



MEASURING, MODELING AND MONITORING YOUR LOCKBOX

A Practical Guide

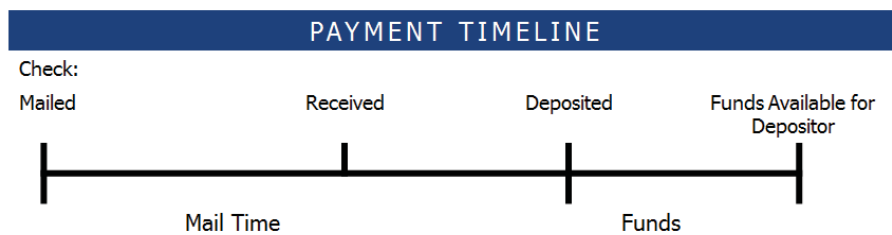
It is a good practice for corporations to review their remittance systems on a regular basis as the number of electronic payments as well as the value of float increases. Checks are still the dominate form of business-to-business payments despite long efforts to migrate to electronic payments. A lockbox analysis identifies the optimum number of lockbox sites, the best locations for these sites, and the most efficient assignment of customers to the selected sites. A common type of analysis evaluates the current performance of an existing lockbox system and fine-tunes the system by reassigning customers among existing lockbox sites.

The material contained in this paper provides an in-depth discussion of how to recognize the need for a lockbox analysis, how to approach doing a lockbox analysis and how to monitor your lockbox's performance.

Measuring Collection Time

The payment time line or the “check is in the mail” (Figure 1) is a familiar concept to most treasury managers. Outside of a lockbox environment a treasury manager could measure all of the components from the mail date (postmark), receipt time (date/time stamp or mail log), deposit date (deposit ticket or bank statement), and funds availability date (balance report). In a lockbox environment, only the processor knows the time mail was received, therefore this same time line appears to a lockbox customer as only two segments: mail time to deposit and funds availability.

Figure 1



In lockbox analysis, mail time is measured from the calendar day of mailing to the banking day of deposit. Funds Availability is measured from the banking day of deposit until the banking day when collected funds are made available to the depositor. Both segments of this delay are calculated in calendar days.

Calendar days, business days and banking days do not always coincide. A banking day may end as early as 1 p.m. Deposits made earlier than that time are credited on that calendar day while deposits made after that time will bear a ledger credit date of the following business day. A “deposit” made on Saturday or Sunday would appear as a Monday deposit on a banking statement. Phoenix-Hecht reports its measured mail times to mirror what a corporation actually sees if it were to measure its own remittances. Specifically, the corporation would use the ledger credit date per the bank statement to determine the date of arrival. Mail time, as the corporation sees it, is therefore the number of elapsed days from the postmark date to the deposit date.

Phoenix-Hecht® is responsible for measuring the mail and funds availability data used in almost all lockbox analyses. An estimated 99% of the lockbox studies performed use Phoenix-Hecht data to make comparisons of lockbox providers. The data and expertise to conduct a lockbox analysis is available directly from major lockbox providers.

The Phoenix-Hecht Postal Survey™

Data to determine the location of lockbox sites comes from the Postal Survey. The Phoenix-Hecht Postal Survey is a scientifically designed database of mail and availability times. This data is used to quantify the time required for corporate payments to flow through the postal system, be processed by various lockbox service providers and be converted to available funds in the receiving company's account. This information can be used to estimate and compare different lockbox locations by measuring mail times and integrating that data with bank availability schedules. Deposited checks are basically now an electronic image and are cleared to the drawee bank on the same day or next day depending on processing schedules. The Postal Survey data is updated twice a year by sending remittance-like envelopes from 170 sending zip codes to the major lockbox participating processors across the country. Each envelope is individually coded and tracked as it enters and exits the mail stream throughout the mail stream. The mail times measurements are integrated with bank availability to calculate total collection time.

A corporation can obtain a lockbox provider's Phoenix-Hecht Postal Survey results directly from the service provider or through the fulfillment service available at www.PhoenixHecht.com. The printed Postal Survey report requires a number of assumptions to determine the availability component of total collection time. For check deposits, the most accurate representation of the total collection time your corporation is likely to experience involves conducting a lockbox analysis.

