



CASH MANAGEMENT SERVICES ANALYSIS

by

Mr. Brian Chin

A Final Report of the Three-Credit Course
CE 6998 Project

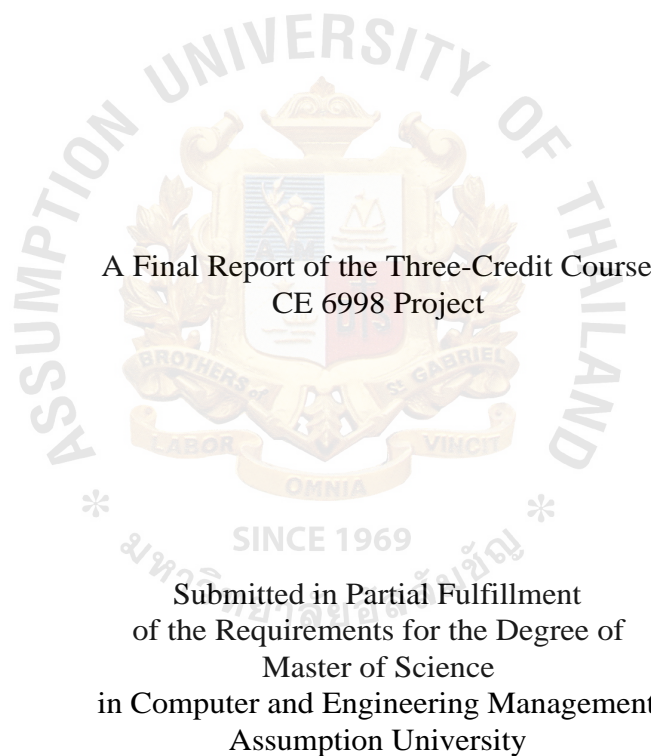
Submitted in Partial Fulfillment
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Mr. Brian Chin



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Project Title Cash Management Services Analysis


Name Mr. Brian Chin

Project Advisor Asst.Prof.Dr. Boonmark Sirinaovakul

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Approval Committee:



(Asst.Prof Dr. Boonmark Sirinaovakul)
Advisor



(Prof.Dr. Srisakdi Charmonman)
Chairman



(Dr. Chamnong ng irapanich)
Dean and Co-advisor

(Assoc.Prof. Somchai ThayarnYong)
MUA Representative

November 2001

ABSTRACT

This project aims at explaining the concept and the process flow of Cash Management Services. Cash Management Services is a tool, which can increase efficiency of the business operating system. The company can concentrate on core business activity by outsourcing labor-intensive function. Cash Management Services are the simple ways to save time, manage cost and enhance control. The Cash Management Services that we are going to discuss in this project can be divided in to 2 categories, which are collection side and disbursement side.

Cash Management Services analysis was accomplished to find out the benefits of Cash Management Services to the customers. Cash Management Services can reduce processing costs, administrative costs, management costs, and customers can enjoy volume intensity. The project also provides a cost benefit analysis, which indicate benefits to customers in terms of value. The project describes benefits to the banks that provide the Cash Management Services. Bank can enjoy incremental revenue from Cash Management Services in terms of float and fees. Cash Management Services can encourage improvements and competitive environment for banking industry.

Recommendations parts provides some recommendations to three parties, which are Customers (Companies & Business Operators), Cash Management Service provider, and Banking Industry. Customers should do the feasibility study to apply the integrated Cash Management Services. Banks should continuously develop the innovative Cash Management Services to compete with each other. The competitive market will create the better quality of services. The service providers also have to develop the high standard of quality to create customer satisfaction, maintain the existing customers, and expand their customer base.

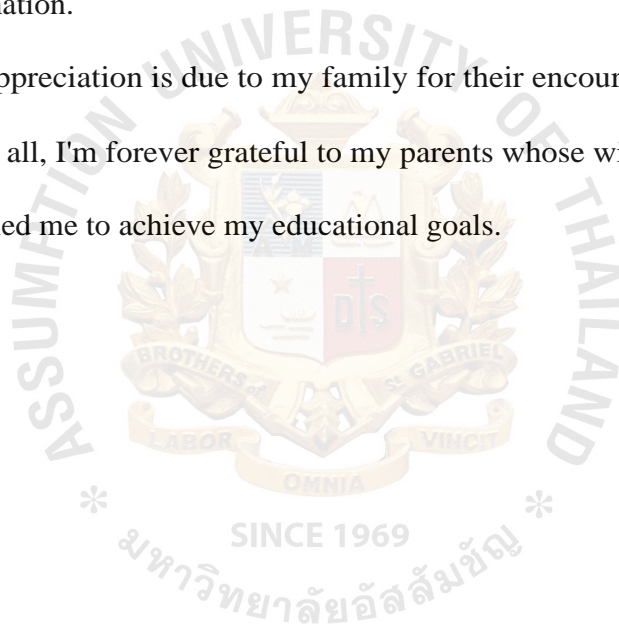
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I. INTRODUCTION

1.1 Significance of Cash Management Services

- (1) As corporations and financial institutions continue to invest and grow in Asia Pacific, they face a number of challenges in managing their financial processes across the region's diverse regulatory, political and cultural environments. These include managing the increasing complexity of cross-border and domestic money movements, funding business expansion while controlling costs, Minimizing the exposure to risks associated with growth, and enhancing security and reducing the possibility of fraud.
- (2) The Cash Management Services is a tool, which can increase efficiency of the business operating system. The company can concentrate on core business activity by outsourcing labor-intensive function. Cash Management Services are the simple way to save time, manage cost and enhance control. The Cash Management Services that we are going to discuss in this project can be divided in to 2 categories, which are collection side and disbursement side.

1.2 Statement of Problems.

Cash Management Services business is quite new for Thailand. Most of the business managers believe that the Cash Management Services are suitable for the multinational companies only. Some of the managers still believe that it will increase their cost and isn't worth enough to implement.

1.3 Objectives

The objectives of this project include describing the meaning and concept of cash management services, describing the Citibank's Cash Management Services and methodologies, and to analyze the benefits of Cash Management Services. This project also provides some recommendations for the management and organization involved.



II. LITERATURE REVIEW

2.1 Cash Management Description

(1) Overall Corporate Objectives

The primary objective of a corporation is to maximize shareholder value, which is the value of the owners' shares in the corporation. Shareholders entrust their assets to a corporation in order to earn an overall return that exceeds that available from similar investment alternatives. Shareholder value is directly enhanced through the efficient and profitable management of a company's operating cycle.

Financial goals and functions are vital to the achievement of the company's overall corporate objectives because they provide the financial resources required to sustain the operating cycle.

(2) Cash Management and the Operating Cycle of a Business

The objectives of cash management are closely related to the management of the operating cycle and cash flow timeline of a business. The specific tools of cash management have evolved and are employed to attain stated cash management objectives.

(3) Cash Management Objectives

An integral component of a company's financial activities is the cash management function. The general objective of cash management is the efficient utilization of cash in a manner, which is consistent with the overall strategic objectives of the company.

The major objectives of cash management include:

- (a) Liquidity — Maintaining the ability to pay obligations when they become due.
- (b) Cash Optimization — Establishing systems and procedures that help minimize investment in non-earning cash resources while providing adequate liquidity.
- (c) Financing — Assisting in obtaining both short- and long-term borrowed funds in a timely manner and at an acceptable cost.
- (d) Risk Management — Monitoring and assisting in the control of a company's exposure to interest rate, foreign exchange, and other risks.
- (e) Coordination — Ensuring that cash management goals are communicated and integrated with the strategic objectives and policy decisions of other areas of the company that have an impact on cash flows.

(4) Tools of Cash Management

The tools of cash management are designed to synchronize a company's cash flows, thereby promoting the efficient operation of the cash flow timeline. Products used in the collection, concentration, and disbursement of funds reduces the time periods between events occurring along the timeline. The shorter the overall cash flow cycle, the more liquidity a company is capable of generating. Increased liquidity not only reduces a company's risk of insolvency, but typically can increase its overall profitability.

The problems of the timing and unequal amounts of a company's cash inflows and outflows are addressed through the practices of cash management, which include the following day-to-day operations:

- (a) Collection — Collecting funds from customers.
- (b) Concentration — Concentrating funds where they can be most efficiently deployed.
- (c) Disbursement — Disbursing funds to vendors, employees, and investors.
- (d) Information — Developing and maintaining appropriate information systems.
- (e) Forecasting — Forecasting to predict future funds flows.
- (f) Investment — Investing surplus funds.
- (g) Borrowing — Borrowing to meet short-term requirements.
- (h) Financial Institution Relationships — Managing financial institution relationships.

2.2 Objectives of A Collection System.

A collection system is a set of arrangements and management procedures used to gather and process customer payments. The broad objectives of a corporate collection system are the following:

- (a) Mobilize Funds — Move funds collected from a customer (payer) into a company's (payee's) banking system as quickly and cost effectively as possible. To do this, a company's collection system must be well integrated with its cash concentration system.

- (b) Access Information — Provide accurate and timely information on cash flows, the level of bank balances, and availability of funds in a manner that integrates easily with other parts of a company's treasury management information system.
- (c) Update Accounts Receivable — Update accounts receivable records promptly and accurately. Credit management and treasury management systems must be linked closely together. Mistakes or failures to update customer files can jeopardize potential sales because of credit limitations and damage customer relationships.
- (d) Support Audit Trails — Support audit trails for the company's internal and external auditors.

