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# Does IT Payoff? Strategies of Two Banking Giants

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# DOES IT PAYOFF?

## STRATEGIES OF TWO BANKING GIANTS

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### Abstract

*Banks have long been among the most intensive users of information technology (IT). Globalization has further accentuated banks' reliance on IT, leading to further increase in their IT investment. It is not all that clear, however, whether these investments pay off. This case presents the complexities involved in measuring IT investment by comparing and contrasting the IT strategies of two of the world's largest banks: HSBC and Citigroup. Will the IT investment strategies adopted by HSBC and Citigroup enhance their operational efficiency or strategic positions? Which of the two banks will have higher returns on their IT investments in the long run? How should they measure such returns?*

**Keywords:** banking, IT evaluation, IT alignment, IS investment

## **Introduction**

*You can see the computer age everywhere but in productivity statistics.*

- Robert Solow (1987)

In the previous 20 years, there had been a debate concerning whether or not IT paid off in the long run. While some questioned the positive contribution of IT to productivity, others attributed the so-called IT paradox to measurement methodology and to the lack of measurable data, such as increased quality, variety, customer service, speed and responsiveness. To make matters worse, a controversial article published in Harvard Business Review argued that, as IT was being commoditized, the opportunities of gaining IT-based competitive advantages were rapidly disappearing (Carr, 2003). If this was true, then companies should spend less, wait longer to invest in more matured technologies and should be more careful about the costs of IT investments.

Financial services firms had long been among the most intensive users of information technology (IT), starting in 1867, when the stock ticker began bringing current Wall Street information to Main Street. Starting in the 1980s, the development of the Internet and telecommunication technologies had further facilitated the development of new banking products and introduced alternative delivery and distribution channels. It was estimated that IT spending accounted for 20-25% of non-interest costs and around 6% of annual revenue for financial institutions (Kauffman and Weber 2002). The global banking industry was expected to spend US\$241.2 billion in 2007 on IT, including hardware, software, IT services, internal services and telecommunications (Moskalyuk 2007). Despite these behemoth investments, it is not all that clear whether IT investment pays off for banks. It is also not clear whether these investments would improve just the operational efficiency of banks or if they would also enhance their strategic positioning and sustainable competitive advantage. This case tries to shed light on these two important issues by evaluating the IT investments at HSBC and Citigroup, two large global banks of similar size but with different IT strategies. Would the IT investment strategies adopted by HSBC and Citigroup enable them to improve their financial performance in the future? Which of the two banks would see higher returns on their IT investments in the long run? How should they measure such returns?

## **Global Banking Industry**

Three tectonic forces had reshaped the strategic landscape of the financial industry in the previous two decades: deregulation, the advent of new technologies, and globalization of business. Deregulation, which had started in the 1980s with the removal of many important regulatory barriers to international banking, allowed banks to expand the scope of their operations globally. The advent of the internet and advanced telecommunication technologies allowed financial institutions to operate more easily and cost-effectively across borders. Finally, while globalization of business had led to a surge in demand for international financial services, it also intensified competition, leading to declining interest margins and fee incomes.<sup>1</sup>

In the face of such sweeping forces, banks were under pressure to find ways to reposition their strategic posture through consolidation, merger and acquisition; reduce cost and improve operational efficiency; deal with an increasingly vigilant regulatory body worried about money laundering and terrorism; and align their strategies to meet customers' ever-increasing needs and demands.

### ***Consolidation***

In the US, industry consolidation started in the 1980s after the laws and regulations restricting banks to operate exclusively within the state of origin were lifted. In 2007, the ten largest US commercial banks already controlled 49% of the country's banking assets, compared to just 29% in the previous decade. Similarly, larger institutions were created as a result of cross-border mergers and acquisitions across the globe. The assets of the largest 1,000 global banks reached US\$63.8 trillion by the end of 2005, having nearly doubled in ten years. Banks used

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<sup>1</sup> For example, Deloitte reported that net interest margins of the 70 largest European banks fell from 2.0% in 2004 to approximately 1.8% in 2006. Non-interest fee growth rates for US banks which topped out in the late 1990s at more than 20% also declined to just 4.8% by the end of 2005.

consolidation to rationalize their operations and lower costs. For example, the high fixed costs of maintaining and operating a merged bank's IT systems (such as credit card and account management systems) could be spread over more users. Mergers and acquisitions also allowed banks to penetrate new markets and to introduce innovative products, e.g. global banks were able to access huge populations in China, India and elsewhere in this way. Deloitte estimated that the number of middle-class consumers in India would reach 250 million by 2010 with 22 million new customers coming into the market each year. Similarly, the credit card market in China could reach 75 million by 2010 (Deloitte 2007).

