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WORKING CAPITAL MANAGEMENT

Applications and Cases

JAMES SAGNER

WILEY

Working Capital Management

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This book is for my colleagues and friends in banking, in the corporate world, and in the universities with which I have been associated. As any author can attest, I have learned far more from them than they have from me.

Contents

Preface	xiii
Acknowledgments	xv
Chapter 1: Concepts in Working Capital Management	1
Working Capital Concepts	2
Improving Working Capital Management	5
The Significance of Working Capital	8
Cost as <i>the</i> Working Capital Issue	9
Applying These Ideas to a Real Business: Best Buy	12
Summary	15
Notes	16
Chapter 2: Working Capital Ratios and Other Metrics	17
Ratio Analysis	18
Other Ratios and Their Application	22
Other Metrics	23
Benchmarking	27
General Problems in the Use of Ratios and Metrics	29
Summary	32
Notes	32
Chapter 3: Cash—Management and Fraud Prevention	35
Forms of Cash	36
Paper Transactions: Lockboxing	38
Paper Transactions: Depository Accounts	40
Paper Transactions: Controlled Disbursement	41
Electronic Transactions	43
Float and Cost Issues	46
Summary	49
Notes	49

Chapter 4: Cash—Credit and Short-Term Financial Instruments	51
Developing a Short-Term Forecast	52
Cash Budgeting	53
Credit Financing	55
Short-Term Investments	58
Summary	63
Notes	63
Chapter 5: Managing Bank Relationships	65
The Changing Financial Landscape	66
Bank Relationship Management	66
Cash Mobilization in a Multibank Network	68
General Terms of Credit Facilities	71
Specific Terms in Credit Facilities	72
Ongoing Bank Relationship Concerns	75
Summary	77
Notes	78
Appendix to Chapter 5: Selecting Noncredit Banking Services	81
The Request for Proposal	82
RFP Evaluation	85
Chapter 6: Accounts Receivable and Working Capital Issues	89
Elements of Receivables Management	90
Float Opportunities in Managing Receivables	91
Receivables Cycle Monitoring: Ratios	93
Receivables Cycle Monitoring: The Aging Schedule	94
Sales Financing	96
Credit Reporting	97
Terms of Sale	99
Invoice Generation	100
Asset-Based Financing	102
Debt Collection Agencies	103
Summary	104
Notes	104
Chapter 7: Inventory and Working Capital Issues	107
Elements of Inventory Management	108
Inventory Cycle Monitoring: Ratios	109

Inventory Cycle Monitoring: Metrics	110
The Purchasing Function	112
Analyzing Purchasing Activities	114
EOQ and JIT	116
Work-in-Process	118
ABF: Inventory Financing	120
Summary	123
Notes	123
Chapter 8: Payables and Working Capital Issues	125
Elements of Payables Management	126
Payables Cycle Monitoring: Ratios	127
The Accounts Payable Function	128
Payables Using Internal Processes	131
Payables Outsourcing	133
Check Payments in a Comprehensive Payables Environment	135
Payroll Disbursements	136
Summary	138
Notes	139
Chapter 9: International Working Capital	141
Capitalism Goes Global	142
The Financing of International Transactions	144
The Foreign Exchange Markets	145
Country Risk Analysis	151
Other Significant Issues in International Working Capital	152
Cultural and Corporate Practices Affecting Working Capital	154
Summary	156
Notes	156
Chapter 10: Information and Working Capital	159
Information Technology	160
Bank Information Technology	161
Internet Bank Technology	165
ERP: An Alternative Approach	169
Choosing Working Capital Information Systems	171
Summary	175
Notes	176

Chapter 11: Managing the Working Capital Cycle	177
Risk and Working Capital	178
Traditional Risk Management	179
Enterprise Risk Management	179
The ERM Process	180
Efficiency and Working Capital	181
Working Capital and Liquidity	183
Suggested Actions	185
Developments in Working Capital Management	189
The Gizmo Deal: How Delays Turn Profits into Losses	190
Summary	192
Notes	192
Chapter 12: Introduction to Working Capital Cases	195
Sequence of the Cases	195
The Concept of the Working Capital Case	196
Case: Widget Manufacturing	198
Suggested Solutions	207
Note	214
 CASES ON WORKING CAPITAL MANAGEMENT	215
Case 1: Dinner Bell Hotel	217
Cash Flow Issues	217
Alternative Actions	219
The “Raw” Data	220
Questions	220
Case 2: Koala Fun	223
The Partners’ First Success	223
Financial Concerns	224
Borrowing Issues	225
Working Capital	225
Final Thoughts	226
Questions	226
Case 3: Miller Building Supplies	229
Joseph Miller Starts MBS	230
Variations in Working Capital Requirements	230

