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December 2003

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Recommended Citation

Tan, Hung-Pheng and Tan, Yong-Wah, "IT/IS Development in China's Banking Industry: The WTO Challenge and IS Strategies" (2003). *AMCIS 2003 Proceedings*. 148.

<http://aisel.aisnet.org/amcis2003/148>

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IT/IS DEVELOPMENT IN CHINA'S BANKING INDUSTRY: THE WTO CHALLENGE AND IS STRATEGIES

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Abstract

The political and economic environment during the 80's coupled with the lacking of reliable network backbone and the inefficient and ineffective telecommunication infrastructure in the 90's had resulted in banks in China adopting de-centralized approach in their computerization programs.

China officially became a member of WTO in November 2001, and by the beginning of 2007, Renminbi (China's currency unit, denoted as RMB, currently at about 8.28 units against one US\$) banking businesses will have to be opened to all foreign banks.

Today, market trend in the world is 'size matters', and the old saying of 'small is beauty' although still applicable in certain business sector, unfortunately is no longer true in the banking industry.

In this regard, the giant Chinese banks are racing for the "consolidation and centralization" of their IT infrastructure and IS operations.

The authors try to give an account of the background, the rush, the challenges and the deadline facing them. The crux of the matters is that it is not a technical problem alone. The unique nature of the problem traced back to the political, social, behavioral and environmental structure. The authors also try to analyze the approaches being taken, its progresses so far and its impacts on the banking industry in China, and perhaps elsewhere. With the WTO entry and further liberalization of the Chinese banking industry, what can we expect next and what are the strategies for these banks and the new comers, both local and foreign? The paper will try to throw in some light.

Keywords: China, banking, information systems, information technology

Introduction

'Prudent' and 'under control' in all dealings has been all along the most essential elements in the whole banking business while the degree of utilization of Information Technology and Information Systems (IT/IS) determines the efficiency of their operations. Though there are no subtle differences between banks operating under different political structures such as communism and capitalism, the political, social, behavioral and environmental structure in the past and present in China has created a unique process in the IT/IS development in its banking industry.

Today, market trend in the world is 'size matters', and the old saying of 'small is beauty' although still applicable in certain business sector, unfortunately is no longer true in the banking industry. The Chinese banks, though mainly state-owned and huge in terms of assets, branches and head count, are fragmented in their operations. This is due to the de-centralized approach taken in their computerization programs stemmed from the historical background before and during the 1980's coupled with the lack of reliable network backbone and the inefficient and ineffective telecommunication infrastructure in the 1990's. In this regard, the huge Chinese banks are racing for the "consolidation and centralization" (C & C) of their IT infrastructure and IS operations to become real giants. On the other hand, China officially became a member of World Trade Organization (WTO) in November 2001, and by the beginning of 2007, Renminbi (China's currency unit, denoted by RMB, currently at about 8.28 units against one

US\$) banking businesses will have to be opened to all foreign banks. This has created extra challenges to the Chinese banks in terms of competition against the real foreign giants whom are invading them with advanced integrated systems and sophisticated products under attractive packaging and offerings.

This paper starts with an overview of the banking industry in China followed by a description of their IT/IS utilization and development divided into four distinctive eras. The latter part of the paper deals with the challenges faced by these banks, the WTO implications, and the IT/IS strategies for them and the newcomers, both local and foreign.

