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EXECUTIVE OVERVIEW

Global Banking Information Services Forecast

1997 - 2002

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Global Banking Information Services Forecast

1997-2002

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Dear Colleague:

Enclosed is your copy of INPUT's report, *Global Banking Information Services Forecast, 1997 - 2002*. It is a publication of INPUT's Global Banking Program.

The forecasts developed in this report are based on more than 500 interviews with banks conducted in 1996 in conjunction with the preparation of reports for the Global Banking Program. More than 100 contacts and interviews with IT vendors also contributed to these forecasts.

I am sure you will find *Global Banking Information Services Forecast, 1997 - 2002* to be both informative and useful. Please do not hesitate to contact me if you have any questions or comments.

Sincerely yours,

John McGann
Principal Consultant



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Global Banking Information Services Forecast

1997-2002

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Abstract

This report gives the results of the fourth strategic assessment project of INPUT's 1996 Global Banking Program. It provides a forecast of expenditures for information services in banking from 1997 to 2002. The forecast covers noncaptive expenditures by banks.

The report also reviews the business and information technology forces that will drive expenditures for information services in banking. The major driver of growth in information services will be the use of electronic banking in retail and corporate electronic banking services, as noted in this report.

The forecasts developed in this report are made for five global regions as well as in total for the forecast period. The five regions include Asia/Pacific, Europe, Latin America, the Middle East/Africa and North America.

The forecasts are based on over 500 interviews with banks, conducted in 1996 in conjunction with preparation of reports for the Global Banking Program. Over 100 contacts and interviews with IT vendors also contributed to these forecasts.



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Global Banking Information Services

***Global Banking Information Services
Forecast, 1997-2002***

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I

Introduction

A**Purpose****1. Overview of Global Forecast**

This study provides a forecast of expenditures on information services in banking on a global basis from 1997 to 2002. It is based on the three global electronic banking studies that were conducted in 1996, as well as the report prepared in 1995 on the forecast of expenditures for information services in banking, which was conducted on a worldwide basis.

The three 1996 studies on electronic banking provided insight into the major changes that will take place in banking during the next five years; they focus on the technological and business forces driving banking expenditures for information services. These three studies are:

- *Global Retail Electronic Banking*
- *Financial Transactions on the Internet*
- *Global Corporate Electronic Banking*

2. Purpose of Study

This study provides a global forecast of the use of information services in banking that can help banks analyze which products and services to use to meet their global as well as regional objectives. The study also provides information of use to IT vendors in planning products and services to offer to the banking market by region.



B

Scope

This study develops forecasts of expenditures for information services in banking globally as well as by the following regions:

- Asia/Pacific
- Europe
- Latin America
- Middle East/Africa
- North America (U.S. and Canada)

The forecast period is from 1997 to 2002. The forecast covers noncaptive expenditures for information services to support all banking activity, including retail, corporate, trust, and infrastructure costs.

C

Research Methodology

The forecasts were developed from over 500 interviews with banks and 100 interviews with IT vendors that were conducted in 1996 in conjunction with INPUT's Global Banking Program.

Discussions were held with leading banks and banking industry consultants to review preliminary drafts of the forecasts.

D

Report Structure

Chapter I introduces the study and describes the purpose, scope and methodology of the study.

Chapter II, the Executive Overview, reviews the forecasts developed in the study and gives general information on business conditions and trends that were analyzed to develop the forecasts. Recommendations for banks and IT vendors, based on the forecasts, are also provided.

Chapter III presents information on the business and IT environments in global regions and the forces driving use of information services.

Chapter IV provides summary information on trends in electronic banking and retail and corporate banking services and products.

Chapter V presents forecasts of noncaptive expenditures for information services in banking on a global basis and in five regions of the world for the period 1997-2002.

E

Related Reports

Global Retail Electronic Banking

Financial Transactions on the Internet

Global Corporate Electronic Banking

Worldwide Banking Information Services, 1995-2000

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II

Executive Overview

A

Impact of Global Business on Banking

Despite problems in many areas of the globe, ranging from unemployment in Europe to overcapacity and slower growth in Asia, the globalization of business and demand for improved retail banking services by consumers is having a substantial impact on banking. Bank systems need modification or replacement to meet the requirements of international trade and the new retail banking services. New information technology makes it possible to serve these needs, and banks realize that they must develop plans to improve their capabilities.

B

Impact of Electronic Banking

One measure of the impact of electronic banking is the high probability that it will drive the use of services by corporations as well as consumers. As much as \$1 trillion of banking business could be influenced by the ability of banks to provide electronic services to customers.

Another measure of the importance of electronic banking is the fact that over 90% of retail business contact and 95% of corporate banking transactions and communication with corporate customers will be conducted in an electronic form by 2002. Exhibit II-1 summarizes these effects.

