James Sagner, *Cashflow Reengineering*, AMACOM, 1997

Chapter 8: Concentration Activities

UP AND DOWN THE CITY ROAD,
IN AND OUT THE EAGLE,
THAT'S THE WAY THE **MONEY** GOES _
POP GOES THE WEASEL![1]
Atributed to W.R. Mandale (about 1853) (Pop Goes the Weasel)

TAKE THE **MONEY** AND RUN.
Woody Allen (1935 -)

Cash concentration involves all of the activities related to the banking and investment of monies collected prior to their disbursement for such expenses as payables and payroll. Significant issues discussed in this chapter include the administration of bank compensation, the management of bank relations, the forecasting of cash, and the use of such outsourcing services as sweep accounts and investment advisory.

The collection and banking of receipts by the procedures discussed in Chapter 6 does not put cash in a readily accessible mode for many large organizations. Cash may be scattered in numerous bank accounts throughout the territory of operations, and will remain there until actions are taken to concentrate it to a few large operating accounts. Concentration mechanisms in common use include wire transfers and ACHs, described in Chapter 5[2].

Wire transfers are used to move collected funds on a same-day basis from depository (collection) accounts to concentration accounts. ACHs are used to move funds on a next-day basis; that is, monies moved one day are usable the next business day. As wires are about 100 times the cost of

[1]According to *Barlett's Familiar Quotations* (15th edition, 1980), in the mid 19th Century "pop" was a term meaning to pawn or "hock", the weasel was a hatter's tool, and the Eagle was a London music hall.

[2]An older form of the ACH for concentration was the Depository Transfer Check or DTC, which involved the printing of a bank check similar to business checks and processing them through the clearing system. This paper mechanism has been made generally obsolete due to the mechanical process of printing the checks and the uncertainty as to when the DTCs would complete the concentration of funds.

ACH transfers, many businesses use the latter. However, when depository banks receive in excess of about $15,000 each day, consideration could be given to concentrate using wires. In a concentration system using wire transfers, standing instructions are given to banks to wire any collected funds each day in excess of a pre-determined amount. In an ACH concentration system, the amount of the local deposit is conveyed to the concentration bank (often through the company's financial staff). The concentration bank prepares ACHs for each depository bank, sends them through the ACH system, and receives next-day collected (available) funds.

Once cash is in a concentration account, the financial manager must decide whether to leave the balances for liquidity and safety, invest, or pay down outstanding debt. Balances would not be used if the amounts were relatively small, if there were large amounts of outstanding disbursements to be honored (see Chapter 7), or if the balances are to be used to compensate the bank for the services it provides. Balances may be required as partial compensation for a credit relationship, or may be used to pay for cash management services through the mechanism of the ECR; see Chapter ??.

The financial manager can sometimes obtain the necessary information on his balance position in a recorded announcement over the telephone. However, the limited detail available through such recordings has encouraged many larger businesses to receive data through the personal computer over a modem. The typical PC report, called the *balance reporter*, includes the following data:

Balance Reporter XYZ Corporation As of 15 NOV 9X	
Currency USD (Dollars)	
Account No. 34567	
Ledger Balance	$250,000
Collected Balance	225,000
1 Day Float	25,000
2 or More Day Float	0
Total Debits	26,000
Total Credits	119,000

The account analysis, described in Chapter 3[3], is the monthly invoice or bill that a bank presents to

[3]See the Appendix to Chapter 3 for a definition of terms and an illustration of the account analysis.

its corporate customers. It summarizes the daily balance position from the balance reporter into a single statement, showing ledger and collected balances and other detail. Included in this bill are all of the various charges incurred during the previous period; the example in the book shows charges for account maintenance, deposited items, returned items (those not honored by the drawee bank probably due to insufficient funds), checks paid (disbursements), and ACH paid items.

The financial manager should be regularly comparing these charges against those of competing banking institutions, to determine whether there are potential savings from negotiating for lower prices or possibly choosing other banks for services. The charges presented in the Chapter 3 illustration are relatively competitive, but certain charges, such as 13½¢ for ACH items, are clearly above the market price. The best source of information on pricing is to visit with your bankers to comparison shop.

The Banker Visit *OR* Guess Who's Taking You to Lunch?