An Overview of the Banking Industry in China

In September 1983, few years after the introduction of the open door policy, the State Council of the People's Republic of China decided to form a full function central bank. The then People's Bank of China (PBOC) where its role was mixed between central bank and commercial bank, was tasked to take up this responsibility, and all other non-central banking functions were cut out to become another entity, the professional state bank named Industrial and Commercial Bank of China (ICBC). In the meantime, Bank of China (BOC), the only external presence of Chinese banking industry, continues to carry on as the other state bank externally but expanded internally under the name of BOC. Since then, PBOC functions as a typical central bank with monetary policy and management, banking supervision, currency management, and reserve management as the core objectives. However, it was only until March 1995 that the Central Bank Act was passed (PBOC 2003) legalizing the status. To better manage and segregate investment activities, the State Administration of Foreign Exchange (SAFE) was formed as a separate entity, under the control of PBOC, to handle all the national reserve. As of March 2003, the reserve stands at US\$316 billions (SAFE 2003). Under the planning or command economy, two other professional state banks were formed, namely the Agricultural Bank of China (ABC) and China Construction Bank (CCB). These four commercial banks, known as professional state banks under the command economy, are transiting from their original professional tasks of foreign exchange, industry activity, agricultural activity and construction activity respectively to overall commercial activities. They are known as just 'The Four' today.

During the early days after the open door policy, one may have witnessed a very interesting banking scene, Renminbi (China's currency unit, denoted by RMB, currently at about 8.28 units against one US\$) was restricted for residents use only while foreigners must make payment in another form of currency called Foreign Exchange Certificate (FEC). FEC was issued by BOC and not by PBOC. It was until July 1993 that PBOC decided to unify these currencies when Mr. Zhu Rongji took over as the governor of PBOC. After which FEC was a history but became collectors' item.

After the implementation of the open door policy, China has witnessed regional or share-holding banks mushrooming to serve specific purpose or to fill the gap that 'The Four' could not handle due to the rapid increase in banking needs. For example, the Bank of Communications (BC) in Shanghai, The China Everbright Bank in Beijing, China Merchant Bank in Shenzhen, Citic Industry Bank in Beijing, Shenzhen Development Bank, Guangdong Development Bank, Shanghai Pudong Development Bank, The Bank of Shanghai, The HuaXia Bank in Beijing, and more. All these banks are more or less controlled by the state, in particular, BC was a re-established major bank and commonly known as the 'plus one' when related to 'The Four' in the 'The Four plus One'.

Some foreign banks started to return to the China banking scene in the early 80's albeit slowly initially. Big giants like Citibank, HSBC, Standard Chartered Bank and ABN AMRO all have good presence and coverage today in China.

In short, banks in China can be generally divided into three basic types. First are those professional state banks turned commercial banks or 'The Four', in assets size order, ICBC, CCB, BOC and ABC (Almanac 2002). Second type consists of those regional or share-holding banks, and last are those foreign banks. One important point to note is that none of the first type banks are listed on any stock exchanges. More recently, BOC has successfully formed an entity from their branches in Hong Kong and listed on the Hong Kong Exchange.

In Nov 2001, China officially became a member of the WTO. Under the terms and conditions, China is committed to the opening up of the banking sector within 5 years, i.e. by end 2006. By then, RMB banking business will be accessible to all foreign banks. As of January 2003, certain foreign banks are already given permission to operate such banking services in restricted mode in designated cities such as Shanghai and Shenzhen. However one must remember that although at this moment, RMB is convertible under current accounts subject to certain conditions, the full convertibility of RMB under capital accounts has no fixed time-table yet.

The Four Eras of Computerization

Era One (1949-1978)

Since the communist took over China in 1949 until 1978, the Bamboo curtain (closed door policy) prevented outsiders from knowing what was happening inside mainland China. Although things started to uncover after the era was over, it was not important in our context to look into it as there was practically nothing as far as IT/IS development is concern and the banking industry was no exception.

The only Chinese presence of banking outside China then was represented by BOC branches, all inherited from the previous governments. These include the significant presence in Hong Kong (then a British Crown Colony), Macau (then a Portuguese Colony), London, Singapore and Kuala Lumpur. The development of IT/IS in these branches, independent of their Head Office (HO) and isolated from each other, although nothing very major, have a significant and long term influence over developments towards the whole banking industry inside mainland China as detailed in the following eras. For example, the Hong Kong branches were able to provide simple online banking services at the end of the era while the HO had nothing at all in this area at that moment. This unique phenomenon distinguished itself from banking industries in other countries where normally the HO led and provided support to its branches nationally and internationally.

