeling (SEM). Findings from this study suggest that the human-, information- and marketing-based service resources, as well as the interactivity among them, positively affect a financial institution's service-based CRM performance. It is therefore recommended that, when there is interactivity among the three types of resources mentioned above, financial institutions should incorporate their salespersons' service efficiency into network technologies, so as to improve customers' perception of service quality in terms of efficiency. Meanwhile, information-based service resources ensure a financial institution update the marketing information while quickly responding to consumers' needs present in the market, and eventually bolster the service-based CRM performance.

Keywords: human-based service resources, information-based service resources, marketing-based service resources, service-based customer relationship management (CRM) performance

I. Introduction

To stay competitive in the drastically changing and emulative market, financial institutions must improve their performance in service-based customer relationship management (CRM), hence the growing dependence on information-based service resources. Such institutions use information-based service resources to analyze their massive amount of data, convert it into valuable information, gain an insight into the needs of both the potential and existing customers, and make decisions with regard to marketing, sales and services accordingly. That way, the institutions' salespersons will be well-informed enough to render customer services, with the institutions counting on the insight into customers' behaviors/needs to further interact with them, keeping them loyal in a mutual-trust relationship. Human-based service resources improve a financial institution's service-based CRM because, if a salesperson's professional services, technological knowledge, business knowledge, managerial knowledge and technical skills are acquired by learning and absorbing dynamic knowledge of the market, these components of professionalism will eventually show in his/her ability to deliver customer service, hence the bolstered service-based CRM performance. As a rule, marketing-based service resources ensure that a financial institution precisely identifies customer values while creating competitiveness (Srivastava, Fahey & Christensen, 2001). With exchanges of opinions among salespersons, a financial institution can harness marketing-based service resources and learn to apply and share their respective professional services, in order to help customers make purchase decisions. The three types of service resources are intended to help financial institutions with internal operations, so the customers' trust and satisfaction for their services could be reflected in the service quality/value that bolsters CRM performance.

Apparently, the resources-driven, service-rendering ability has become an essential part of financial institutions. That is, the operations and development of a financial institution require an ability to implement employee training programs combined with professionalism-cultivating efforts, enhanced information technologies, and knowledge-based marketing, in order to provide customers with the services required. Such institutions' human-based service resources have to be integrated with information-based service resources, with marketing-based service resources harnessed at the same time to increase their learning capacity and service-based CRM performance, and eventually achieve a higher level of customer satisfaction (Slater & Narver 1995; Tippins & Sohi, 2003). That explains why Armstrong and Shimizu (2007) said human-, information- and marketing-based service resources contribute to a financial institution's continuous competitiveness. The interactivity among the three types of resources, meanwhile, generates synergy to improve financial institutions' CRM performance (Shum, Bove & Auh, 2008). In a financial institution's decision-making process concerning resource-oriented services, such interactivity also creates value out of customer service, improving the institution-customer relationship (Richards & Jones, 2008) as well as the operating effectiveness. Therefore, the service-based CRM performance could be affected by service resources, either separately or through interactivity, which is a distinctive quality of such resources that prompted Payne and Frow (2005) to suggest that information resources should be combined with human-based service resources, in order that the interactivity would create enough synergy to improve service-based CRM performance. Interactions between information and the other types of service resources are valuable as they increase a financial institution's procedural efficiency and effectiveness. To achieve long-term growth, such institutions are supposed to build up information- and marketing-based service resources. As recommended by Powell and Dent-Micallef (1997), financial institutions seeking long-term growth should combine information- and human-based service resources. The aforementioned literature prompted this study's author to discuss, in the following aspects, whether the three types of resources have significant effects on a financial institution's service-based CRM performance, either separately or through interactivity:

a) Whether or not human-, information- and marketing-based service resources significantly and positively affect a financial institution's service-based CRM performance;

b) Whether or not the interactivity among three types of resources (i.e., human-, information- and marketing-based service resources) significantly and positively affects a financial institution's service-based CRM performance.

Ⅱ. Literature Review, Hypotheses and Development

Building information-based service resources results in a competitive advantage as it enables an Internet interface to be used to offer an integrated set of customer services in marketing, sales, e-commerce, and customer support (Pan & Lee, 2003). These types of resources ensures competitiveness in service-based CRM performance as it allows a financial institution to quickly respond to customers' needs for services, anytime and anywhere, with a relationship built on two-way interactions. (Pan & Lee, 2003). To be specific, a financial institution creates value for customers by initiating satisfactory communications, prompt deliveries, and highly customized products/services. The performance of service-based CRM is a combination of people, processes and technologies. Given the impossibility for employees to remember each and every customer's preferences or needs, it is imperative that information-based service resources be collected from a large amount of customer data (Chen & Popovich, 2003), which means interactions with customers are, to a large extent, possible only with information- and human-based service resources. The salespersons of a financial institution that copes with a huge demand for customer service should harness the institution's information-based service resources in the same way they use human-based service resources, so as to better interact with customers. Since marketing-based service resources enable a company to respond to customers' needs (Krasnikov & Jayachandran, 2008) while acquiring marketing knowledge (Sinkula, 1994), they not only provide an insight into the managerial implications of business operations (Slater & Narver 1995; Tippins & Sohi, 2003) but also provide support for market-perception-oriented, interactive customer relationship (Day, 2000). Once built up, such resources will be extended to the institution's internal organizations and help them complete the process of meeting customers' needs, which explains how resources of this type enable financial institutions to build a long-term relationship out of interactions/services through continuously learning, and subsequently bolster competitiveness in a rapidly changing market with well-preserved knowledge of customers (Day, 2000). The literature reviewed above shows how important the three types of service resources are for a financial institution to achieve satisfying service-based CRM performance.