Bankers are an excellent information source on cash and credit issues, including products to enable you to develop internal cashflow improvements or outsource financial activities. These reengineering efforts require that a consultative relationship exist between you and your banker. The banker must ask probing questions in order to fully understand your organization's products, services, markets, competition, regulatory constraints, staffing issues and other business factors. It is only through the expenditure of time and effort that any outsider can understand your problems, and can suggest ideas to help you conduct your activities more effectively.

However, in our consulting practice with both corporates and banks, the typical banker visit involves him/her asking about what is new at the company, followed by the explanation of the latest product or service being marketed by the bank. These visits often occur over lunch or in some other entertainment venue, in order to make it attractive for the corporate to take the necessary time.This is a costly way to do business, as company information can be gained from databases and publications, and product information can be distributed at exhibitor booths and through advertising.

Little consultative activity occurs, because the banker is neither trained nor motivated to probe for problems and opportunities. Instead, the banker's compensation is often based on the sale of product, either directly through commission incentive, or indirectly, through salary increases measured by performance (*e.g.*, sales and/or the number of calls). There are tremendous pressures on bankers to visit and to sell, and given current expense control programs, these visits must be as effective as possible for both parties.

In previous times, the financial manager typically had the time to meet with bankers and describe current problems and developments within the organization. Given current downsizing programs, financial staff is often performing the jobs of two and even three people, and simply do not have the

time to spend on unproductive banker visits. The result is that fewer banker appointments are accepted by companies, and there is less tolerance for wasting time. Thus, there is some urgency to make this process more efficient for both parties.

Typical questions you should ask your banker include the following:

- Pricing changes: Are cash management prices changing during the coming period? Banks often "forget" to announce price changes, hiding them in the monthly account analysis. This is an excellent opportunity to develop competitive data on pricing of the services you use, as discussed in the previous section.

- Organizational or strategic changes: Is the bank planning to abandon certain businesses or types of clients, *e.g.*, those outside its target market defined by size, geography or type of industry? Is your bank "in play" as an acquisition candidate? Your banker won't know, and neither will your stockbroker. Do your own homework, focusing on per share market price vs. book value[4], such as those published in the daily newpaper, *American Banker*. You should be concerned if your bank's market-to-book ratio is well below the average for its peer group of banks.

- New product developments: Has the bank developed an innovative approach to a treasury problem that may simplify your work effort? An example would be products that outsource receivables and payables to the banks once you establish transaction files, as discussed in Chapters 6 and 7.

- Industry and competitor developments: Does your calling officer have competitive organizations as clients or prospects? If so, your banker may be an excellent source of non-confidential market intelligence, and he/she may be knowledgable about industry groups and conferences.

Case: Managing Bank Fees and Balances

A hospital and health maintenance organization (HMO) kept an average of about $500,000 in the bank due to its failure to understand the value of those balances. The financial staff knew that any balances in the account would be used to compensate its banks for services, based on a 3% ECR credit by the banks. By paying for bank services in fees and investing collected balances overnight at

[4]*Book value* is defined as assets less liabilities, or net worth. The book value of a share of stock is that calculation divided by the number of shares outstanding.

an assumed rate of 8%, the company would realize an annual benefit of $25,000 ($500,000 X [8%-3%]). The 8% rate is based on an expected average cost of capital of the organization; see the discussion in Chapter 9.

Five bank service categories were analyzed: retaill and wholesale lockbox, check disbursements, wire transfers, and ACH debits and credits. Service charges and item counts for each category were aggregated to establish an all-in unit cost by bank and an average unit cost by service category; see Table 8-1.

Table 8-1: Analysis of Hospital/HMO Banking Costs

Bank Service	Volume	Bank A	Bank B	Competitive Bank Pricing	Potential Savings
Retail lockbox	1,500	20¢	NU	10¢	$150.00
Wholesale lockbox	1,000	60¢	NU	50¢	100.00
Check disbursements	750	25¢	35¢	15¢	112.50
Wire transfers	100	$10	$7.50	$6.00	275.00
ACH debits/credits	500	20¢	15¢	10¢	37.50
Potential Monthly Savings					$675.00

The retail and wholesale per item lockbox charges at Bank A are 20¢ and 60¢, respectively. Industry data shows that the average retail per item charge for depository services with roughly the same volume level is roughly in the range of 10¢, and that the average per item charge for wholesale lockbox is 50¢. Comparing this per unit cost to the charge for collection services at other banks within the company's area of location, it appears that the hospital/HMO could negotiate for more favorable pricing for several bank services.