Era Two (1979-1989)

The famous open door policy was approved and endorsed by the eleventh congress meeting of the Chinese Communist Party in 1978. Under this policy, there were four clear strategies to modernize the country. However, the central government needed time to identify, select and agree upon the cities to set up the Special Economic Zones (SEZs). Moreover, the climate was not right for a hasty change. In the following years, people started to see the door opening very slowly and the famous Shenzhen SEZ was carved out from a small fishing village boarding Hong Kong together with three other SEZs (Xiamen, Shantou and Zhuhai) at other strategic locations along the coastal lines. These SEZs were intended to be experimentally of the crossing from the legacy of a central planning economy to a market-oriented economy. In the Chinese terminology, they are called pilot cities.

Four years on, when the first author first visited China in late 1983, he found that the mindset of people dare not change too much in the open as yet. They were very cautious when they spoke and most were on the wait and see attitude. People were still wearing the dark or grey Mao suits. Foreigners cannot use the RMB, the Chinese currency issued by the PBOC. Instead, they must use the FEC issued by BOC. Their activities were confined to places designated for foreigners only. In fact, as a foreigner, one cannot even get food outside the designated places as one does not have the “Liang Piao” (ration coupon) required for purchases of food and other essential items. The Chinese cannot be blamed for the tardiness to the change as the outside world reacted similarly. For example, Singapore government did not allow its citizens to visit China unless special permissions were granted. The strictness was evidenced by the application in 1982 by the first author, then working in BOC’s Singapore branch, for business visit to its HO in Beijing being rejected by the Singapore government. Perhaps due mainly to this, there was no drastic or rapid change during the first half of this era although any change no matter how small proved to be quite significant. IT/IS development started to crawl slowly into the various industries while banking was one of the pioneering users of IT/IS.

The initial applications were mainly batch accounting systems. Very little information was available to outsiders then. Machines used were mostly Japanese made small to mid-range computers with more IBM mainframes appearing towards the latter part of the era. In June 1986, the first author and some IT professionals in the Singapore branch of BOC were invited to Beijing to participate in their first ever Nationwide Computing Application Exhibition & Conference. Besides delivering papers on the IT/IS development overseas at the conference, they started to engage in subsequent technology exchanges as well as providing consultancy to the branches inside China on their computerization programs.

Due to the June 1989 Tiananmen incident, there were some setbacks but it proved to be very brief.

Era Three (1990-2001, the WTO Entry)

During this era, the IT/IS development was very vibrant and the speed commendable. Besides mainframes, powerful mid-range, PCs and client/server with introduction of GUI to solve the Chinese character output (both display and print) were mushrooming throughout China.

In the early 90's, banks were prepared to pay for boxes of hardware but refused to pay for software that were invisible physically. Coupled with the lack of good telecommunication infrastructure, powerful mainframes proved to be unpopular. Most banks went on to the de-centralised approach where mid-range and PCs were deployed as a fast and cheap fix.

BOC, having the advantage of overseas presence, was leading the computerization process by tapping their overseas branches resources and experience as these branches were progressing in tandem with their local environment over their international locations. In the process, BOC HO started the appeal of centralization of IS development but no mentioning of consolidation of processing centers or such concepts as yet. This stemmed from the fact that various processing centers at branches inside and outside China were already in an "independent" stage resulting in serious duplication of professional resources and compatibility problems. Coupled with the weak communications infrastructure, sharing of resources within the organization was impossible not to mention integration and standardization. With a wide variety of platforms, various localized in-house developed applications and third party software were already in the day-to-day operations, even centralization of IS development alone proved to be very difficult. For example, a new generation system on international settlements developed centrally in-house over a three-year period was to be standardized for all branches. However, it was not implemented throughout the branches due to various difficulties and other priorities.