Companies receiving checks by mail may view another banking service, Remote Deposit, as a viable substitute for lockbox. However, Lockbox has an inherent advantage in receiving mail much earlier than when regular First Class Mail is delivered.

TOTAL COLLECTION TIME IS THE ONLY VALID MEASUREMENT TO USE WHEN COMPARING TWO OR MORE LOCKBOX PROVIDERS.

Modeling

The Lockbox Analysis

One or more of the following situations is often cited as the reason for conducting a lockbox analysis:

- The company's remittance pattern has changed due to sales growth (or contraction), changing customer base, acquisition or divestiture of subsidiaries, divisions or product lines, customers increasing their use of electronic payments or changes at the lockbox bank or in the postal system.
- The company wishes, for administrative control or relationship reasons, to reduce the size of its banking network.
- The company is not using lockboxes and receives checks averaging \$1,500 or more mailed from its customers.

An evaluation of the current remittance system is usually considered part of a lockbox analysis in that it serves as the benchmark for comparing any alternatives. Evaluating the current system can also be part of an ongoing monitoring program discussed further in the paper.

Fine tuning the system does not change the existing lockbox sites but, rather, changes the customers assigned to mail to each existing lockbox. The result of this type of study is usually modest volume shifts among the existing lockboxes. Finally, a lockbox optimization considers a complete realignment of the lockbox system.

What Data Should Be Gathered - The Remittance Sample

The lockbox model contains the mail time and availability schedule databases, but needs one more set of data in order to provide estimates of the total remittance time for various alternative lockbox locations. The remittance sample is the data that allows the calculation of estimates for each company.

The remittance sample, often referred to as the check sample, is one of the most important aspects of a lockbox analysis. Striking an appropriate balance between accuracy and a cost effective data collection effort is the key to an accurate study.

Basically, the sample should represent a reasonable estimate of how many dollars are expected to be mailed from the company's customers in the future and from where these payments will be mailed. There are many possible sources of data for the remittance sample, all of which share the basic elements of indicating how many dollars are coming from which locations.

A simple and in many cases an acceptable remittance sample is "sales by state" information from a recent month or quarter. A somewhat more precise remittance sample is "dollars by mailing zip code." It should be noted that the model is "dollar driven" since a large dollar payment will generate more remittance time than a small dollar payment. Often a "dollars by zip code" sample is simply taken from a customer sales report that has been put into a spreadsheet. Not all customers need to be included in this type of sample as long as about 80% or more of the total dollar volume is represented.

Given these observations, here are some important points to consider in selecting or creating a sample:

- The sample should be an accurate, dollar-weighted, geographic distribution of the company's annual remittances. The geographic distribution of the sample is a significant factor in determining the accuracy of the calculations in a lockbox analysis. If the sample does not accurately represent the major dollar locations from which customers are mailing their remittances, it will invalidate the analysis.
- The number of items included in the sample is secondary to the percent of the total dollar value of the remittances being analyzed. The reason for this is that as a company grows, the lockbox system grows larger and marginal decisions will be made on smaller differences in time. Remittance sample error is one of the principal causes of error in a study, increasing the percentage of dollars included in the sample provides more accurate float measurement. Phoenix-Hecht recommends a minimum of 80% of dollars be represented in the analysis.
- All large dollar remittances (customers) should be accurately accounted for in the sample. Two possible errors can occur here. First, some large customers may have been left out because none of their remittances happened to be received in the sampling period. If this occurs, additional items from another time period should be selected and added to the sample. Second, some customers may be over-represented, in that their items were unusually large or received with greater than normal frequency during the sample period. This source of bias can be adjusted by deleting or adjusting the size of the items.

Related to the issue of sample selection is determining what data should be collected for the sample. All studies that use the Collection Model should have a sample containing at a minimum:

- Dollar amount of the remittance
- Mailing location of the remittance (zip code or state)

Using these two pieces of data aggregated and combined with assumptions on the payment behavior of the customer base can produce an accurate study for benchmarking or monitoring the current system and realigning the assignment of customers within the current system. The degree of accuracy in the study can be enhanced by adding:

- Routing Transit Number (RTN) of individual checks
- Customer name

There are good reasons to encode the Routing Transit Number of the check and customer name. Individual customer payment practices (i.e., the mailing zip code may not reflect the location of the drawee bank) can be examined or a test can be conducted. To test the sensitivity of the lockbox system to a particular customer, for example, what happens to the lockbox system if customer XYZ pays electronically next year.