The all-in unit costs of disbursement services are 25¢ at Bank A and 35¢ at the hospital/HMO's other bank, Bank B. An industry study of controlled disbursement pricing shows an average all-in price of approximately 15¢ per item. Similarly, wire transfer and ACH costs at the two banks are above typical market charges. By negotiating charges down to those of competitive banks, there is an opportunity to save $675/month, or over $8,000/year. The total annual savings from more aggressive bank balance and fee management approached $35,000.

The Daily Cash Position

The determination of the daily position usually begins at the start of the business day, when the bank sends balance reporter data to the business. The report tells the financial manager what his bank balances are as of yesterday's close of business. These balance totals may be assembled into a spreadsheet compilation of current cash activity, showing the day's beginning cash, expected collections of cash and expected disbursements of cash. Cash collections and disbursements may be regular events, such as daily lockbox receipts for products sold, or irregular events, such as tax payments or monies disbursed to purchase a major asset.

Once these various data are assembled and a projected closing position for the day is calculated, the financial manager decides whether to invest excess funds, pay down outstanding debt, or do nothing (and allow any cash balance to pay for bank services through the ECR credit). The majority of businesses, such as many manufacturing firms, are cash "poor", in that for much of the year they are borrowing to finance inventory and other expenses in anticipation of future sales. Those organizations will normally pay down debt as cash becomes available, as the cost of their borrowing will exceed any possible investment return by three or four percentage points.

Some industries are cash "rich", such as insurance, utilities, and any situation where a dominant market position may exist. In such circumstances, it will normally be useful to forecast cash requirements over the next one to two months to determine the appropppriate maturity of any investment. For example, if it is determined that adequate cash will be received over the next month to fund foreseeable disbursements, a cash surplus can be invested for that period to earn a higher yield than repeated overnight investments.

In periods of normal (upward sloping) yield curves[5], the difference between overnight and one month on U.S. government equivalent debt may be one-fifth of a percentage point (20 basis points) to one-fourth (25 basis points) of a percentage point[6]. An additional benefit in a longer investment maturity is that the continual transaction costs of investing are avoided, possibly involving $10 or more for each buy or sell trade. The total annual savings in accurate forecasting on a $1 million portfolio would be more than $30,000:

$1 million X 20-25 bp =	$2,000 - $2,500
22 business days X $10 for each buy transaction =	$220

[5]A *yield curve* displays the relationship between interest rates on debt instruments for various maturities. The normal shape of this curve is upward because investors demand a greater return as maturities lengthen in anticipation of future inflation.

[6]A *basis point* (or *bp*) is 1/100th of a percentage point. Hence, ¼ of 1% is equal to 25 bp.

22 business days X $10 for each sell transaction =	$220
	$2,500 - $3,000
X 12 months =	$30,000 - $36,000

However, there are always a risk associated with such a strategy. An unexpected cash requirement could develop, forcing the liquidation of the one month investment. The risk is slight from any embarrassment or other problem if this occurs, assuming that the investment is of high quality and traded in a liquid market. However, interest rates could have risen since the investment was purchased, causing a loss in the value of the security in the event of an early sale. In normal periods of relatively stable yield curve relationships, the risk is small of a significant loss if an early sale were to occur.

The Cash Forecasting Process

Many cash forecasts accept information provided by sales, purchasing or other functions, without sufficient concern for the quality of that data. Even worse, too many organizations merely pull down today's bank balances, determine cash disbursements from check clearing data and expected wire transfers, and invest the balance overnight.

The sad truth is that the financial staff assigned to this function communicate primarily with each other and their banks, so that the data on each day's activities has no meaning other than the debits and credits on the paper. Should sales receipts decline or payables exceed expected amounts, financial staff would not be alarmed. Obviously, should cash deficits continue and fall outside of the expectations of senior management, someone would eventually take notice.

This actually happened to a consulting client. One division in this decentralized company decided that a vendor's price discounts were too attractive to pass up. The only "catch" was that huge purchase commitments were required to obtain these discounts. The division authorized the purchase even though future sales were uncertain and the resulting financial requirements had not been revised to reflect the new capital required. The company discovered the situation when accounts payable notified treasury of impending wire transfers to the vendor!