Late 90's started the appeal of C & C of processing centers. Early plans of regionalization were released by almost all banks. However as these banks are having numerous branches all over the cities and counties of the provinces, the earlier rush to automate and modernize prevented a central, proper and long term planning. Consider 'The Four' alone, the total branches and sub-branches within China were around 120,000 with a combined workforce of around 1.5 million (Almanac 2002). With each province branch having thousands of sub-branches under them, it is quite common to find that most of them have numerous professional IT/IS teams to carry out their own computerization program. As a result, none of these banks can have a 'central' database. It is assumed that if you are having an account with a bank in one part of China, you are unable to access your account when you are in another part of the country although the presence of branches of the same bank is significant there.

With the introduction of internet and the rapid development of communication technology, up to end 2001, the state of computerisation in the various banks in China was quite impressive. Banks in China have more or less automated accounts keeping, mainly for retail customers such as saving accounts and fixed deposits, expanded their network infrastructure, introduced ATM, POS, phone banking, home banking and internet banking. Online banking has become a norm. However, the services are still not nationwide. Most of these services are only available in the centralized cities like Beijing and Shanghai and restricted to their account holders only. The fragmented phenomenon still prevailed and C & C of processing centers have yet to come. The situation overseas was not promising either. As late as 2001, the re-establishment of Malaysia's Branch of BOC in Kuala Lumpur as a locally registered bank after an absence of around 40 years saw the use of third party turnkey systems using AS/400 despite so many branches running the same platform and the intense C & C call.

In short, all banks in China were still in a de-centralized mode by the end of the era with major branches at each location having their own systems. It was also not uncommon to find smaller cities or branches in remote areas running their own systems using PCs and so on. Reporting back to their HO in Beijing or where their higher level in their hierarchy situated did not seem to be a problem to them as they utilized various methods of communication together with manual interventions. However, the speed of consolidation at the HO level was hampered especially when one or more branches did not submit the returns in time. Because of all these, there were various inherent problems besides the inefficiency of the system, the long floating periods, the control problems and the frauds, just to name a few. Banks in China also noted that it is hard for their HO to take back such control (database residence). As such arrangements give the head of major branches all the power to manipulate the data or customer information. Not too long ago, BOC wanted to migrate customer account information from a county (to be more specific, Kaiping County) to a bigger city data centre (its hierarchical superior), it was then discovered that more than USD 725 million of money was missing (Lague 2003). The case of BOC's Kaiping branch was thought to be just the tip of an iceberg in the whole of China's banking industry.

To compete with foreign banks already having presence in China, like HSBC or Citibank which have their account information residing in a single data center, banks in China are aware that they must get their own act together fast. One first thing is to put their bank's processing centers into one single or at most a few centers with contingency center arrangements. For example, BOC has dictated that top priority be accorded to the C & C at the expense of even stopping all development work. By the end of 2000, BOC succeeded in compressing the thousand over installations inside China into just 298 (Annual Report 2000).

More recently, it was observed that the State Council had decided, after a long debate, to issue instruction to all professional state banks, asking them to consolidate customer information and to form a single database image by 2006. The key word now in

China's banking industry is 'C & C'. One very typical example is the formation of the China UnionPay based in Shanghai to handle the debit cards (mainly ATM cards) for the entire banking sector. The company is basically owned by all the state banks, supervised by PBOC and is now working to become the credit card giant (like Visa and Master) in China.

Era Four: (2002 Onwards After the WTO Entry)

Year 2003 will be exciting for the banking industry in China. February 2003 saw the announcement on the opening up of RMB business to all foreign banks for all corporate customers by end of the year. Presently, only foreign customers or foreigner control or joint venture companies are allowed to have RMB accounts with foreign banks. At present, foreign banks are not allowed to issue credit cards in China. However, new rules allowing this are expected to be announced anytime now. With more and more emphasis being placed on regulating the banking industry, to be in line with the advanced economies, a new entity termed the China Banking Regulatory Commission, similar to the China Securities Regulatory Commission and independent of the PBOC will be formed. When this is completed, all existing PBOC's banking supervisory functions will be taken over by this new body and we shall be able to see that the supervisions of banking industry and securities industry, monetary policy, and the management of national reserve are under independent bodies. All these are expected to be materialized within the year.