2.2.1 Collection Float.

Collection float is the delay between the time the payer mails the check and the time the payee receives available funds at its financial institution. Converting account receivable expeditiously into collected funds requires minimizing collection float.

Collection floats have three components: mail, processing, and availability. Each represents a collection delay along the cash flow timeline.

- (1) Mail Float — Mail float is the delay between the time a check is mailed and the date it is received by the payee or at the processing site. It usually ranges from one to five calendar days or more.

- (2) Processing Float — Processing float is the delay between the time the payee or the processing site receives the check and the time the check is deposited at a financial institution. It can range from less than one day to three calendar days or more.
- (3) Availability Float — Availability float is the delay between the time a check is deposited and the time a company's account is credited with collected funds. It typically ranges from zero to two business days, and is determined by the depository institution's availability schedule.

2.2.2 Collection Systems Consideration.

In designing a collection system, a company should take into consideration the following issues:

Payment Practices.

Checks are the most frequently used payment instrument for both corporate and consumer bill paying, though the use of electronic payments is increasing. Some believe that electronic payments will offer strong cost saving potential for corporate payers and receivers in the future. This is especially true if they become the predominant method of payment and are used as an integral part of an Electronic Data Interchange (EDI) business strategy. However, in today's environment, checks provide the payer with disbursement float and is an established way of doing business acceptable to most trading partners.

(2) Payments System.

The collection system must be designed in light of the particular strengths and limitations of a country's payments system. Four features

that distinguish the U.S. payments system from that of most other countries are as follows:

- (a) The widespread use of checks for the majority of payments
 - (b) Unpredictable delays in the mail system
 - (c) A large number of small banks
 - (d) A lack of comprehensive nationwide branch banking
- (3) Nature of the Business.

Often the collection method a company uses is determined by the nature of its business. A fast food store receives virtually all of its payments in cash. A time-critical transaction such as a securities settlement or a real estate closing, or simply a very large dollar amount, may require a wire transfer with same-day value. A supplier usually sends an invoice to its customer and receives a check as payment. The check is generally accompanied by information regarding invoices paid, partial payments, discounts, and deductions. Capturing this accompanying information determines, to a large degree, the method of collection.

- (4) Payment Instrument Characteristics

Each payment instrument has different characteristics and uses. Often the instrument used is a matter of negotiation between the payer and the payee. The most preferred method for the payee may not be best for the payer and vice versa.

- (a) **Cash** — Cash is the principal means of payment in many retail businesses. Cash provides the payee with immediate funds.
- (b) **Check** — A check is used for most corporate and consumer bill payments. Depending on when and how it is deposited and cleared, a check usually provides the payee with zero-to-two-day availability.
- (c) **Credit Cards** — The acceptance of credit cards by retailers is widespread. Increasingly, credit cards are also becoming a preferred method of payment among wholesalers. The payee is provided with zero-to-two-day availability.
- (d) **Debit Cards** — Consumer use of debit cards as a method of payment is growing in acceptance. Debit cards replace cash and check transactions. The payee is provided with zero-to-two-day availability.
- (e) **Automated Clearing House** — Consumer use of the Automated Clearing House (ACH) as a method of payment is growing in acceptance, as is the use of ACH by companies to pay trading partners. Settlement occurs one to two days after origination.
- (f) **Wire Transfer** — Wire transfer as a method of payment is primarily used by companies for large dollar transactions. The payee is provided with immediate funds.

(5) Float/ Administrative Cost Tradeoff

An optimal collection system minimizes the sum of float costs and processing and administrative costs. For example, if a company chooses to use a lockbox, it must determine the number and location of lockboxes. Additionally, each customer must be assigned to a specific

lockbox if more than one is used. Adding more collection points generally reduces float, but increases administrative and processing costs.

(6) Wholesales and Retail Payments

The following is a discussion of the different issues involved with wholesales versus retail payment collection:

- (a) **Wholesale** — Wholesale, or corporate-to-corporate, payments are generally for large amounts and in response to specific invoices. Often several invoices are paid with one check. Usually detailed information is required of the invoices paid, discounts taken, returns and allowances. Wholesale collection systems emphasize float reduction and timely handling of information related to the invoices being paid.
- (b) **Retail** — In retail systems, payers are generally consumers. Payments are often small dollar amounts, and frequently involve installments or recurring payments. Because of the large number of items to be handled, processing cost is a more critical consideration than float reduction.

2.2.3 Collection Methods and Products.

(1) Over-the-Counter/ Field Deposit Systems.

Various businesses may collect receipts over-the-counter at field locations. Methods used by retail establishments to collect at the point-of-sale include cash, checks, debit cards, and credit cards. A wholesale customer or its agent may deliver checks or cash to a vendor's office. Alternatively, a vendor, or its agent, may pick up checks or cash from the customer when making a delivery. Field units include local offices,

stores, and restaurants. An important design issue is the selection of banks for deposits made by field units. These banks are called deposit or collection banks. The following factors should be Considered in the selection of deposit banks:

- (a) Location — A deposit bank close to the field unit offers convenience and increased cash handling security for the local manager.
- (b) Branch Banking — Where statewide, regional, or interstate branching is available, collections may be simplified by using branches of the same bank. This reduces the company's administrative and cash concentration costs. The company may, however, lose some flexibility in selecting convenient deposit bank locations and incur a risk in relying on only one bank.
- (c) Compensation — The compensation of field banks can be by fees, balances, or a combination of both. Levels of account analysis statement detail vary from bank to bank.
- (d) Deposit Reconciliation Services — A bank with multiple branches may offer deposit reconciliation services, also called branch consolidation services. These services enable deposits from multiple locations to be credited to a single corporate account with a bank. Magnetic Ink Character Recognition (MICR) encoded deposit tickets identify each location and enable the bank to produce a report of deposits by location on a daily, weekly, or monthly basis.

- (e) Preprocessing Check Deposits — A bank may charge a company less and offer better availability for checks when the dollar amounts are MICR-encoded before they are deposited.
- (f) Cash Processing — A company that accepts cash has two options for making cash deposits:
 - (1) Branch Deposits — An employee of the company can take cash to a nearby bank or bank branch for deposit. When the amounts are large, there is a security risk in this method.
 - (2) Centralized Cash Processing — With centralized cash processing, an armored courier is used to pick up cash from a company's locations and deliver it to a money-processing site. This method is most common for large amount because it reduces security risks. Use of armored services may result in cash being held overnight at the courier facility before deposit.

(2) Mail Processing Systems

Companies receive checks from individual consumers and from other businesses in the mail directly or through lockboxes. For payments received in the mail, a company may use either its own processing center or a lockbox. Deciding which method to use depends primarily on the volume of checks processed and the dollar amounts of the checks.

Company Processing Center — With a company-processing center, a company does its own processing and deposit preparation. It is typically used by a company with a large volume of relative small-dollar payments.

Advantages — The following are among the advantages of a company-processing center relative to a lockbox:

- (a) A company maintains total control over the operation.
- (b) It is easier to make changes in an internal system than it is in a lockbox processor.
- (c) Processing is customized to meet a company's needs rather than standardized to meet the needs of a lockbox processor.
- (d) Updating of payer information may be faster.
- (e) With large volume and small dollars, a company may find internal processing less expensive than paying a third party for the same amount of work because a company can realize the same economies of scale as a lockbox processor.
- (f) A company is assured of future processing capability, as opposed to relying on a lockbox processor that may eliminate the service.

Disadvantages — The following are among the disadvantages of a company-processing center relative to a lockbox:

- (a) A company has to staff and equip the processing center. Check volume must be sufficient for a company to have a cost-efficient operation and peak volume must be accommodated.
- (b) A company may lack a contingency site to prevent an interruption in payment processing.

- (c) Compared to a lockbox, there may be a greater tie lag between processing the items and depositing the checks.
- (d) A company-processing center may not receive mail through a unique ZIP code, resulting in longer mail times.
- (e) A company processing center is likely to be located where the company has operations, which is not necessarily at a point that minimizes mail float.

(3) Lockbox

A processor receives mail at a specified lockbox address, processes the remittances, and deposits them in the payee's account. Lockboxes are one of the more important cash management tools.

Advantages — The following are among the advantages of a lockbox relative to a company-processing center:

- (a) Float Reduction — A lockbox is designed to reduce the three *components of collection float as follows:

- (1) Mail Float — Mail float is usually reduced because a lockbox processor uses its own unique ZIP code to further speed mail delivery. Also, a lockbox processor may make more frequent mail pickups.

(2) Processing Float — Processing float is usually reduced because remittances are mailed directly to the lockbox processor, eliminating a company's intermediary role in receiving and processing checks and delivering them to the bank. Further, many lockbox processors operate 24 hours a day, seven days per week, with emphasis on peak periods. In effect, lockbox operations specialize in the efficient processing of remittances and deposits.

(3) Availability Float — Availability float is usually reduced because lockbox processors schedule work to meet critical availability deadlines. These are deadlines by which checks must reach the bank's proof and transit area. For example, 8 a.m. could be the deadline for receiving same-day availability for checks drawn on banks in the same city, or next-day availability for checks drawn on banks in outlying cities.