### ***Offshoring***

In the 2000s, offshoring continued to grow in importance as a way to lower costs and tap into a skilled global workforce. It was estimated that banks' offshore IT spending would increase from 6% of the industry's US\$44 billion total annual IT budget to 30% by 2010 (Quittner 2006). Cost-saving was the main motive for offshoring: Deloitte Research estimated that nearly half of all offshoring operations could save more than 40% of the cost of running the same operation onshore (Deloitte 2005). This trend was expected to continue. In addition to the lower labor cost of offshoring, banks also benefited from a skilled and well-educated workforce available overseas to improve their customer services. More than half of the top 50 US financial institutions used offshore IT consulting services in 2006 and nearly 20% more planned to start using them (Quittner 2006).

### ***Re-regulation***

Banks were facing the growing burden of complying with tough and complicated government rules and regulations ranging from Sarbanes-Oxley to anti-laundersing regulations. As evidenced by several high-profile enforcement actions, banks realized the importance of complying with anti-laundersing regulations to avoid potential financial risks and damage to their reputations. Moreover, as regulators around the world constantly raised the bar by adopting ever more stringent requirements and coordinating with each other in their supervision of far-flung global institutions, compliance became increasingly complex and challenging. Multifactor authentication was put on the top of banks' technology priority list in 2007 (Eckenrode 2007), calling for tight business process management, event-detection for monitoring potential fraudulent activities, notifying legitimate customers of these activities and taking immediate action to prevent fraudsters from succeeding.

### ***Changing Customer Needs***

Facing intensified competition, banks had to put customer needs at the core of their strategies. For example, while drastic cost cutting eliminated many bank branches during the 1990s, many banks were re-expanding their branch networks across the globe. US banks opened 3,459 new branches in 2006 while closing 1,476 locations, a ratio of 2.3 openings to each closing, representing significant expansion compared to the open-to-close ratios of 1.5 in 2003 and 1.8 in 2004. At the same time, global banks had to develop branch strategies tailored to the new markets they entered, focusing on the usage of self-service channels, new branch formats, and the increasingly competitive retail banking environment (Deloitte 2007). In general, there was a call for financial institutions to motivate staff on both the customer-related and financial metrics in order to win the battle for growth (PricewaterhouseCoopers 2006).

HSBC and Citigroup, two of the world's largest financial institutions were trying to grapple with these significant challenges. Of particular interest was the way they were investing in IT as a means to improving the provision and delivery of their products and services across the globe, cutting costs, and entrenching their strategic positions [See Appendix 1 for comparable statistics]. The efficacy of their IT spending was of great importance considering that the two companies' combined IT annual spending was over US\$8 billion in 2006. Were they spending their money wisely? And if they did, which one of these two banking giants had the better IT strategy?

## **HSBC Holdings Plc**

The Hongkong and Shanghai Banking Corporation Limited, the original predecessor of the HSBC Group, was founded by Thomas Sutherland in Hong Kong in 1865, with offices in London and Shanghai and an agency in San Francisco. In 1991, HSBC Holdings started its shares trading on the London and Hong Kong stock exchanges,

followed by listings in New York, Paris and Bermuda. In 2007, it had approximately 200,000 shareholders in some 100 countries and territories.

Over the years, the HSBC Group, headquartered in London, had developed into one of the largest banking and financial institutions in the world, with over 9,500 offices in almost every corner of the globe. Over 310,000 employees provided services to around 125 million customers in 76 countries and territories, with over 29 million e-customers. The company carried out its operations through different subsidiaries, including HSBC Bank Plc, HSBC Bank USA, HSBC Latin America, HSBC Mexico and the Hongkong and Shanghai Banking Corporation.

HSBC's operational philosophy was based on outstanding customer service, effective and efficient operations, strong capital and liquidity, a prudent lending policy and strict expense discipline. Similarly, HSBC's key business values emphasized integrity at all levels, truth and fair dealing, hands-on management, minimum bureaucracy, fast decision making and implementation, putting team interests ahead of individuals', authority delegation with accountability, compliance with laws and regulations, and good reputation (HSBC 2006).

Between 1998 and 2003, HSBC Holdings followed the strategy of "Managing for Value", with the objective of providing a satisfactory return on shareholder capital. In 1999, it created its global brand, HSBC, and the company's hexagonal logo, and launched a marketing campaign to be "your world of financial services". In 2002, it launched a very successful campaign to be "the world's local bank" with the view to it reaffirming its global outlook and differentiating its brand from those of its competitors.

Later, the company launched a new strategic plan called "Managing for Growth", seeking to become the world's leading financial services company, striving to be "preferred, admired and dynamic" and to be "recognized for giving the customer a fair deal" (HSBC 2007). There were eight strategic imperatives in this plan, focusing on brand, personal financial services, consumer finance, commercial banking, corporate, investment banking and markets, private banking, people, and Total Shareholder Return (TSR).