Few organizations develop quality cash forecasting data, using the resources and input of other departments. In fact, the typical treasury manager has limited knowledge of the sales process, who the important customers are and what they are buying, and how the purchasing/payables cycle really works. Financial managers do know that receipts are collected and disbursements made, because they appear in the organization's bank accounts, but not the drivers or causes behind these events.

Various statistical techniques are available to financial managers to forecast cash, with the choice of a specific procedure based on the timeframes under review.[7]

Cyclical Forecasts. Forecasts exceeding one year in duration are used to assist in the development of financial strategies involving the issuance debt and equity, and to ration capital among alternative projects. The percentage-of-sales method assumes that most balance sheet accounts will change in direct proportion to sales, and that financing needs can be calculated by proecting these changes to debt and equity requirements. Regression analysis correlates financial requirements (the dependent variable) with known independent variables based on the best linear relationship between these factors.

Seasonal Forecasts. Forecasts of one month to one year are used to determine how cash may be affected by seasonal influences, patterns of cashflow within the monthly cycle of a business, and decisions to manage specific elements of collection and disbursement cashflow activity. For example, it may be decided to delay certain transactions by some number of days due to an impending cash shortfall. A useful technique is the cash budget, to determine the monthly status of cash, to arrange for cash sources or postpone expenditures. However, cash budgets masks intra-month timing variations due to imbalances in flow activities.

Daily Forecasts. As previously described, forecasts of less than one month are used to calculate the immediate (overnight) position, and assist in the determination of the organization's response. Procedures for such forecasts of the cash position are cash scheduling and the distribution method.

CASH SCHEDULING

Cash scheduling involves the somewhat basic methodolgy of merely establishing a schedule of expected cash collections and disbursements. Each item is individually estimated, using whichever techniques provide accurate results, including various statistical procedures and data from organizational areas with the responsibility for the receipt or disbursement activity. For example, daily activity may be obtained from sales on expected collections by date, and accounts payable may specify expected payments to vendors.

THE DISTRIBUTION METHOD

[7]Detailed explanations of these techniques can be found in any standard statistics or finance text.

The distribution method is a more formal approach to the daily cash forecast, as it assumes that there are repetitive patterns of cash receipt activity by day of the week and day of the month. To develop the required data, it is necessary to compile actual receipts for two or three months. These data are then analyzed by the percentage of total monthly receipts by business day of the week and by business date of the month.

It may be determined, for example, that the organization experiences its highest level of mailed receipts on Mondays, which is typical for much of American business, and a fairly even distribution the balance of the week. Your analysis may also show a high collection day on the 1st and 15th business dates of the month, with no particular pattern during the remainder of that period. The specific factors are provided in Table 8-2.

Table 8-2
Day-of-the-Week and Day-of-the-Month Factors

Day-of-the-Week Factor		Day-of-the-Month Factor	
Monday	30%	1st, 15th	15%
Tuesday	20%	2nd, 16th, 22nd	6%
Wednesday	15%	3rd, 14th, 17th	5%
Thursday	20%	4th, 18th	4%
Friday	15%	5th, 6th, 9th, 13th, 21st	3%
Weedends	0%	All other days	2%

Assume forecast revenues for April 199X, based on the percentage-of-sales or regression methods, are $3½ million. The fifth of April, a Wednesday, would be business day 3 of the month. The factors for that date would be 15% (day of the week) and .05 (day of the month). The day of the week is divided by the "par", 20%, and multiplied times the day of the month factor. The result would then be multiplied times the expected revenues for the month, or as a surrogate, the revenue experience of the preceding month, so long as no corrective factors must be used for delayed receivables or other changes. For this organization, the forecast cash inflow for April fifth would be $131,250, calculated as (15% ÷ 20%) X .05 X $3½ million.

Once regular collection flows are forecast, the financial manager would then add anticipated non-regular flows, such as the proceeds of new financings or the sale of equipment. Outflow projections

would be subtracted, which are usually based on daily forecasts of check clearings or from the controlled disbursement presentment, plus any non-regular payments such as payroll, taxes or debt repayment.