1. Human-based service resources

Human-based service resources are defined as something that affects corporate performance through knowledge innovations (Holsapple & Joshi, 2001). From a customer-centric viewpoint, such resources function in close association with the organization as a whole, rather than being restricted by the usual sales tasks. For example, a financial institution may achieve higher goals by maximizing the efficiency of human-based service resources, with adequate assistance from all the other departments. While Mondy and Noe (1990) defined human-based service resources as the human resources used to reach an organizational goal, the service quality derived from such resources (including the perceived service quality and perceived price) has become a crucial factor that affects service-based CRM performance. Generally speaking, human-based service resources are developed over a long period of time; they ensure that a financial institution gains competitiveness without being limited, or threatened, by low-cost imitations (Barney, Wright & Ketchen, 2001). The financial institutions' purposes of harnessing human-based service resources, therefore, are reflected in the improved service quality, lowered personnel cost, the corresponding human-resource management measures, and the satisfied customers' needs. Resources of this type also involve the salespersons' fast response to the demand for services, customer-service efficiency, and a shorter wait time. Since customers affect a financial institution's operating performance through the factor of service quality management, they should be given efficient, dine-quality services that meet their needs and enhance the institutions' service-based CRM. Financial institutions are advised to put greater emphasis on human-based service resources, considering their growing importance, and incorporate such resources into personnel recruitment, placement, training and development to ensure their significant influence on service-based CRM performance. In a financial institution with this type of service resources, the salespersons' service-rendering ability is considered as an asset, and the salespersons use their newly acquired knowledge/technologies to create value for the institution's services. In summary, human-based service resources help enhance a financial institution's customer satisfaction, which is reflected in the service-based CRM performance.

2. Information-based service resources

Information-based service resources refer to the state-of-art service tools/equipment used to solve problems arising from a financial institution's process of delivering customer services. Compared to the other types of resources, they are the most often used in a service-delivering process with an intention to enhance the service-based CRM performance (Ravichandran &

Lertwongsatien, 2005). A financial institution is expected to gain competitiveness through information-based service resources (Barney, 1991) as it learns and improves in a trial-and-error process of executing service-rendering tasks; such learning experiences are accumulated over a long period of time and reflected in the institution's understanding, works, coordination and anticipation of information-based service resources. A financial institution seeking to improve service-based CRM performance needs to coordinate and utilize such resources (Shum et al., 2008), which include hardware equipment, software, data communication equipment, phone/FAX access, personnel. Harnessing such resources makes a financial institution competitive in terms of product development cycle, improved product quality, sales support, lowered corporate costs, channels/inventory control, reduced number of the management's hierarchical levels, and enhanced product features. When used properly, information-based service resources ensure speedy and efficient coordination among pieces of data that are complicated and difficult to integrate; they rapidly bolster a financial institution's effectiveness in rendering services while changing the conventional pattern of internal interactions, namely the inter-personal ties within the institution and the salespersons' relationships with their jobs. Such resources also contribute to a financial institution's capability and speed of resource integration. In summary, the extent to which information-based service resources are applied, either vertically or horizontally, to a financial institution is closely linked to the amount of services offered and integrated by that institution.

3. Marketing-based service resources

Marketing-based service resources represent a major factor of how a company responds to a dramatically changing market and manages customer services (Garcia-Murillo & Annabi, 2002). Such resources make financial institutions competitive because they are market-oriented and ensure market opportunities are seized to identify the target customers. Since marketing-based service resources increase a financial institution's profitability through the promotion/sales of a wide variety of products that meet customers' needs, they generate sales results by way of the institution's service-rendering ability that explores marketing portfolios and target markets. Such resources exert an influence on customers through the salespersons' professional service-rendering ability, service quality and service knowledge, and consequently contribute to the service-based CRM performance. Marketing-based service resources are appropriate, viable services designed to reach the long-term profit goals. This type of resources have the potential of retaining customers for financial institutions (Chen & Popovich, 2003) because they help the institutions connect to the existing customer base while predicting any change in customer preferences. Such resources, therefore, often generate profits as they create value out of customer service on the basis of marketing experiences/capability (Barney et al., 2001; Srivastava et al., 2001). Marketing-based services are intended to create transactions, where both parties are willing to exchange valuables by monetary means, which is why the product development process in which such resources are used tends to improve service-based CRM performance while meeting the demand for customer services (Tippins & Sohi, 2003). A financial institution's marketing-based service resources, therefore, are products/services that meet the customers' expectations for purchases while fulfilling the expected value of transactions. In summary, it is necessary to examine the effects of marketing-based service resources on corporate performance.

4. Service-based CRM performance

Bucklin and Sengupta (1993) defined service-based CRM performance as a financial institution's ability to make customers perceive the valuable and satisfying interactive relationships with salespersons (Ru-jen Lin, 2009). Such relationships are mostly built on capabilities because the longer the customer relationship, the greater the economic value of the reciprocity between both parties in the transaction. According to Morgan and Hunt (1994), a customer tends to make and maintain the commitment to receiving services from a company that offers him/her relatively satisfying products/services. Even when offered an alternative, the customer would stay loyal to that particular company as they are able to extract greater value from it. Shum et al. (2008) suggested that efforts to improve service-based CRM performance be focused on customer satisfaction, which means a financial institution is more likely to keep customers loyal and satisfied by offering service resources. Apparently, customers' repurchase behavior increases along with CRM performance and customer satisfaction since good service-based CRM performance results in the customer's positive judgment and positive emotional reaction toward a specific financial institution even after consumptions, making that institution able to build connections to, and understanding of, customers' purchase decisions. Based on such connections or understanding, the institution sells customers the needed products/services while giving them opportunities to voice opinions about its research and development, marketing, and quality control efforts. That way, the institution will eventually achieve performance goals through customer relationships (Donaldson & O'Toole, 2001). The continuous stability of such relationships is a major factor of improved service-based CRM performance, which according to Tuli & Bharadwaj (2009) includes customer satisfaction. Given the close link between customer satisfaction and a customer's willingness to repurchase, Goldsby and Vickery (2003) mentioned in their study the significantly positive relationships among service-based CRM performance, customer satisfaction, operating performance, and cost performance. Meanwhile, customer satisfaction and customer loyalty are reflected in the performance of service-based CRM.