(b) Efficient Processing — A lockbox provides efficient processing through economies of scale. Trained staffs process the work for a particular account, and others are trained to back up these specialists.

(c) Audit and Control — A lockbox establishes an external audit trail for payments received, and segregates check processing from other accounts receivable functions. A lockbox may be required by a company auditor even when it is not economically justified based on cost reduction.

Disadvantages — The following are among the disadvantages of a lockbox relative to a company-processing center:

(a) Operational Control — A company has less control over the operation than with a company-processing center.

(b) Cost — A company with very high volume may be able to run its own processing center at a cost that is lower than the cost of a lockbox.

2.2.4 Types of Lockboxes

There are two different types of lockboxes as follows:

(a) Wholesale Lockbox

Among the characteristics of a wholesale lockbox are the following:

- (1) A wholesale lockbox is used for corporate-to-corporate payments.
- (2) The typical wholesale lockbox customer usually receives a small-to-moderate number of large-dollar remittances.
- (3) The most important concerns are to minimize collection float and to provide accurate and timely information on payments received.
- (4) Processing is usually manual and labor intensive.

- (5) Payments are usually made for specific invoices.
- (6) Invoices are sometimes partially paid, and often one payment is for several invoices.
- (7) Adjustments are often made by the payer for discounts, returns, and allowances.
- (8) There is not a standard format for the remittance information accompanying the payment.
- (9) Therefore, each company's remittance information requirements may be different.

(b) Retail Lockbox

Among the characteristics of retail lockbox are the following:

- (1) A retail lockbox is used by companies that receive large volumes of relatively small-dollar remittances, usually from consumers.
- (2) Minimizing costs is generally more important than reducing collection float because of the large volume of small-dollar payments.
- (3) A standard remittance advice, sometimes called a return document, usually accompanies the check.
- (4) A retail lockbox operation is generally highly automated, including specialized equipment that opens the envelopes and removes the contents.

- (5) A retail lockbox often uses Optical Character Recognition (OCR) and Magnetic Ink Character Recognition (MICR) equipment to scan checks and remittance advices.
- (6) The return document has a scan line, which contains information such as the payer's account number, the total amount due, the minimum amount due, and the due date.
- (7) The data on the scan line is captured and usually transmitted electronically to the company to update accounts receivable.
- (8) The dollar amount of the check may be automatically encoded during the scanning process.

2.2.5 Issues Involved with Lockbox Selection

(¹) Lockbox Cost/Benefit Analysis.

The economic benefit of using a lockbox is usually a tradeoff between reducing collection float and paying fees to a lockbox processor over and above internal processing costs.

Float Saving — A lockbox can create float savings by reducing some combination of mail, processing, and availability time.

Fixed and Variable Costs - Lockboxes have both fixed and variable cost components. The company should compare both the fixed and the variable costs per item between a lockbox and a company processing center. Lockbox providers have many ways of charging, but the following are some basic concepts:

- (a) Fixed — Fixed monthly charges may include fees for preparing deposit tickets, renting the post office box, sending remittance data to the company, balance reporting, and account maintenance. Often several of those charges are wrapped into a lockbox maintenance charge. There may also be a charge for transferring funds to a concentration bank.
- (b) Variable — Variable costs may include per-item deposit and processing charges and the charges for transmitting remittance data, photocopying, and microfilming. These and other custom processing charges are often on a per-item basis. Some costs, for example, deposit ticket preparation, may be considered either fixed or variable, depending on the lockbox processor.
- (c) Calculation of Net Benefit — The net benefit from a lockbox is equal to the reduction in float opportunity costs plus the reduction in internal processing cost minus lockbox processing costs. Float opportunity cost is a function of the dollar amount of the collected items, the total collection time of items, and the current investment/ borrowing rate.

(2) Collection Studies

The objective of a collection study is to minimize combined mail, processing, and availability float. These studies use remittance data (customer remittance envelopes, photocopies of checks, and bank statements) to compile the following information for analysis:

- (a) location of remitting customers

- (b) geographic concentration of remitting customers
 - (c) location of customers with largest payments
 - (d) intercity mail times
 - (e) bank availability schedules
 - (f) difference between company and bank processing costs
 - (g) administrative costs associated with using lockboxes
- (1) Mail Time Studies — Treasury consulting firms do periodic studies to compare mail times for various combinations of cities. These services generally report mail times between central city post offices for a uniform distribution of mailings throughout the week. If necessary, adjustments can be made for non-surveyed mail points and day-of-the-week mail experience.

The results of mail time studies are combined with information from banks' availability schedules to compare both city-average and banks' availability statistics. Banks or consultants use this data in conjunction with analysis of a company's actual remittances to determine which cities or combinations of cities are the most effective collection sites.

Computer analysis is performed to produce close to an optimal solution and can be attractive for a company with many banking relationships that is willing to consider many different combinations of cities.

- (2) Processing Cost — A collection study should take into account not only float but the difference in processing costs between a company processing center and a lockbox, and the price differences among

lockbox processors.

(3) Site Selection — In doing a study, a firm will usually select a number of potential sites based on the following criteria:

- (a) Availability — A lockbox in a Federal Reserve city or Regional Check Processing Center (RCPC) point generally gets faster availability than one in a Federal Reserve country point.
- (b) Mail Center — A lockbox is usually best located in a city with a major airport and a major postal processing center.
- (c) Customer Base — A lockbox is usually best located near high concentrations of customers.
- (d) Service Quality — Processors may be pre-screened for service quality before they are included in a study. The overall quality of service and responsiveness to a company's inquiries is as important as mail time and availability performance. A number of processors have dedicated customer service representatives and guaranteed response times for answering inquiries. A company must evaluate the ability of a processor to serve its particular needs.

(4) Lockbox Processor Selection — In selecting a lockbox processor, there are a number of considerations.

Processor Characteristics — Among the characteristics to consider are the following:

- (a) payment processing capabilities
- (b) check processing procedures
- (c) availability schedules
- (d) data transmission capabilities
- (e) deposit and balance reporting capabilities
- (f) its postal facility's mail processing capabilities

City and Processor Selection — A company may first select lockbox cities based on a lockbox study, and then select processors within those cities, but there are other factors to consider that could modify the decision. Some processors may try to demonstrate features such as processing time and availability schedules that are better than the average for their cities and win customers from cities with marginally better mail times.

Relationship Banks — Having a lockbox at a bank where there is an existing relationship may allow the company to strengthen that relationship. Protecting access to credit facilities and making better use of operating balances for bank compensation are two examples. An existing relationship may give an advantage where there are small differences in the study.

Image Technology

Image technology is used to facilitate processing of both wholesale and retail payments. This technology allows paper documents to be scanned, converted to a digital image, and stored for subsequent handling and processing. The data capture process is enhanced through the use of

Intelligent Character Recognition (ICR), which reads handwritten or typed information, and OCR, which read pre-printed information. The documents scanned can be both checks and remittance advices. Potential benefits of applying image technology to the remittance processing function include reduced overall processing costs, increased productivity, improved accuracy, and the ability to capture data for automated posting to accounts receivable.

Regarding the latter benefit, the degree of data capture automation achievable with image technology is generally higher with retail than with wholesale payments because of the presence of a standard return document. Wholesale payments often do not contain the seller's original invoice or OCR advice. Instead, a buyer may enclose its own payment document, a check stub with limited information, or nothing at all. As a result, any machine-readable data is often supplemented with manual-entry data for wholesale remittances.

In addition to the actual processing of items, image technology can be applied to the delivery and storage of remittance data output. A lockbox provider can transmit to a company image of its deposit and detailed payment information or supply this data on a CD-ROM. Among companies that can benefit from this feature are those that must research payment information to respond to a high volume of customer service inquiries.

2.3 Cash Concentration

2.3.1 Objectives of Cash Concentration System

Cash concentration is the movement of funds from outlying depository locations to a central bank account, commonly referred to as a concentration account,

where the funds can be managed more efficiently. Among the objectives in designing a cash concentration system are the following:

- (1) **Simplify Cash Management** - A cash concentration system enables a cash manager to focus on fewer accounts in the day-to-day management of corporate liquidity.
- (2) **Improve Control** - By separating deposit gathering from disbursement control, tracking, and forecasting, a cash concentration system is able to place the control of funds in the hands of key financial managers. In addition, it provides an audit trail for incoming deposits.
- (3) **Pool Funds** - By concentrating cash from multiple accounts, a company can buy larger blocks of short-term securities, which tend to earn higher yields. Concentrated funds may also be used to reduce debt or take advantage of supplier discount opportunities.
- (4) **Minimize Excess Balance** — Cash concentration enables a company to reduce excess bank balances.
- (5) **Reduce Transfer Expenses** — If a cash concentration system is properly designed, it should reduce the expense of transferring funds from field banks to a concentration bank.

2.3.2 Concentration System Considerations

Among a company's concentration system considerations are its collection system, disbursement system, funds transfer alternatives, and banking network.