In HSBC's 2006 Annual Report, seven strategic priorities called "global pillars" were identified to guide the company's strategic initiatives in 2007 and 2008:

- Expanding their global reach more effectively for each country, distribution channel, customer group and global business
- Enhancing the banking experience so that customers would consider HSBC as the best place to bank
- Developing HSBC's brand
- Instituting employment policies that were progressive, perceptive, responsive, respectful and fair
- Growing the business with a focus on deposit-taking and achieving the right balance between risk and reward
- Using technology more effectively to make it easier for customers to do business with the group
- Allocating responsibility and delegating authority for delivery of the above initiatives to managers at all levels.

### ***IT Investment Strategy***

*We do business all around the world because of our technology, which supports our promise to be the world's local bank. We are already an IT leader in some spaces, particularly the internet and customer recognition.*

- Ken Harvey, group CIO for HSBC (Banks 2006)

*Our information technology strategy is based on harnessing the power of new technology to provide new and better services for our customers and improving our own operating efficiency. As a global banking and financial services organization, the challenge of information technology is to link the different parts of the Group more closely together.*

- HSBC (1996) Annual Report

As "the world's local bank", HSBC promoted rapid decision-making and local accountability; its subsidiaries were locally incorporated banks, each with its own balance sheet. The head office was only responsible for managing essential functions, such as human resource management, strategic planning, legal and administrative issues and financial planning and control. The HSBC Universal Banking System (HUB), the company's platform for running IT applications and a multifaceted risk and credit control system, was located in London. HUB was deployed in 63

countries to manage and implement the HSBC Group's projects and provide consultation services to meet local needs. HUB was responsible for planning, coordinating and liaising with group entities.

HSBC had regional technology services consisting of different departments meeting local technology needs [see Appendix 2]. For example, HSBC Technology Services Asia-Pacific was made up of over 30 major departments, with each department responsible for a distinct area of system development. They were grouped by types of applications and by end-users served:

- IT Development was responsible for the design and development of personal finance services and commercial banking as well as the deployment of enterprise data.
- IT Operations was made up of computer operations, infrastructure and telecommunication teams.
- IT General covered IT functional areas including IT architecture, information security, IT quality, and finance and planning.
- Corporate, Investment Banking and Markets (CIBM) IT HK was responsible for supporting and overseeing IT activities for more than 20 Asia-Pacific countries and territories.

### **Operational Investments**

In 1996, HSBC opened its first offshore processing centre in Guangzhou, China. Thanks to a continued governance commitment from top management and from employees with a wide breadth of expertise, the company established IT and back-office operations in ten Asian countries in 2002. By April 2007, there were more than 18,000 employees across Asia catering to the divisions in North America, Europe, Asia-Pacific and the Middle East (Vashistha 2007). The Global Process Team, as a focused and dedicated corporate-governance body, continually worked to meet strategic and tactical objectives.

In 2002, the company set up HSBC Global Technology (GLT) as part of the HSBC Group in Pune, India. Its mission was to provide timely and cost-efficient quality technology solutions and support to the HSBC Group. Following this successful establishment of GLT in India, HSBC expanded and established a Global Technology Centre in China (GLTc) and another in Brazil (GLTb).

HSBC took on more IT staff to support service-improvement projects and online banking. Staff costs fell by US\$30 million due to a reduction in the full-time equivalent headcount, as back-office processing functions were transferred to HSBC's Group Service Centers in India and China. By the end of 2002, there were 1.2 million customers registered for personal internet banking, with a further 177,000 customers registered for TV banking.

In 2003, the company completed the merger of HSBC and HSBC Finance Corporation's technology services teams in North America, making possible the coordination of comprehensive global credit card technology. HSBC Finance Corporation's use of HSBC's Group Service Centers was expanded, leading to an annual savings in excess of US\$67 million. In spite of this phenomenal savings, the creation of the North American technology company cost over US\$1 billion.

### **Strategic Investments**

Facing the Y2K problem, the company adopted the conformity requirements issued by the British Standards Institution. In 1998, it completed the testing of all of its computer systems, evaluation of non-IT systems and drawing-up of group-wide business contingency plans. As a result, the company came through the millennium transition smoothly, with no problems happening in any of the 76 countries and territories in which it operated. Minor problems in the UK with a small quantity of externally supplied software were remedied quickly.

In July 1998, HSBC opened a new dealing room employing the latest technologies to cope with increased business volumes and to facilitate co-ordination between HSBC Markets, HSBC Securities and HSBC Futures. Later, it initiated several e-commerce projects to achieve its "Manage for Value" strategy in terms of customer services. Working with Compaq Computer, the company launched an internet payment gateway to allow merchants to authorize and accept credit card payments securely. It launched mobile banking in September 1999 to allow customers to do daily banking and share dealing by mobile phone. Later that year, together with Cable and Wireless HKT, the bank provided an online service to enable merchants to set up online storefronts.

In October 1999, Heng Seng Bank, an HSBC subsidiary, launched Asia's first Mondex card, an electronic wallet storing the money value on a chip, developed through a joint venture between HSBC and MasterCard International.