5. Hypotheses

According to Shum et al. (2008), the level of service-based CRM performance depends on human-based service resources, and a financial institution's service-based CRM improves as its human-based service resources (particularly the salespersons highly committed to customer services) enhance the willingness to build reciprocal ties with customers. Meanwhile, human-based service resources keep such institutions competitive (Barney et al., 2001) because salespersons sustaining work-related stress in a treacherous market (Herold, Fedor, Caldwell & Liu, 2008) would persistently create value for customer service if they are driven by the commitment to offering services with enthusiasm and motivation. Human-based service resources satisfy customers as the salespersons' service-rendering ability enables the internal operations unit's efficient handling of customer grievances. Moreover, the e-system that integrates services while timely handling complaints encourages customers to give the best possible rating for salespersons' problem-solving capability, hence the bolstered service-based CRM.

Human-based service resources include distinctively professional service-rendering skills (Barney et al., 2001) that are transformed by financial institutions into a customer-service asset through the training/nurturing of well-experienced talent.

On-the-job training enables salespersons to win customers' trust in their service-rendering ability, and develop service-related professionalism to not only keep customers interacting with the financial institution but also provide the needed services besides a diversified range of products, hence the bolstered service-based CRM performance. Both the professional skills and service-related knowledge make the salespersons more capable of making service-oriented innovations, problem-solving, increasing product sales, introducing new customers, and offering new and required products, so that the product-relevant information needed by customers is in accordance with the institution's policy. The more communication channels available between salespersons and customers, the better performance a financial institution achieves in service-based CRM. That is, a financial institution uses human-based service resources in an attempt to improve service quality, as shown in the salespersons' speedily and efficiently delivered services. Human-based service resources involve a complicated network of professional service technologies and knowledge that brings reciprocal values to a financial institution and its customers; they have the potential of increasing transactions between salespersons and customers, as well as the institutions' service-based CRM performance. The following hypothesis is derived from the above statements:

H1a: Human-based service resources significantly and positively affect a financial institution's service-based CRM performance.

Information-based service resources make a company competitive as they ensure inter-departmental exchanges of the required customer data/statistics by way of customer relationships. They contribute to a financial institution's service-based CRM through the Electronic Data Interchange (EDI) system, ATM, and an Interactive Voice Response (IVR) system, improving the institution's platform for customer-service communications while preserving service-rendering experiences for future analyses of customer data, hence the ability to offer products that meet customers' needs. By harnessing such resources, a manager could conduct information analyses to win over new customers for the institution while remaining on good terms with the existing ones, hence the improved service-based CRM performance (Payne & Frow, 2005). Leonard (1992) contended that information-based service resources bring innovations and at the same time encourage the use of customer database. Customers benefit from the array of products available on a financial institution's information website (including online services and the web-page security feature) as the transparent product information offers them extra options/values. Customers tend to increase trust in a financial institution and show greater willingness to purchase once they are given information about its products. With frequent access to a financial institution's information-based service resources, customers can make inquiries/evaluation about the institution's service quality before actually buying anything. Consequently, improvements in service-based CRM performance are reflected in a customer's purchase decisions. Information-based service resources help a financial institution identify potential customers, make decisions, and enhance marketing efforts. They offer potential customers new products and interactive channels, so the institution may keep customers willing to repurchase and at the same time increase the customers' transactions (and also the willingness to transact) with it, thanks to the market information.

In any resource integration effort, information-based service resources help store, process and communicate information while delivering customer services. Such resources are irreplaceable as they contain institution-specific information that is used to meet the customers' demand for financial products. By integrating the evaluation system with internal/external service-oriented technologies, information-based service resources speed up the customer-service process. Since the integrated information provides a means of communications between a financial institution and customers, enabling them to interact in a two-way and real-time manner, it helps improve the institution's service-based CRM performance. Moreover, an institution can use integrated customer data to analyze the buying behavior for accurate customer segmentation and service customization efforts. In this case, the amount of knowledge a customer has regarding a certain product is positively linked to the level of satisfaction, which explains why a financial institution is able to retain customers with information-based service resources that drive up the CRM performance. Apparently, information-based service resources bolster a financial institution's service-based CRM performance by properly adjusting the internal processes/operations. The following hypothesis is derived from the above statements:

H1b: Information-based service resources significantly and positively affect a financial institution's service-based CRM performance.

Marketing-based service resources include resources for customer knowledge management (e.g., the stored knowledge and experiences in customer services), which ensure the information is exchanged, preserved and shared. This type of service resources is considered a financial institution's intangible asset that allows customers to interact with the institution through a system of information-based services, with extra value created in the process. Companies with marketing-based service resources, therefore, are able to predict any subtle change in customer-market relationships. A financial institution's competitiveness increases along with the value of marketing-based service resources, as reflected in the institution's service-based CRM performance (Srivastava, Shervani & Fahey, 1998). That is because marketing-based service resources can be used, through market-centric learning, to ensure the customers are happy with the service quality, receive adequate information to evaluate certain products, and make increasingly satisfying purchase decisions that increase the potential of transactions. Stewart (1997) defined service-based CRM performance as the result of learning from customers, with a well-established customer database and wisely harnessed marketing-based service resources. Therefore it is possible to improve the service-based CRM performance by offering customers the required knowledge, profits and rights during interactions; creating an interactive mechanism; enhancing the customers' loyalty; meeting customers' needs.