Exhibit II-1

Impact of Electronic Services on Banking

Banking Functions/Services	Annual Impact of Electronic Services by 2002
Retail Banking Business Driven by the Use of Electronic Banking	About \$300 billion
Bill Payment on the Internet	Over \$200 billion
Corporate Lending Business Driven by the Use of Electronic Banking	Over \$500 billion
Retail Banking Contact with Customers	Over 90%
Corporate Banking Contact with Customers	Over 95% of transactions and communication

Source: INPUT

C**Forecast of Information Services Expenditures, 1997-2002**

As seen in Exhibit II-2, the forecasts of growth of information services expenditures in banking show a higher rate for the Latin American and North American regions. The growth forecast for North America is due primarily to the impact of electronic banking. Improvement in economic performance as well as electronic banking will drive growth in Latin America.

Exhibit II-2

Aggregate Forecasts of Growth of Expenditures for Banking Information Services in Global Regions (in \$ millions)

Region	1997 Expenditures	2002 Expenditures	CAGR (%)
Asia/Pacific	7070	13170	13%
Europe	10990	19820	13%
Latin America	740	1540	16%
Middle East/Africa	242	482	15%
North America	20150	42130	16%
Total	39192	77142	15%

Source: INPUT

In addition to being a market with relatively fast growth, North America also boasts the largest increase in expenditures from 1997 to 2002. This market will increase by almost \$38 billion during that period.

D

Recommendations for Banks and IT Vendors

1. Recommendations for Banks

The expenditures being made in each region in total and by product/service category should be a guide to banks in the region in regard to their own expenditures for information services. Banks can compare the growth of their own expenditures to average growth in the region for total information services use and for the use of specific services.

- Several banks reported that they had analyzed differences in spending for systems integration and outsourcing services between themselves and banks in their regions to find out if there were reasons why they had spent much less or much more, relatively.
- One bank reported that an examination of the use of outsourcing revealed that an opportunity existed to use this service to quickly meet the demands of corporate banking customers.

The drive to offer electronic banking products and services to meet the demands of retail and corporate customers should also stimulate banks that are not taking action to examine the activities of competitive banks in their regions. Banks should also analyze the attitudes of other banks and of their own customers in regard to their plans or expectations for the use of electronic services. A number of banks-including major money

center or megabanks and community banks-reported that they feel it will be necessary to implement electronic services to keep as well as gain customers. Some banks, however, still doubt that it is necessary to plan for these services.

2. Recommendations for IT Vendors

IT vendors should use the forecast of expenditures by region and in total as a guide to the interest of banks in the use of information services. Although growth is taking place in all global regions, there are differences in the sizes of opportunities among regions as well as among product/service categories.

- Although growth in the North American region is high, the potential for turnkey systems is nowhere near the opportunity present in systems integration and outsourcing.
- Although expenditures for application software products are growing rapidly in Latin America, the annual increase in such expenditures is less than the expenditures for professional services or even turnkey systems in the U.S.
- The opportunity for the sale of application software products is greater in Europe than in Latin America because, though the European market is growing at the same fast rate of 14%, it is much larger.

Several smaller IT vendors that had recently weighed possibilities in various regions noted that they reviewed the size of markets as well as growth rates.

IT vendors must also examine the factors that are driving industry markets. At the present time, retail and corporate banking is being driven by electronic delivery capabilities. As noted in section B of this chapter, electronic services will become vital to banking, and many banks are going to be forced to seek aid from vendors to meet customer demands.

IT vendors must determine which categories of information services they can best utilize to meet the demand for electronic banking.

- Many banks report that they will use systems integration services or outsourcing to supply the information technology that will be needed to respond quickly to the demands of customers.
- Large IT vendors report that they are responding to the demand for systems integration and outsourcing services to meet needs for electronic banking.

Professional services and application software vendors also report that they are developing products and services to meet bank needs for electronic banking, but some of these vendors admit that the growth rates for systems integration and outsourcing services being used for electronic banking offer better opportunities to vendors.

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Business and Information Services Environment

A

General Business Conditions

1. Asia/Pacific

After several decades of economic boom based on "miracle economies," problems have emerged in a number of Asian countries:

- Japan has suffered four years of economic stagnation. The stock market dropped about 50% in value during that time and banks were faced with the task of revaluing assets that had declined significantly in value.
- South Korea has seen export growth slump and productivity fall as wage demands rose.
- Taiwan, Thailand, Indonesia, and Malaysia have also seen wage increases outpace gains in productivity.

Overcapacity is appearing in the manufacturing areas such as appliances, petrochemicals, and cars that supported the Asian boom, as countries and major corporations compete with each other. Failures and losses have to take place in some ventures.

Reforms are needed in management of companies as well as in political systems, but business activity and banking will continue to experience a fast pace of change and improvement over the next five years, and this will fuel continuing growth in expenditures to support banking applications.