Around the same time, Heng Seng Bank and Hewlett-Packard launched the Secure NetPayment Solution as an online payment gateway for credit card merchants.

In the late 1990s, HSBC cooperated with IBM to develop the Interactive Financial Services (IFS) system, integrating its existing capability with the full spectrum of its customers' technologies, including the internet, mobile phones and other wireless modes of data transmission. It also launched the UK's first nationally available TV banking service via Sky digital satellite, attracting over 126,000 registered customers by the end of 2000.

HSBC recognized the importance of the internet and made some strategic investments, including the creation of a joint venture, iBusinessCorporation.com, with Heng Seng Bank and Cheung Kong Limited and Hutchison Whampoa Limited, two of Hong Kong's largest conglomerates.

In 2000, the company started to develop hsbc.com as a brand name and portal for providing customer services to both retail customers and small- and medium-sized enterprises. By the end of the year, its businesses operated online in Brazil, Canada, Hong Kong, the UK, Singapore and the US.

Merrill Lynch HSBC, a joint venture between HSBC and Merrill Lynch, launched an online broking and banking service for affluent customers in Canada and Australia. Meanwhile, in France and Brazil, HSBC launched banking by mobile phone using wireless application protocol technology.

In 2000, the company spent over US\$2 billion on technology including dotcom initiatives. In 2001, it launched a new generation hsbc.com centre, providing a number of new major customer services. By the end of that year, the number of e-banking customers had more than doubled to over three million. HSBC websites were visited by customers in over 150 countries and territories in 2001, with an annual total of 76,650,000 site visits.

A major e-initiative in 2001 was the announcement of a strategic agreement between HSBC and Yahoo! Inc to deliver "Yahoo! PayDirect from HSBC", a co-branded person-to-person payment system allowing customers with an email address and a bank account (or credit card) to securely transfer money to another party. They established an operation centre in Buffalo, New York and successfully launched the system in late 2001. Further investment in customer relationship management (CRM) capacity enabled HSBC to provide additional intelligent services to customers.

In 2001, HSBC's second-generation strategic internet banking platform, hsbc.com, launched its first business applications. The hsbc.com program was designed to provide a common presentation and browser capability to offer all of HSBC's services to any of its customers. It was planned to integrate all the key systems with hsbc.com within five years. HSBC spent US\$164 million on development costs for hsbc.com in 2001 alone.

HSBCnet, the group's new e-banking platform for corporate and mid-market customers in Asia Pacific, Europe, North America and the Middle East, was launched in 2004 to provide a range of transaction banking and treasury services. In commercial banking, the number of customers registered for internet banking increased by 43%. The continued mitigation of processing activities from other regions to the group service centers entailed additional staff and IT infrastructure costs. The increase in IT costs in 2004 also reflected development of HSBC Finance Corporation's WHIRL credit card system for application in the UK and installation of HSBC's universal banking system, HUB, in France.

In 2005, the US Technology Centre incurred US\$1.1 billion in expenses, 18% higher than the previous year due to the increased activity supporting both increased global IT requirements and the development of new capabilities in Corporate, Investment Banking and Markets. Customers responded favorably to the enhanced online banking service, with a 24% increase in customer numbers and a 116% increase in online transaction volumes. In the same year, the company launched its direct banking and savings scheme, HSBC Direct, in the US, reaching 343,000 customers with a total of US\$7.2 billion in deposits. The company also implemented a 2G website with the plan to integrate 80% of its websites by the end of 2007. 2G Innovative Business Solutions offered real-time sales campaign capabilities with user-related images, allowing the site to recognize customers and provide relevant personalized content and pre-filled applications. HSBC internet sales were up 25% in 2006, with over 250,000 new online savings accounts, raising US\$ 5.7 billion.

In 2006, HSBC introduced 2,300 advanced self-service terminals, adding 13 countries to HSBCnet, its strategic internet platform for corporate and institutional sales. HSBC Mexico became the first bank to offer pre-approved online mortgages.

In Personal Finance Services, HSBC continuously updated its websites to offer additional features, personalized content and improved customer accessibility. The new technologies gave the company enhanced targeting and analytical insights to better meet customer needs and drive sales growth, leading to a 40% increase in personal customer numbers to 16 million and a 55% annual increase in online sales volumes.

## Citigroup

First National Bank of the City of New York and National City Bank of New York, the predecessors of the Citigroup, were both founded in the 19<sup>th</sup> century. They merged in 1955 to become First National City Bank to maintain dominance in the New York City market. The name Citibank was adopted in 1975. Another important merger happened in 1998 when Citicorp (the parent of Citibank) merged with Travelers Group. Travelers Group was also the result of a series of mergers and acquisitions by Travelers, a diversified financial service provider based in Hartford, Connecticut. The motivation for this merger was cross-selling within the context of a life-cycle model. Travelers wanted access to Citibank's global consumer base, while Citibank wanted additional financial products that Travelers could offer (Rapp, 2002).