As a result, marketing-based service resources offer customers assistance in selecting products through well-maintained customer relationships, and stabilize a company's service-based CRM performance. In their study about a financial institution's commercial activities, Philip and Gary (1997) expect marketing-based service resources to increase customers' demand for the products while prompting the institution to provide satisfactorily customized products. That is, a financial institution with marketing-based service resources is more capable of understanding its customer base by collecting customer data in the market. Marketing-based service resources help companies to gain an insight of customers' needs on the basis of previous experiences, and then respond to the anticipated market conditions (Homburg, Wieseke & Bornemann, 2009). Such resources offer a close connection between financial institutions and their customers, so the customers can timely obtain the required information while increasingly identifying with that institution, hence the improved service-based CRM performance. As a result, Churchill & Peter (1998) said marketing-based service resources give customers a sense of how a financial institution processes loan applications and conducts transactions, so the customers could receive loan assistance besides market information (e.g., projected sales results and market trends). Equipped with the market information collected using such resources, a financial institution is able to tap potential customers, improve innovative brands, and then enhance the customers' willingness to purchase. Such resources enable a financial institution to share market information amid growing interactions with customers, hence the improved service-based CRM performance.

Marketing-based resources include the knowledge and service-rendering ability of a financial institution's salespersons, who offer services (e.g., detailed information regarding a certain product and after-sales services) that would drive up the institution's service-based CRM performance. Ongoing interactions with customers, therefore, ensure good CRM performance. Marketing-based service resources offer sales channels and solutions to problems stemming from those channels, therefore building up such resources leads to expanded sales channels while giving customers greater access to information concerning a financial institution's products. The information accessibility also allows salespersons to offer customers product-transacting opportunities via the marketing channel. Financial institutions may explore a customer's demand for a specific product when he/she makes relevant conversations or inquiries with them, and consequently improve on the sales channels/strategies to better satisfy customers' needs, which in turn drive up the service-based CRM performance. The following hypothesis is derived from the above statements:

H1c: Marketing-based service resources significantly and positively affect a financial institution's service-based CRM performance.

Barney (1991) said the interactivity among resources creates a competitive advantage as the value of an existing form of resource increases when combined with a different form. The interactivity among a financial institution's human-, information- and marketing-based service resources helps promote customer relationships, because an institution with coordinated internal resources tend to respond better to the external environment, which in turn drives up sales results through enhanced services. The fit between a company's internal resources and external environment, therefore, is evident in the fact that the interactivity among three types of resources helps it better meet the demand for customer service. For example, human-based service resources combined with information- and marketing-based service resources lead to a financial institution's wider customer base (Shum et al., 2008) because the combination of three types of resources not only enhances the efficiency of the institution's service-oriented sales channel, but also reduces the salespersons' workload and work-related stress through an integrated service system. That is, information-based services make information highly accessible for salespersons, who then use marketing-based service resources to meet customers' needs by producing the information needed, hence the enhanced CRM performance.

Facing a rapidly changing market, a financial institution uses information-based service resources to update marketing information and quickly responds to the varying customers' needs present in the market, so the customers may acquire knowledge concerning marketing resources while making product-purchase decisions. Moreover, the financial institution's salespersons may use information-based service resources to collect information required for a customer to make purchase decisions, and subsequently build up marketing-based service resources, which is very important for a financial institution as the interactivity among the three types of service resources provides it (and also its customers) with the latest information market-wise about products and market activities. Such updated information may also be offered by the salespersons to customers in the form of market-related knowledge. By harnessing information-based service resources, an institution is able to introduce online services and website systems, which bolster interactions with customers and consequently offer them product-relevant knowledge. Information-based service resources give financial institutions a sense of changes in the market by examining the customers' demand for products, which is why the salespersons are able to quickly determine which product suits a certain customer and present it to him/her. Through exchanges among the information systems of its various internal departments, a financial institution helps improve its salespersons' ability to respond to customers' needs. In other words, information helps enhance the salespersons' marketing ability, so they are able to increase customer satisfaction and the service-based CRM performance.

Companies in different environments need to adopt sales strategies according to their respective regional cultures and consumption habits (Christensen & Overdorf, 2000). Without sufficient information or marketing-based service resources, the erstwhile salespersons relied on their own knowledge to determine or predict consumers' habits in a time-consuming manner. Fortunately, financial institutions nowadays combine marketing-based service resources with the salespersons' professionalism to process information stored in a massive marketing system, so the salespersons can improve onerous work processes that involve both the institutions and customers. By integrating the three types of resources, salespersons are able to determine a customer's habits and which product he/she may need during brief, interactive sessions, and skillfully increase the product transaction volume as customers tend to feel satisfied the moment when they receive a product needed. That way, the institution may perform better in service-based CRM. The combination of the three types of resources is valuable in the fact that information-based service resources not only bolster the salespersons' sales-making ability (Black & Lynch, 2001) but also meet customer's demand for *knowing* by producing product-relevant information. Equipped with the ability to offer professional services, salespersons may determine or predict their consumers' habits, according to the market knowledge built up as part of the marketing-based service resources, and then improve the CRM performance by proposing a well-managed plan in line with the customers' demand for products. Given the importance of interactivity among human-, information- and marketing-based service resources for a financial institution's service-based CRM performance, the following hypothesis is derived:

H2a: The interactivity among the three types of resources (i.e., human-, information- and marketing-based service resources) positively affects a financial institution's service-based CRM performance.

III. Research Design

1. Subjects

The Citibank Taiwan, Mega International Commercial Bank, Fubon Commercial Bank and HSBC Bank (Taiwan) examined in this present study are four financial institutions that use human-, information- and marketing-based service resources to offer customer services in Taiwan. All of them consider it necessary to build interactive customer relationships, which are reflected in their service-based CRM performance. This present study is focused on salespersons at the four institutions' life insurance units as they offer customers advice concerning the purchase of life insurance products/services. Customers generate satisfaction when a salesperson talk to them in a face-to-face manner trying to sell something that meets their needs, therefore customer satisfaction, customer service, and CRM ratings are considered the major dimensions of service-based CRM performance. That explains why the satisfaction with service-based CRM and interactive services both provide significant foundations for a customer to make purchase decisions regarding a financial institution's products. In this study, 360 copies of questionnaire were each given to the salespersons and customers of four financial institutions, with 315 copies returned from the salespersons and 305 copies from customers. Excluding the 20 uncompleted copies (i.e., 15 and 5 copies uncompleted by salespersons and customers, respectively), salespersons and customers each accounted for 300 valid copies of returned questionnaire. Data collected from the responses contributes to the verification of how a financial institution's resources affect its service-based CRM performance, either separately or through interactivity.