A Banker's Assistance	231
Questions	231
Case 4: Office Smart	235
The Business of Office Smart	236
Financial Issues	237
Questions	238
Case 5: Quacker Cracker	241
The Attitude toward Debt	242
Financial Planning	242
Questions	244
Case 6: Young Brands	245
Changes in YB's Global Marketing Strategy	246
Forecasting Considerations	247
Working Capital Issues	247
Financial Issues	248
Questions	248
Appendix I: Basic Financial Concepts	251
Appendix II: Websites of Working Capital Organizations	257
Glossary	261
About the Author	279
Index	281

Preface

THIS BOOK IS ONE OF a series of textbooks developed by John Wiley and Sons. As the publisher observed the near-chaotic conditions in the credit markets beginning in 2008, it became apparent that there was a need for an explanation of business processes and specific ideas on changes to company structures and procedures.

Working capital management is the art—and increasingly the science—of organizing a company’s short-term resources to sustain ongoing activities, mobilize funds, and optimize liquidity. The most important elements are:

- The efficient utilization of current assets and current liabilities of a firm throughout each phase of the business operating cycle.
- The planning, monitoring, and management of the company’s collections, disbursements, and bank account balances.
- The management of receivables, inventories, payables, and international transactions to minimize the investment in idle resources.
- The gathering and management of information to effectively use available funds and identify risk.

The liquidity crisis that was experienced in the United States has been the subject of numerous articles, congressional hearings, and general debate. Available data indicate that adjustments have been ongoing and may eventually lead to the opportunity for future business expansion now that this period is coming to an end. Despite some bankruptcies, companies have adjusted remarkably well to the contraction of credit and liquidity and to weakened economic conditions. Our discussion focuses on how businesspeople can continue to be successful in difficult financial times, particularly in the context of limited access to bank credit and other sources of short-term funds.



CONCEPT OF THE BOOK

In developing this approach, several components have been included to assist the reader.

- Chapters are of convenient length, approximately 5,000 words. Each chapter begins with a series of learning objectives and ends with a brief summary of material covered.
- Examples and real-world situations are included to provide context for principles and calculations used in working capital management.
- As a banker and consultant, the author has actually worked with more than 250 major U.S. and global corporations and not-for-profits, and has analyzed and helped implement the ideas discussed in the book.
- A concluding chapter contains an explanation of our approach to case analysis and then presents a case (Widget Manufacturing) with solutions.
- Six cases that emphasize various working capital concerns are included in the second part of the book.
- Other useful material is contained in Appendices I and II and the Glossary to supplement the coverage in the main part of the text.

In planning the content, the author and publisher had in mind the needs of several types of readers:

- New working capital managers, including students and recent appointees to any of the functions of working capital.
- Current managers who need a succinct, well-written reference.
- Members of allied professions, including accountants, information technology specialists, marketing and production managers, and others who want to expand their knowledge base.
- Readers outside of the United States who either plan to do business here or are observing their economy as evolving into a U.S.-type of capitalism.

Acknowledgments

THE AUTHOR IS INDEBTED TO Michele Allman-Ward, who provided assistance in Chapter 9, and with whom he authored an earlier book in the Wiley Essentials series. Michele is a distinguished consultant, lecturer, and author, and has encyclopedic knowledge of global treasury management practices.

Chapter 10, “Information and Working Capital,” was coauthored with Arthur C. McAdams, associate dean in the School of Business at the University of Bridgeport (Connecticut). He was senior vice president and director of information systems at People’s Bank (Connecticut) leading the implementation of several strategic initiatives, and has many years of experience in systems development and project and process management.

