

Cash Budgeting

32A

TOY WORLD, INC.

Grace Jones, the recently hired treasurer of Toy World, Inc., a manufacturer of specialty toys, was summoned to the office of Dan Culbreth, the president and chief executive officer. When she got to Dan's office, Grace found him shuffling through a set of worksheets. He told her that because of a recent tightening of credit by the Federal Reserve, and hence an impending contraction of bank loans, the firm's bank has asked each of its major loan customers for an estimate of their borrowing requirements for the remainder of 1995 and the first half of 1996. Also, Dan informed Grace that the bank planned to continue its practice of charging a commitment fee of 1.5 percent per year (0.1250% per month) on any unused committed funds.

Dan had a previously scheduled meeting with the firm's bankers the following Monday, so he asked Grace to produce an estimate of the firm's probable loan requirements which he could submit at that time. Dan was going away on a white-water rafting expedition, a trip that had already been delayed several times, and he would not be back until just before his meeting with the bankers. Therefore, he asked Grace to prepare a cash budget while he was away.

Due to Toy World's rapid growth over the last few years, no one had taken the time to prepare a cash budget recently, so Grace was afraid she would have to start from scratch. From information already available, Grace knew that no loans would be needed from the bank before January, so she decided to restrict her budget to the period from January through June 1996.

As a first step, she obtained the following sales forecast from the marketing department:

1995	November	\$800,000
	December	925,000
1996	January	500,000
	February	300,000
	March	280,000
	April	225,000
	May	200,000
	June	250,000
	July	350,000
	August	400,000

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Note that the sales figures are before any discounts; that is, they are not net of discounts. Also, the marketing people cautioned Grace to recognize that actual sales could vary substantially from the forecasted levels, because kids are fickle in their choice of toys.

Toy World's credit policy is 2/15, net 30. Hence, a 2 percent discount is allowed if payment is made within 15 days of the sale; otherwise, payment in full is due 30 days after the date of sale. On the basis of a previous study, Grace estimates that, generally, 35 percent of the firm's customers take the discount, 60 percent pay within 30 days, and 5 percent pay late, with the late payments received about 60 days after the invoice date, on average. For monthly budgeting purposes, discount sales are assumed to be collected in the month of the sale, net sales in the month after the sale, and late sales two months after the sale. Of course, variances could occur from all of these figures.

Toy World begins production of goods two months before the anticipated sale date. Variable production costs are made up entirely of purchased materials and labor, which total 70 percent of forecasted sales—30 percent for materials and 40 percent for labor. Again, these figures could change if operating conditions departed from norms. All materials are purchased just before production begins, or two months before the sale of the finished goods. On average, Toy World pays 60 percent of the materials cost in the month when it receives the materials, and the remaining 40 percent the next month, or one month prior to the sale. Half of the labor expenses are paid two months prior to the sale, while the remaining 50 percent is paid one month before the sale.

Toy World pays fixed general and administrative expenses of approximately \$95,000 a month, while lease obligations amount to \$60,000 per month. Both expenditures are expected to continue at the same level throughout the forecast period. The firm estimates miscellaneous expenses to be \$40,000 monthly, and fixed assets are currently being depreciated at the rate of \$47,500 per month. Toy World has \$1,600,000 (book value) of bonds outstanding. They carry a 10 percent semi-annual coupon, and interest is paid on January 15 and July 15. Also, the company is planning to replace an old machine in June with a new one expected to cost \$100,000. The old machine has both a zero book and a zero market value. Federal and state income taxes are expected to be \$90,000 quarterly, and payments must be made on the 15th of December, March, June, and September. Toy World has a target minimum cash balance of \$450,000, and this amount will be on hand on January 1, 1996.

Assume that you were recently hired as Grace Jones's assistant, and she has turned the job of preparing the cash budget over to you. You must meet with her and Dan Culbreth on Sunday night to review the budget prior to Dan's meeting with the bankers on Monday. You recall the cash budgeting process from your recently completed finance course, and you plan to use the format shown in Table 1 as a guide to prepare a monthly cash budget for Toy World for January through June 1996. Based on information obtained from the firm's credit department, Grace suggests that the following assumptions be used to prepare the budget. Initially, disregard both interest payments on short-term bank loans and interest received from investing surplus funds. Also, assume that all cash flows occur on the 15th of each month. Finally, note that collections from sales in November and December of 1995 will not be completed until January and February of 1996, respectively.

Grace is extremely concerned about the peak funds shortfall during the 6-month planning period. She is hoping that a \$500,000 line of credit will be sufficient to cover any expected cash shortfall. There has been talk in the industry about changes under which suppliers would bill on terms requiring payments early in each month and, separately, customers would pay toward the end of the month. If these changes are made, competition would force Toy World to adapt to them. Therefore, Grace would also like to know how the cash budget would be affected if Toy World's cash outflows start to cluster at the beginning of the month, while collections become heaviest toward the end of the month.

At the last minute, Grace decided that a daily cash budget for the month of January should also be developed (Table 2 is provided as a guide).