Foreign banks besides stepping up their presence in China through establishment of their own networks, some are taking up strategic investment partners with the Chinese banks. For example, the HSBC acquired an eight per cent equity stake in the Bank of Shanghai for RMB 517.92 million (approx. USD 62.6 million) in cash (HSBC 2001). Citigroup took a five per cent stake for USD67 million in Shanghai Pudong Development Bank with option to raise the stake to as high as 25%, the current limit allowed by the Chinese authority (Holland and Beckett 2003). In fact, more and more type two Chinese banks are looking for foreign banks as strategic shareholders.

On the other hand, the push for C & C by the Chinese banks intensifies and various deadlines were set, amid some unrealistic. For example, by end of year 2001, the C & C result by BOC was 33 centers within China as compared to 298 achieved a year ago (Annual Report 2001). The target of C & C into 3 to 5 centers by May 2002 was revised to 5 centers by December 2002 at the same time. However, the revised target was not achieved with 11 centers still running at the end of 2002 (Annual Report 2002). As to the overseas branches, the target of C & C was 3 centers worldwide within 5 years. On February 20, 2003, customers in Singapore were informed that the data processing function of the ATM system at Singapore's processing center will be migrated to the Asia Pacific Information Technology Centre located in Hong Kong. Based on these and the above-mentioned situation in Kuala Lumpur, Malaysia, we can see that it is still quite a way to go for its C & C both inside and outside China.

Challenges and IS Strategies

Challenges Faced by Banks in China

At national level, the most important issues that China's regulators worry are the outflow of RMB, monetary stability and deposits controlled by foreign banks. However at the banks level, the challenges faced by the banks are different. From the control point of view, most of the customer information and account information are de-centralized at various branch levels, HO does not have the control. How to prevent branch staff from manipulating their accounts and related information, including the vital heavy nonperforming loans details, has become a massive task. The BOC Kaiping branch incidence mentioned is one good example. As foreign banks are coming in with advanced technology and nicely packaged banking products, accompanied by proper auditing, accounting and control procedures, banks in China are very worry about losing out deposit base to them. In the past, banks in China are giving out loans mainly based on policy instruction rather than on a commercial decision basis. This is why the nonperforming loan ratio is so high and the triangle debt scenario rampant in the whole banking industry. Foreign banks are coming in on commercial grounds and what they will get will be better quality loans. As all banks in China are owned more or less by the state, they have to listen to the State Council and to follow instructions carefully. As it is apparent that the State Council has provided the guiding principles – 'C & C by 2006', the challenges for banks include their own direction and strategies to meet the deadline.

From the regulator point of view, PBOC itself has started to consolidate in terms of administrative control since late 90's. Under the planning economy, PBOC used to have a sub-branch in each county that has banking activities. All these sub-branches were controlled by the branch in the city, and these branches were in turn controlled by the main branch in the province capital controlling these cities. Finally PBOC HO in Beijing controlled directly the 31 main branches. In mid 90's, there were about 600

branches in cities and more than 2000 sub-branches all over China. Starting from year 2002, PBOC consolidated into 9 regional branches, very similar to the Federal Reserve Bank in the United States.

In commercial world, to compete, one can do it on cost factor or on differentiation factor. But in today's banking environment, one can also compete on time to market. It is now 'fast' eats 'slow'. The old phrase of 'big' eats 'small' may not be necessarily true anymore, even though in banking business 'size matters' still prevail. The Chinese banks are big enough. However, they cannot act fast enough due to the complex and fragmented IT/IS structure.