Acknowledgment is also extended to Sheck Cho, Helen Cho, and Judy Howarth, my Wiley editors; and to my former colleagues and clients at First National Bank of Chicago (now JPMorgan Chase) and the team at Sagner/Marks.

You may have questions about the ideas presented in this book. If so, e-mail the author at jsagner@optimum.net with your inquiries. However, a good place to start is to ask your bankers for ideas; they are often on the leading edge of current practice and have access to helpful product information.

Concepts in Working Capital Management

This chapter covers these topics:

- Explanation of the basic concepts of working capital.
- Appreciation for the problems in assigning management responsibility for working capital.
- Consideration of traditional and modern ideas of working capital management.
- Understanding the essential focus of cost in working capital management.
- Applying working capital concepts to a successful company (Best Buy).

WORKING CAPITAL is the arithmetic difference between two balance sheet aggregated accounts: current assets and current liabilities. This calculation is done in a currency, such as U.S. dollars, which is the convention we will be using in this book.

WORKING CAPITAL CONCEPTS

Both current assets and current liabilities are composed of several ledger accounts, as shown *in italics* in the Exhibit 1.1 balance sheet. For the company presented in this balance sheet—we'll call it the Rengas Company—the amount of working capital in 2013 was \$42.5 million, calculated as current assets (\$65 million) less current liabilities (\$22.5 million).

Description of Working Capital Accounts

The accounts noted in italics in Exhibit 1.1 are briefly explained next, with chapters of this book devoted to appropriate management procedures.

- **Cash accounts and short-term investments.** These account categories include cash on hand and in bank accounts, and any short-term investments that are expected to be turned into cash within one year. We'll review the management of cash in Chapters 3 and 4, and of short-term investments in Chapter 5.
- **Accounts receivable.** This category of current assets includes all credit sales where the customer is expected to pay by a future date specified on an invoice. Most companies have small amounts of uncollectible credit sales, and an account called "allowance for doubtful accounts" may be deducted from accounts receivable to reflect this experience. We'll examine receivables in Chapter 6.
- **Inventory.** Most companies hold some combination of raw materials, work-in-process (that is, partially manufactured and assembled), and finished goods. There are various accounting practices for valuing inventory and management concepts regarding inventory, which will be discussed in Chapter 7.
- **Payables.** The accounts payable account represents the amounts owed to creditors for purchases. Payroll is the other significant component of payables. Issues regarding payables will be reviewed in Chapter 8.
- **Other working capital accounts.** Prepaid expenses and accrued expenses often appear on balance sheets. **Prepaid expenses** are assets paid in advance of expenses as incurred; an example is insurance paid in advance of the incurrence of the expense. **Accrued expenses** are costs that have been incurred as of the date of a balance sheet but not paid; an example is payroll for employees whose expense has been incurred but not yet paid. These balance sheet accounts are not specifically discussed in subsequent chapters.

EXHIBIT 1.1 Rengas Company Balance Sheet as of December 31, 2012, and 2013

2012			
Assets		Liabilities and Owners' Equity	
Current assets	\$ 59,200,000	Current liabilities	\$ 16,500,000
Cash	4,700,000	Accounts payable	11,500,000
Short-term investments	15,000,000	Notes payable	4,000,000
Accounts receivable	25,500,000	Accrued expenses	1,000,000
Inventory	12,000,000	Long-term liabilities	<u>36,500,000</u>
Prepaid expenses	2,000,000	Bonds payable	20,000,000
Fixed assets	<u>50,000,000</u>	Mortgage payable	16,500,000
Plant & equipment (at cost)	85,000,000	Owners' equity	<u>56,200,000</u>
Less: Accumulated depreciation	35,000,000	Common stock (50,000 shares)	10,000,000
Total Assets	<u>\$109,200,000</u>	Retained earnings	46,200,000
		Total Liabilities & Net Worth	<u>\$109,200,000</u>
2013			
Assets		Liabilities and Owners' Equity	
Current assets	\$ 65,000,000	Current liabilities	\$ 22,500,000
Cash	5,000,000	Accounts payable	15,000,000
Short-term investments	15,000,000	Notes payable	6,000,000
Accounts receivable	27,500,000	Accrued expenses	1,500,000
Inventory	15,000,000	Long-term liabilities	<u>40,000,000</u>
Prepaid expenses	2,500,000	Bonds payable	20,000,000
Fixed assets	<u>60,000,000</u>	Mortgage payable	20,000,000
Plant & equipment (at cost)	100,000,000	Owners' equity	<u>62,500,000</u>
Less: Accumulated depreciation	-40,000,000	Common stock (50,000 shares)	10,000,000
Total Assets	<u>\$125,000,000</u>	Retained earnings	52,500,000
		Total Liabilities & Net Worth	<u>\$125,000,000</u>