(a) Collection System

The design of the concentration system is in part a function of the collection system used by a company. The two major types of

collection systems are:

(¹) **Over-the-Counter/Field Banking Systems** - Some companies receive payments from customers in a number of locations. Examples include companies with regional sales offices and retailers. These types of companies deposit over-the-counter cash and checks in field banks. Field banks are outlying depository banks, which are usually located near retail outlets, regional offices, or subsidiary operations. Although field-banking systems vary, most have the following features:

- (a) **Multiple Banks** - A company with many locations needs a convenient local depository for each location.
- (b) **Local Banks** - A field banking system may use community banks if these are closest to the field offices.
- (c) **Limited Need for Daily Deposit and Balance Information** - Because sales and deposit information is often sent directly to company headquarters or a concentration bank by the company's field units, headquarters may require fewer deposit and balance reporting services from field banks. Generally, field offices do not use field banks extensively for cash management services.
- (d) **Local Deposits** - Deposits consist mainly of coin, currency, and local checks. Coin and currency are usually given immediate availability. Local checks may take one day to clear; on-us items may clear faster.

(2) Lockbox Systems - In a lockbox system, a company collects payments through one or more locations and transfers available funds to a concentration bank. A company may have several lockbox sites to optimize collection float, and may also use separate lockboxes for different subsidiaries. Though lockbox systems vary, most have the following characteristics:

- (a) Relatively Few Collection Points -The trend for most companies has been toward the use of fewer lockboxes.
- (b) Regional and Money Center Banks and Third-Party Processors -
A lockbox system often uses regional or money center banks and third-party processors.
- (c) Corporate Services - Standard capabilities of lockboxes include daily reporting of transaction details and ledger and collected balances, and moving funds by wire transfer or the Automated Clearing House (ACH). Bank lockbox providers may offer a company credit facilities and a variety of cash management services.
- (d) Deposit Availability - Because a lockbox often processes a large portion of checks drawn on non-local endpoints, a portion of a company's daily deposit may not be available for one or two business days from the day of deposit.

(3) Electronic Payments - Corporate-to-corporate payments through the ACH are growing as the use of Electronic Data Interchange (EDI) continues to expand. While electronic payments are not likely to

eliminate the need for field banking or lockbox systems, many companies can expect to receive a portion of their corporate-to-corporate payments through the ACH.

With electronic payments, a company's bank can be located anywhere, because mail float is no longer an issue. This reduces the number of banks needed and the cost of cash concentration transfers.

(b) Disbursement System

The design of a concentration system is also a function of the disbursement system used by a company. The two major disbursement systems are as follows:

- (1) **Centralized Check Issuance** - In this type of system, headquarters controls disbursement accounts and is responsible for check writing and account reconciliation. Efficient concentration is crucial in order to fund these disbursement accounts.
- (2) **Decentralized Check Issuance**- In this type of system, checks are written on local disbursement banks and account reconciliation is performed at the local level. Since funds remain at the local deposit banks for disbursement, concentration concerns are reduced.

(c) Banking Network

The number of banking relations will impact the transfer and administrative costs of a company's concentration system. If branches of a single bank can be used, the number and costs of concentration transfers can be reduced. In addition, administrative tasks like account reconciliation are simplified. The growth in statewide and interstate

branch banking will benefit companies by reducing concentration costs.

2.3.3 Cash Concentration Components

Among the examples of cash concentration cost components are excess bank balances, transfer charges, and administrative costs.

(a) Excess Bank Balances

Balances are said to be in excess when the average collected balance in an account is above the level that a bank requires for compensation or the level that a company has chosen to maintain at a bank. There is an opportunity cost associated with excess balances.

(1) Determining Required Balances - Among the methods for determining required balances are the following

- (a) Account Analysis - Most large banks provide an account analysis statement showing the price of each service used, the volume of activity, and the compensation required. Banks may be compensated with balances, fees, or a combination of both.
- (b) Estimates for Field Banks - Some small field banks may not have the capability to provide account analyses. Therefore, a company may have to determine a fair compensating balance. Using estimated per item service costs, average volume, and a reasonable earnings credit rate, a company can compute a target compensating balance for a field bank.

(2) How Excess Balances Arise - Among the reasons excess balances arise are the following:

- (a) Deposit Reporting Delays - Deposit reports by field units may be delayed by local management or the deposit information gathering system. Excess balances may result from delayed concentration transfers.
- (b) Clearing Delays - If concentration is done with EDTs or DTCs, there can be one or more days of float between transfer initiation and clearing or settlement. Excess balances may be created when immediately available funds are deposited, or when checks deposited in field or lockbox banks clear before the concentration transfers clear back to the deposit account.
- (c) Transfer Initiation Delays - A company or a company's concentration bank may be delayed in preparing transfers. For example, if an EDT is not originated in time to meet the bank's deposit deadline, settlement will be delayed an extra day.

(b) Transfer Charges.

In concentration systems, there are various transfer costs associated with the banking system and reporting services. Among typical service charges are the following:

- (1) Deposit Bank Charges - A deposit bank may charge for depositing funds, outgoing wires, EDT and DTC clearings, deposit reports, account maintenance fees, and over-drafts.

- (2) Concentration Bank Charges - A concentration bank may charge for receiving wires, originating and depositing EDTs and DTCs, for receiving and reporting deposit information, and for account maintenance.
- (3) Third-Party Vendor Charges_- A company may use vendors to assist in concentration. Vendors charge for collecting deposit information from field units or lockbox providers, and for transmitting data to a concentration bank and/or company.

(c) Administrative Costs

Among the administrative costs involved with operating a concentration system are the following:

- (1) Managing Deposit Reporting - A major administrative responsibility is receiving and monitoring daily deposit reports from local managers, lockbox providers, and concentration banks.
- (2) Cash Transfer Scheduling - Cash transfer scheduling is deciding when and how much to transfer. Cash transfer scheduling is a routine decision if a company's policy is to transfer the entire amount of the daily deposit. Otherwise, there is a cost associated with deposit monitoring and decision-making.

- (3) Overdrafts - Cash concentration systems have occasional overdrafts caused by misdirected transfers, returned items, or missed deposit deadlines. Also, sometimes a check deposited at a field or lockbox bank is returned after the amount was included in the concentration transfer. In these cases, a field office may reimburse a field bank for a returned item, or reduce the next concentration transfer by the amount of the returned item.
- (4) Timely Local Deposits - Ensuring that deposits are made in field banks in time to receive same-day ledger credit accelerates the availability of funds and reduces expenses related to overdrafts.

Techniques to Improve Transfer Timing

Excess balances can be reduced by removing information delays, anticipating deposits, and by using a faster transfer mechanism. An explanation of each of these techniques follows.

- (1) Remove Information Delays - There are sometimes delays in informing a concentration bank of required transfers, thereby adding extra float to the process. To overcome these delays, a company may do the following:
 - (a) Establish Cutoff Times - Cutoff times encourage transfer reports to be made to meet a concentration bank's schedule.
 - (b) Require Timely Reports - Banks offer services, which help monitor non-reporting locations, as well as the timeliness of reporting locations.

(2) Anticipate Deposits - Anticipation is the initiation of a transfer before cash becomes available at the deposit bank. Given the possibility of abuses of this technique or of occasional accidental overdrafts, it should not be practiced without written agreement with the banks involved. The following are the two most common forms of anticipation:

- (a) Availability Anticipation - The transfer is initiated on the basis of deposit information. There is little risk of ledger overdraft with this method because the ledger balance is known with virtual certainty when the transfer is initiated. However, there is a risk of drawing on uncollected funds since the collected balance is not always predictable due to potential delays in the clearing system or returned items.
- (b) Deposit Anticipation - In this form, the transfer is initiated on the basis of expected deposits that have not yet been reported. This technique is often used by retailers. This form of anticipation requires a good forecasting system, timely deposit processing at the local level, and administrative time to forecast daily receipts and reconcile transfers to deposits.

(3) Use Faster Mechanisms - The use of wire transfers results in immediately available funds while EDTs or DTCs are available only after a one or two day time delay. In many cases, EDTs may become available more quickly than DTCs.

2.4 Disbursement and Accounts Payable

2.4.1 Disbursement and Accounts Payable System Objectives

The basic goal of managing a disbursement and accounts payable system is to properly disburse funds to vendors, suppliers, employees, and other payees in a timely and cost effective manner. More specifically, the objectives of a disbursement and accounts payable system are the following:

(a) Reduce Costs

An important objective of a disbursement system is to reduce a company's net cost of making payments. These costs include:

(1) Opportunity Costs - Opportunity costs include the following:

- (a) The cost of excess borrowing or lost investment income when idle balances exist in disbursement accounts.
- (b) The costs of missed or early payments, which include:
 - (1) The costs of paying bills late, such as lost discounts and ill will.
 - (2) The opportunity costs of paying bills early, such as interest income lost or extra interest expense incurred.

(2) Transfer Costs - Transfer costs are the costs of transferring funds to the bank accounts from which disbursements are made.

(3) Overdraft Costs - Overdraft costs include the monetary costs of overdrawing disbursement accounts as well as possible damage to the banking relationship.

(b) Access Information

Obtaining timely and accurate information about the status of

disbursement accounts and disbursement clearings enables the company to effectively manage its cash position.

(c) Maintain Relationships

It is important that good relationships are maintained with vendors and other payees.

(d) Control and Fraud Prevention

Funds should be protected from unauthorized use through controls such as a written policy establishing authority, responsibilities, and separation of duties.

(e) Manage Disbursement Float

Disbursement float should be managed in light of company objectives and policies.

