

December 2004

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Recommended Citation

Rotchanakitumnuai, Siriluck and Speece, Mark, "Balancing Business Value of Thai Internet Banking Services: The Corporate Customers' Perspectives" (2004). *PACIS 2004 Proceedings*. 4.
<http://aisel.aisnet.org/pacis2004/4>

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Balancing Business Value of Thai Internet Banking Services: The Corporate Customers' Perspectives

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Abstract

An understanding of corporate customer acceptance of Internet banking can assist banks to assess the real business value of Internet banking implementation. The four benefit factors are information quality, information accessibility, information sharing, and transaction benefit. The three major barriers are related to trust, legal support, and organization barriers. Information quality and transaction benefit factors are far more important than other in discriminating Internet banking users from non-users. In addition, information sharing and distrust of the web are two drawbacks of Thai Internet banking adoption. As Thai banks decide to use Internet technology as a new self-service delivery channel, they have to enhance acceptance from corporate customers. This does not seem to be merely a matter of getting corporate customers to recognize benefits, but banks probably need to lower barriers to Internet banking adoption to provide actual benefits to corporate customers.

Keywords: Internet banking, web benefits, web barriers, Thailand

1. Introduction

Many banks have implemented Internet banking to offer their customers a variety of online services with more convenience for accessing information and making transactions. From the banks' viewpoint, implementation of Internet banking will lead to cost reductions, improve customer service, and create long-term profit. Evans and Wurster (1997) argue businesses investment in web technology is driven by expectations that Internet technology should provide better opportunities to establish a distinctive strategic position compared to the previous generation of information technology.

However, customer adoption of Internet banking has not been as strong as most banks might have wished. Some research shows that most retail banking customers rank Internet banking as less important than other technology-based delivery channels, such as ATMs (Aladwani 2001). In Thailand, the context of this study, retail consumers show attitudes consistent with this, and are uncertain about adopting Internet banking (Ongkasuwan and Tantichattanon 2002; Rotchanakitumnui et al. 2003). It is becoming clear that the potential value of web-based service adoption for customers depends not only on the benefits, but also on overcoming a number of barriers.

Web barriers can be derived from many factors such as distrust of the web system, and lack of legal support issues. Electronic markets create new transaction risk for electronic market participants, and security is one of the crucial factors that discourage the successful implementation of electronic services (Min and Galle, 1999; Paul, 1996; Ratnasingham, 1998). These issues are serious concerns among corporate customers in Thailand (Rotchanakitumnuai and Speece, 2003).

Prior research on Internet banking has mainly focused on the perspective of personal account bank customers, frequently addressing issues such as benefits (Polatoglu and Ekin 2001), trust (Suh and Han 2002), and innovations (Gerrard and Cunningham 2003). Normally, corporate customers provide the greatest profit opportunities to the bank (Tyler and Stanley 1999), but they need a greater level of business interactions with their banks (Athanasopoulos and Labroukos 1999). Relatively little research has studied adoption of web-based service by assessing both benefits and barriers of Internet banking from the viewpoint of business-to-business or corporate customers. This is the focus of the study here. Success of Internet banking in Thailand, as in many other countries, will rely at least partly on corporate customer acceptance of its value.

Moreover, implementation of Internet banking in Thailand is taking place in a somewhat different environment than in the West because Asian cultures place much more value on strong interpersonal relationships in business. Even in the West, Howcroft and Durkin (2000) noted that technology might not be able to fully substitute for people in bank-customer relationships – technology may be even less of a viable substitute in Asia. For instance, key account managers of banks operating in Hong Kong view social relationships with their customers as quite important in facilitating information exchange for developing and maintaining customer relationships (So and Speece 2000). Srijumpa et al. (2002) suggested that integrating Internet services into interpersonal services would be more attractive and contribute to stronger customer satisfaction in Thailand than relying on self-service options over the Internet. As Asia has become a major player in the global economy, and a primary area where the international banking industry sees opportunity for strong growth, understanding views toward Internet banking in some detail seems to be critical.