- **The infrastructure of working capital.** Infrastructure involves those activities that are essential for managers to proceed. These include international working capital (Chapter 9), information and working capital (Chapter 10), and management of the working capital cycle (Chapter 11). Chapter 11 also provides a quick recommendations summary. Chapter 12 introduces the working capital cases that follow.

There are numerous considerations in the optimal management of working capital. For example, what are appropriate procedures for managing cash? For reducing accounts receivable? For improving the performance of accounts payable? We will examine these and many other issues throughout this book.

Ideas Basic to Working Capital

Various concepts and conventions are used to explain and illustrate ideas on working capital management:

- **The term *bank* refers to commercial banks, although other financial services companies and some vendors provide many of the services described.** Vendors are noted when the relevant topic is discussed; for example, payroll services are provided by four leading firms that are noted in Chapter 8. Freight invoice auditing firms are also discussed in that chapter, but there are so many companies in that business that we have not attempted to list them.
- **Float is critical to an understanding of working capital.** The concept of **float** refers to funds in the process of collection or disbursement. While the complete elimination of float is impossible, the calculation of the amount of float is critical in considering alternative processes. For example, in Chapter 3 we examine the bank product of lockboxing.¹ In deciding on the use of this service, we need to know the potential to save collection float as compared to the current system.
- **Concepts basic to finance but not defined as working capital are reviewed in Appendix I.** These include fixed assets, long-term liabilities and owners' equity on the balance sheet, and relevant income statement accounts. In addition, we demonstrate the calculation of the **cost of capital** (weighted average cost of capital, or WACC), which is used to value float. The WACC is the weighted average of a firm's cost of debt (after tax) and cost of equity (common stock and retained earnings), and is expressed as a percentage. For the purposes of our book examples, we use 10 percent as the cost of capital.

- **Reviews should be conducted by relevant functions to analyze each element of working capital.** For example, in payables, managers would examine the percent of payments made by check, the cost of those transactions, the extent of cash discounts offered and taken, the results of account reconciliation, the incidence of fraud, and other issues. As an essential part of this process, it is useful to document the delays and organizational units involved in the movement of forms, files, and other records, including computer systems.

IMPROVING WORKING CAPITAL MANAGEMENT

The traditional functional scheme of corporate management—such as sales, manufacturing, finance, and technology—prevents any one manager from having direct responsibility for working capital. Most often, the only common “manager” is the chief executive officer (CEO) or chief operating officer, who seldom has knowledge of or interest in the specific functioning of those activities.

The Missing Working Capital Manager

Since few organizations (if any) have a functional position for “working capital manager,” consideration of these issues has not typically been a major focus for management. For this reason, companies that are focusing on this concern default responsibility to finance, where cash and various forms of capital reside. As a result, the initiative for a working capital program often begins in the office of the chief financial officer (CFO) or the treasurer.

However, this presents a dilemma for any manager attempting to improve working capital: The issue of violating someone else’s turf, or area of responsibility, may prevent the appropriate action or the necessary cooperation from occurring. The author well remembers encountering hostile reactions when asking a payables manager how his/her department functioned or when asking a plant manager about what appeared to be stale raw materials and parts. Suggestions are provided later in this section for overcoming these objections—but it is a delicate job of diplomacy!