- Of particular interest in wholesale banking are applications supporting trading and treasury functions, risk management, and corporate trade payments.
- In retail banking, electronic banking applications such as home banking systems and the use of smart cards are of interest throughout the region, from Japan to Australia.
- There is also need for improved systems in support of back-office accounting in the region, and new client/server systems are planned for this purpose.

2. Europe

The European Monetary Union (EMU) is of major concern in European countries at the moment, and more countries such as Italy and Spain have announced their intention of joining. It may take several years for the EMU to stimulate business, though it will require changes in banking applications in the near future.

European economies are enjoying a period of low inflation in general, although recent growth in productivity has not been significant and unemployment has remained high in many countries. The economic environment has been improved by rising business investment, however, and consumer spending has been healthier during the second half of 1996.

Rising household spending and interest in improved retail banking capabilities will continue to stimulate expenditures for information services in banking. Specific interests mentioned by banks in retail functions included the use of smart cards, home banking, ATM networks, and credit and debit cards. In England and some other countries, the use of phone systems supported by marketing databases and computer-controlled phone systems has been growing.

In corporate banking, banks reported interest in improving or replacing corporate trade payment, cash management, lending, and risk control applications.

Banks also reported interest in developing improved internal accounting systems and better CIF systems to analyze service to customers and the profitability of accounts.

3. Latin America

Reports from international banks describe 1995 and 1996 as difficult years for Latin American economies. The equity markets in most of these

countries have been a two-year bear market. However, several major global banks expect business to improve in Latin America-particularly in Brazil and Argentina, and possibly in Mexico during the next few years. Latin America also continues to show political as well as economic instability, as illustrated by events at year end in Peru, and earlier, in sections of Mexico.

Improvement in business is expected to be encouraged by privatization or interests of governments in the near future, and banks feel that systems supporting corporate trade, foreign exchange, and other trading, cash management, and corporate lending will be needed.

Banks also report that consumers are demanding improvement in retail services, including ATMs, home banking, and credit and debit cards. Credit cards are still not welcome in situations where the value of currency is volatile, however.

Several major U.S. banks report that banks in Latin America need rapid development to catch up to the needs of increasing business and financial activities.

4. Middle East/Africa

A number of companies in Africa and the Middle East are expanding trade in natural resources, including oil, lumber, minerals, and rare metals. In addition, manufacturing is being encouraged in the region, and this is stimulating trade as well. Banks in the region, as well as international banks with offices there, report that systems handling corporate trade, trading in currencies, money transfer, and corporate lending are being upgraded or replaced.

There is also pressure to upgrade retail banking systems to meet consumer needs. Not only is there need for improvement in DDA and savings systems, including better statements, there is also demand for ATMs, credit and debit cards, and home banking.

5. North America (U.S. and Canada)

The continuing boom in business in this region has been a stimulus to the improvement of retail and corporate banking systems to meet business and consumer needs.

- One area of increasing business has been in international trade, and this has fostered need for improvements in corporate trade payment and letter-of-credit systems, as well as in trading, risk control, and money transfer applications.



- The desire to manage funds more carefully as they become available and are disbursed or invested has spurred demand for improvements in cash management applications.

Consumer demand is higher in the U.S. than in other countries in the world regarding development and use of improvements in electronic banking.

- There is mounting use of and improvement in home banking.
- Credit card use continues to grow, although the market is saturated and highly competitive. Debit or check card use is also growing, although it isn't as attractive in the U.S. as it is in Europe.
- ATMs are growing in use and advanced ATMs and kiosks are being introduced that dispense tickets and stamps as well as other services.
- Telephone systems-including call centers that take advantage of marketing databases and computer-controlled telephone use-are increasing in popularity as a means of selling services as well as providing them.

Although many banks are doing well, there is still a need to reduce bank costs to protect bank margins. This is driving continuing merger activity in the banking industry in the U.S. and providing work for IT vendors.

B

Forces Driving Bank Use of Information Services

In addition to general business conditions, the forces that drive use of IT in banking, according to banks, include the globalization of bank business, major changes in the use of banking being brought about by the increasing use of electronic capabilities in banking, and the pressure to reduce costs in banking to meet competition from nonbanks. The latter is particularly strong in the U.S. Exhibit III-1 gives banks' ratings of these forces.



Exhibit III-1

Forces Driving Use of Information Services by Banks

Forces Driving Use of Information Services	Average Importance Reported by Banks (1 = Low and 5 = High)
Possibilities Offered by Technology	4.4
Globalization of Business and Banking	4.3
Demand for Improved Service	3.8
Competition	3.5

Source: INPUT

Bank personnel tend to feel that the possibilities offered by technology, particularly network computing, have been primary in driving use of information services in retail and corporate banking, but they also rate two other business factors as very important. The globalization of business and demand for improved service have strongly pushed banks to take advantage of technology.

The analysis of what banks mean by the "possibilities offered by technology" reveals that banks mean both the possibility of offering better services, such as faster delivery of money transfer instructions or better home banking, and the possibility of using those services to drive banking business and increase revenues.