We examine the perceived benefits and barriers of the Internet in Thailand among corporate banking customers to see how they affect adoption of Internet banking. Thailand is a good example of a middle-income country where Internet banking is in early stages of development. In general, information technology (IT) resources in much of Asia are somewhat less well developed than in the West, so it is useful to investigate how much and what kind of benefits and barriers corporate customers perceive in such conditions, which are more representative of much of the world outside the West.

2. Literature Review

Any implementation of Internet banking requires information technology investment by Internet banking service providers. To succeed in such investments, bank customers must see value in the technology, or they are unlikely to use it much. In this section we discuss theoretical bases from the customer viewpoint benefits of using the web for commercial purpose. Things have not moved as quickly as some anticipated in turning these benefits into reality in the banking sector,

and many bank customers still hesitate in switching to web-based service transactions. Thus, issues about web barriers are also discussed.

2.1 Web benefits

Prior studies about business use of web technology showed that web technology provides a number of information benefits, as businesses use the Internet channel to provide information about product specifications, price, and service delivery methods. Specific informational benefits include quality information, easier access to information, and capabilities for information sharing (McGowan et al., 2001; Lederer et al., 2001; Ng et al., 1998; Teo and Too, 2000). There are also transactional benefits, which can provide the firm with the ability to automate business functions via the web and provide service to customers with lower costs, more responsiveness, and greater potential for customization (McGowan et al., 2001; Lederer et al., 1997; Ng et al., 1998).

Quality information should be relevant, related to customer needs and interests so that it adds value for customers (Edmunds and Morris 2000). Businesses have to focus on relevant information which responds to customer needs and attracts them to keep accessing the firm website as a quality information source (Huang 2000). The informational benefit is also more valuable to customers if website owners provide accurate information (Daugherty et al. 1995; December 1994; Freiden et al. 1998). Accuracy refers to “how well the information represents the phenomenon it purports to describe” (Freiden et al. 1998, p. 216). Finally, quality information has to be timely, which means that up-to-date or current information must be provided (Freiden et al. 1998, p. 216).

One of the major attractions in commercial use of the web is the ability to access information more easily. Daugherty et al. (1995) pointed out that accessibility to service provider / supplier sites can create better levels of responsiveness to customers. Furthermore, if the firm website is easily accessible, customers can access information faster, encouraging them to continue connecting back to the firm website, so they can frequently check firm information. In addition, to make websites most accessible, firms have to pay particular attention to creating flexible ways to disseminate information resources to their customers (Lederer et al. 2001).

Online information sharing has been conceptualized in different ways. One of the popular issues mentioned by researchers is information sharing via a virtual community. Firms can create a virtual community to serve the needs for communication and information sharing among customers who have common interests or experience, e.g., via the bulletin board. Virtual communities can be used to attract customers and enhance their involvement with the firm (Kodama 1999; Weill and Vitale 2002). Firms can now interact with customers on a global scale, in real-time, and using two-way interaction (Kiani 1998). Information sharing among customers can help enhance customer service by increasing convenience, through collection of service performance information to support management decisions, and by making possible the offering of more customized products or extra services according to customer needs (Karimi et al. 2001; Harrison-walker 2001).

Moreover, information sharing should provide a selection of appropriate links or connections to other websites that give more detailed information about related topics that are interesting for customers. The objective of the connectivity is to provide customers with all the information they want. Several recent studies on electronic commerce have noted that these issues are critical. For instance, Lin and Arnett (2000) suggested that a major factor for the success of a website is the design of information interfaces and navigation that enable users to link to other websites.

In doing business, both buyers and sellers try to minimize transaction costs. Customers perceive cost advantage if their service providers set prices lower than others without any substantial sacrifice of service quality. Cost advantage leads to superior performance if service providers can provide an acceptable level of value with lower costs to their customers. According to many observers, one of the major contributions of Internet-based service is the reduction in transaction costs as buyers and sellers can contact each other directly. Service providers can gain operational benefits by reducing time, overhead costs in operation, and also eliminate costly service participants such as company service personnel (Ghosh 1998; Ng et al. 1998).

Prior empirical research about Internet banking reveals that time and cost are key factors affecting Internet banking adoption of the bank. There may be some economies of scale involved; e.g., Polatoglu and Ekin (2001) found that cost and time saving dimensions are perceived as a larger benefit when customers use Internet banking services more often and for larger transactions.

