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# CYBER-BANKING IN HONG KONG: DEVELOPMENT AND CHALLENGES

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## Abstract

*This paper summarizes the development of Internet- and cyberspace-based e-banking in Hong Kong, and explores some of the challenges and problems any attempt to develop this financial innovation is likely to face. In particular, we point to the problems of transaction security and the creation of product-service differentiation.*

## Introduction

The extension of banking to the Internet and cyberspace is an inevitable development in the information age, especially in technologically sophisticated international financial centers like Hong Kong. A number of local and foreign commercial banks have recently launched Internet-based e-retail banking products and services in the Special Administrative Region (*Financial Times* 2000). Although significant growth in the customer base is expected (*Business Times*, 2001) numerous challenges and problems, associated with competition, prices, cost, efficiency, product-service quality and differentiation, and demographics render it imperative for financial institutions to continually re-evaluate this decision. In particular, Hong Kong's commercial banks face the problems of evaluating the gains from Internet e-retail banking against the incremental costs and risks, determining the profitability of development along particular dimensions and market segments through product and service innovations, and discovering whether the new technology would be accepted by customers.

Competition is the chief driving force behind the introduction of Internet-based e-banking in Hong Kong. Commercial banks tend to view this financial innovation as a competition strategy to retain existing customers, attract additional business, and increase market share. Since cost is a key factor in price competition, an important strategic advantage would follow from the ability to supply differentiated financial products and services over the Internet at lower cost compared to traditional branch banking, and from further declines in cost in the future. By going on-line, banks can more fully exploit the increased efficiency from technological progress, allowing more branch-counter resources to be shifted towards sales, marketing, dedicated financial services, R&D, and other higher value-adding activities.

To effectively compete, the individual bank must distinguish itself by product differentiation. In the concentrated markets inhabited by commercial banks in Hong Kong, the products and services offered under this competitive sub-strategy must not only capture market share by fulfilling current wants, preferences, and quality expectations, but also prepare consumers to accept their technological progeny in the future. Expertise in marketing and the ability to anticipate changes in demand are therefore crucial to the commercial success of Internet-based e-banking. In particular, strategic priority must be assigned to the development of branding relationships. The Internet offers commercial banks an efficient channel to build, maintain, and develop client relationships, by offering ready access to a broad array of products and services, low-cost financial shopping, rapid response to customer inquiries, and product-service innovation through the commercialization of R&D. If individual e-bank can successfully capitalize on brand name and brand identification, this would help to strengthen customer loyalty, increase opportunities for cross-selling, promote repeated purchases, and attract new customers. At the macro level of corporate planning, branding represents an opportunity to implement a more aggressive competition strategy. An offensive can then be carried over to the domain of traditional bricks-and-mortar retail banking and to enhance product-service differentiation and educate consumers on the comparative advantage of banking over the Internet.

Another important factor underlying the trend towards Internet e-banking (and e-commerce in general) over the Internet is demographics (Liao and Cheung 2001a). Banks not supplying Internet-based e-retail banking are likely to deprive themselves of future access to profitable, technology-seasoned customer segments. Computer literate Internet users in Hong Kong (and throughout the world) are generally young and well educated. This age group will attain economic maturity in the near future, to be followed by even more technologically aware and cyberspace-oriented individuals. To increase market share in the face of demographic change, banks must seek to attract such clients by offering innovative and technologically sophisticated financial products and services over the Internet and mobile telecommunications.

## Development of e-Banking in Hong Kong

Internet-based e-banking is still an infant industry in Hong Kong, both as regards the number of banks offering products and services, and in terms of product lines and competition (*South China Morning Post* 2000a). Currently, most institutions only supply basic banking functions over the Internet, such as account/balance inquiries, fund transfers, bill payments, on-line transaction inquiries, fixed deposit placements, statement requests, etc. A comparison of the services provided by three major banks in Hong Kong is presented in Table 1. In particular, the marketing and trading of mutual funds and insurance over the Internet are still rare. Although banks accept on-line mortgage applications, the rates are generally not finalized until customers show up physically at some branch (*South China Morning Post* 2000b).