The impact that these electronic services can have on the banking business can be measured by estimating the impact that they will have on retail and corporate banking by 2002. Studies conducted by INPUT in 1996 show that the potential impact of electronic banking could reach \$1 trillion by 2002.

- In retail banking, there could be over \$300 billion in annual banking services to customers driven by the use of electronic services, and \$200 billion in annual bill payment on the Internet.

In corporate banking, over \$500 billion of annual lending business could be driven by the availability of electronic banking services.



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IV

Global Trends in Electronic Banking

A

Trends in Global Retail Electronic Banking**1. The Impact of Retail Electronic Banking**

Bank respondents reported that global retail electronic banking would have a considerable impact on retail banking business, as shown in Exhibit IV-1.

Exhibit IV-1

Global Impact of Retail Electronic Banking

Global Impact of Retail Electronic Banking	Average Rating of Impact on Banks 1 = Low and 5 = High
Means of Driving Retail Lending/Deposit Business	4.5
Means of Gaining or Retaining Accounts	4.1
Reduction of Branch and Central Operations Costs	3.6
Generation of Revenues, Fees, and Cross-Sale Business	3.5
Improvement of Relationship Management	3.4
Changes in Bank Administration and Operations Processes	3.3

Source: INPUT

On December 23, 1996, the *American Banker* reported that customer loyalty to banks had eroded for the second straight year. Banks realize that customers will move their business in order to get the convenience of new electronic services, as noted above.

The global impact of retail electronic banking services will also enhance the ability of banks to combine or integrate services.

- Citibank now advertises that customers can use home banking, ATMs, or Direct Access phone service to make payments and manage balances, since these services are integrated.
- Andersen Consulting points out that developments are in place to allow a bank customer to initiate stock purchases and transfer balances from home, check the status of activity at an ATM device, and phone a bank telephone service during the day to take follow-up actions.

2. Global Retail Electronic Banking Services

The retail services that banks report as electronic banking include:

- Home banking, including systems that use a terminal or a PC to initiate bill paying and other functions such as balance inquiry and transfers. The home banking services could also include a review of financial information on potential investments and the input of purchase instructions. The Internet is being used to connect banks and their customers for home banking services. Some banks and IT vendors refer to home banking with a PC as PC banking because it can be performed at sites other than home.
- ATM, advanced ATM, and kiosk systems that can dispense cash, take deposits, and accomplish other functions such as pay bills and transfer funds or even issue stamps or tickets. These units can be connected to card organization networks for authorization and cash dispensing and to the Internet for other purposes such as providing information on lending arrangements or obtaining customer data.
- Smart cards with a stored value of money that can be used to pay merchants or service providers. The cards are growing in popularity as a means of paying small transactions in place of pocket money and can be updated at an ATM or bank. Smart cards are also being tested as a means of making payment on the Internet.
- Credit and debit cards. Debit (or check) cards have been combined with ATM access cards in many locations, and multifunction cards that combine financial and other capabilities are beginning to be issued. Cards will generally be used on card organization networks, but devices will be tested that provide more security for use of credit and debit cards (possibly delayed debit cards) on the Internet in the future.
- Computer-based telephone services offer standard bill paying, inquiry, balance transfer, investment, and expanded services that include more bank functions as well as proactive marketing of bank services through call centers or other phone systems. These services can trigger use of e-mail on the Internet to distribute some information.
- Remote services for and sales of lending, mortgage, investment, annuity, personal trust, financial planning, and insurance products via the Internet. The Internet will also be used to collect data and deliver e-mail in relation to these services.

Other network providers or on-line services may also provide the lending, mortgage, and investment services discussed above, but the Internet will be the dominant network means of marketing and distributing these remote services, according to bank respondents. The large number of potential customers, the propensity of prospects to look for and buy services on the Internet, and cost considerations will drive these services on the Internet or on intranets.

New retail electronic services are emerging that include support or planning services and the ability to tie together financial activity for on-line retail customers. Other electronic services will emerge in the next five years to help customers gain the most effective aid from their banks and/or other financial services institutions.

3. Significant Trends and Factors Involved in Retail Electronic Banking

The tremendous growth taking place in retail electronic banking services is a reflection of consumers' desire for more convenient services that are available at home and other places where they are needed, rather than at traditional bank locations.

- One leading bank vendor reported that it has developed an estimate of the decrease in use of branches by affluent depositors during the last five years, which was greater than expected.
- A high percentage of banks and vendors or consultants involved with banking anticipate a greater decrease in the use of branches in the next five years.

Over two-thirds of banks are analyzing the changes that are taking place in information technology as well as in consumer behavior in regard to bank use, but many banks are more reactive. Almost all bank respondents report that they are aware of trends occurring in the use of retail electronic services. The most frequently mentioned trends are indicated in Exhibit IV-2.