She obtained the following information from Toy World managers for use in developing the daily cash budget:

- (1) Toy World normally operates 7 days a week.

- (2) Sales generally occur at a constant rate throughout the month; that is, 1/31 of the January sales are made each day.
- (3) Daily sales typically follow the 35 percent, 60 percent, 5 percent collection breakdown.
- (4) Discount purchasers take full advantage of the 15-day discount period before paying, and “on time” purchasers wait the full 30 days to pay. Thus, collections during the first 15 days of January will reflect discount sales from the last 15 days of December, plus “regular” sales made in earlier months. Also, on January 31, Toy World will begin collecting January’s net sales and December’s late sales.
- (5) The lease payment is made on the first of the month.
- (6) Fifty percent of both labor costs and general and administrative expenses are paid on the 1st and 50 percent are paid on the 15th.
- (7) Materials are assumed to be delivered on the 1st and paid for on the 5th.
- (8) Miscellaneous expenses are incurred and paid evenly throughout the month, 1/31 each day.
- (9) Required interest payments are made on the 15th.
- (10) The target cash balance is \$450,000, and this amount must be in the bank on each day. This balance is higher than the firm would otherwise keep, but it is required as a compensating balance under terms of the firm’s bank loan agreement. However, the bank may be willing to renegotiate this provision.

Dan has expressed some concern about the efficient utilization of his firm’s cash resources. Specifically, he has questioned whether or not seasonal variations should be incorporated into the firm’s target balance. In other words, during months when cash needs are greatest, the target balance would be somewhat higher, while the target would be set at a lower level during slack months. He asked you to consider this situation and to run some numbers to demonstrate the effect of using different target balances. Of course, this would require a modification to the bank loan agreement.

Grace noted that the only receipts shown in Toy World’s cash budget are collections. She notes that Toy World pays a 7 percent interest rate on the short-term bank loan and would probably earn 5 percent on surplus cash. She wants to know how these new items could be incorporated into the cash budget. Additionally, she would like your views on an investment strategy for Toy World to invest any surplus funds. Toy World’s policy has been to invest only in securities that provide liquidity and safety, yet offer a reasonable rate of return. Grace has heard about securities called “derivatives” that are backed by U.S. Treasury bonds yet offer higher returns than T-bonds, and she wonders if they should be used.

Dan Culbreth is an astute businessman, so he realizes that the cash budget is a forecast, and that many of the cash flows shown are expected values rather than amounts known with certainty. If actual sales, hence collections, are different from forecasted levels, the forecasted surpluses and deficits would be incorrect. He is interested in knowing how various changes in the key assumptions would affect the firm’s cash surplus or deficit. It would be particularly bad to obtain a \$500,000 line of credit and then find that, because of incorrect assumptions, the actual loan requirement is \$700,000. Labor costs and many other expenses are set by contract at the start of the 6-month forecast period on the basis of the original expected sales. Therefore, many of the outflows cannot be adjusted downward during the planning period even if sales decline below the forecasted levels. Therefore, Dan sent Grace a memo requesting that the following three scenarios be specifically considered: (1) What would be the impact on the monthly net cash flows from January to June 1996 if actual sales for November through June were 20 percent below the forecasted amounts? (2) What if actual sales were only 50 percent of the forecasted level? (3) Even if sales are as expected, what would happen if customers changed their payment patterns and began paying more slowly, such as 25 percent in the month of sale, 55 percent in the following month, and 20 percent in the second month versus the old 35-60-5 pattern?

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Based on an analysis of the situation, recommend the size of the credit line Toy World should seek. Think about any other related issues that Grace or Dan, or the bankers, might raise concerning the budgets. In particular, be prepared to explain the sources of all the numbers, and the effects on the company's cash requirements if any of the basic assumptions turn out to be incorrect. It would be useful to do some sensitivity analyses, and to be prepared to answer various "what if" questions Dan might ask. Be prepared to discuss the tradeoff between a high credit line with a high commitment fee versus a low credit line with a low commitment fee. Finally, Grace knows that Dan has been thinking about altering the production process to produce at a level rate all during the year rather than producing one month based on sales expected in the next month. How might such a change affect loan requirements?

TABLE 1
Monthly Cash Budget Worksheet

	November	December	January	February	March	April	May	June	July	August
<i>I. Collections and Payments</i>										
Gross Sales (expected)	\$800,000						\$200,000	\$250,000	\$350,000	\$400,000
Gross Sales (realized)	\$800,000						\$200,000	\$250,000	\$350,000	\$400,000
Collections:										
Month of Sale	\$274,400	\$317,275					\$ 68,600	\$85,750		
1 Month After Sale					180,000	168,000	135,000	120,000		
2 Months After Sale					25,000	15,000	14,000	11,250		
Total Collections			<u>\$766,500</u>	<u>\$449,150</u>						
Purchases	<u>\$150,000</u>				<u>\$ 60,000</u>	<u>\$ 75,000</u>	<u>\$105,000</u>	<u>\$120,000</u>		
Payments:										
2 Months Before Sale	90,000	54,000	50,400							
1 Month Before Sale		60,000	36,000	33,600						
Total Payments			<u>\$ 86,400</u>					<u>\$114,000</u>		
<i>II. Cash Gain (Loss) For Month</i>										
Collections			\$766,500							
Payments:										
Purchases								\$114,000		
Labor										
2 Months Before Sale			56,000					80,000		
1 Month Before Sale			60,000	\$ 56,000	\$ 45,000	\$ 40,000	\$ 50,000	70,000		
General/Admin. Exp.			95,000							
Lease			60,000							
Miscellaneous Exp.			40,000							
Taxes					90,000			90,000		
Interest (on bonds)			80,000							
New Equipment								100,000		
Total Payments			<u>\$477,400</u>							
Net Cash Gain (Loss)			<u>\$289,100</u>	<u>\$79,050</u>						