Citigroup and its predecessor companies followed the “diversified financial services business” model, first conceived by Prudential in the late 1970s (Wikipedia 2007). It was believed that different types of companies, such as stock brokers, banks and insurance companies, should be conglomerated because each of these businesses would do better or worse at different times of the business cycle; hence, owning all of them could balance things out and create, in theory, less earnings volatility. Additionally, because customers usually used different kinds of financial products, it was more cost-effective to cross-sell these products in one go than to sell them separately.

Citigroup was divided into three major business groups:

- The Global Consumer Group focused on three business areas: cards, consumer finance and retail banking. Citigroup was the largest provider of credit cards in the world, the Consumer Finance Division (called CitiFinancial) was the largest consumer finance company in the world, while Citibank was striving to be one of largest retail banks.
- The Global Wealth Management division, consisting of the Citigroup Private Bank, Smith Barney, and Citigroup Investment Research, provided banking and investment services to high-net-worth individuals and private institutions. The corporate and investment banking division, which included Global Markets, Global Banking and Global Transaction Services, handled large corporate cash management, trade, lending and investment banking services.
- Citigroup Alternative Investments offered a broad range of alternative investments, including hedge funds, private equity, credit structures, real estate and other special investment opportunities.

Citigroup identified four competitive advantages over any other financial services company: global presence and reach, valuable brand name, scale and efficiency and the wide range of products offered. In Citigroup's 2006 Annual Report, the company also identified five strategic priorities for 2006 and beyond:

- Expanding distribution: To penetrate new markets and deepen presence in existing markets around the world, Citigroup would accelerate the pace of branch openings, expand its capital markets businesses, including brokerage businesses and electronic trading capabilities, and increase the number of customers in the US.
- Transferring expertise: To manage Citigroup as one company, better integration of products and services was needed in order to improve customer service by providing insightful and comprehensive solutions.
- Investing in people and technology: Better system integration across the company was needed in order to allow clients' access and service, regardless of the type or location of their business. The company also needed to attract and develop the best talent by emphasizing long-term training and career development, and continue being one of the most favored companies to work for.
- Allocating capital to maximize returns: Citigroup would continue to rigorously evaluate the use of capital in order to move it to higher return and growth opportunities.
- Embracing shared responsibilities: Citigroup would further build on its three Shared Responsibilities – those of its customers, employees and franchise - as the essential foundation for the growth of its franchise.



## **IT Investment Strategy**

*One of our goals is to have more common systems and standards across Citigroup so clients can transact with us more easily, no matter what business is serving them or where they're conducting business.*

- Chunk Prince, CEO of Citigroup (Citigroup Annual Report 2005)

Unlike HSBC, Citigroup took an integrated approach to their IT governance worldwide. Citigroup used a combination of packaged and customized software to develop group-wide platforms to enhance the organizational strengths of its extensive international branch network and to facilitate knowledge exchange across borders. While taking a global approach, Citigroup also made an effort to understand local conditions. The only truly global requirements were that a local system was capable of being efficiently linked with Citigroup's existing systems and that adequate security arrangements could be made.

Operations & Technology provided global support to Citi's business, and it had two key technology groups [see Appendix 3]:

- Corporate and Investment Banking Technology was responsible for analyzing business requirements, providing support and solutions to businesses, developing and managing applications and ensuring application availability and timely problem resolution to cope with the dynamic investment banking technology environment.
- Citi Technology Infrastructure (CTI) was responsible for managing all forms of internal infrastructure products, including PCs, telephony, servers, messaging, system security, structured cabling, remote access and network services and mainframe-based application processing. Within CTI, there was a group based in Los Angeles to assist in operations in each country in terms of meeting local standards and ensuring consistency with Citi's system. In each country, Citi built a systems network managed by a regional computer centre.

The initiation of IT projects often began with a local business unit. Since the business unit was charged the costs of system development, a manager would not undertake or approach an IT project unless bottom-line benefits could be anticipated. All outside vendors were required to comply with Citi's rules and protocols with respect to connecting to its system.

In the words of Charles Prince, CEO of Citigroup, the objectives of using technology was to "better serve clients and lower costs".

## **Operational Investments**

Citigroup used a combination of packaged and customized software to enhance the organizational strengths of its extensive international branch network and to capture the expert knowledge that was scattered across its operations in many different countries (Rapp 2002). The company pursued IT outsourcing only in a very limited way and not for strategic initiatives. One such example was the US\$750 million project in the mid-1990s to fully integrate the bank's 60,000 PCs and 2,000 LANs worldwide into a common global network and systems infrastructure (Rapp 2002). The company controlled the system architecture and the tools used, while Digital Equipment Corporation and EDS took care of implementation.