Exhibit IV-2

Leading Trends in Retail Electronic Banking Services

Retail Electronic Banking Service	Leading Trends Reported by Banks Worldwide
Home Banking	Growth in use of home banking services Growth in use of PC rather than terminal Use of personal finance software increasing
ATM, Advanced ATM, Kiosk	Growth in use of ATMs Growth in types of services offered through ATM/advanced ATM (and kiosk)
Smart Card (Including Stored Value)	Growth in number of pilots (particularly pilots of smart cards with stored value) Growth in use of smart cards in niche markets such as travel
Credit Card	Growth in use Expanding competition from banks/non-banks in all regions Card organizations expanding into other services
Debit Card (Check Card)	Growth in use More acceptance by consumers and merchants Expanding competition in all regions
Computer-Based Telephone Service	Increase in offerings and functions provided Integration of service with other bank offerings such as home banking
Internet-Based Services	Increasing use of the Internet and intranets to sell and supply deposit, lending, investment, and insurance services

The preceding exhibit emphasizes that banks see strong trends for the growth of retail banking services. Banks also emphasize that these trends reflect a high level of customer interest, particularly by a group of customers.

- Customers who want retail electronic banking services tend to be ones whose schedules require remote, convenient services. They also tend to be customers who are more affluent and knowledgeable about technology.
- This type of customer is reported by banks in the U.S. particularly, but also by banks in Asia, Europe, and Latin America. There are fewer such customers reported by banks in the Middle East and Africa.

Banks also point out that most customers or depositors now demand some retail electronic services, such as ATMs and credit cards, and, in some countries, debit or check cards. Banks anticipate that demand from all customers will increase and cover the full spectrum of the services being discussed.

B

Trends in Global Corporate Electronic Banking

Although bank respondents identify both technological and business trends that are having an impact on corporate electronic banking, they report that the business trends involved with increased business activity on a global basis, as shown in Exhibit IV-3, are most important.

Exhibit IV-3

Business Trends Affecting Global Corporate Electronic Banking Applications

Business Trends Reported by Banks	Average Rating of Importance by Bank Respondents
Expansion of business to more global sites	4.4
More complex lending arrangements to meet needs	4.2
Need for more information for corporate clients and banks	4.1
Expanding multicurrency needs	4.1
Use of multiple banks	3.6
Use of nonbanks	3.4
Complex financial instruments being used	3.4

Scale: 1 = low, 5 = high

Source: INPUT

Business trends are placing more pressure on banks serving corporate clients. Banks must be prepared to provide support in more global markets, meet expanding currency needs, provide more information, handle work faster and report more rapidly, and compete with banks and nonbanks that are sharing corporate business.

Technological trends are also having an impact on banks. Banks are devoting more planning attention to network and computing capabilities, as illustrated in Exhibit IV-4.



Exhibit IV-4

Technological Trends Affecting Global Corporate Electronic Banking

Technological Trends Reported by Banks	Average Rating of Importance by Bank Respondents
Increasing use of networks	4.4
Use of client/server technology	4.2
Concern about security	4.1
Use of object-oriented technology	3.6
Growth of database requirements	3.9
Willingness to utilize IT vendor solutions	3.7

Scale: 1 = low, 5 = high

Source: INPUT

The strong technological trends affecting corporate banking suggest that IT vendors or internal IT groups must have up-to-date capabilities when addressing needs for corporate electronic banking applications. Banks report that they do judge prospective vendors in terms of their technical capabilities as well as their knowledge of corporate banking applications and banking business.

Forces driving the development or modification of corporate electronic banking applications reflect both IT and business needs, as shown in Exhibit IV-5.



Exhibit IV-5

Forces Driving Global Corporate Electronic Banking Applications

Forces Identified by Banks	Average Rating of Importance by Bank Respondents
General corporate demand for global business support	4.2
Need for higher speed telecommunication and faster response to clients	4.2
Desire to meet needs of important corporate clients	4.1
Need to customize applications rapidly	3.6
Desire to reduce costs	3.4
Desire to gain revenue and new accounts	3.9

Scale: 1 = low, 5 = high

Source: INPUT





Global Information Services Expenditures in Banking, 1997-2002

A

Regional Forecasts of Expenditures for Information Services in Banking

1. Asia/Pacific

The forecast that follows addresses noncaptive expenditures for information services by banks in the Asia/Pacific region in the period from 1997 to 2002.

Exhibit V-1

Forecast-Asia/Pacific, 1997 - 2002
(\$ Millions)

Product/Service Category	1996	1997	1998	1999	2000	2001	2002	CAGR '97 - '02
Professional Services	2290	2600	2950	3300	3700	4170	4690	13%
Systems Integration	500	580	670	770	890	1030	1200	16%
Outsourcing	510	620	770	960	1180	1460	1790	24%
Processing Services	1250	1400	1550	1690	1860	2050	2270	10%
Network Services	390	450	520	610	710	830	960	16%
Application Software	670	750	830	930	1030	1150	1290	11%
Turnkey Systems	620	670	730	780	840	900	970	8%
Total	6230	7070	8020	9040	10210	11590	13170	13%



The use of professional services and systems integration will be encouraged by the need to upgrade banking applications to meet expanding consumer demands for services as well as to meet business needs for corporate banking improvements in corporate trade, trading, cash management, money transfer, and corporate lending systems.