The Strategies for Banks in China

The C & C by 2006 deadline is very much an IT/IS task. However, to implement such task, it is not just IT/IS matters. As such implementation affects the existing structure in so many ways, it bound to face lots of obstacles from users. It is quite common in China to hear that IT/IS staff do not understand business and banking is no exception. In fact, in banking, one finds that business operational unit staff knows little about IT/IS while IT/IS people do not bother to learn about business operations. From experience, the composition of the three basic efforts for IT/IS projects to succeed differs significantly from elsewhere. It is estimated that the composition hovers around 70% in co-ordination between business and IT/IS units; 20% in professional IT/IS contents and skills; and 10% in political handling. It would be of interest for a further research in this area as it is critical to the success of IT/IS projects. It is quite clear that the slow progress in C & C is not without its reasons. To overcome these, more effort than the norm must be spent on the co-ordination part.

As priority is being C & C, the development or acquisition of new products/services stands to almost a halt. This is far from desirable. Banks struggle to meet the target dates for various C & C deadlines must remember, meeting deadlines or fail to meet the deadlines as reported is just one issue, the WTO challenge from foreign banks entering or already in China cannot be ignored. In order not to dilute the technical resources, they should deploy non-technical but well-experienced banking professionals to work with outsiders by outsourcing their IT/IS requirements. This not only speed up the process, but is an opportune time to adopt best practices around the world built in available established software packages. As most existing application systems in use in the Chinese banks were developed by modeling the outdated business processes, a separate re-engineering exercise may not be required.

The Strategies for New Comers in China

The strategies for new comers whether local or foreign now become clearer. Establishment and rapid expansion of branch network is definitely not practical. From now till 2007, banks in China are willing to spend more money in IT/IS not just on C & C but also in anticipation of the increased demand in financial services related to the coming Beijing Olympic Games in year 2008 and the Shanghai Expo in year 2010. The amount is reported to reach US\$10.5 billion by then (Tech Watch 2003). With priority being placed on C & C and the slow progress so far, the opportunity for newcomers to deliver service excellence cannot be better. Without the burden of the fragmented IT/IS structure, new entrants both local and foreign stand to win with this window of opportunity. This also explains why the rush inside China to form local banks or joint venture banks, including upgrading from the "Xin Yong She" (credit union and co-operatives) by enticing foreign partners as share-holders. Foreign banks armed with their sophisticated and proven systems, especially in the area of customer services with risk control measures are having an edge over the new local banks. The only disadvantage they faced is constraints from the regulators which are easing, though slowly, after the entry into the WTO with the committed deadlines. China has well over US\$1 trillions in household savings, almost all of it lying fallow in 'The Four'. A mere US\$16 billions is in mutual funds and if the Chinese introduce funded pension schemes, this should grow to US\$400 billions by 2010 (Economist 2003). However, one must always remember that the commitment by the Chinese authority to open up RMB business is still different from the convertibility of the RMB. No date was set for the latter.

In a most recent internal research report by BOC, quoted by Zaobao (2003), it is predicted that establishment of brick and mortar branches will be concentrated on the strategic cities only. Internet banking and other means of online network banking will be the channels of delivery as the communication infrastructure proved to be up to standard. Fee-based and card-based businesses will be the major focus for the new comers. On the other hand, RMB business will form a major portion of the businesses rather than foreign exchange activities even for foreign banks.

Success in entering China's banking industry depends very much on two key factors, the technical know-how and the business know-who. One interesting practice, uncommon to others, though not quoted in available documents but observed by

practitioners, is that all Chinese banks must submit their computerization program to PBOC for vetting before any project implementation can take place. For example, in terms of IT infrastructure, they have come to a conclusion that a four-layer components model would be desirable. These four layers are channel and delivery, network and routing infrastructure, products and services applications, and management control and audit requirements. Outsiders have proven technological systems while insiders have the know-whos. A combination of both is essential in order to win. In this respect, the opportunities now for IT/IS vendors and related service providers cannot be better.

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