A number of banks are beginning to offer a wider variety of Internet-based e-banking products and services. Hang Seng Bank (HSB) recently launched an e-shopping Master Card, which is specialized for on-line shopping with no physical form and a credit limit designed to enhance perceived safety (HK\$3,000). A Secure Electronic Transaction (SET) system safeguards transaction integrity by employing digital certificates to validate cardholder, merchant and bank identities. Data is encrypted to ensure that transactions and account information remain secure, allowing consumers to enjoy greater peace of mind when e-shopping on the Internet. GE Capital, which was the first financial institution to offer Internet-based e-banking in Hong Kong, is seeking to specialize in on-line lending, mainly with regard to mortgages but also for personal purposes and vehicle purchases (*South China Morning Post* 2000b). Shanghai Commercial Bank has recently increased the range of its e-banking products and services to 28, allowing it to clinch the top Asian ranking in the business (*Business Times* 2001).

The strong response to the on-line initial public offering (IPO) of Hong Kong's Mass Transit Railway Corporation (MTRC) has stimulated the demand for Internet-based e-banking (*South China Morning Post* 2000d). Among financial institutions, Hong Kong's large commercial banks were the biggest winners in the MTRC on-line IPO. The Hongkong Shanghai Banking Corporation (HSBC) and HSB secured 29,500 and 24,000 applications respectively, mainly because of the efficiency and additional convenience offered over the Internet. HSB's e-IPO Service, for example, was designed to allow investors to read the prospectus, fill in application forms, and transfer deposits on-line, saving time (a crucial factor in the event of over-subscription) and shoe-leather costs. Banks also save in processing cost, as bricks-and-mortar centers to sort physical IPO applications forms were no longer required. In addition, it was possible for the banks to dispatch consolidated on-line application data to the MTRC on a CD-Rom within a short period. Since the MTRC on-line IPO was introduced in September 2000, HSBC and HSB (itself part of the HSBC Group) have reported a sharp increase in Internet transaction volumes and the number of registered account holders. Daily on-line transaction volume at HSB, which had averaged 30,000 to 35,000 per day, jumped to 55,000 to 60,000 during the IPO and stayed high afterwards. HSBC also noted an increase in registered users of 10.5% in the same period.

Alliances in Hong Kong's commercial banking and information management sectors can be expected to increase in the future, to reap the benefits of increasing returns from more detailed and up-to-date customer databases, and from the expanding cross-selling opportunities over the Internet. HSBC and IBM have teamed to develop and supply a comprehensive range of e-banking services worldwide. The IBM Interactive Financial Services system has been implemented as a platform under which HSBC customers can pay bills, transfer funds, update balances, and manage investments anywhere and anytime on-line over the Internet (*Retail Delivery News* 2000). In June 2000, the Bank of East Asia (BEA) and Yahoo! (Hong Kong) launched a co-branded website ([www.hkbea.com](http://www.hkbea.com)). This represented the first commercial-retail cooperation between a bank and an Internet media company in Hong Kong. The joint website, [hkbea.my.yahoo.com](http://hkbea.my.yahoo.com), was designed to allow BEA customers to enjoy the full range of products and services supplied by Yahoo! (Hong Kong), including e-mail, relevant stores, financial news, and stock quotes, as well as to access bank information at the same time. Both BEA and Yahoo! (Hong Kong) expect to expand audiences and business and enhance customer loyalty. On the part of the former, this endeavor represents part of an ambitious plan to offer a comprehensive and integrated range of financial products and services to the public over the Internet and cyberspace (Table 2).

## Challenges and Problems

Given the open nature of banking and financial transactions over the Internet, security risks are likely to represent the biggest concern among customers. This, in turn, would tend to create a significant barrier to market acceptance of the financial innovation (Liao and Cheung 2001b). Management of security risk is therefore crucial for the e-bank's operational efficiency and reputation, and for the promotion of consumer confidence and acceptance. Before launching financial products and services over the Internet, it is imperative for the individual bank to secure expert assessment of the viability of measures to safeguard client assets and information (for example, storing confidential material in a database server with firewalls and stringent access control), and to protect transactions. It should be noted that, with regard to the development of Internet-based e-banking, transaction security is also the primary concern of the Hong Kong Monetary Authority (the SAR's de facto central bank and regulatory agency) (*South China Morning Post* 2000c). Interpreting security in a wider sense, we wish to suggest that e-retail banking deposits should also be covered under the forthcoming regulations on deposit insurance in Hong Kong.