After the remittance sample has been collected, the data should be reviewed to determine that the dollar weighted geographic distribution of remittances matches the distribution observed by the accounts receivable or sales department and all large customers have been accurately represented.

Individual items in the sample that represent 1% or more of the total dollars should be questioned. Any large non-recurring or intra-company remittances should be eliminated from the sample. Other large items that are received less often than the sample would indicate may need to be adjusted or eliminated. In some cases a lockbox can be justified for just a few large remittances. Remember that in the lockbox model is a dollar weighted calculation. Any anomaly can cause an incorrect assignment of remittances.

The Collection Model™

The Collection Model licensed by lockbox providers can be used to perform a remittance analysis for companies of all sizes. The data structures permit the model user to analyze wholesale or retail remittances by tailoring assumptions and including processing costs.

The heart of all lockbox studies is the determination of relative total remittance times for current and proposed lockbox site configurations. In order to accurately estimate total remittance times, lockbox studies depend on surveys of mail times performed by Phoenix-Hecht, bank availability schedules and deposit processing cutoff times supplied to Phoenix-Hecht by the banks. By combining the remittance sample, the model calculates a mail time and expected availability for each site being considered.

Analysis Results

A lockbox analysis represents a combination of several assumptions and measurements, each of which contributes to the reliability of the final estimates. The quality and accuracy of the remittance sample is the most important. The second most important source arises from differences between actual bank operating procedures and the way such procedures are modeled within the databases. For instance, if a company is receiving only one processing deposit per day and this was not taken into account, the remittance estimate may be off by 0.4 days or more.

A small amount of error can come from statistical variations relating to the mail time and availability databases. As a general rule, typical studies have a “model accuracy level” of approximately 0.1 calendar days. This implies that if one were to find two solutions whose total remittance times differ by less than 0.1 days, the results could be considered equal and the selection should be based on criteria. The 0.1 day is only a general guideline. Differences of less than 0.1 day can be meaningful for lockbox systems involving multiple sites.

Since the savings derived through a change to a company's cash flow, it is appropriate that the cost of capital be used to value savings (not the overnight investment rate). The cost of capital most closely approximates the interest rate used in lease vs. buy decisions.

The savings seen in the study can typically be divided into two parts. First, is the potential savings obtained from simply reassigning customers to existing lockbox sites. The second component of savings comes from adding or deleting lockbox sites. The cost of implementing changes to customer assignments is usually much lower than the cost of adding or deleting lockbox sites.

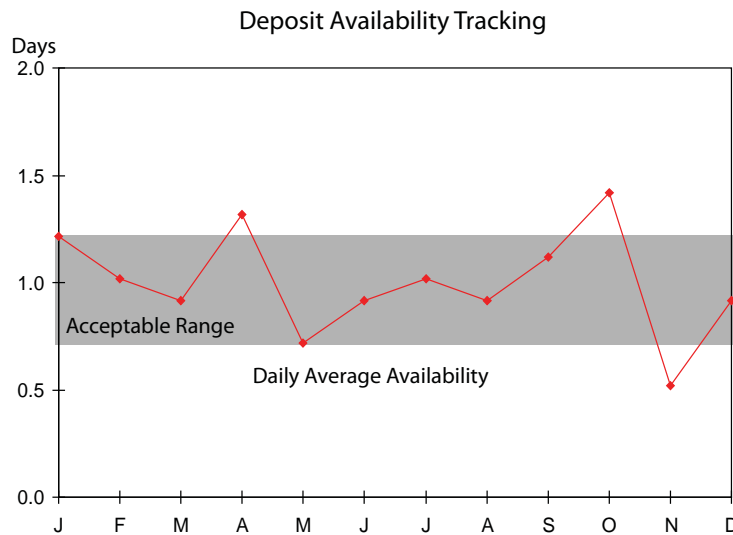
Monitoring Tracking Lockbox Performance

Many companies use "report cards" summarizing such factors as processing errors, encoding errors, reporting errors, timeliness of reporting, quality of remittance detail and images, etc. Each month they track these items, perhaps assign weights to each, and then rank the banks relative to each other or to some established standard. In combination with quality assessments of other bank services, this can be an effective basis upon which to conduct an annual review of bank operating services with each bank.