2. Questionnaire, reliability and validity

2.1 The human-based service resources of financial institutions

Human-based service resources are inseparable from the operations of a financial institution because, while a training program helps salespersons acquire a new service technology, it enhances the service quality and bolster the service-based CRM performance. Delone and McLean (1992) measured the quality of a service system on the basis of customer-service response time, reliability, and acceptability. Ravichandran and Lertwongsatien (2005) measured human-based service resources on the basis of personal skills and the nature of services delivered. Byrd and Tuner (2000) contended that an individual's service-rendering skills should be measured in terms of service knowledge, business knowledge, managerial knowledge, and information skills. As a result, this study's author developed a questionnaire based on a 5-point Likert scale, where a salesperson (or respondent) was asked to choose from five options ranging from "Strongly agree" to "Strongly disagree" for each questionnaire item, with the options given 5 to 1 points, respectively. In this present study, the value of Kaiser-Meyer-Olkin (KMO) measure is.754; the $\chi 2$ in Bartlett's test of sphericity is 502.628 ($p< .01$, 2-tail); the factor loading exceeds .50; the overall Eigenvalue exceeds 1; the Cronbach's α is, a coefficient of reliability, is .734. Having developed a questionnaire using the Principle Component Analysis (PCA), the author suggested that this perspective (i.e., financial institutions' human-based service resources) be divided into four factors, with a 58.844% total explainable variance. The four factors are: (1) the salespersons' timely response to customers' needs; (2) the salespersons' understanding of product information; (3) the quality of service rendered by salespersons; and (4) the salespersons' service-rendering ability.

2.2 The information-based service resources of financial institutions

Information-based service resources help a financial institution with planning for internal systems, which involves the integration of internal systems, and also the integration of information concerning customers' product-related decision making and needs. Such integration ensures the speedy functioning of internal systems in an institution, which provides a foundation for purchase decisions. Information-based service resources include the hardware components of information-system structures and the system software that puts the system together. Among the information-based service resources recommended by Byrd and Tuner (2000) are the software and hardware tools for information communications that, when applied to a service system, enable a financial institution to easily and swiftly support a wide variety of information services. As a result, this study's author developed a questionnaire based on a 5-point Likert scale, where a salesperson (or respondent) was asked to choose from five options ranging from "Strongly agree" to "Strongly disagree" for each questionnaire item, with the options given 5 to 1 points respectively. In this present study, the value of KMO measure is .763; the $\chi 2$ in Bartlett's test of sphericity is 456.264 ($p< .01$, 2-tail); the factor loading exceeds .50; the overall Eigenvalue exceeds 1; the Cronbach's α is .712. Having developed the questionnaire using PCA, the author suggested that this perspective (i.e., financial institutions' information-based service resources) be divided into four factors, with a 52.152% total explainable variance. The four factors are: (1) Internet services; (2) integrated information regarding marketing services; (3) integrated e-service technologies; (4) integrated customer-service data.

2.3 The marketing-based service resources of financial institutions

Marketing-based service resources are inseparable from the operations of a financial institution because an increase in such resources would drive up the institution's service-based CRM performance and profitability (Srivastava et al., 1998). According to Vorhies and Morgan (2005), marketing-based service resources include the capabilities of learning from the market and responding to customers' demand for services, such as: (1) the management of marketing-based services information, made up of market knowledge and the information about customer-service experiences; (2) the planning of marketing-based services, which means a financial institution using marketing-based service resources to meet market demand while responding to the customers' purchase decisions; (3) the applications of marketing-based services, which is a financial institution's process of applying marketing strategies to the actual services/operations. This study's author developed a questionnaire based on a 5-point Likert scale, where the salespersons, on behalf of respondents, selected from five options ranging from "Strongly agree" to "Strongly disagree", with the options given 5 to 1 points respectively. In this present study, the value of KMO measure is .768; the $\chi 2$ in Bartlett's test of sphericity is 491.424 ($p< .01$, 2-tail); the factor loading exceeds .50; the overall Eigenvalue exceeds 1; the Cronbach's α is .742. Having developed the questionnaire using PCA, the author suggested that this perspective (i.e., financial institutions' marketing-based service resources) be divided into three factors, with a 49.228% total explainable variance. The three factors are: (1) the perceived marketing-based CRM; (2) customer knowledge management; and (3) customer service training.

2.4 Service-based CRM

Stemming from the interactive salesperson-customer relationship, service-based CRM leads to potential product-marketing initiatives that target customers. The long-term, reciprocal interactions with customers are a major factor of a financial institution's profitability as they result in the institution's good performance in customer service, CRM, and customer loyalty. The ability to listen to customers' needs and understand their product-buying decisions is an essential source of sustained customer services, CRM, as well as marketing-based service resources. Not only did Kim, Suh and Hwang (2003) evaluate customer service and CRM using the Balance Scorecard, they also introduced a customer-centric philosophy for customer service management. The four dimensions of CRM are customer knowledge, interactions with customers, customer values, and customer satisfaction. The term "customer knowledge" means customer segmentation, customer data management, service-oriented vocational learning, and the understanding of customers' needs and their decision-making process prior to purchases. Moreover, the factors that affect the patterns of how customers are affected involve the management/maintenance of customer values, the enhanced service quality, and the CRM-oriented connections with customers. With efforts made in the four CRM dimensions, a financial institution is able to meet customers' demand for services and achieve competitiveness operations-wise. As a result, this study's author developed a questionnaire based on a 5-point Likert scale, where customers were asked to select from the five options ranging from "Strongly agree" to "Strongly disagree", with the options given 5 to 1 points respectively. In this present study, the value of KMO measure is .759; the $\chi 2$ in Bartlett's test of sphericity is 470.583 ($p < .01$, 2-tail); the factor loading exceeds .50; the overall Eigenvalue exceeds 1; the Cronbach's α is .714. The author suggested that this perspective (i.e., service-based CRM) be divided into five factors, with a 54.389% total explainable variance. The five factors are: (1) innovations that add value to services; (2) service-oriented channel management; (3) services that respond to customers' needs; (4) customers loyalty; and (5) customer service process.