2.4.2 Disbursement Float

Disbursement float results from the delay between the time when a payer mails the check and the time when the funds are debited from the payer's account. This form of float is essentially the same as collection float, plus any clearing system slippage.

Disbursement float has the following components:

(a) Mail Float

Mail float is the delay between the time a check is mailed and the date the check is received by the payee or at the processing site. Mail float is the same for both collections and disbursements.

(b) Processing Float

Processing float is the delay between the time the payee or processing site receives the check and the time the check is deposited.

Processing float is the same for both collections and disbursements.

(c) Clearing Float

Clearing float is the delay between the time the check is deposited and the time it is presented to the payer's bank for payment. It has two components:

- (1) Availability Float - The delay between the time a check is deposited and the time the company's account is credited with collected funds.

Availability float is the same for both collections and disbursements.

- (2) Clearing Slippage Float - The difference between the time the payee receives collected funds and the time the payer's account is debited. This is not a component of collection float and may be highly variable depending on inefficiencies in the check clearing system.

2.4.3 Disbursement System Considerations

There are several considerations in planning and managing a disbursement system.

(a) Centralization versus Decentralization

Disbursement systems may be centralized or decentralized. The advantages and disadvantages of each are as follows:

- (1) Centralized Check Issuance - In this type of system, headquarters control disbursement accounts and is responsible for check writing and account reconciliation.

Advantages

- (a) Bank and internal costs may be reduced.

- (b) Idle cash at local banks is minimized; excess cash is concentrated and available for investment or loan repayment.
- (c) Payment of bills can be scheduled to coordinate with the cash inflows of the firm.
- (d) Information about a company's cash position can be obtained easily and quickly.
- (e) As fewer individuals have access to the system, there is less likelihood of unauthorized disbursements.

Disadvantages:

- (a) Payments to suppliers may be delayed and the organization may miss a discount because invoices must be sent to a central location for processing.
- (b) Disbursement float may increase and payees may perceive that it is being increased at their expense.
- (c) * Problem resolution requires coordination between headquarters and field offices.

(2) Decentralized Check Issuance - In this type of system, check issuance and account reconciliation are performed at the local level. The checks are generally drawn on a local disbursement bank.

Advantages:

- (a) In decentralized corporations, it may be more efficient for the local manager to have total control over disbursement activities.

- (b) Relationships with payees may be better because checks are drawn on local banks and the local manager can resolve payment disputes more easily.

Disadvantages:

- (a) Idle balances in disbursement accounts may result in significant excess balances for the company as a whole.
- (b) Disbursement float may be lower when disbursements are made to local vendors.
- (c) Information about a company's day-to-day aggregate cash position may be more difficult to obtain. More company accounts may need to be monitored.
- (d) There may be a greater likelihood of unauthorized disbursements because more people have access to the system.
- (e) There may be additional transfer reconciliation and administrative costs for maintaining local disbursement accounts.

- (3) Local Checks Written on a Centralized Disbursement Bank - In this system, check issuance and account reconciliation are performed at the local level, but headquarters is responsible for choosing disbursement banks and funding disbursement accounts.

Advantages:

- (a) The number of bank relationships is minimized compared to a decentralized system.

- (b) Excess balances in field locations are reduced compared to a decentralized system.
- (c) There are more opportunities for volume discounts on disbursement bank charges compared to a decentralized system.
- (d) The local manager has greater autonomy compared to a centralized system.
- (e) There is local control of payment timing compared to a centralized system.
- (f) Vendor relationships are improved compared to a centralized system.

Disadvantages:

- (a) There is less control over when checks are written compared to a centralized system.
- (b) Higher administrative costs may result from a dual system, including local check writing, headquarters monitoring, and management of centralized accounts.
- (c) Use of a non-local bank is required for checks sent to local vendors, compared to a centralized system

(b) Control and Fraud Prevention

Disbursement fraud has become an increasingly significant problem.

Technological advances have increased the sophistication of check fraud.

These advances include color copiers, high-resolution laser printers and

hand-held document scanners for use with a personal computer. Control

and fraud prevention measures include the following:

- (1) Formal, written policy and procedures for each type of disbursement.
- (2) Separation of functional authority for collection and disbursement.
- (3) Separation of expense approval, check-signing authority and account reconciliation.
- (4) Use of check stock printed on safety paper and/or use of difficult to reproduce watermarks.
- (5) Use of reputable printing companies.
- (6) Storing checks and signature plates in a secure area with limited access.
- (7) Using a printing process that does not require preprinted check stock (i.e. laser printing of checks and MICR lines).
- (8) Use of positive pay, a service that matches check serial numbers and dollar amounts to a database to determine the checks to be paid.
- (9) Setting a specific dollar amount limit for each type of account. Checks issued above this limit are returned to the depositor as unauthorized.
- (10) Increasing the use of electronic payment methods.

(c) Disbursement Networks

Disbursement networks are systems of check mailing locations and drawee banks based on disbursement studies and are designed to maximize disbursement float. Disbursement networks are not widely used. The cost and control benefits of making disbursements from just one or two banks often outweigh the float benefits of using a greater number of banks.

(d) Compliance with Trade Terms

Lengthening mail float does not benefit a company unless it is given

credit for having paid the bill on the postmark date. The postmark date may settle a technical dispute, but a vendor might view a substantial delay in receiving good funds as a late payment.

(e) Funding Disbursement Accounts

The cash manager needs to be sure that disbursement accounts are funded to pay checks presented but at the same time, do not have excess balances.

(f) Special Payment Types

Freight Payments - A few banks and third parties offer a specialized payment service in which freight payment specialists pay all of a shipper's freight bills, audit bills for possible overcharges and duplicate payments, and provide reports that help the company compare costs for different routes and carriers.

Tax Payments Federal Tax Deposits - The method for collecting and accounting for taxes withheld by employers from individuals' salaries and wages, as well as corporate business and excise taxes.

III. CITIBANK'S CASH MANAGEMENT SERVICES DESCRIPTION & METHODOLOGIES

3.1 Account Payable Process Management

(a) PayLink Check

PayLink Check service is a cost-effective "outsourcing" approach designed to address rising production costs and high staff turnover. It significantly enhances internal security and control procedures, while helping management shift their time to focus on more critical core business competencies. (Please see Figure A.1)

(1) Objectives of PayLink Check:

- (a) Improved productivity and operating efficiency.
- (b) Reduced processing and administrative costs.
- (c) Enhanced security and control.

PayLink Check can be initiated by downloading of payment instructions from accounting system to Citibanking system, thereby provides a complete automated process for payment processing.

PayLink Check offers a convenient, reliable, and secure method for local currency payments. This means that customer can effectively outsource the entire check issuance process to Citibank and re-deploy scarce resources into higher value-added functions. By outsourcing this cash management function, customers will achieve greater security (no need to maintain an inventory of un-issued continuous checks in the office) and enhanced productivity gains.

(2) How PayLink Check Works (Please see Figure A.2)

Step 1: Payment Download. Before payment date, payment instructions will be downloaded in an ASCII file format generated from customer's accounting system to Citibanking installed at customer's office. These transactions are then available for review on the Citibanking Workstation.

Step 2: Authorization. Authorized person(s) will review, verify and authorize these payment instructions in PayLink module in Citibanking system to assure accuracy. Up to 9 levels of authorization can be included in the process.

Step 3: Authorization report. Once payments have been authorized, an authorization report can also be exported in an ASCII file format from Citibanking system to customer's accounting system for update.

Step 4: Transmission to Citibank. By invoking the "End of Day" function after authorization on Citibanking, a consolidated file will be created, and the encrypted file of payment instructions will be sent electronically to Citibank for processing. If customers wish to send data via diskette, the system will automatically generate the "Paylink list" and "Paylink Check Issuance Request". The "Paylink Check Issuance Request" signed by authorized person(s) should be attached with the diskette. Citibank will send messenger to pick up diskette and documents to prepare check issuance.

Step 5: Citibank Issues Checks. Checks will be generated and issued to beneficiaries at the Citibank "Paylink Counter", by "Registered Mail", or "Return" to customer, according to the customer's instruction on

the next day after payment instructions.

Citibank will also provide a "Check Issuance Confirmation Report" within 24 hours after the payment file is received and processed. This will consist of a summary of payments made and a detailed payment report, which includes the fees debited from customer's account

(3) Methods of Delivery

- (a) Return Method - Citibank will return the checks to customer's office by noon.
- (b) Mail Method - Citibank will send checks by registered mail to beneficiaries. "Receipt Acknowledgment" will be returned to customer in the following day.
- (c) PayLink Counter Service Method - Citibank will be responsible for verifying payment amount, name and address on receipt, if receipt contains incorrect information, Citibank will not distribute the check. At the same time Citibank will collect tax invoice(s), receipt, bill collection slip and/or other documents from beneficiaries and return them to customer the next day. Counter distributes checks to vendors at 1:00 p.m. - 3:30 p.m. on the first day and from 9:30 a.m. - 3:30 p.m. on the following days.

(4) Reconciliation

All checks will be automatically reconciled. The Paid Check Report & Outstanding Check Report will be submitted to customer on a Citibanking or monthly basis.