Since minimizing delays is such an important factor in lockbox service, companies usually employ measures to monitor collection time and other quantitative factors.

Companies monitor total deposits by day of week. If mail or processing slows, it could show up as more dollars being deposited later in the week. For example, a large total deposit on a Tuesday is likely an indication of a problem processing mail over the weekend.

The combination of the account analysis and bank statement can produce a measure of "average days to collect" by dividing total float for the month by total check deposits for the month (or average daily float by average daily deposits).



An endpoint study can also be used to calculate average days to collect. Most endpoint analyses will have a summary of dollars by days of float, similar to that shown on the right. By obtaining total float from this report and total check deposits for the same time period from the bank statement, one can calculate average days to collect.

All of these calculations and observed figures can be used to track a lockbox providers performance over a period of time. However, the difference in ledger credit cutoff times prevents these measures from being valid for bank-to-bank comparisons. The Phoenix-Hecht Collection Model integrates observed mail times with the bank’s availability schedule, taking into account ledger credit. The net result produces comparable relative collection time numbers between lockbox providers which is the best comparison possible.

<u>AVERAGE DAYS TO COLLECT</u>				
<u>Dollars</u>		<u>Days</u>		<u>Float (\$-days)¹</u>
\$861,665	X	0 Days	=	\$0
\$1,292,497	X	1 Day	=	\$1,292,497
			Total Float	\$1,292,497
				\$-days
Float	\$1,809,496	(1.11 business days X 1.4)		
Total Deposits ²	\$2,154,162	0.84 calendar days		
¹ From Endpoint Analysis				
² From Bank Statement				

Conclusion

The establishment and maintenance of an efficient collection system involves many elements. While price, service quality, and other product features are important, the primary consideration in almost every lockbox decision remains: converting receivables to investable funds and updating receivables. Data and computer models have been developed over the years by Phoenix-Hecht to help treasury managers identify the most favorable number and location of lockbox sites. However, there is no single best way for corporations to pursue a lockbox analysis. Each analysis must be carefully designed and executed to meet the individual circumstances of each company. Special care must be taken to choose the appropriate sample period, sample size, modeling assumptions, and the correct interpretation of results.

Treasury managers should thoroughly understand the lockbox processing environment of current and prospective service providers, ways in which it is consistent or inconsistent with assumptions made in the study, and what impact these inconsistencies will have. The questions in Appendix A and responses to the standardized lockbox questionnaire are a good place to start.

Once a system is in place, it should be monitored for performance as well as for the timeliness and accuracy of processing. The account analysis, bank statement and daily balance reports can be used to track some fairly simple indicators of trends within a bank. Your lockbox provider can supply you with its Phoenix-Hecht Postal Survey™ data to help track their performance.

Appendix A

Frequently Asked Questions About A Lockbox Analysis

What is the difference between an open and a closed lockbox analysis?

There are two types of lockbox analysis. All lockbox providers which subscribe to the Postal Survey will normally perform a “closed study.” This is where the universe of possible lockbox sites is limited to that one provider. An “open study” is where several providers are compared to obtain the optimal solution.

Can mail times alone be used to select lockbox banks?

Many corporations are shown mail times from the Phoenix-Hecht surveys as a means of comparing banks. A reasonable comparison between two banks can be made by consulting the published total float figures (combined mail and availability) for each bank. This will provide a benchmark measure for comparing two banks. Keep in mind, however, that the published mail and availability times are based on availabilities that assume that all checks are drawn on banks local to the city from which the remittances were mailed. The model can change this assumption by increasing the percentage of controlled disbursement. The most accurate comparison is to take a sample of a company's remittances, analyze it using the Collection Model and then evaluate the non-model factors discussed in this paper.

A bank claims that it has many more immediate availability endpoints on its availability schedule than its competition. Is this not a better lockbox bank?