2.5 Customer satisfaction with services

Customer satisfaction increases repurchase behavior as well as the chances of buying the other products available at a particular financial institution. Fornell (1996) used the Customer Satisfaction Barometer (CSB) to measure customer satisfaction and product quality, both considered directly related to the total sales results. Since the service quality presumably involves the ability to respond to, and the understanding of, customers' needs, this study's author developed a questionnaire based on a 5-point Likert scale, where customers were asked to choose from five options ranging from "Strongly agree" to "Strongly disagree", with the options given 5 to 1 points respectively. In this present study, the value of KMO measure is .756; the $\chi 2$ in Bartlett's test of sphericity is 814.671 ($p < .01$, 2-tail); the factor loading exceeds .50; the overall Eigenvalue exceeds 1; the Cronbach's α is .737. Having developed the questionnaire using PCA, the author suggested that this perspective (i.e., customer satisfaction with services) be divided into five factors, with a 50.438% total explainable variance. The five factors are: (1) perceived service quality; (2) satisfaction with the service quality; (3) satisfaction with the professionalism; (4) customer support; and (5) service-centric interactions.

In the above-mentioned questionnaire scales, the values of KMO measure in all factor analyses exceed the recommended minimum of .60 and all results from the Bartlett's test of sphericity proved statistically significant. While both criteria are met, the explanatory power of variables in each scale is an acceptable 50% of the total explainable variance, with the eigenvalues for factors exceeding the minimum acceptable level of 1.00. In this present study, a Haman's one-factor test was conducted to determine whether there is homology among two or more perspectives. The Common Method Variance (CMV) proposed by Podsakoff & Organ (1986) was used in unrotated factor analyses of all questionnaire items, given the eigenvalues >1 and the 63.22% total explainable variance. Since the first factor accounted for 27.93% (or below 50%) of the explainable variance, this study's author suggested that the single-source bias does not affect the conclusion of regression analysis.

IV. Empirical Analysis

In this study, the Multiple Interaction Regression proposed by Powell and Dent-Micallef (1997) was used to test the effects of interactivity among three independent variables on the dependent one. If multicollinearity occurs when the three independent variables interact with one another, doubt will be raised against the regression analysis results. In other words, independent variables in this study will be tested for variance inflation factors (VIFs) if their correlation coefficient exceeds .70. The empirical analysis results showed that service-based CRM performance and marketing-based service resources have the largest correlation coefficient ($r = .893$; $P < .01$), with the smallest correlation coefficient found between the salespersons' timely response to customers' needs and customer knowledge management ($r = .12$; $P < .05$). The smallest average is found in the salespersons' timely response to customers' needs (M=3.21), compared to the largest average in customer satisfaction (M=3.49). The largest standard deviation is found in customer service training (S.D. =.75), compared to the smallest standard deviation in information-based service resources (S.D. =.42). As shown in

Attachment 1 (Model 1: service-based CRM performance), a financial institution's service-based CRM performance is positively affected by information-based service resources (β =.29; P<.01), human-based service resources (β =.33; P<.01) and marketing-based service resources (β =.42; P<.01). Model 1 indicates a 62% explainable variance and a 118.8 F-value (R2=.62, F=118.8; P<.01) with an absence of multicollinearity (VIF<10), hence the substantiated H1a, H1b andH1c. In Model 2, the interactivity among human-, information- and marketing-based service resources positively affects service-based CRM performance (β =.06; P<0.5), with an absence of multicollinearity (VIF<10), hence the substantiated H2a.

In this study, exploratory factor analyses were conducted on the effects of human-, information- and marketing-based service resource on two indicators of service-based CRM performance (i.e., customer service management and customer satisfaction), either separately or through interactivity. As for the customer service, Model 1 shows a financial institution's CRM is positively affected by information-based service resources (β =.28; P<.01), human-based service resources (β =.13; P<.01) and marketing-based service resources (β =.27; P<.01). Model 1 has a 55% explainable variance and 60.2 F-value (R2=.55, F=60.2, P<.01), with the absence of multicollinearity (VIF<10). The interactivity among human-, information- and marketing-based service resources does not significantly affect the dependent variable in Model 2. As for customer satisfaction, Model 1 indicates the dependent variable of customer service is positively affected by information-based service resources (β =.25; P<.05), human-based service resources (β =.45; P<.01) and marketing-based service resources (β =.45; P<.01). Model 1 has a 51% explainable variance and a 78.2 F-value (R2=.51, F=78.2; P<.01), with an absence of multicollinearity (VIF<10). In Model 2, the interactivity among human-, information- and marketing-based service resources does not significantly affect the dependent variable. According to the results of exploratory factor analyses in this study, human-, information- and marketing-based service resources all exert a positive influence on the "customer service management" and "customer satisfaction" factors of service-based CRM performance.

V. Discussion and Conclusions

1. New research findings

Findings from this study indicate a significantly positive effect of human-, information- and marketing-based service resources on a financial institution's service-based CRM performance. The interactivity among the three types of resources also affects CRM performance in a significantly positive way.