Payment Stream Matrix: First Draft

The recommended initial step is to prepare a draft **payment stream matrix**, listing working capital flows by name, dollar volume, and manager. The matrix becomes a kind of road map to understanding and improving the business by

EXHIBIT 1.2 Illustrative Payment Stream Matrix

	Name of Cash Flow, Mechanism, and Type*	Managed Where?	Manager	Supervisor	Annual \$ Volume
1	Product W, Lockbox Receipts, C	Home Ops, Anytown	Rebecca Rhea	Sandy Sparrow	\$500 million
2	Product X, Office Receipts, C	Division A, Anytown	Betty Bear	Charles Capybara	\$250 million
3	Product Y, Wire Transfers In/Out, C	Division B, Anytown	Tony Tiger	Ursula Unicorn	\$1.2 billion
4	Product Z, ACH Collections, C	Big Dept, Sometown	Wendy Walrus	Yetta Yak	\$100 million
5	Accounts Payable, Check Disbursements, D	Large Dept, Sometown	Zachary Zebra	Anthony Alligator	\$30 million
6	Accounts Payable, ACH Disbursements, D	Vivi Section, Yourtown	Denise Dolphin	Erik Eagle	\$25 million
7	Payroll, Direct Deposit, D	Inter Section, Mytown	Frances Flounder	George Gopher	\$80 million
8	Payroll, Check Disbursement, D	Grope Group, Ourtown	Harry Halibut	Ira Ibex	\$75 million

*C = collection; D = disbursement

indicating those major activities that drive short- and intermediate-term successes and failures. A **working capital flow** is an activity of the organization that generates a cash inflow or outflow (see Exhibit 1.2):

- Inflows, or collection flows, usually result from the sale of products or services, although collections can occur from interest income, the sale of fixed assets, and other sources.
- Outflows, or disbursement flows, are accounts payable (to vendors for purchases), payroll, payments on fixed debt, and other uses of cash.

Payment Steam Matrix: Final Version

The draft matrix is used to bring other functions within an organization into the working capital review. It is usually necessary to involve managers in all of the disciplines of the business, including sales, operations, and finance. Input

from customers and vendors can be helpful in understanding their perspective of how a transaction occurs and to make the process more efficient and effective for all parties. Obviously, revisions to the matrix are expected and will improve the quality of the information that is developed.

The typical process for this activity involves one to three meetings of an ad hoc task force or committee of company managers. Often the president will request that his direct reports send a fairly senior person(s) who has (have) in-depth knowledge of that organizational activity. The collaboration of this group will result in a fair representation of significant working capital flows.

Efforts should be devoted to the major flows—usually those more than \$1 million per month in activity—to allow the development of improvements through the application of technology, redesign of existing processes, and consideration of outsourcing to banks and vendors. A single product-line company may only have 12 to 15 major flows; a global firm with numerous business units could have 100 flows. It is necessary to prioritize the working capital effort in this manner to realize significant results and motivate manager participation.

Overcoming Resistance to Change

Bringing change to companies is often an extremely difficult task regardless of the logic of an innovation or the demonstrable savings that may result. Here are some ideas on meeting internal resistance:

- Solicit the support of senior management. Promote the program through presentations to middle managers and educational events to explain where opportunities can be found.
- Reward employees who work outside of finance for each idea suggested and accepted, and again when it is successfully implemented. These incentives draw company employees into the change process and foster an environment that controls naysayers. Rewards do not have to be cash, although that is certainly a strong incentive. Any recognition or award can promote cooperation, the submission of useful ideas, and an organizational spirit.
- Use any available marketing devices to publicize the effort, including articles in the company newspaper, announcements at company meetings, e-mail messages, and promotions through cafeteria or lunchroom events. If a company can sell a product or service, it can sell working capital efficiency!

THE SIGNIFICANCE OF WORKING CAPITAL

Why is working capital management important? In truth, businesses have not paid sufficient attention to working capital in past years, and have focused instead on such concerns as raising and using debt and equity capital, choosing information and manufacturing technology to run operations, and attempting to develop domestic and global marketing strategies to sell product. However, recent economic problems—specifically, the Great Recession that began in 2008—have forced companies to consider ways to improve profitability, to cut costs, and to make business processes efficient. These are not just necessary actions—they are required for survival!

Working Capital: The Traditional View

Working capital has traditionally been considered as a positive component of the balance sheet. The Rengas Company, with \$65 million of current assets and \$22.5 million of current liabilities, has a current ratio of 2.9:1 (calculated as \$65 million ÷ \$22.5 million, to be discussed in Chapter 2). Good performance has been considered as this type of result for the working capital relationship, with the higher the result, the better. Similar results hold for other ratios.