Unfortunately, availability schedules can be "artificially" enhanced. One simple way to do this is to move the ledger credit cutoff up by several hours. The earlier the ledger credit cutoff, the more immediate endpoints will be shown on the availability schedule. Another way to artificially enhance an availability schedule is to show many immediate endpoints of no significance.

The treasury manager must be very careful when comparing model predicted versus actual availability. Even if a company's actual availability is better than predicted, it may be that the company is actually losing float. For instance, a bank can substantially improve reported availability by depositing all lockbox checks just after the start of a new ledger day. In this situation the deposit will make all the cutoffs shown on the availability schedule. Of course, items are then held for up to 24 hours before deposit.

How frequently and when are processing deposits made?

This question should be asked with respect to the corporation's account, and not what occurs for a typical account. Processing deposit times made for the benefit of the company's account should be compared with the bank's availability schedule. The key point is that the company should be receiving processing deposits corresponding to the bank's major availability cutoffs.

Why do the availabilities predicted by the model differ from those found on account analysis statements?

In theory, they should be the same. In practice, they usually are not. The following are the most important reasons why they differ:

- The availability schedule used by the model is different from the one used to assign availabilities to the company. Keep in mind that Phoenix-Hecht gets the best availability schedule offered by the bank. It is important to check that this is the same availability schedule given to the company.
- The schedule of processing deposits used by the model may not match those offered to the company. This can occur especially when lockbox volume is small. In addition, some banks process items early, but not for the customer's benefit. This helps the bank, but not the lockbox customer.
- Processing of items before critical deposit deadlines took more than the four hours assumed by Phoenix-Hecht. This can occur when a bank experiences heavy mail receipts close to the deadline cutoff and is not properly staffed to handle the volume. The problem is most acute during processing cycles when the bank may have limited staff to handle the volume.
- The bank statement contains other deposit items not included in the study such as wires, ACH payments, even over-the-counter items or items deposited via remote deposit capture.
- The study period did not exactly match the statement analysis period. Many analysis statements split float between statement periods when they end on Friday or a weekend.

Why do Phoenix-Hecht Postal Survey times differ from mail times as measured by postmark and deposit stamp information?

There are several reasons why Postal Survey and lockbox analysis measured mail times differ, the most important of which are:

- Many times when a bank encodes the mail date, it encounters an illegible or missing postmark. It must then use the date found on the check as the mail date. Checks are dated before they are mailed. Thus, the use of the check date makes the observed mail times somewhat longer. Phoenix-Hecht has found in its Postal Survey that 12% of the cancellation marks are either illegible or missing.
- Meter marks do not always reflect the actual date of mailing. Due to late mailing, error or delay, the meter date and actual date of mailing could be different. Phoenix-Hecht does not rely on the postmark to determine either the date or location of mailing.
- The sample may have a significant number of “remails.” Remails are remittances sent to the wrong address, usually the company’s office address, instead of the lockbox. They are then remailed to the lockbox. A large number of remails usually indicates a problem with the company’s invoicing procedures. Remails can cause measured mail times to appear unusually long.
- A sample gathered from a company’s remittances will likely be too small (2,000-5,000 items) to evaluate postal performances. Phoenix-Hecht mails over 500,000 envelopes per year. In addition, Phoenix-Hecht mail times contain no three-day weekends or other holidays that distort mail patterns.
- Phoenix-Hecht items that are time stamped up to four hours before the last daily deposit are considered to be “deposited” that same day. The actual performance of a lockbox department for a particular customer may have a portion of the received items “deposited” the next business day. This difference results from the timing of deposits and/or an early cutoff of mail processing to comply with a company’s information reporting requirements.
- If the lockbox analysis mail times are for a non-lockbox location, such as a company office, processing and handling procedures will create considerable variation. Lockbox banks typically receive their mail sooner, owing to such advantages as unique zip codes, caller box service, and frequent mail pickups.



This paper is a revision of What Every Company Needs to Know to Insure a Quality Lockbox Analysis, originally published in 1985 by Phoenix-Hecht in conjunction with its user group of banks. This latest version was updated and revised by Phoenix-Hecht, which is solely responsible for its content.

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