1.1 The effects of human-based service resources on a financial institution's service-based CRM performance

The positive link between human-based service resources and service-based CRM performance shows that financial institutions giving salespersons the required on-the-job training will increase human-based service resources, which in turn bolster both the service quality and CRM performance. For such institutions, training programs help increase human-based service resources and enhance the salespersons' ability to offer customers accurate, reliable services. With the service-rendering experiences built up over a period of time, a salesperson sharpens service-related skills and professional knowledge. Moreover, training and work experiences drive up a salesperson's innovation and problem-solving capabilities. According to this study's author, financial institutions that start attaching importance to human-based service resources will perform better in service-based CRM, which is mostly because of the increased and maintained level of product sales attributed to grater capability to offer professional services, convey information and deliver fine-quality services, which in turn reduce the personnel cost; facilitate effective management; fulfill employees' work-relate needs; contribute to the salespersons' training/nurturing efforts besides expertise and experiences in problem-solving. Since human-based service resources help sharpen the ability to offer satisfactory customer service while enhancing the service-based CRM, they are positively linked to service-based CRM. That is, human-based service resources ensure a company builds up enough experiences in customer service to improve service quality, as reflected in the service-based CRM performance.

1.2 The effects of information-based service resources on a financial institution's service-based CRM performance

Information-based service resources is positively linked to service-based CRM performance as they offer a comprehensive, service-regulating process that increases customers' trust in an all-inclusive package of information. When executing the nearly impossible mission of identifying potential customers, a salesperson has to make door-to-door visits that are not only time-consuming but also detrimental to the service quality. Supported by the company's information services, salespersons are able to quickly identify the potential customers and their previous consumptions/habits (through an analysis of customer data), as well as the products they might need or suit their needs. All the findings are then integrated and stored in a database for future customer services. With access to the financial institution's source of information, salespersons are able to meet customers' needs with bonus services via company network (e.g., purchase payments and contract cancellation/signing at an online ATM), saving customers the trouble of leaving homes or offices. That way, a financial institution will improve both service quality and customer satisfaction.

Information-based service resources offer financial institutions speedy solutions to problems arising from the customer service process; they also ensure the effective use of online information system for customer-data analyses. Such resources are crucial for preserving or obtaining information because they, when used effectively, contribute to the CRM performance by way of integrated and analyzed market information, customer knowledge, and interactions derived from customer services. While applying information-based service resources to the internal operations, a financial institution should introduce a well-planned system for better integrations of internal service information, such as those of evaluation systems and internal/external technologies. A financial institution will deliver better customer services with its various functions integrated.

With technological integrations enabled by information-based service resources, an institution benefits from the speedy functioning of internal systems besides an unobstructed customer-service process. Before rendering customer services, a financial institution should evaluate its information-based service resources and make sure they reduce or shorten the problem-solving time, so the institution's management will know any potential problem stemming from the customer-service process, including the viable solutions. As the management becomes more capable of tackling and solving problems through such resources, with analyses conducted on the customer database, the institution will improve its understanding of the consumers' habits. All in all, information-based service resources offer a good communication channel that gives a financial institution's salespersons direct understanding of the customers' demand for products.

1.3 The effects of marketing-based service resources on a financial institution's service-based CRM performance

Marketing-based service resources are positively linked to service-based CRM performance. Findings from this study indicate that, in a treacherous market, the primary reason of customer grievances or reduced demand is probably the incompleteness of such factors as the marketing-oriented service initiatives/plans, the collection of service-oriented marketing knowledge, the service-oriented marketing strategies, and the service-oriented marketing channels. The major components and viable plans of marketing-based service resources, when applied to a rapidly changing market, drive up financial institutions' service-based CRM performance as they enable the institutions to consider, or focus on, customers' needs/demand while drawing up service-oriented marketing strategies that help identify potential customers. Meanwhile, service-oriented marketing channels are used to build a two-way communication channel between a financial institution and its customers, so the latter may receive advice and subsequently use or buy more of the institution's products/services. That explains how marketing-based service resources enhance a company's marketing and innovation capabilities through built-up experiences in customer service, as reflected in the bolstered CRM performance.

1.4 The effects of interactivity among human-, information- and marketing-based service resources on a financial institution's service-based CRM performance

The interactivity among human-, information- and marketing-based service resources is positively linked to a financial institution's service-based CRM performance because the combination of human- and information-based service resources ensures an institution's capability to render services with the salespersons' professionalism incorporated into marketing resources. Meanwhile, harnessing information-based service resources help the salespersons integrate into the marketing initiatives abundant information regarding customers' demand for products. Not only does the interactivity among three types of resources improve the salespersons' onerous work processes that involve both the company and customers, it also gives a boost to the CRM performance. The integration of service mechanisms provides another angle for discussions of how interactivity among the three types of resources affects a company's service-based CRM performance. Upgraded information service systems (including their functions) are necessary in a dramatically changing market, but they call for an increase in human-based service resources, particularly the training in professional service knowledge, so the salespersons will be capable of efficiently using the information service system to meet customers' demand for services. When marketing-based service resources are applied in combination with the other two types of resources, giving rise to interactivity, a salesperson is able to integrate the market-oriented marketing knowledge with information-based service resources, and give the institution a comprehensive idea of which products are demanded by the customers or meet their needs. That way, customers will be satisfied with the service quality, with the three types of resources integrated under a service mechanism to drive up the institution's service-based CRM performance.