Offering the Internet for commercial purposes also require that the level of service provided to customers remain much the same as is provided from a sales force in traditional marketing (Gurau et al. 2001). Communications aspects of service can certainly be enhanced by the web, which is often used as a channel to communicate and provide support to customers in order to improve customer relations (Klien and Quelch 1997).

Firms have to communicate to their customers in order to provide them with more information on related products or services which they offer. Parasuraman et al. (1991) found that information technology provides powerful tools to communicate with customers. In research on electronic services, Rust and Lemon (2001) found that web technology provides situation-specific or personalized communication.

Customer service can improve by using web applications to identify and report problems more quickly, and allow more accurate diagnosis and faster responses to firm customers. Web applications such as customer relationship management (CRM) can gather data and analyze a customer database for specific customer needs and wants so that customers can have immediate feedback on services or products available as requested. Kardaras and Papathanasslou (2001) found that when banks provide service via the web for its corporate customers, customers demand many types of support from banks, such as after sales service support for customer training in using the Internet banking system.

Many companies have succeeded in using web-based business to implement innovative new services for their customers (Lederer et al. 2001). The new radical changes of services have led

to superior offerings and provided significant economic benefits to their customers (Yen and Chou 2001). As discussed above, the most commonly cited benefit of the web is its value as an information source, offering accessibility, and sharing capabilities (Ng et al. 1998; Klien and Quelch 1997; Kodama 1999). The power of the web to enhance information flow provides the firm an effective channel to respond to customer needs (Daugherty et al. 1995). This contribution allows service providers to gather customer information more quickly, conduct faster analysis, respond in shorter time, and customize services or products according to customer needs (Klien and Quelch 1997; Lederer et al. 2001; Ng et al. 1998).

In addition, web technology empowers employee collaboration, information sharing, and knowledge integration which can create innovation faster. Rapid innovation offers even more opportunities to customize a specific service or product according to customer needs (Hsieh and Lin 1998). In the financial services sector, service innovation has become very important for service providers to keep ahead of the competition. Currently, corporate customer adoption of web-based service delivery indicates that the web creates new opportunities for corporate customers and the bank to improve collaboration in product design and customization.

In the context of Thai Internet banking, it is argued that corporate customers who perceive a higher level of web benefits would be more likely to adopt Internet banking. Therefore, the first hypothesis for this study is:

H₁: The three web-based services informational benefits and the set of transactional benefits discussed above should positively influence Internet banking adoption for bank corporate customers.

2.2 Web barriers

While web-based services provide benefits, banks also face a number of barriers to adoption of web-based service delivery. Customers do not accept web-based service for many reasons. One set of issues is related to trust, another to legal infrastructure, and a third set of issues is about internal capabilities to use the systems.

Strong concern about security is one crucial factor related to unwillingness to adopt service via the Internet (Black et al. 2001; Gerrard and Cunningham 2003; Madu and Madu 2002). Evidence from research about Internet banking also reveals that security is one of the most important future challenges for banks because of customer fears of higher risk in using the web as a channel for financial transactions (Aladwani 2001; Black et al. 2001).

Service providers must have experience in business functions, policy promises, and consistent support to customers in order to build reputations among their customers. Online customers are more likely to perceive problems related to loss of privacy, as the Internet channel is an open system that other people can access for information easily (Gattiker et al. 2000; Jones et al. 2000). Reputation of the bank, especially in technology applications, is one of the major factors that affect customer adoption of new technology-based service delivery (Aladwani 2001; Mols 1998). Customers perceive that risk is related to reliability and likelihood of system failure (Mols 1998; Walker et al., 2002). Perceived risk can cause customers to reject new technology-based service

delivery. Safety and documentation in making financial transactions are the major factors about which corporate customers are concerned. Customers are also worried that technology-based service delivery systems will not work as expected, and lack confidence that problems can be solved quickly (Walker et al. 2002). Westland (2002) found that transaction risk occurs when online markets fail to assure that service will be delivered with adequate quality. Frequently, slow response time after the Internet interaction leads to a delay of service delivery and causes customers to be unsure that the transaction was completed (Jun and Cai 2001).