(5) Service Standard/deliverables

- (a) Outstanding Check Report, Paid Check Report and Billing Advice can be picked up at Citibank's counter.
- (b) PayLink Checks and reports can be generated in Thai or English. For lost/stolen checks, Citibank will do police report, stop payment and re-issue checks for customer within 24 hours.
- (c) Stop Payment can be accepted by telephone but customer must confirm Citibank in writing along with police report within 3 business days.
- (d) Deliverables from Citibank to customers are:
 - (1) Documents from vendors and/or other claimed documents.
 - (2) Check Issuance Confirmation.
 - (3) Check Issuance Acknowledgment (for Mail and Return Method only) should be signed by authorized signer(s) and returned to Citibank if all issued checks are correct
 - (4) Copy of Mail registered for Mailing Method.
 - (5) Paid Check Report.
 - (6) Outstanding Check Report.
 - (7) Monthly Billing Advice.
- (e) Paylink Counter Service time is 9:30 a.m.- 3:30 p.m.

(For the first payment date, the time is 1:00 p.m. - 3:30 p.m.)

(b) Paylink Direct

PayLink Direct is a product which enables payments to be made electronically via The Bank of Thailand (BOT)'s Media Clearing system from initiating bank

(Citibank) to the beneficiary's bank accounts held in various banks or branches all over Thailand.

Paylink Direct is suitable for a company's local regular payments such as vendor or payroll payments. This means that customers can use Paylink Direct to directly credit payments to bank accounts of vendors, suppliers, employees, agents, or utility services.

PayLink Direct - Features

(1) Service Cycle

Payment files can be sent to Citibank by diskette or on-line via electronic banking. Customers are required to send the payment instructions to Citibank 3 working days before the payment date by 3 p.m. for diskette solution. For on-line solution, customers can send payment instructions to Citibank no later than 10 am 2 working days before the payment date.

To cancel a batch file of instruction, customers have to inform Citibank no less than 2 working days before the payment date by 12.00 p.m.

(2) Funding

Customers authorize Citibank to debit Current Account with Citibank 2 days before the payment date to cover the face value of the PayLink Direct instruction plus the transaction fees charged.

Citibank will credit funds into customer's beneficiaries' bank accounts on the agreed schedule dates. Hence customer's beneficiaries will be able to withdraw their payments on the scheduled payment date every month. -

(3) Reports

PayLink Direct provides the following reports to control the payment;

- (a) Debit Advice
- (h) *Cr edit* Advice
- (c) Customer Result Report

(c) Paylink Express

(1) PayLink Express feature

PayLink Express is offered specifically to help Citibank's customers improve the efficiency of urgent Customs or Tax Payments and/or check payments to other governmental agencies.

(2) Process (e.g. Customs Payments)

When the imports arrive and customer need to issue check payments payable to The Customs Department to clear the goods, Citibank's customers can send the PayLink Express Application Form (provided to Citibank's customers) to the mentioned fax number at Citibank, stating the beneficiary name and amount to be paid.

Upon our receiving the fax, Citibank will contact Citibank's customers to confirm the instruction, and within one hour, Citibank will issue a Cashier Check. Customer's messenger or a messenger from designated shipping company can come to the PayLink Express Counter at Citibank to pick up the check.

The original Application Form can be forwarded to Citibank later within 5 days. The funds will be debited from customer's account on check date.

3.2 Accounts Receivable Process Management

(a) Speed Collect

Citibank Speed Collect is a reliable solution for the efficient management of Thai Baht receivables. Checks payable at Bangkok or upcountry and either due or post-dated checks are cleared quickly and credited promptly into customer's account within a specified time. Customer would know exactly when to expect their funds. Speed Collect also provides comprehensive reports on a daily or monthly basis to help you manage your cash flows, improve your credit control and ease your bank account and A/R reconciliation.

Speed Collect Process

- (1) Checks coming in at customer's office will be collected by Citibank's messenger as per pre-arranged schedule.
- (2) Collection documents will be passed on to invoice data entry team. The data entered will be validated by means of dual entry or against preloaded open invoice information. How information on the collection documents should be recorded shall be agreed between Citibank and customers
- (3) All Bangkok clearing checks received by 11:00a.m. will be sent for same day clearing.
- (4) Checks returned with status "5" will be represented for clearing one more time. Return items will be forwarded to customers for further action along with the detailed check return report.

Reconciliation and Reports

- (1) Remittal letter containing deposit information will have both checks and invoices on the report. A file containing both deposited checks and manually entered invoices can be uploaded into the A/R system.
- (2) When checks are cleared, file containing check information and matched invoices can be retrieved via Citibanking. This file can be uploaded into the A/R system for automatic A/R entries.
- (3) Customer's statement will show one consolidated credit entry for each category of payment. i.e. cash, check, postal order etc.

Post-Dated Check Custody (PDC)

In addition, Citibank's Speed Collect solution can also offer customers with Post Dated Check Custody service. These checks will be safe kept by Citibank upon receipt and will be presented for collection on due date. Apart from processing these checks, Citibank will also provide customers with Post Dated Check Custody Report that allows customers to keep track and monitor those outstanding checks closely.

Image Scan Service

Apart from processing the check collections, Citibank's Speed Collect solution can offer customers complete image scan service for each individual check (frontal image and back image) that are sent for processing at Citibank.

Summary of Special reports

- (1) Remittal Letter
- (2) Credit Advice
- (3) Liquidation Advice

- (4) Return Check Advice
- (5) Client Charge

3.3 Citibanking — System Security

Transaction initiation on Citibanking is controlled by sophisticated entitlement management with integrity ensured by password control at an individual user level. This includes functional controls: types of functions allowed, accounts, amounts, etc. Initiation or modifications of transactions have dual controls, which ensure that transactions follow the maker/checker/authorizer flow. Customers can decide how many levels it requires for finalizing a payment prior to transmission. Below is a detailed description of the security features on Citibanking:

(1) Entitlements

Customers can specify who may gain access to the system and for what purpose, through user profiles tailored to the customer's requirements. These user profiles, together with the system-enforced change of passwords, ensure that account information remains completely confidential and payment instructions are duly authorized.

(2) Dual Control Function

To ensure that no one person can create and authorize his/her own instructions, Citibanking has incorporated a security feature that requires a maker/authorization role. This means that all instructions must always be created by one person and properly authorized by another (or several others, depending on how the system is set-up) before it can be transmitted to Citibank.

(3) Data Encryption

All transactions and message data are encrypted so those files cannot be accessible by anyone who is not viewing them through the software.

(4) Automatic Sign-Off of inactive Users

If Citibanking is idle for a pre-defined period of time, i.e. neither the keyboard nor the mouse have been used within that period, the user is automatically signed off and the sign-off window is displayed.

If the user who was automatically "signed-off" wants to resume with his or her work on the system, he or she will have to sign-on to the system again.

(5) Audit Logs

Audit logs provide a complete record of Citibanking software activities with complete summaries of which function was performed, when, by whom and status of file transmission. Customers can specify the amount of detail required in the logs, and whether the logs are to be displayed or printed.

(6) File Encryption.

Citibanking will produce an encrypted transaction file after the user invokes the 'End of Day' function. Citibanking dials into Citibank's host computer to identify itself via a customer ID and alerts the bank that it has transactions to be sent

At this point, the 'Call-Back Authentication' security feature will ensure that the transmitted file meets with the following standard:

- (1) Confidentiality - that the data is not disclosed to unauthorized persons
- (2) Integrity - that the data has not been altered.
- (3) Authentication - for proof on the source of data.
- (4) Non-repudiation - for proof that the data actually originated from the sender

Training

Customer can expect that the staff using Citibank systems will be fully trained in their understanding, use and practical operation. The Citibanking training school will provide training that consist of detailed hands-on demonstration, and comprehensive instructions for all Citibanking users.

Citibank also has dedicated electronic banking (EB) specialists, whose sole function is the installation, training, and support for EB systems. The EB specialists are available on an "as needed" basis to solve any issues, either technical, or practical, which may arise, at no extra cost to customer.

These are integral parts of the delivery process, which starts with the development of Citibank proposal and concludes with customer having complete satisfaction:

- (a) The Cash Management System is implemented as proposed and agreed upon.
- (b) Full training has been given to meet customer's requirements.
- (c) All processes for ongoing customer service have been met.

IV. FINDINGS & RESULTS

The Cash Management Services of Citibank will benefits three core parties which are;

(1) Benefits to Customers of Citibank

(a) Benefits of Disbursement Products

Reduced Processing Costs: Customers can minimize the expense of executing payments by eliminating the manual process involved in preparing applications, verifying and signing individual checks, and issue them out.

Reduced Administrative Costs: Outsourcing the payables via the PayLink Module in Citibanking will allow customers to eliminate the need to maintain, secure, re-order check stock any related supplies.

Reduced Management Costs: Management's time is better spent by not having to authorize and sign checks. This also eliminates delays in the event authorized signers are out of the office or unreachable. Supervisory time is freed up to address more critical issues in daily business.

Fraud Protection: The risk of fraudulent checks is minimized since payments are initiated and drawn on a Citibank account.

Improved Management Reporting: Accurate account information, such as payment records and audit trails, are readily accessible via Citibanking's extensive reporting functions to assist management and decision-making processes.

Simplified Month-End Reconciliation: A single consolidated amount will be debited from Citibank account each time customer sends in the payment file. At month end, Citibank can also provide a listing of unpaid checks.