2. Contributions

As argued and defined by Teece, Pisano and Shuen (1997), service resources make a company capable of integrating, establishing and rearranging internal/external resources to tackle rapid changes in the environment. Service resources make a company able to upgrade internal operations when threatened by changes in the external environment. To be specific, financial institutions upgrade service resources faster than the other types of companies in a competitive market with mounting uncertainties. The innovative nature of financial institutions' service resources is reflected in an ability to survive the changing environment by offering the institutions' internal/external organizations the required assistance, corrections, integrations and rearrangements of resources. That matches the argument proposed by Barney et al. (2001) that financial institutions facing an ever-changing market should rely heavily on service resources as the core concept, and then develop services required to create greater value out of customer services (Makadok, 2001). For the same reason, Armstrong and Shimizu (2007) contended that human-, information- and marketing-based service resources contribute to a financial institution's sustained competitiveness. In response to the aforementioned notions centered on service resources, this study's author recommends that financial institutions in a rapidly changing market should harness service resources to tackle the growing uncertainties while achieving the goal of service-based CRM performance. The key to successfully harnessing services resources lies in the way a financial institution introduces human-, information- and marketing-based service resources for maximal benefits, with the combination of such resources contributing significantly to the CRM performance. Apparently, a financial institution aimed at effectively responding to customers' demand for services/products must combine the three types of internal service resources while considering their interactivity, so as to achieve sustainable development on the basis of well-functioning resources.

Copious studies have discussed how corporate performance is affected by the aforementioned resources, either separately or through interactivity. Corporate resources, for example, refer to the whole of a company's assets, competencies, information, organization-forming processes, and the nature of business operations. A company is able to perform better by putting all its resources together; its efficiency and benefits will be enhanced with information technologies interacting with other corporate competencies. Tanriverdi (2006) suggested the interactivity/complementation between information technologies and other resources result in added and ultra values. Oftentimes, a company's service-based CRM performance is affected by the interactivity between human- and information-based service resources (Shum et al.; 2008). Rai, Patnayakuni and Seth (2006) said the interactivity between financial operations and information drives up corporate performance, while Miller and Rice (1967) argued that marketing- and human-based service resources used in combination would lead to an improvement in performance. As suggested by Ravichandran and Lertwongsatien (2005), the interactivity between human- and information-based resources positively affects a company's performance in information systems. Wu (2006) also noticed how corporate performance is positively affected by the interactivity or complementation among dynamic resources.

This present study extends the discussions of, and proposes new findings on, how service resources and their interactivity affect a company's service-based CRM performance. Findings from this study apparently support the hypothesis that the three types of resources (i.e., human-, information- and marketing-based service resources) all exert significantly positive influence on a financial institution's service-based CRM performance. Given the presumably significant and positive effect of the interactivity among the three types of resources on service-based CRM performance, this study's author suggests that companies investing in information systems comprising information-based service resources should consider training operators in the system of human-based service resources and collecting marketing information accordingly, so the three types of resources will be correctly combined to bolster its CRM performance. The argument echoes the statement that, when three types of resources put together add value to any type involved, it would be fair to say that there is interactivity among them, and that the interactivity affects the service-based CRM performance.

3. Limitations and Recommendations for Future Research

Taiwan's rapidly growing commercial market led to the emergence of service-oriented companies such as consumer electronics firms, hypermarkets and department stores. An empirical analysis of financial institutions is featured in this study for several reasons. Firstly, a financial institution's service-based CRM performance is defined as the interactive, salesperson-customer relationship that involves a salesperson's attempt to meet the customers' needs concerning sales or financial-product transactions. Secondly, customer-specific data collection/analysis directly reveals the needs, expectations and values of customers, which enables a salesperson to better maintain ties with customers and improve service management and satisfaction while interacting with them (Kim et al., 2003). Moreover, financial institutions' largely numerical products/services enable them to rely on the three types of service-oriented resources for delivering customer services and CRM performance, which is why the three types of resources ensure the institution to efficiently and timely offer customer services with the required quality, product information, and market knowledge (Tippins & Sohi, 2003). Compared to the other businesses in service sector, the three types of service resources exert a particularly significant and positive influence on financial institutions' service-based CRM performance, either separately or through interactivity.

This present study examines the effects of human-, information- and marketing-based service resources on service-based CRM performance, either separately or through interactivity. As mentioned in previous studies, employees of an organization might be unable to timely adapt or respond to drastic changes in the broader market, because they are used to the existing work environment. Consequently, it is imperative that a company be supported by executive leadership that is highly sensitive and capable of leading employees to face any change in a complex and treacherous environment (Yukl, 2010). When Herscovitch and Meyer (2002) proposed the affective, continuance and normative forms of organizational commitment to change, in hopes that they would suit the drastically changing markets nowadays, they inspired some important research topics, such as the potential of executive leadership to increase a salesperson's commitment to customer services, as reflected in the beneficial effects of salesperson-customer interactions on a company's service-based CRM performance.

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Attachment 1

Exploring the Regression Relationship between the Service Resources and Service-based CRM Performance at Financial Institutions

	Overall Performance in Service-based CRM and Customer Satisfaction			**Service-based CRM**			**Customer Satisfaction**		
	Model 1	*Model 2*	*multicollinearity*	*Model 1*	*Model 2*	*multicollinearity*	*Model 1*	*Model 2*	*multicollinearity*
Model 1: Types of resources (independent variables)									
Human-based service resources (H1a)	.33**	.31**	1.7-2.1	.13**	.11**	1.7-2.1	.45**	.41*	1.7-2.1
Information-based service resources (H1b)	.29**	.31**	1.5-1.8	.28**	.30**	1.5-1.8	.25*	.26*	1.5-1.8
Marketing-based service resources (H1c)	.42**	.45**	1.6-1.9	.27**	.31**	1.6-1.9	.45**	.41**	1.6-1.9
Model 2: Complementary resources (independent variables)									
HR * Information * Marketing (H2a)		.06*	1.6-1.7		.09	1.6-1.7		- .06	1.6-1.7
R^2	.62**	.64**		.55**	.46*		.51**	.53*	
F	118.8**	120.7**		60.2**	63.4*		78.2**	79.8*	

***** p< .01 (2-tail), * p< .05 (2-tail).***