Customer protection is a major legal issue associated with using the Internet (Zugelder et al. 2000). This issue can cover unfair and deceptive trade practices by service providers or suppliers, unauthorized access and usage by others (e.g., hackers). Customer protection is important for building customer confidence over the Internet because there is no personal contact, and there is a great likelihood for having problems via the web. In addition, fair liability is a key legal issue. Thomas et al. (1998) mentioned that responsibility must be set when financial losses occur in Internet transactions. In practice, banks normally issue Internet banking contracts with limitations of their liability (Attaran 2000; Giannakoudi 1999).

Many businesses are still wary of making extensive transactions over the web because of the lack of supporting law about electronic documents as legal evidence (Farhoomand et al. 2000). Frequently it is unclear whether electronic documents and records are acceptable as sufficient evidence of transactions (Rotchanakitumnuai et al. 2003). Some customers will not accept online transaction records due to the difficulties in providing authentication of electronic transmissions. These sorts of issues cause customers to question the legal basis for using the Internet in commercial transactions in terms of the jurisdiction of the courts and dispute resolution procedures. Further, negative attitudes among some managers are also a major hindrance (Teo et al. 1997-1998). Negative attitudes cause resistance to change and lack of management commitment, reducing the company's resource allocation and motivation to use the technology (Basu et al. 2002).

In addition, implementing web technology as a business channel requires organizational ability and resources to utilize web technology more efficiently resources, such as hardware and software. The shortage of information technology infrastructure can be a critical barrier to adoption. So, firms can the shortage of knowledgeable personnel, even if the technology is there. The lack of experience and knowledge in using online business can inhibit adoption (Noh and Fitzsimmons 1999). Customer knowledge barrier may come from a lack of diffusion capability, and the lack of investment in training for internal employees.

Thus, adoption of web-based services can be inhibited by trust issues, lack of legal support, and internal organizational factors. If web barriers can be solved and lowered, corporate customers may be more likely to adopt Internet banking. Hence, the second hypothesis for this study is:

H₂: The three sets of barriers to web-based services discussed above should negatively influence Internet banking adoption for bank corporate customers.

3. Survey Methodology

The web benefits and barriers questions are measured by a Likert's scale ranging from 1=strongly disagree to 5=strongly agree. Judgment sampling from the bank customer lists was used, consulting with the bank executives so that judgments were assessed independently by several people familiar with the customer base. The specific respondents are the persons in the customer companies who deal with the banks, such as financial / accounting managers / officers.

Data collection proceeded by calling the targeted respondents in order to inform them about the study and to encourage them to respond. A total of 300 questionnaires was sent by fax or e-mail. Respondents were asked to select one major bank whose financial services they frequently use as the basis for answering the questionnaire. Consequently, 111 questionnaires of Internet banking users and 84 questionnaires of non-Internet banking users were faxed or emailed back, for a total number of respondents at 195 (Table I). The sample consisted more women than men. The respondents were fairly senior, with slightly more than 40 percent in the 40 and up age category, and another one-third 36 to 40 years old. Nearly all had university education, and more than 40 percent held a graduate degree. Overall, this sample represents the targeted population of senior and educated respondents who are likely to have real financial responsibility in their companies.

Table I: Respondent Profile

Characteristics	N	%
Type		
Users	111	56.9
Non-users	84	43.1
Age		
<20-25	2	1.0
26-30	16	8.2
31-35	39	20.1
36-40	59	30.4
41-50	66	34.0
>50	12	6.2
Gender		
Male	64	32.8
Female	131	67.2
Education		
Less than bachelor	6	3.1
Bachelor	101	51.8
Graduate	87	44.6
PhD	1	.5

Table II: Dimensions of Internet banking benefits

Factor items	Loading for factors			
	F1	F2	F3	F4
Factor 1: Transaction benefit				
Internet banking transactions save more time	.841			
Internet banking provides more responsive service	.733			
Internet banking transactions have lower cost	.698			
Internet banking can make me feel enjoyable that I can control processes of financial transactions on my own via the Internet	.669			
Internet banking provides customized services according to my company needs and wants	.663			
Factor 2: Information sharing				
Internet banking provides systems to assist me to share my experiences with other customers of my bank more efficiently		.909		
Internet banking provides systems to assist me to share my experiences with my bank more efficiently		.831		
Internet banking provides link to other websites		.622		
Factor 3: Information quality				
Internet banking provides accurate information			.802	
Internet banking provides relevant information			.778	
Internet banking provides up-to-date information			.581	
Factor 4: Information accessibility				
Internet banking is easy to access with my convenience				.794
Internet banking has more flexible ways to search for information				.748
Eigenvalues	4.984	1.740	1.285	.955
% variance	38.335	13.386	9.884	7.346
Cumulative variance	38.335	51.721	61.605	68.951