Avoid expensive technology development and support cost: by using the ready made automated solution.

Enjoy volume insensitivity: As the payables grow with business growth, an automated solution reduces the demand for additional clerical resources.

Cost Saving: Citibank's PayLink Direct is cheaper than the current pricing normally charged by local banks. PayLink Direct pricing is the same for Bangkok and upcountry.

(b) Benefits of Collection Products (Please see Figure A.3 - A.4)

Peak Relief The freeing up of resources is especially valuable during month end or collection peaks

Speed Collect provides consolidation of information. Customizable reports show details of each transaction. Single credit or debit (in case of returned) is done on customer's account each day, thus, simplifying daily and/or monthly reconciliation of account statement.

Improved Productivity: Speed Collect gives detailed information daily via file transfer. The data file can be easily uploaded into the systems without any manual input. Time can be better utilized addressing other issues more critical to the organization, thus, enhancing efficiency and productivity.

Manage Anticipated Growth: Reduce and eliminate management time spent on collection process. Additional investment in people, premises and equipment to handle anticipated growth could be avoided.

Secure and Reliable Check Custody: Post-dated checks will be entered into the system. Citibank keeps track of these checks and ensures that they are sent for collection as soon as they become due.

(2) **Benefits to the bank**

Bank can enjoy the incremental revenue from Cash Management services in terms of float and fees, because the core revenue of the bank comes from overnight float and transaction fees.

Bank can increase their customer base: New products can create customer's satisfaction and serve the customer's needs. Varieties of products can be matched with different customers from different industries.

(3) **Benefits to Thailand Banking Industry**

Encourage Improvements & Competitive Environment: Cash Management Services will create competitive environment and encourage banks to improve their services.

Could be a pilot study for local bank: Local banks could learn and

analyze the market before buying or develop the Cash Management systems.

Create the local specialist in Cash Management Services: The local human resource can be educated and will be the quality resource for Thai banking industry.

Cost & Benefit Analysis

(a) Benefits for customers

We could also evaluate the benefits of Cash Management Services in terms of Cost & Benefit analysis. Following is an example of cost analysis for PayLink Check Service, which is calculated from time consuming and labor cost.

	Time Used (Minutes)	Labor Cost (Baht)
(1) Prepare check requisition	5	5
(2) Supervisor authorizes payment	5	10
(3) Check preparation	10	10
(4) Co-ordinate schedule	2	4
(5) Signing by authorized signer	3	15
(6) Reconciliation	2	4
(7) Check fixed cost		5

Cost Per Check = 53 Bahts.

Assuming 300 checks issued monthly. Total cost per month = 15,900 Bahts

(b) Benefits for the Bank

(1) PayLink Revenue calculations

PayLink Check revenue could be divided in to 2 categories, which are float and fee.

$$\text{Float/ day} = \frac{\text{Amount of funds remain in the account} \times \text{overnight interest rate}}{365}$$

Fee = Fee charges per transaction.

For example:

If the customer paid check through PayLink Check service around 300 transactions and the total payment per month is 300 million Baht.

Fee = BHT 15, Float = 3 %/annum

Rev per month = (300 txn x BHT 15) + [(300 million x 3%)/365]

(2) Collection Revenue calculations

Collection revenue calculation will depend on the services. The bank will charge the commission charge for upcountry check collection, and processing fee, withdrawal fee, return check charge, or **PDC** custody fee. Etc.

For Example:

If the customer has used the upcountry check collection service. This customer has 1 month Post Dated Check and the monthly volume is approximately BHT 100 million, total number of checks is 50 checks per month.

Rev per month = (100 million x 0.2% commission charge)+(50 x 10 Bht PDC custody fee)

The reference annual revenue in some industries are shown in Table A.1

V. CONCLUSION AND RECOMMENDATION

5.1 Conclusions

The Cash Management Services can increase efficiency of the business operating system. In addition, Cash Management Services will provide the reports in text file format, which can be exported to the Account Payable and Account Receivable systems such as JD Edward, SAP, ORACLE etc. The company can concentrate on core business activity by outsourcing labor-intensive function. The company can also save time, manage cost and enhance control.

Cash Management Services business is taking an important role in the banking industry. At present, there are only few banks that provide the Cash Management Services and most of them are foreign banks. Needs for the Cash Management Services is increasing rapidly. Therefore, it is justifiable for the local banks to develop and invest for the Cash Management Services.

In summary, Cash Management Services will give benefits to service provider and customer. Cash Management Services is good tool to synchronize a company's cash flow and promoting the efficient operation of the cash flow timeline. Cash Management Products can reduce the workload and operation task occurring along the timeline. The shorter the overall cash flow cycle, the more liquidity a company is capable of generating. However, cost of funds may vary among the customers. So the manager should not consider only the fee or bank charge but also the cost of funds such as Over Draft rate.

5.2 Recommendations

After analyzing benefits of Cash Management Services, there were recommendations for three main parties that are;

- (1) Companies & Business Operators should do the feasibility study to apply the integrated Cash Management Services in order to reduce the operating cost and enhance the efficiency of the cash flow. The Cash Management Services concept is to outsource the operation task. So it is very suitable with the companies that are facing the economic crisis. The service charges of the Cash Management Services are based on number of transactions. So it is variable cost. Company has no need to invest in the facilities and manpower such as computers, check printing machine, counter for check distribution, messenger, etc. The companies also have to make themselves up to date. There are several Cash Management Services providers in the market so it is a good opportunity to choose the best quality services and lowest price.
- (2) Cash Management Services Provider should continuously develop the innovative Cash Management Services to compete with each other. The competitive market will create a better quality of services. The service providers also have to develop the high standard of quality to create customer satisfaction, maintain the existing customers, and expand their customer base. The Cash Management Services providers should try to increase their correspondent bank in order to increase their network and capabilities.
- (3) The Local Banks should complete setting up their Cash Management Services system as soon as possible. In the past few years,

local banks have lost a huge amount of revenue to the foreign banks just because they didn't have the Cash Management Services. The local banks have a big advantage, which are their intensive branches and net work coverage. The foreign banks have to pay extra cost for the network but the local banks need not do so. At present, there are some local banks entered to the Cash Management Services market. However, they provide their service to only few customers. The local banks that are starting to provide their Cash Management Services are Bangkok Bank PCL., Thai Farmer Bank PCL, Siam Commercial Bank PCL, and Bank of Ayuthaya PCL.





APPENDIX A

BENEFITS OF CASH MANAGEMENT SERVICES

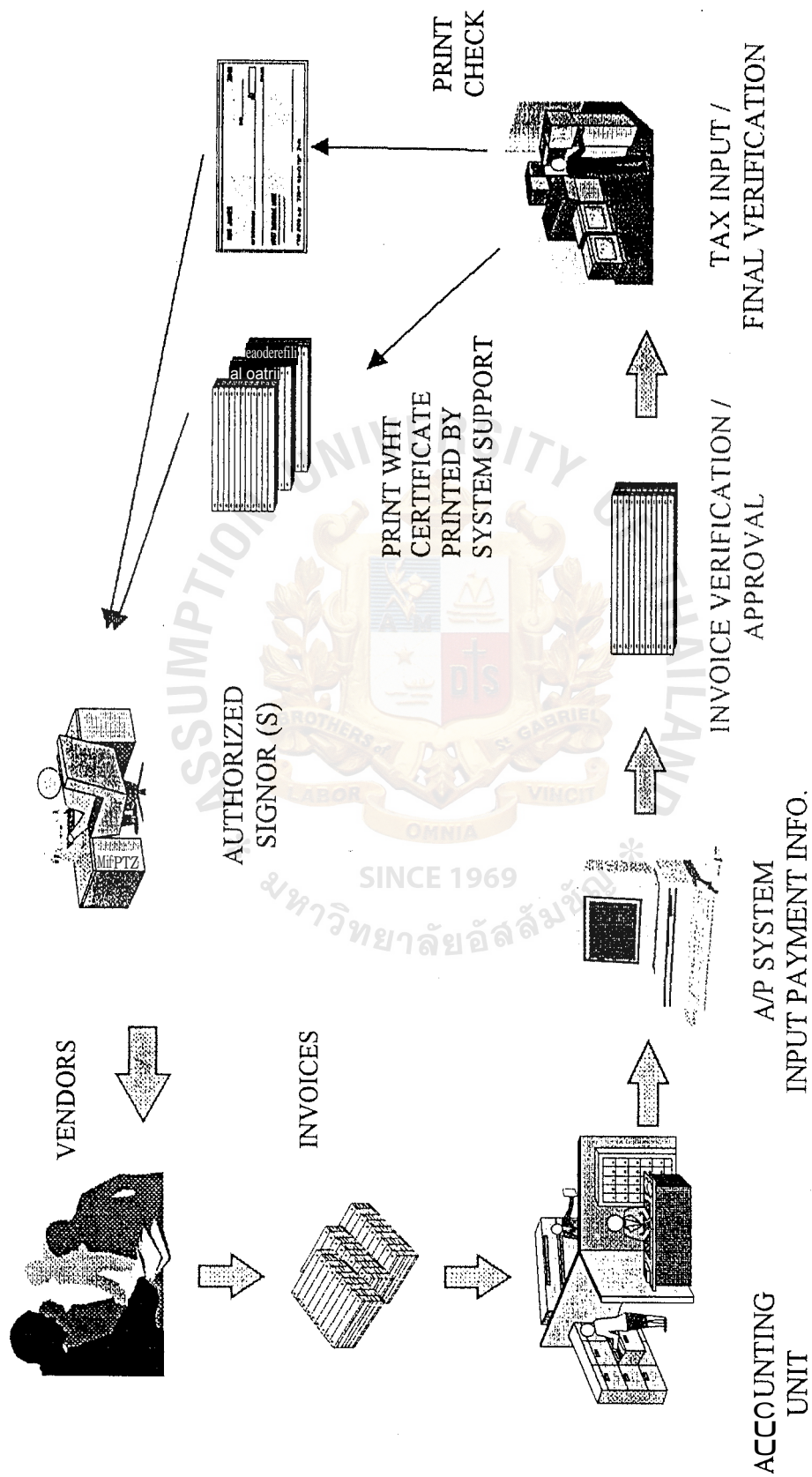
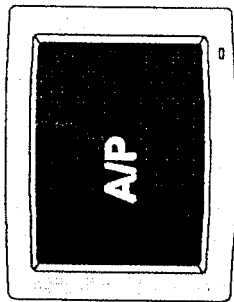