This thinking has been driven by the attitude of lenders and financial analysts that working capital constitutes a store of value to repay such debts as borrowings. Bankers are trained to look at financial ratios and demand numbers that exceed preset standards. In the past, this demand was to enable the bank to force a company to borrow to put more cash on the balance sheet, thereby growing the bank's loan portfolio.

Working Capital: The Modern View

The newer view is that working capital is undesirable in that it constitutes a drag on financial performance. Current assets that do not contribute to return on equity (ROE) hinder the performance of the company, and may hide obsolete inventory that may not be salable and receivables that may not be collectible. The emphasis now is on reducing current asset accounts to the point that current liabilities can be funded from the ongoing operations of the business. That is, cash collected from sales is used to pay for payables and payroll, with the minimum in idle current asset accounts.

The concept of working capital as a hindrance to financial performance is a complete change in attitude from earlier conventional wisdom. However, working capital has never actually contributed to a company's profits or losses;

instead, it just sits on the balance sheet awaiting disposition. No returns are directly generated by cash or accounts receivable, and inventories provide returns only when sold at prices above cost. In fact, there is a significant cost in carrying working capital, which can be calculated using the cost of capital.

If the financial manager attempts to drive working capital down to nearly zero, he or she must actively manage each asset and liability category. Today the discipline of working capital management is a growing field of practice, involving financial managers, marketing managers, accounts receivable and payable managers, order-entry and invoicing supervisors, and other staff.

COST AS THE WORKING CAPITAL ISSUE

The modern view of working capital changes the focus to cost efficiencies from the management of and accounting for assets and liabilities. This change started in the 1970s with the focus of banks on cash management, using such products as lockbox and electronic funds transfer. We will review the current status of cash and liquidity in Chapters 3 and 4. The objectives of these efforts include the following:

- Managing the entire timeline of a business process in order to achieve major cost savings.
- Optimizing cost efficiency by using a scenario methodology that determines the costs of the various operational processes for handling a business process.
- Seeking additional methods to capture working capital cost efficiencies.

Working Capital Timeline

Exhibit 1.3 provides a working capital timeline for the full range of transactions that take place for the business process of collections (above the timeline) and disbursements (below the timeline). The essence of cost management is the efficient design of an entire business process, not a single step or action within that process. The basic methodology advocated is a multiphase approach:

- Develop a baseline for the all-in costs for the full timeline of an existing business process, such as the collection process.
- Analyze and cost multiple alternate scenarios for handling that process.
- Specify nonquantifiable factors.
- Select the most appropriate scenario.

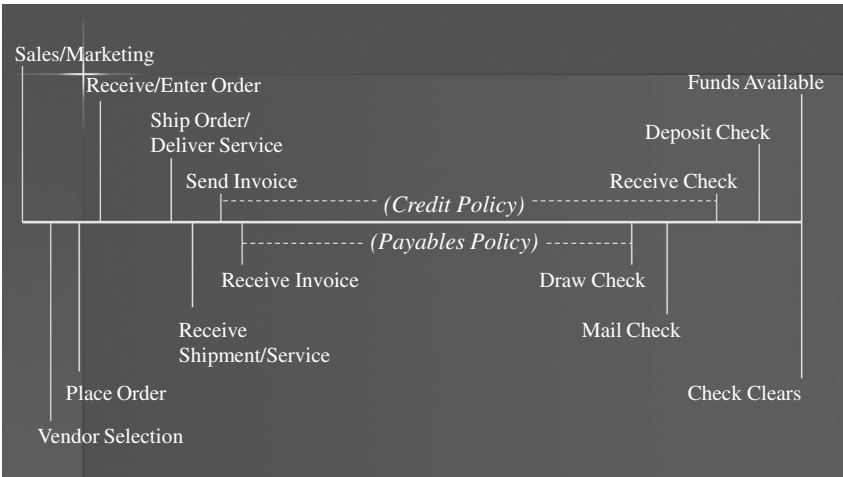


EXHIBIT 1.3 Working Capital Timeline

A change to only one element along the timeline is flawed for three reasons:

1. **The unseen solution.** It is impossible to examine all possible alternative procedures in optimizing the timeline.
2. **Objective evaluation.** All the elements within each alternative may not be properly analyzed.
3. **Timeline element interactions.** The impact of one timeline element on another may not be considered.