Increasing pressure to upgrade systems rapidly to take advantage of new technology, lower costs, and integrate applications will cause many Asian banks to utilize outsourcing solutions. Solutions from Asian vendors such as NTT as well as solutions from major vendors in other regions such as IBM, Andersen Consulting, CGS, and EDS will be employed.

Processing services will continue to grow to meet expanding needs in credit and debit card processing and securities applications, but some banks will seek outsourcing solutions instead.

Network services will be driven by consumer and corporate needs, but the increase in use in some countries such as Japan and Taiwan will be much higher than in others.

2. Europe

The forecast that follows addresses noncaptive expenditures for information services by banks in the European region in the period 1997-2002.

Exhibit V-2

Forecast-Europe, 1997 - 2002
(\$ Millions)

Product/Service Category	1996	1997	1998	1999	2000	2001	2002	CAGR '97-'02
Professional Services	2420	2630	2910	3210	3550	3920	4340	11%
Systems Integration	660	720	820	930	1070	1230	1420	15%
Outsourcing	830	1030	1260	1500	1750	2100	2500	19%
Processing Services	1890	2100	2320	2560	2840	3130	3460	11%
Network Services	710	830	980	1140	1360	1600	1880	18%
Application Software	1900	2160	2450	2780	3160	3590	4070	14%
Turnkey Systems	1400	1520	1630	1750	1880	2010	2150	7%
Total	9810	10990	12370	13870	15610	17580	19820	13%



Systems integration and outsourcing solutions will be used to meet demands for improvements in retail electronic banking and banking infrastructure such as upgrading networks and client/server technology. Banks report that these service categories enable new technology to be used more rapidly and enable banks to take advantage of the technical expertise and economies of scale of IT vendors.

Many banks anticipate making changes needed in existing payment and lending systems through use of application software products rather than having professional services or turnkey vendors do the work. This is reflected in a rising growth rate for application software products.

The increase in use of electronic banking services to meet consumer demands is reflected in a large increase in network services.

3. Latin America

The forecast that follows addresses noncaptive expenditures for information services by banks in the Latin American region, including Mexico and Central America, in the period from 1997 to 2002.

Exhibit V-3

Forecast-Latin America, 1997 - 2002
(\$ Millions)

Product/Service Category	1996	1997	1998	1999	2000	2001	2002	CAGR '97-'02
Professional Services	170	190	220	260	300	340	380	15%
Systems Integration	50	60	80	90	110	130	160	22%
Outsourcing	60	80	90	110	140	170	210	21%
Processing Services	130	140	170	200	230	260	290	16%
Network Services	40	50	60	80	90	100	110	17%
Application Software	120	140	160	180	200	230	260	13%
Turnkey Systems	70	80	90	100	110	120	130	10%
Total	640	740	870	1020	1180	1350	1540	16%

High rates of increase in most product/service categories reflect the need for upgraded or new banking systems to meet consumer and business demands, as well as needs for internal improvements in general ledger



and accounting systems. Consumers are demanding more retail lending products in addition to card, ATM, and other payment services.

Banks report that business needs include cash management products as well as improved money transfer and foreign exchange and other trading services. Companies and countries in the region realize that economic progress requires upgraded banking services.

In order to catch up to the level of bank services needed (or available elsewhere), banks report that use will be made of IT vendors who can deliver systems integration and outsourcing solutions, as that will allow banks to improve their services more rapidly and take advantage of the knowledge of vendors with new technology.

Professional services and application software packages will also be called upon to make needed modifications in retail, wholesale, and internal systems.

4. Middle East/Africa

The forecast that follows addresses noncaptive expenditures for information services by banks in the region including Africa and the Middle East in the period from 1997 to 2002.

Exhibit V-4

Forecast-Middle East/Africa, 1997 - 2002
(\$ Millions)

Product/Service Category	1996	1997	1998	1999	2000	2001	2002	CAGR '97 - '02
Professional Services	50	60	70	75	80	90	100	11%
Systems Integration	24	30	38	45	56	70	87	24%
Outsourcing	15	19	24	30	37	44	54	23%
Processing Services	31	35	40	45	49	54	61	12%
Network Services	14	17	20	24	29	35	43	20%
Application Software	41	45	50	60	65	75	85	14%
Turnkey Systems	33	36	38	41	44	48	52	8%
Total	208	242	280	320	360	416	482	15%



This region has an overall need for increased banking capabilities, but there is a great diversity in needs. The most common need in corporate banking is for corporate trade and foreign exchange systems to handle the expansion of trade. There is also great need for systems to control risk. On the retail side, there is demand for increased checking and other retail services, including use of ATMs.