Case: Cash Flow Forecasting/Investment Strategy

A hotel and resort company had sales of $600 million and total assets of $200 million, of which 5% or $10 million were cash and U.S. government- equivalent investment securities of less than one year's maturity. In addition, there was a credit line at a major regional bank to cover emergency and seasonal cash needs. The short-term holdings were managed by a Finance Committee, comprised of the CFO, the Treasurer and the Comptroller, with advice from the company's banker.

Short-term holdings included the following:

Cash in banks	$1,000,000
Overnight Investments	2,000,000
Investments to One Month Maturity	1,000,000
Investments of One Month to Six Months Maturity	3,000,000
Investments of Six Months to One Year Maturity	3,000,000

Although the industry often experiences seasonality in business activity, this company enjoys steady revenues through the diversification of its propeties throughout many locations. The average $50 million in monthly revenues were plotted against historic day of the month and day of the week experience using the distribution methodology. The day-of-the-week and day-of-the-month factors used in the example in Table 8-2 were assumed for this example, reported as Table 8-3. The results for the month of September 199X showed that the net position fell below $1 million only three times all month, and to a negative $539,100 on the 10th, to a negative $2,918,246 on the 19th and to $593,602 on the 30th.

Assuming that the balances on all days are adequate to meet company liquidity requirements except for these three days, significant savings can be gained by moving excess short-term investments to longer-term holdings. Overnight investments would be eliminated, and $2 million would be held in cash. The other $1 million held overnight along with the $1 million held in one month maturities could be invested longer, say for six months, with a resulting gain of 50 bp and 30 bp gain, respectively. A 50 bp gain on $1 million is worth $5,000 annually, assuming that these patterns continue during throughout the year. Prior to the expected negative balances, six month investments could be sold to fund these amounts. Furthermore, cash now in six month investments can more confidently held in one year securities, worth another 30 bp in additional yield.

With a longer average maturity of its short-term portfolio, this hotel and resort operator was able to

save $25,000 annually in part through higher interest return and lower transaction costs. In addition, better forecasting convinced its bankers to lower the costs of credit lines it provided the company.

Opportunities in Concentration: Outsourcing

Cashflow reengineering of concentration through outsourcing includes the use of sweep account arrangements and investment management/advisory. Both products have become particularly important due to financial staff downsizing, leading to limitations on the time available to pursue overnight and longer-term investment alternatives. In addition, corporate support has declined for financial markets information services (*e.g.*, Reuters, Telerate) and other treasury expenditures given recent cost reduction pressures.

SWEEP ACCOUNTS

Bank balance credits through the ECR have long been accepted as an important method of bank compensation for several reasons, including:

- DDA balances are liquid and are immediately accessible in the event of a business need.
- Balances represent soft dollars and are not budgeted or otherwise subject to close review by senior management.
- Late cash in the corporate account, such as from wire activity, may earn more from an ECR credit than from a late-day overnight investment.
- Balances may be required by the bank to support a credit line or to support a cash management service subject to debits (*e.g.*, not-sufficient checks re-deposited).
- Some banks charge a surcharge if services are paid by fee, although competitive pressures are lessening the imposition of this penalty.

The rising interest rate period beginning in the late 1970s made it apparent that the potential value of balances left at banks exceeded the ECR received. Financialmanagers then began to consider paying for services in fees, and managing down balances to minimal amounts.

However, our experience in reviewing thousands of bank statements and account analyses (bank invoices for services) over the years indicates that idle or unused balances remain. The value of those balances can be substantial, particularly if permanently removed from the funding requirements of a business and valued at the long-term cost of capital (probably more than 10%).

One solution is to consider the use of a sweep account, a product that currently involves some $30 billion in daily activity. A "sweep" is an investment mechanism offered by banks and securities firms to automatically move balances from your account at the close of business, invest the funds overnight, and return the investment to the account the following morning. Interest is calculated and paid on the invested balances daily.

Sweeps have grown in popularity due to several converging pressures:

- *Cost of Daily Transactions*. Companies are recognizing that daily investment decisions involve transaction costs, both for wires or internal transfers and for the purchase and sale of the security; and the realization that the Fed's 10% required reserves of balances earns no ECR credit. See the discussion in the Chapter 3 Appendix.