The interrelations among elements on the timeline are difficult to analyze, making it difficult to find the optimal solution for the full business process. Unfortunately, companies tend to perpetuate past practices, leading to embedded costs and inefficient practices.

Working Capital Cost Elements

The two most critical cost elements to analyze are float and processing expenses.

Float

Float involves funds in the process of collection or disbursement. These activities have inherent delays, which are costly for a company. Although float

cannot be eliminated, every step of the cash-flow timeline can be examined to search for savings opportunities.

Consider an example in which a large electronics manufacturing company allowed customers to delay payments while disputes were investigated on monthly invoices. Some invoices included hundreds of transactions, but even a few disputes caused a remittance delay during the investigation period, which could last weeks. The time wasted involved, averaging one week, translated to \$2 million a year for this company with \$1 billion a year in revenues!

Processing Expenses

Processing expenses are similarly important, as each transaction along the timeline—whether performed internally or outsourced—has a cost that directly affects your profitability.

A simple illustration is lockboxing, noted earlier. The all-in processing expense for a remittance handled internally by a company (without considering float) is about \$2 (based on studies by the author performed for hundreds of clients). A retail lockbox application typically is priced by banks at about 25 cents.²

Illustrative Total Potential Savings

Managing the float cost throughout the timeline can significantly impact the bottom line. Based on our client experience, the typical industrial business will waste more than 40 days because of its failure to critically examine the timeline and its activities.³

For example, a business experiencing \$1 billion a year in revenue will receive \$4 million in sales each business day (assuming 250 business days a year). At an assumed cost of capital of 10 percent, each day of delay in receiving, processing, and banking funds is equal to \$400,000.

On the disbursement side of the timeline, each day probably involves two-thirds or so of the revenue received in salaries and wages, materials, and other accounts payable. That same \$1 billion a year business will have about \$2.7 million in daily outflows (\$667 million ÷ 250 days), valued at about \$270,000.

Leisure Industry Working Capital Illustration

Traditional management of costs in the leisure industry has focused on the processing of consumer remittances and cash disbursements. Extending the search for cost management opportunities throughout the full business process timeline may yield savings far beyond those developed for specific portions of the timeline.

The benefits attained by a sample of companies in the consumer products/leisure industry involve annual savings totaling over \$2.2 million, with the companies included in the sample having annual revenues ranging to the hundreds of millions of dollars. These results are exclusive of recommendations that could not be quantified (e.g., improved control and security).

Consider an example of a theatrical supply company, focusing only on float costs. The business of Show Business Services is to supply theaters, circuses, and amusement parks with equipment, food, beverages, paper products, cleaning supplies, lighting, projection equipment, and other products. Working capital has been a continuing problem, and a study of payables practices seemed appropriate. Disbursements are made by check, with two major payables/check runs on the 8th and 23rd business day of each month.

The results for its largest vendors are shown in Exhibit 1.4, demonstrating an annual value of float costing nearly \$800,000. The company immediately researched other vendor transactions and found similar problems. The total cost to Show Business Services from all vendors in lost payables float was determined to be about \$1 million a year. In addition to these float savings, competitively bidding the disbursement function resulted in operating cost efficiencies of \$200,000, resulting in an annual total benefit of \$1.2 million. In Chapter 8 we will discuss specific actions that can be taken to accomplish those savings.

APPLYING THESE IDEAS TO A REAL BUSINESS: BEST BUY

Thus far we've been considering the financials of fictional companies. Now we'll look at the working capital results for Best Buy (stock ticker symbol BBY), a leading consumer electronics retailer operating over a thousand stores primarily in the United States. Best Buy's business strategy centers on meeting individual consumer electronics needs with end-to-end solutions, which involves greater employee involvement and increased services than traditional outlets.

What Is Best Buy's Industry?

In searching for Best Buy's industry and competition, we will use "electronics and appliance stores" (NAICS code 443115).⁴ Most observers would agree that Best Buy had a direct (although smaller and far less successful) competitor in Circuit City, but that company ceased operations in 2008. Other retailers competing with Best Buy include Game Stop and Radio Shack.