Unlike many foreign financial centers, Hong Kong is geographically concentrated, with ready access to bank branches and phone-banking at low shoe-leather and telecommunication costs. At the present time, there are therefore no compelling environmental reasons for individuals to migrate to the Internet for their banking needs. As long as branch- and phone-banking remain as important delivery channels, the presence of these close substitutes suggests that the growth of Internet-based e-banking is likely to be relatively slow. Initiatives to creating product differentiation, and to build and enhance the confidence of culture-bound individuals in Internet-based e-banking, will take time and effort. In particular, though the Internet allows commercial banks to offer a wide array of product and service options, many customers are still attracted by traditional bricks-and-mortar branch banking. For such individuals, the latter remains the most comfortable way of doing financial transactions, so that the resulting premium on over-the-counter and person-to-person contact and confirmation would tend to hinder the growth of virtual banking in Hong Kong. For the duration, the optimal development strategy for e-banks is likely to be to cultivate consumer attitudes along the paths of least resistance, in particular as regards perceptions of transaction security, transaction accuracy, user-friendliness, and transaction speed (Liao and Cheung 2001b).

Many banks in Hong Kong employ the Secure Sockets Layer (SSL) and Secure Electronic Transactions (SET) encryption protocols to manage transmission security. Though SSL and SET have been widely adopted internationally, there is a lingering resistance to accept its security in the SAR, so that in addition to the cultural and preferences barrier, efforts to develop Internet-(and cyberspace-) based e-retail banking must also surmount a technological barrier.

## Concluding Remarks

In most cases, commercial banks seeking to reduce cost by offering products and services over the Internet are also looking to downsize branch networks and reduce counter staff. On the other hand, these institutions serve customers from different walks of life in Hong Kong, with different degrees of awareness and acceptance of information technology. For the duration, physical branch networks must therefore be maintained to satisfy certain segments of market demand. In addition, since banks often do not charge fees, Internet banking itself will not generate significant direct revenue. Instead, it is expected that the new products and services will bring in new suppliers and new clients, allowing e-banks to tap into a wider customer base and exploit new business opportunities in lending, funding, credit facilities and cross-selling. Driven by such considerations, the greatest challenge facing these institutions is perhaps not so much the technology and technological progress, but to cultivate consumer acceptance and the market demand for electronic financial transactions over the Internet.

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Table 1. Selected Functions of Cyber-banking

Selected Functions	Bank of East Asia	Hang Seng Bank	HSBC
<u>Basic Functions</u>			
Open Account	*	*	*
Balance inquiry	*	*	*
Funds transfer	*	*	*
Account history	*	*	*
Time deposit	*	*	*
Rate inquiry	*	*	*
Requisition of cheque book	*	*	*
Bill payment	*	*	*
<u>Research</u>			
Economic analysis	*	*	*
Financial news	*	*	*
Market commentary	*	*	*
<u>Product Marketing</u>			
Mortgage			
On-line valuation	*	*	*
Calculator	*	*	*
On-line application	*		
<u>Personal Loan</u>			
Loan information	*	*	*
On-line application	*		
<u>Credit Card</u>			
Card information	*	*	*
On-line application	*		
<u>Investment Services</u>			
Securities information	*	*	*
Unit trust information	*	*	*
On-line trading	*		
IPO subscription	*		
Stock quote	*	*	*
<u>Information Inquiry</u>			
Mandatory Provident Fund	*	*	*
Insurance	*	*	*