In 1997, the group launched e-Citi as the business unit of the group to pioneer electronic financial services and e-commerce solutions for businesses, governments and consumers. Partnering with other Citigroup businesses, e-Citi was a centralized approach to e-commerce with the objective of creating innovative products and services with the assurance of trust, privacy and security inherent to the Citigroup brand. Between 1997 and 1999, over US\$1 billion was spent by Citigroup on e-Citi.

Citigroup also launched a program in 1997 to integrate Citibank systems into a standard global platform, while at the same time coping with the demands from the mergers, the introduction of the new euro currency and reprogramming required for the Y2K problem. In 1998, capitalizing on Salomon Smith Barney's ongoing commitment to be a technology leader among full-service brokerage firms, the group expanded its capabilities to provide clients with round-the-clock account information, research and email exchange with their financial consultants. Additionally, it began to develop an internet-based administrative platform to support development in pension and mutual fund areas to make it easier for clients to do business with the company.

In 1998, the group launched e-Citi Commerce Solutions, offering electronic bill payment presentment, authentication, and certification to big companies and government organizations. Back in 1998, it was the only bank offering round-the-clock telephone access in many countries, while its PC banking product was the highest-rated by SmartMoney magazine.

Citigroup's strategy was to use technology to provide customers with superior service at lower costs (Citigroup Annual Report 2006). In 2006, it made strategic investment in an electronic communications network that provided state-of-the-art technology for immediate access to liquidity. It also reduced the number of its data centers by 20% and consolidated its call centers for greater efficiency.

### **Strategic Investments**

In an alliance with Netscape, Citigroup provided financial advice, news, research reports and interactive investment tools to its customers in the late 1990s, around the same time that it started offering online banking, insurance and mortgage services. Later, it made other strategic alliances with AOL and Oracle. The company also introduced a business-to-business e-commerce system called Citibank Commerce, which was initially available in the Asia Pacific region. This was an internet corporate banking service that allowed clients to order products, monitor order status and complete settlement and reconciliation processes. It also started a trial service with Mobile One in Singapore, allowing clients to open accounts and transfer money using mobile phones.

In 2000, the company accelerated its global growth in its credit card business through ten strategic acquisitions, reaching 100 million accounts. The technology platforms on which these accounts were managed provided a best-in-industry cost position and efficiently leveraged the company's global expansion. The power of its technology platforms was further demonstrated by the rapid integration of the CitiFinancial system with the 750 former associates' branches in the US in the same year.

In 2000, with more than 800 million accounts online, Citigroup adopted a strategy called "Citi on the Net" as an effort to deliver convenience and value to its clients and improve efficiency. New internet units, including e-Commerce, e-Business and e-Capital Markets, were created to empower the business lines, while the Internet Operating Group was created to drive corporate internet strategy and coordinate efforts across different divisions. Citi.com was created for consumers as a portal offering an integrated set of consumer services in the areas of banking, brokerage and insurance. With the introduction of MyCiti.com, the company became the first global financial institution to offer account aggregation.<sup>2</sup> In 2001, it formed a strategic alliance with the Microsoft Network and AOL to develop different online products. The business unit responsible for developing and implementing Global Consumer Internet financial service products and e-commerce solutions reported a loss of US\$110 million in 1999, US\$160 million in 2000 and US\$77 million in 2001.

In 2002, Citigroup launched new foreign exchange products and enhanced Citigroup Direct, the flagship online service for fixed-income institutional customers. The same year, Global Transaction Services was created to integrate Cash, Trade and Treasury Services and Global Securities Services. The group also upgraded CitiDirect Online Banking, making it available in 90 countries. CitiDirect, processing more than 39 million transactions around the world in 2004, was named "Best of the Web" for 2003 by Forbes.com in the financial services category.

In 2004, Citigroup acquired Lava Trading, the leader in electronic execution and sell-side order management systems, enabling the group to offer institutional clients the most sophisticated and robust electronic system on the market. By leveraging the technology from its acquisitions, the company expanded its US electronic trading capabilities and tripled its client number in 2005. By developing a joint venture with Shanghai Pudong Development Bank in 2004, Citigroup was able to use its US cards technology to issue the first dual-currency card in China in 2005. As international expansion was one of the strategic goals of the company, it continued making targeted acquisitions. In 2006 it acquired Egg Banking Plc, the world's largest pure online bank and one of the UK's leading online financial services providers.

In 2006, Citigroup launched Citibank Direct, which successfully brought in nearly US\$10 billion in deposits in the US in the first nine months. Citibank Direct aimed to expand its US and global retail banking customer base by

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<sup>2</sup> Account aggregation is a method of compiling information from different accounts which may include bank accounts, credit card accounts and investment accounts.

offering high-yield e-savings accounts, with the ultimate objective of offering all Citibank products at more attractive internet rates. It also launched biometric credit card services in Singapore and biometric ATMs for microfinance customers in India, allowing customers to do business with the touch of a finger. The company became the first financial institution to implement enhanced authentication globally for sensitive transactions over the Internet and other online channels.