- *Financial Institution Promotion*. Banks and securities firms are now actively marketing families of inexpensive sweep products, as contrasted to a past disdain for sweeps due to the negative impact on bank deposit balances. That is, bank balances earn an ECR which is well below a bank's cost of funds, and so is an inexpensive source of capital for the bank.

  The various sweep alternatives, often managed as money market funds, include U.S. government instruments, repurchase agreements (repos), and commercial paper. Offshore sweeps (*e.g.*, Eurodollar deposits in non-U.S. financial institutions) offer attractive interest yield, unaffected by Federal Reserve requirements. Banks today can manage their balance sheets and derive fee income from sweep products, now estimated at $300 million/year, with typical fees of about 50 basis points on swept funds.

- *Sweep Innovation*. There is an ongoing development of sweep products, which will make such products attractive alternatives to traditional investment vehicles. For example, banks can offer intraday sweeps to optimize interest yields in the prime late morning time period; tiered sweeps, with pre-determined amounts going to overnight funds and the balance to a long-term U.S. government fund with higher yields; and even "real time" sweeps, with intermittent funds investment of available funds.

- *Lower Short-Term Interest Rates*. Short-term money rates have declined in recent years, with Federal funds[8] between 5¼% and 6% over the past 12 months. In this interest rate environment, the marginal gain from direct investment activity by treasury managers is too small to be worth the effort. In addition, the attempt to invest at optimal rates requires decisions by late morning, whereas funds may be credited to a DDA any time during the day.

In considering sweep products, these issues should be considered:

- What is the collateral supporting the sweep? As sweeps are not Federal Deposit Insurance

[8]Federal funds ("fed funds") is money lent between commercial banks overnight. This rate is a standard for lending transactions in the U.S.

Corporation (FDIC) insured, are you comfortable with the quality of the underlying investment?

- What are the sweep mechanics? Most accounts are swept after the close of business, often as late as midnight. However, the sweep may be during the business day, or a minimum sweep amount may be required, or there may be other sweep restrictions.
- What is the bank's charge for the sweep? Typical fees are $125 to $250 a month, although charges can be per transaction or deducted from the interest rate credited. However, a $2,000 per year charge for a sweep usually more than justifies the expense, when the cost of idle bank balances, transaction charges per investment, management time and systems costs are considered.

INVESTMENT MANAGEMENT/ADVISORY

Investment management and advisory services have been available for many years to manage investment portfolios for corporate clients. The primary reasons for outsourcing this function are as follows:

- *Individual Investor Syndrome*. Unless the corporation manages a portfolio in excess of $10 million, it will often receive worse data and higher commission rates than professional money managers. In essence, it will treated as if it were a small investor. This is also seen in typical fee differentials for professional advice can be substantial, with $10 million portfolios paying 100 bp or more for management advice and $1 billion portfolios only 5-10 bp. Finally, small corporate investors may be excluded from attractive investment opportunities, such as IPOs (Initial Public Offerings) and Private Placements, investment sold to a limited number of investors and not SEC registered.

- *Competition in Portfolio Performance*. Outsourcing permits the investor to place funds with several managers, to develop a performance competition and the calculation of results based on the risk characteristics of the portfolio.[9]

- *Cost*. The cost of external investment management is typically substantially less than maintaining adequate internal resources. A $25 million portfolio may cost 30 to 40 bp or $75,000 - $100,000 to manage, costs easily exceeded even by a minimal internal financial staff, investment data services and overhead.

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[9]Such risk when applied to the equities market is known as Beta (β), which is a measure of the price movement of a stock or a portfolio of stocks as compared to the general stock market.

Should an investment manager or advisor be engaged, it is essential to establish appropriate investment guidelines to minimize the risk of inappropriate actions. Table 8-4 lists several critical areas for such guidelines.

Table 8-4: Categories of Investment Guidelines

Category of Investment Guideline	Examples of Guidelines
Credit quality requirements as measured by standard rating service evaluations	Triple A to B for long-term instruments; A1P1 to A2P2 for commercial paper
Average portfolio maturity to assure liquidity as required	6 or 12 months
Realistic return expectations against an established benchmark rate	Fed funds + 25 bp (for a 6 month money market portfolio)
Permissible investment instruments	Government instruments; commercial paper; stocks of designated qualities
Approved investment managers	Specific firms
Authoritizations for company investment actions	Trade orders; accounting; compliance