TABLE 2

Daily Cash Budget Worksheet

Day:	1	2	•••	5	•••	10	•••	15	16	•••	28	29	30	31
<i>I. Collections and Payments</i>														
Gross Sales	\$ 16,129		•••	\$16,129	•••	\$16,129	•••	\$ 16,129	\$16,129	•••			\$16,129	\$16,129
Collections:														
Discount Payers	\$ 10,235		•••		•••		•••		\$ 5,532	•••			\$ 5,532	\$ 5,532
Net Payers	17,903		•••		•••		•••		17,903	•••			17,903	9,677
Late Payers	1,333		•••		•••		•••		1,333	•••			1,492	1,492
Total Collections	<u>\$ 29,471</u>	<u>\$29,471</u>	•••	<u>\$29,471</u>	•••	<u>\$29,471</u>	•••	<u>\$ 29,471</u>	<u>\$24,768</u>	•••	<u>\$24,768</u>	<u>\$24,768</u>	<u>\$24,927</u>	<u>\$16,701</u>
Purchases	\$ 84,000													
Payments:														
2 Months Before Sale														
1 Month Before Sale				\$36,000										
Total Payments	<u>\$ 0</u>	<u>\$ 0</u>	•••	<u>\$86,400</u>	•••	<u>\$ 0</u>	•••	<u>\$ 0</u>	<u>\$ 0</u>	•••	<u>\$ 0</u>	<u>\$ 0</u>	<u>\$ 0</u>	<u>\$ 0</u>
<i>II. Cash Gain (Loss) For Day</i>														
Collections	\$ 29,471	\$29,471	•••	\$29,471	•••	\$29,471	•••	\$ 29,471	\$24,769	•••	\$24,769	\$24,769	\$24,927	\$16,702
Payments:														
Purchases				\$86,400										
Labor														
2 Months Before Sale	\$ 28,000							\$ 28,000						
1 Month Before Sale	30,000							30,000						
General/Admin. Exp.	47,500							47,500						
Lease														
Miscellaneous Exp.	1,290			1,290		1,290		1,290	1,290		1,290	1,290	1,290	1,290
Taxes														
Interest (on bonds)								80,000						
Total Payments	<u>\$106,790</u>	<u>\$1,290</u>	•••	<u>\$87,690</u>	•••	<u>\$ 1,290</u>	•••	<u>\$186,790</u>	<u>\$ 1,290</u>	•••	<u>\$ 1,290</u>	<u>\$ 1,290</u>	<u>\$ 1,290</u>	<u>\$ 1,290</u>
Net Cash Gain (Loss)	<u>(\$177,319)</u>	<u></u>	•••	<u>(\$58,219)</u>	•••	<u>\$28,181</u>	•••	<u>(\$157,319)</u>	<u>\$23,479</u>	•••	<u>\$23,479</u>	<u>\$23,479</u>	<u>\$23,637</u>	<u>\$15,412</u>

TABLE 2 (continued)
Daily Cash Budget Worksheet

Day:	1	2	•••	5	•••	10	•••	15	16	•••	28	29	30	31
<i>III. Cash Surplus or Loan Requirement</i>														
Cash at Start (no borrowing)	<u>\$450,000</u>	<u>\$312,681</u>	•••	<u>\$397,224</u>	•••	<u>\$451,728</u>	•••	<u>\$592,633</u>	<u>\$435,314</u>	•••	<u>\$717,056</u>	<u>\$764,013</u>	<u>\$787,650</u>	
Cumulative Cash	\$312,681	\$340,862		\$339,005		\$479,909			\$458,792				\$787,650	\$803,061
Target Cash Balance	<u>450,000</u>	<u>450,000</u>		<u>450,000</u>		<u>450,000</u>			<u>450,000</u>				<u>450,000</u>	<u>450,000</u>
Surplus Cash or Total Loans Outstanding to Maintain Target														
Cash Balance	<u>(\$137,319)</u>	<u>(\$109,138)</u>	•••	<u>(\$110,995)</u>	•••	<u>\$ 29,909</u>	•••	<u>\$ 8,792</u>	<u>=====</u>	•••	<u>\$290,534</u>	<u>\$314,013</u>	<u>\$337,650</u>	<u>\$353,061</u>