Many banks are relying on the expertise of systems integration and outsourcing companies to meet these needs. The existing gap in banks' knowledge of how best to use technology can be addressed by those services.

A considerable increase will be needed in network services to meet retail and corporate banking needs, including both network applications and EIS (Executive Information systems which are on-line databases) to meet trading needs. Banks expect that a high level of growth will take place in network services due to the lack in present capabilities.

5. North America (U.S. and Canada)

The forecast that follows addresses noncaptive expenditures for information services by banks in the North American region (U.S. and Canada) in the period 1997-2002.

Exhibit V-5

Forecast-North America, 1997 - 2002 (\$ Millions)

Product/Service Category	1996	1997	1998	1999	2000	2001	2002	CAGR '97 - '02
Professional Services	3160	3600	4160	4810	5600	6410	7400	16%
Systems Integration	650	770	920	1090	1290	1530	1800	19%
Outsourcing	3940	4710	5630	6730	8040	9300	11140	19%
Processing Services	4620	5300	6100	7000	8000	9110	10430	14%
Network Services	1120	1320	1600	1920	2310	2790	3360	21%
Application Software	2760	3140	3600	4120	4720	5400	6200	15%
Turnkey Systems	1220	1310	1400	1490	1590	1690	1800	7%
Total	17470	20150	23410	27160	31550	36230	42130	16%



Professional services and systems integration growth in banking will continue to be above the average growth for other industries, driven by constant change in technology and demands from consumers for electronic services that will require modification or replacement of current retail banking systems.

Outsourcing will expand at a high rate as banks of all sizes try to avoid the risks of taking the wrong step with new technology as well as gain more economy in their use of IT. Some processing users will also move to outsourcing solutions, though processing services will continue to grow to meet narrow ranges of needs such as for card processing or some securities industry tasks.

The use of network services will be driven by the continuing boom in the use of retail electronic banking services and demand for wholesale electronic banking services such as cash management, risk control, trading and treasury applications, and global custody.



B**Global Summary Forecast of Expenditures for Banking Information Services**

The following forecast is an aggregation of data from the five forecasts in section A, above. It contains data for noncaptive expenditures for information services by banks around the world in the period from 1997 to 2002.

Exhibit V-6

Forecast-Global Summary, 1997 - 2002
(\$ Millions)

Product/Service Category	1996	1997	1998	1999	2000	2001	2002	CAGR '97 - '02
Professional Services	8090	9080	10310	11655	13230	14930	16910	13%
Systems Integration	1884	2160	2528	2925	3416	3990	4667	17%
Outsourcing	5355	6459	7774	9330	11147	13074	15694	19%
Processing Services	7921	8975	10180	11495	12979	14604	16511	13%
Network Services	2274	2667	3180	3774	4499	5355	6353	19%
Application Software	5491	6235	7090	8070	9175	10445	11905	14%
Turnkey Systems	3343	3616	3888	4161	4464	4768	5102	7%
Total	34358	39192	44950	51410	58910	67166	77142	15%

The global summary forecast for 1997 to 2002 shows a 3% higher rate of overall growth during the period as the forecast made in 1995 for worldwide information services expenditures for banking due to high rates of growth for SI, Outsourcing, Network Services, and Software Products.

- The need to implement new electronic banking products rapidly and changes to major applications have driven expenditures in many banks.
- The use of new technology and the need for systems compliant with the year 2000 have also generated expenditures.

In addition to general business conditions, the forces that drive use of IT in banking include the major changes in the use of banking brought about by increasing use of electronic capabilities in banking and the pressure to reduce costs in banking to meet competition from nonbanks.



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EXECUTIVE OVERVIEW

**Global Banking Information
Services Forecast**

1997 - 2002

To Our Clients:

This summary is an excerpt from a full research report, *Global Banking Information Services Forecast, 1997 - 2002*, issued as part of INPUT's Global Banking Program. A complete description of the program is provided at the end of this Executive Overview.

If you have questions or comments about this report, please call (415) 961-3300 to contact your INPUT analyst.



Abstract

This report gives the results of the fourth strategic assessment project of INPUT's 1996 Global Banking Program. It provides a forecast of expenditures for information services in banking from 1997 to 2002. The forecast covers noncaptive expenditures by banks.

The report also reviews the business and information technology forces that will drive expenditures for information services in banking. The major driver of growth in information services will be the use of electronic banking in retail and corporate electronic banking services, as noted in this report.

The forecasts developed in this report are made for five global regions as well as in total for the forecast period. The five regions include Asia/Pacific, Europe, Latin America, the Middle East/Africa and North America.

The forecasts are based on over 500 interviews with banks, conducted in 1996 in conjunction with preparation of reports for the Global Banking Program. Over 100 contacts and interviews with IT vendors also contributed to these forecasts.