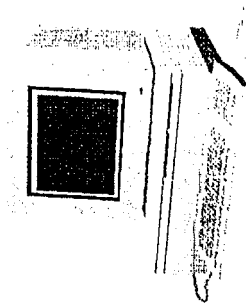
Figure A.1. Domestic Payments — Vendor Current Process.

CUSTOMER

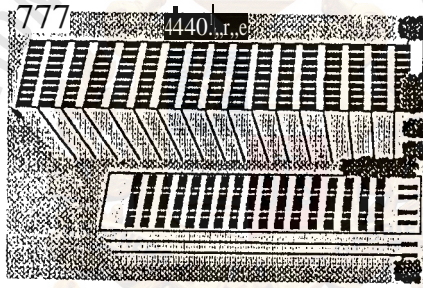
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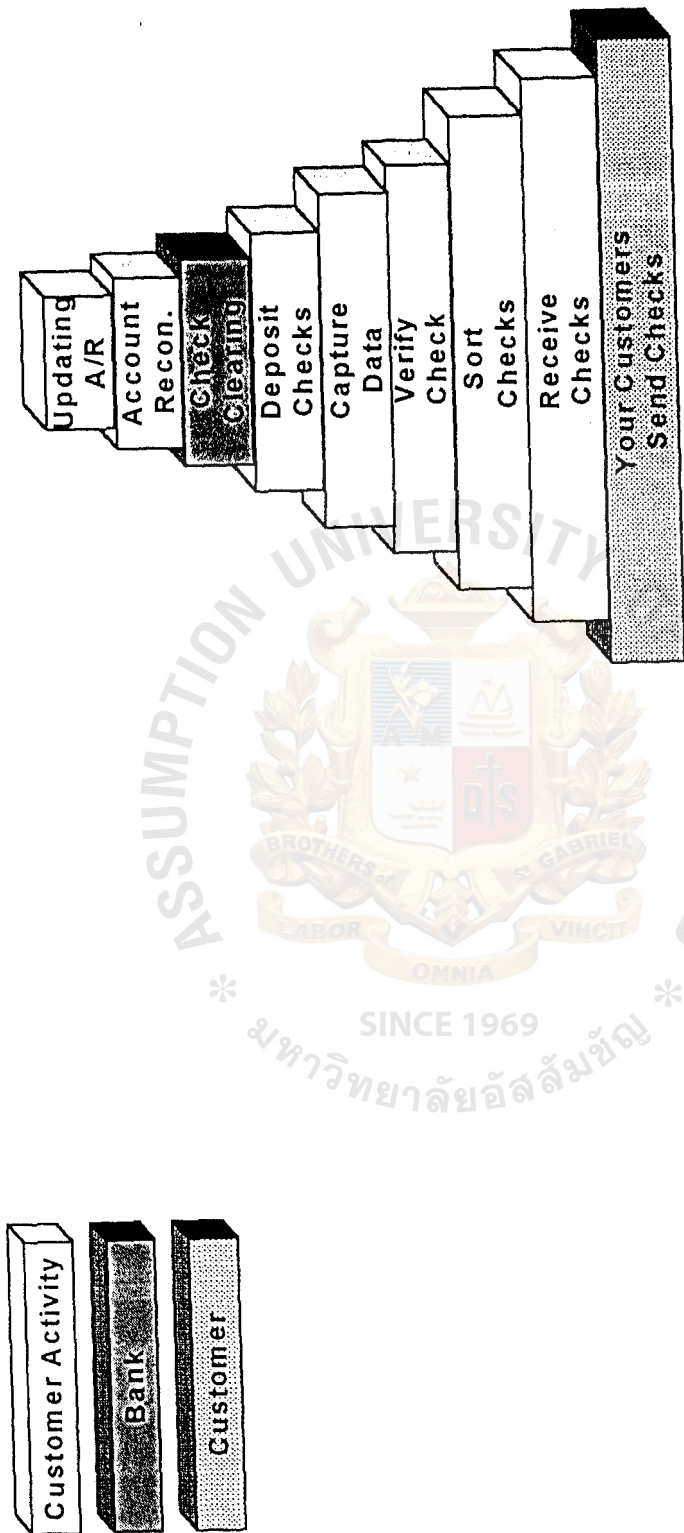
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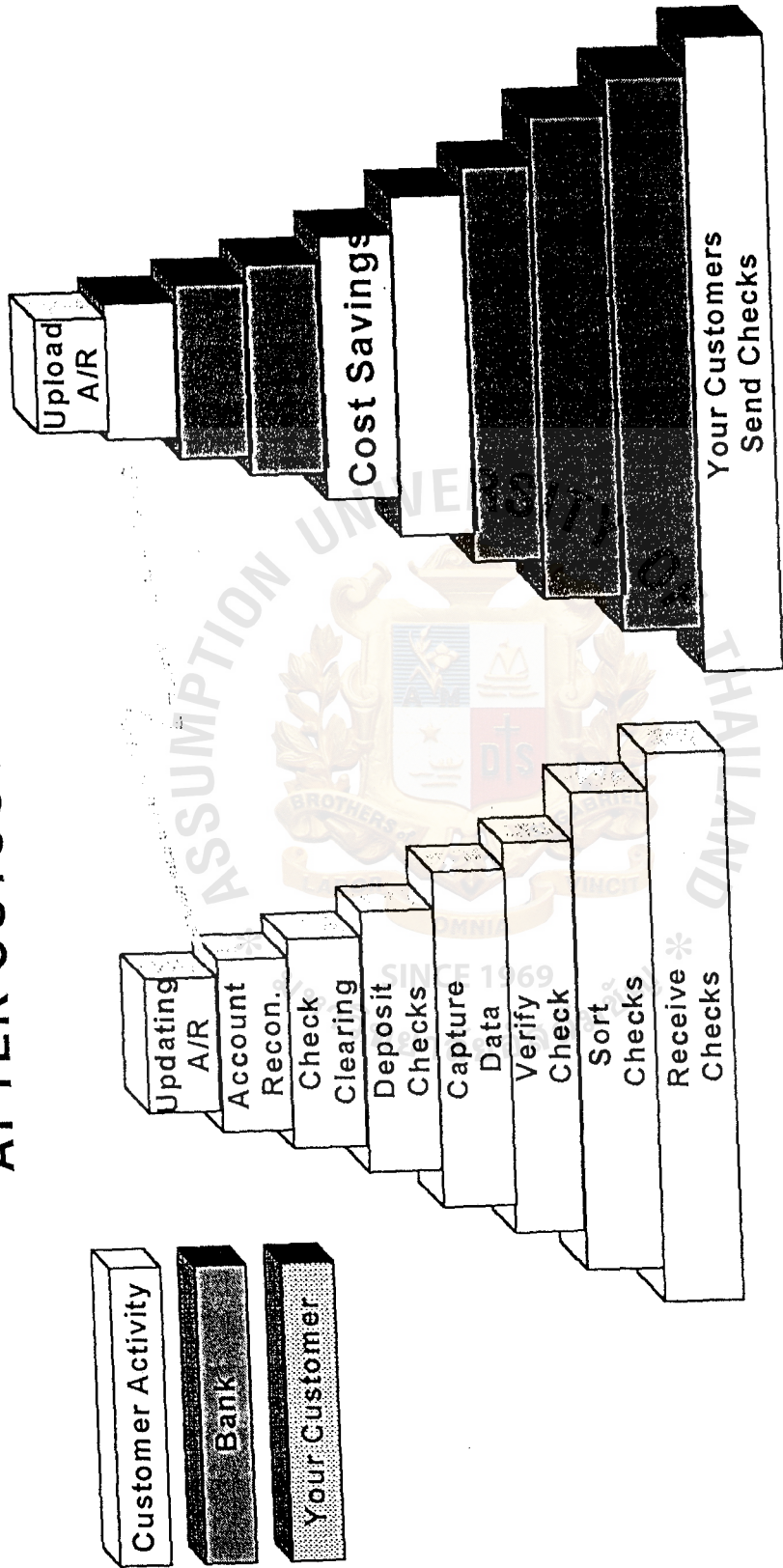
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