## Conclusion

Over the past ten years, HSBC and Citigroup have developed into influential global financial institutions. Both banks have committed to using IT to gain competitive advantages, and both have invested significantly in their IT projects. However, the IT projects that HSBC and Citigroup have invested in have been different, which may reflect their different approaches to IT investment. How does HSBC's IT strategy differ from that of Citigroup's? Which of these two banks is cleverer in its IT investment strategy? How do you measure the return of their IT investments?

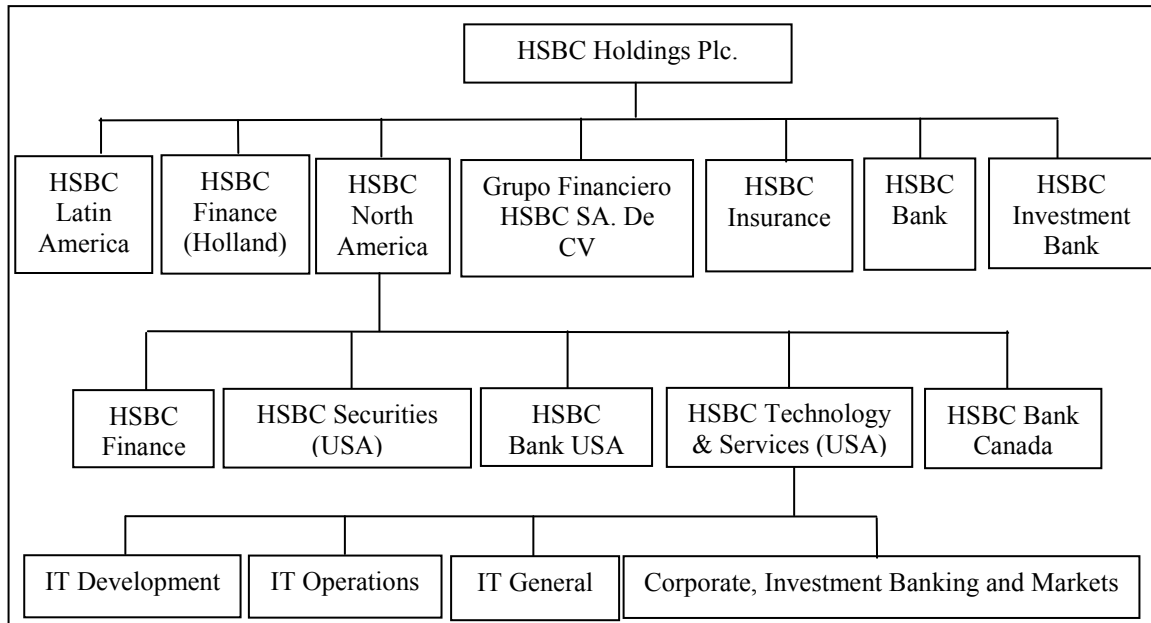
## Appendix 1: Comparable Statistics - HSBC versus Citigroup

Item	Year	HSBC	Citigroup
Market Capitalization (In US\$ bn)	1997	67	17.0
	1998	70	23.5
	1999	118	40.3
	2000	136	64.4
	2001	109	79.7
	2002	105	180.9
	2003	172	250.3
	2004	190	20.3
	2005	182	241.7
	2006	212	269.1
Total Assets (In US\$ m)	1997	471,686	755,167
	1998	483,128	740,336
	1999	569,139	795,584
	2000	680,076	902,201
	2001	698,312	1,051,450
	2002	763,565	1,300,000
	2003	1,012,023	1,264,032
	2004	1,266,365	1,484,101
	2005	1,406,944	1,494,037
	2006	1,712,627	1,884,318
Net Profit (In US\$ m)	1997	3,355	6,705
	1998	3,934	5,807
	1999	4,889	9,994
	2000	6,236	13,519
	2001	4,911	14,284
	2002	4,900	12,682
	2003	7,231	17,058
	2004	12,506	16,054
	2005	14,703	19,805
	2006	16,358	21,538