4. Results

Factor analysis was used to confirm the dimensionality of bank corporate customers perceptions. A principal component factor analysis with Varimax rotation was undertaken for the thirteen benefit items, and a four-factor solution was found, which explained about 68 per cent of variation in the items (Table II). The communalities were quite high and tests suggested that the subsequent overall four factor solution adequately accounted for the underlying structure of the data (Barlett's Test of Sphericity p -value = 0.000, KMO measure of sampling adequacy = .795).

Table III: Dimensions of web barriers

Factor items	Loading for Factors		
	F1	F2	F3
Organizational barrier			
My company lacks experience in information technology usage to fully use Internet banking.	.885		
My company lacks knowledge to extensively adopt Internet banking.	.880		
My company lacks know how in information technology hardware /software to fully use Internet banking.	.836		
My company lacks human resource to fully use Internet banking.	.810		
Legal support barrier			
Thai law cannot sufficiently protect bank customers with fair liability in the case of financial loss via Internet banking.		.936	
Thai law cannot protect customer privacy sufficiently.		.920	
Thai courts lack the ability to trace for evidence and to resolve fraudulent electronic transaction cases efficiently.		.913	
Distrust barrier			
My company does not trust business practice of this bank via the Internet regarding privacy policy (information about our company).			.845
My company does not trust web security.			.831
Our management has negative attitudes toward Internet banking adoption.			.755
Internet transactions cannot be accurately transmitted.			.684
Eigenvalues	4.080	2.573	1.609
% variance	37.087	23.395	14.630
Cumulative variance	37.087	60.482	75.112

Table III showed that the eleven barrier items could be grouped into three dimensions, which explain 74.65 percent of the total variance. The first factor explains 36.53 percent of this variance, the second and third factor explains 23.51 and 14.6 percent of the variance respectively. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy score (.778) was also well above the recommended 0.5 level (Malhotra 1999). In addition, the Barlett's test of sphericity indicated that there was adequate correlation among the chosen variables ($p < .05$).

According to the items which loaded on each factor, the first factor – labeled as “organization barrier” – consists of the barrier about lack of experience in information technology usage to fully use Internet banking, lack of knowledge to extensively adopt Internet banking, and lack of know how in information technology hardware / software to fully use Internet banking. The second factor, named the legal support barrier, consists of the negative perception that Thai law cannot sufficiently protect bank customers with fair liability in the case of financial loss via Internet banking, Thai law cannot protect customer privacy sufficiently, Thai courts lack the

ability to trace for evidence and to resolve fraudulent electronic transaction cases efficiently. The last factor, called trust, included distrust of business practice of this bank via the Internet regarding privacy policy, distrust of the web security, negative attitudes toward Internet banking adoption, and low reliability for transactions to be transmitted via the web accurately.

Discriminant analysis was conducted using the four benefits factor scores and three barriers factor scores to distinguish Internet banking users from non-users. As shown in Table IV, the discriminant function was significant. The results showed that the information quality benefit factor had the largest magnitude coefficient (.631), and also the largest correlation with the discriminant function, which is perhaps the best way to decide relative importance (Hair et al. 1995). The transactional benefit was also fairly strong with discriminant coefficient 0.394. The results show that information quality and transactional benefit are the most vital positive elements for discriminating adoption. In contrast, the information sharing factor apparently inhibits adoption. The results show that information sharing had high negative impacts on adoption (discriminant coefficient = -.509); i.e., corporate customers do not seem to view information sharing capabilities as a benefit, but rather as a barrier. This is probably due to the very strong traditions of business secrecy in much of Asia. Further, the trust barrier is also useful in predicting adoption, and it has a negative impact on adoption. Finally, the information accessibility benefit factor and the other two barrier factors (organization and legal support barriers) were not useful in predicting adoption rates.