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Executive Overview

A

Impact of Global Business on Banking

Despite problems in many areas of the globe, ranging from unemployment in Europe to overcapacity and slower growth in Asia, the globalization of business and demand for improved retail banking services by consumers is having a substantial impact on banking. Bank systems need modification or replacement to meet the requirements of international trade and the new retail banking services. New information technology makes it possible to serve these needs, and banks realize that they must develop plans to improve their capabilities.

B

Impact of Electronic Banking

One measure of the impact of electronic banking is the high probability that it will drive the use of services by corporations as well as consumers. As much as \$1 trillion of banking business could be influenced by the ability of banks to provide electronic services to customers.

Another measure of the importance of electronic banking is the fact that over 90% of retail business contact and 95% of corporate banking transactions and communication with corporate customers will be conducted in an electronic form by 2002. Exhibit-1 summarizes these effects.

Exhibit-1

Impact of Electronic Services on Banking

Banking Functions/Services	Annual Impact of Electronic Services by 2002
Retail Banking Business Driven by the Use of Electronic Banking	About \$300 billion
Bill Payment on the Internet	Over \$200 billion
Corporate Lending Business Driven by the Use of Electronic Banking	Over \$500 billion
Retail Banking Contact with Customers	Over 90%
Corporate Banking Contact with Customers	Over 95% of transactions and communication

Source: INPUT

C**Forecast of Information Services Expenditures, 1997-2002**

As seen in Exhibit-2, the forecasts of growth of information services expenditures in banking show a higher rate for the Latin American and North American regions. The growth forecast for North America is due primarily to the impact of electronic banking. Improvement in economic performance as well as electronic banking will drive growth in Latin America.

Exhibit-2

Aggregate Forecasts of Growth of Expenditures for Banking Information Services in Global Regions (in \$ millions)

Region	1997 Expenditures	2002 Expenditures	CAGR (%)
Asia/Pacific	7070	13170	13%
Europe	10990	19820	13%
Latin America	740	1540	16%
Middle East/Africa	242	482	15%
North America	20150	42130	16%
Total	39192	77142	15%

Source: INPUT

In addition to being a market with relatively fast growth, North America also boasts the largest increase in expenditures from 1997 to 2002. This market will increase by almost \$38 billion during that period.

D**Recommendations for Banks and IT Vendors****1. Recommendations for Banks**

The expenditures being made in each region in total and by product/service category should be a guide to banks in the region in regard to their own expenditures for information services. Banks can compare the growth of their own expenditures to average growth in the region for total information services use and for the use of specific services.

- Several banks reported that they had analyzed differences in spending for systems integration and outsourcing services between themselves and banks in their regions to find out if there were reasons why they had spent much less or much more, relatively.
- One bank reported that an examination of the use of outsourcing revealed that an opportunity existed to use this service to quickly meet the demands of corporate banking customers.

The drive to offer electronic banking products and services to meet the demands of retail and corporate customers should also stimulate banks that are not taking action to examine the activities of competitive banks in their regions. Banks should also analyze the attitudes of other banks and of their own customers in regard to their plans or expectations for the use of electronic services. A number of banks-including major money

center or megabanks and community banks-reported that they feel it will be necessary to implement electronic services to keep as well as gain customers. Some banks, however, still doubt that it is necessary to plan for these services.

2. Recommendations for IT Vendors

IT vendors should use the forecast of expenditures by region and in total as a guide to the interest of banks in the use of information services. Although growth is taking place in all global regions, there are differences in the sizes of opportunities among regions as well as among product/service categories.

- Although growth in the North American region is high, the potential for turnkey systems is nowhere near the opportunity present in systems integration and outsourcing.
- Although expenditures for application software products are growing rapidly in Latin America, the annual increase in such expenditures is less than the expenditures for professional services or even turnkey systems in the U.S.
- The opportunity for the sale of application software products is greater in Europe than in Latin America because, though the European market is growing at the same fast rate of 14%, it is much larger.

Several smaller IT vendors that had recently weighed possibilities in various regions noted that they reviewed the size of markets as well as growth rates.

IT vendors must also examine the factors that are driving industry markets. At the present time, retail and corporate banking is being driven by electronic delivery capabilities. As noted in section B of this chapter, electronic services will become vital to banking, and many banks are going to be forced to seek aid from vendors to meet customer demands.

IT vendors must determine which categories of information services they can best utilize to meet the demand for electronic banking.

- Many banks report that they will use systems integration services or outsourcing to supply the information technology that will be needed to respond quickly to the demands of customers.
- Large IT vendors report that they are responding to the demand for systems integration and outsourcing services to meet needs for electronic banking.

Professional services and application software vendors also report that they are developing products and services to meet bank needs for electronic banking, but some of these vendors admit that the growth rates for systems integration and outsourcing services being used for electronic banking offer better opportunities to vendors.

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