Table 2. East Asia Cyber-banking Services

Services/Electronic Channels	Internet	Power Phone™	Mobile Phone	iCare Internet-on-TV	Phone	Kiosk
1. Account Inquiry °						
Account Balance	Y	Y	Y	Y	Y	Y
Account Summary	Y	Y		Y		Y
Account Activity for up to 12 months	Y	Y		Y		Y
2. Funds Transfer						
Funds Transfer within the Bank	Y	Y	Y°	Y	Y°	Y
Funds Transfer to Other Banks in Hong Kong	Y	Y		Y		Y
Restriction on Funds Transfer to Non-Designated Accounts	Y	Y		Y		Y
	Y	Y	Y	Y	Y	Y
3. Bills Payment						
4. Time Deposits						
Place / Uplift Time Deposit	Y	Y		Y	Y	Y
Set-up / Cancel Renewal Instruction	Y	Y		Y	Y	Y
5. Rates Inquiry						
Hong Kong Dollar & Foreign Currency Deposit Rates Inquiry	Y	Y	Y	Y	Y	Y
Foreign Currency Exchange Rates (T/T) & Passbook Gold Inquiry	Y	Y	Y	Y	Y	Y
6. Mortgage Loans						
Accounts Inquiry	Y	Y		Y		Y
Property Valuation	Y	Y		Y		Y
Mortgage Pre-approval	Y	Y		Y		Y
Mortgage Application	Y	Y		Y		Y
Mortgage Terms Inquiry	Y	Y		Y		Y
Document Requisition	Y	Y		Y		Y
Repayment Instruction	Y	Y		Y		Y
Dream House Search	Y	Y		Y		Y
Mortgage Calculator	Y	Y		Y		Y
7. Consumer Loans						
Accounts Inquiry	Y	Y		Y		Y
Instant Approval of "Personal Loan" , "EasyFund Revolving Standby Credit Facility" and "Cash360° Revolving Loan"	Y	Y		Y		Y
Product Information Inquiry	Y	Y				Y
Partial & Early Repayment Instruction	Y	Y		Y		Y
8. Credit Cards						
Accounts Inquiry	Y	Y	Y	Y	Y	Y
Payment	Y	Y	Y	Y	Y	Y
Cash Advance	Y	Y	Y	Y	Y	Y
Check Bonus Point Balance	Y	Y	Y	Y		Y
Request Statement	Y	Y	Y	Y		Y
Interactive Bonus Gallery	Y	Y		Y°		Y
Direct Debit Authorization	Y	Y		Y		Y

9. Insurance					
On-line Approval for "TravelSafe"	Y	Y		Y	Y
Policy Inquiry for "TravelSafe"	Y	Y		Y	Y
10. Foreign Exchange Margin Trading Information					
Balance Inquiry	Y	Y		Y	Y
Portfolio and Order Inquiry	Y	Y		Y	Y
Rates Inquiry	Y	Y		Y	Y
Commentary	Y				
11. ATM Cards					
Card Inquiry	Y	Y		Y	Y
Reporting Loss of Card	Y	Y		Y	Y
Annual Fee Payment	Y	Y		Y	Y
12. Mandatory Provident Fund					
Account Balance Inquiry	Y	Y		Y	Y
Contribution History Inquiry	Y	Y		Y	Y
Current Investment Inquiry	Y	Y		Y	Y
Fund Prices of Constituent Funds Inquiry	Y	Y		Y	Y
Contribution for Casual Employee	Y	Y		Y	Y
Change of Investment Choices	Y	Y		Y	Y
Fund Switching (for existing assets)	Y	Y		Y	Y
Contribution for Self-employed Person	Y	Y		Y	Y
Product Information Inquiry	Y	Y			Y
13. General Features					
Application of Telegraphic Transfer, Cashier Order and Demand Draft	Y	Y		Y	Y
Cheque Book and Statement Requisition	Y	Y	Y	Y	Y
Change of Personal Identification Number	Y	Y	Y	Y	Y
Instruction for Cheque Stop Payment	Y	Y		Y	Y
Service Hours Inquiry and Frequently Asked Questions	Y	Y <sup>o</sup>		Y <sup>o</sup>	Y <sup>o</sup>
14. Stock Trading of East Asia Securities	Y	Y	Y		#

Source: The Bank of East Asia, Hong Kong

Notes: Y = Service is available now.

<sup>o</sup>Register particular account(s) to use this service, available for the following account types:

Current Account, Hong Kong Dollar Savings Account, Foreign Currency Savings Account\*, Multi-currencies Statement Savings Account, Credit Card Account, Time Deposit Account\*, Foreign Exchange Margin Trading Account\*, Mortgage and Consumer Loans Accounts\*, East Asia Supreme Account, East Asia Cyberbanking i-Account\*.

\*Account balance inquiry not available for mobile phones.

<sup>o</sup>Only applicable to accounts with prior registration/On-line Redemption of Gifts/Frequently Asked Questions.

#Will be provided in future.