Table IV: Standardized discriminant function and correlation coefficient

Discriminating variables	Discriminant function coefficients	Correlation coefficients
Transaction benefit factor score	.394	.362
Information sharing factor score	-.509	-.398
Information quality factor score	.631	.664
Information accessibility factor score	.123	.163
Organization barrier factor score	-.160	-.205
Legal barrier factor score	-.130	-.099
Distrust barrier	-.309	-.550
Wilks' Lambda = .742 Chi-square = 55.985 df = 7 Sig. = .000		

5. Discussion and implications

Within the boundaries of what the study has investigated, it shows some of the major factors that influence corporate customers' perceptions of Internet banking in Thailand. At the moment, information quality benefit is the strongest determinant of adoption – customers who perceive better information quality are more likely to use Internet banking. Transaction benefits of Internet banking also stand out as a major factor to corporate bank customers. This finding is consistent with prior work about benefits of Internet banking, in which saving time, responsiveness of service, service customization, cost saving of making financial transaction via the Internet banking are considered components of transaction benefit dimension (Polatoglu and Ekin 2001).

Other information benefits commonly seen in the West do not seem to play much of a role. Perception of accessibility does not influence adoption in this context. The information sharing benefit discussed frequently in the literature is actually a strong barrier here in the perceptions of corporate customers. Links and virtual space to share information among bank customers is probably not very useful at this stage of development of Internet banking in Thailand. Thai Internet banking providers do not currently make much provision for information sharing, and there seems to be no need to rush ahead in providing such service. It is likely that corporate customers are quite different from individual consumers who prefer to share their experiences or chat via the virtual space. In Thai culture, business secrecy is a major obstacle that holds back sharing financial information among bank corporate customers.

The barriers that frequently inhibit adoption in many markets seem to work slightly differently, too. The mid-sized to large companies in this sample do not perceive much problem in utilizing IT if they want to, i.e., they probably have internal capability to fully utilize Internet banking if they decide to adopt it. Further, while most respondents perceive that the legal system is not ready to deal with Internet transactions, this is not a distinguishing factor in adoption. Possibly it is discounted, because companies are quite used to operating in an environment of somewhat weak legal infrastructure – Thai business, as in much of Asia, depends much more on the strength of interpersonal relationships than on legal structures. However, the trust barrier does seem to distinguish between adopters and non-adopters. Customers who distrust the technology, the security, or the business practices are less likely to adopt Internet banking. This is also consistent with the orientation toward interpersonal relationships in Asian business – the relationships are primarily about trust building.

Therefore, at this stage of development of Internet banking in Thailand, it seems that many corporate customers still hesitate to use Internet banking. To expand the market for Internet banking to the banks' major customers, banks need to reconsider what they have done to date in explaining the real benefits to their corporate customers. They also need to overcome barriers of the system. Banks have to visibly demonstrate concern for security, reliability, and liability with concrete solutions to reduce or eliminate costs to customers in case transactions fail or are processed inaccurately. Frequently, these are not purely technical issues, but rather, are related to customer psychology and beliefs, which may or may not be consistent with the actual technology and system. Although most Thai Internet banking service providers currently use many security features, they need to provide knowledge to their customers about bank intention to protect security of the network in order to generate a higher level of trust of the web system. All customers, even users, believe that problems will occur, so it is about what customers believe the bank will do when the problems do arise. The web-based service channel must be well integrated into other channels so that customers can easily interact with people who are trained to handle problems efficiently, and banks must adopt strong customer orientations.

Further research should also investigate the impact of adoption and use of Internet banking on the broader areas of the corporate customer interaction with the bank. Gaining the benefits from use of Internet banking may help create better relationships between bank and corporate customer, or may build in higher switching costs. Through these, the Internet banking channel may be able to indirectly contribute to greater customer loyalty, which is critical in the ever more

competitive banking industry. Our results show that, like elsewhere, there seems to be strong potential for Internet banking. The results also demonstrate that it is going to take some work to fully realize the potential. There is still quite a lot of work that needs to be done to understand customer response to Internet service channels well.

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