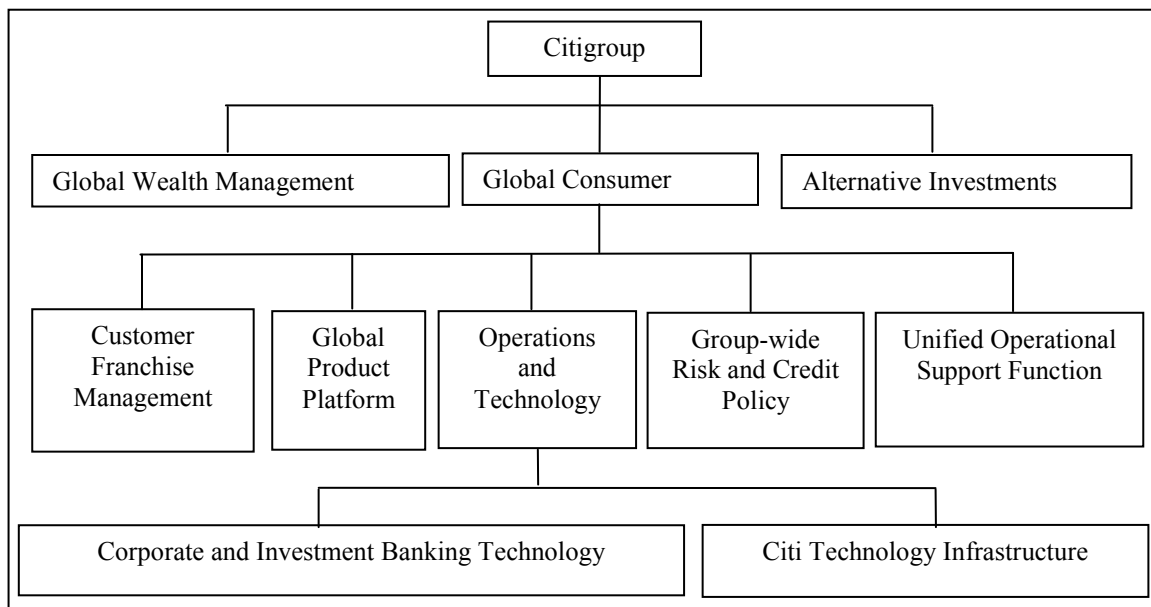
Item	Year	HSBC	Citigroup
Number of Employees	1997	132,285	170,000
	1998	136,433	170,000
	1999	154,000	180,000
	2000	172,000	230,000
	2001	180,000	268,000
	2002	192,000	250,000
	2003	232,000	275,000
	2004	253,000	290,332
	2005	284,000	299,938
	2006	312,000	325,000
IT Expenditure (in US\$m)	1997	1,500	1,930
	1998	1,700	3,500
	1999	1,750	3,780
	2000	2,050	3,767
	2001	2,450	3,068
	2002	2,500	3,139
	2003	2,600	3,414
	2004	2,700	3,518
	2005	4,413	3,524
	2006	4,810	3,762

**Sources:** HSBC Annual Report 1997-2006, Citigroup Annual Report and Annual Diversity Report 1997-2006, HSBC website (company presentations) and Citigroup's Form10-K available on the US government official website.

## Appendix 2: Simplified Organizational Chart of HSBC Holdings Plc.



## Appendix 3: Simplified Organizational Chart of Citigroup



## References

- Banks, J. "Only Connect," *IT Leadership*, 1 May 2006, <http://www.the-itleader.com/features/feature437/>.  
 Carr, N.G. "IT doesn't matter," *HBR AT Large*, May, 2003, pp. 41-49.  
 Citigroup *Annual Report*, Citigroup, 1997 – 2006.  
 Citigroup *Diversity Report*, Citigroup, 1997-2006.  
 Deloitte *Global Financial Services Offshoring: Scaling the Heights*, Deloitte Touche Tohmatsu, 2005.

- Deloitte *Global Banking Industry Outlook: Issues on the Horizon 2007*, Deloitte Touche Tohmatsu, 2007.
- Eckenrode, J. "2007 Bank Technology Forecast: Challenges and Opportunities," *Bank Systems and Technology*, 1<sup>st</sup> February 2007.
- HSBC "HSBC Holdings Plc: Presentation to Financial Stability Institute", HSBC, 19 June 2006.
- HSBC *Corporate Strategy*, 2007, HSBC, [http://www.hsbc.com/hsbc/investor\\_centre/strategy](http://www.hsbc.com/hsbc/investor_centre/strategy).
- HSBC *Annual Report*, 1997-2006.
- Kauffman, R.J., and Weber, B.W. "Introduction to the Special Issue on Advances in Research on Information Technologies in the Financial Services Industry," *Journal of Organizational Computing and Electronic Commerce* (12:1), 2002, pp. 1-4.
- Moskalyuk, A. "Banking Industry IT Spending to Reach \$241.2 bln in 2007", *DZNet Research*, 5<sup>th</sup> March 2007, <http://blogs.zdnet.com/ITFacts/?p=12508>.
- Rapp, W.V. *Information Technology Strategies: How Leading Firms Use IT to Gain an Advantage*, Oxford University Press, Oxford, 2002.
- Quittner, J. "Beyond IT: Outsourcers Expand Services," *American Banker* (171:216), 9 November 2006, pp. 26-28.
- Vashistha, A. "What is the weakest link in global outsourcing?" *InformationWeek's Optimizer* (66), April 2007.
- Wikipedia "Citigroup", 2007, [http://en.wikipedia.org/wiki/Citigroup#Business\\_model](http://en.wikipedia.org/wiki/Citigroup#Business_model).