26.1 Overview of Working Capital

Any reduction in working capital requirements generates a positive free cash flow that the firm can distribute immediately to shareholders. Thus, a reduction in a firm’s required investment in working capital can increase the value of the firm.

A firm’s cash cycle is the length of time between when the firm pays cash to purchase its initial inventory and when it receives cash from the sale of the output produced from that inventory. The longer a firm’s cash cycle, the more working capital it has, and the more cash it needs to carry to conduct its daily operations. The cash cycle can be measured by calculating the cash conversion cycle (CCC):

\[ CCC = \text{Inventory Days} + \text{Accounts Receivable Days} - \text{Accounts Receivable Days} \]

where:

\[ \text{Inventory Days} = \frac{\text{Average Daily Cost of Goods Sold}}{\text{Inventory}} \]
\[ \text{Accounts Receivable Days} = \frac{\text{Average Daily Sales}}{\text{Accounts Receivable}} \]
\[ \text{Accounts Payable Days} = \frac{\text{Accounts Payable}}{\text{Average Daily Cost of Goods Sold}} \]

The firm’s operating cycle is the average length of time between when a firm originally purchases its inventory and when it receives the cash back from selling its product. If the firm pays cash for its inventory, this period is identical to the firm’s cash cycle. However, most firms buy their inventory on credit, which reduces the amount of time between the cash investment and the receipt of cash from that investment.
26.2 Trade Credit

When a firm allows a customer to pay for goods at some date later than the date of purchase, it creates an account receivable for the firm and an account payable for the customer. The credit that the firm is extending to its customer is known as **trade credit**.

If a supplier offers its customers trade credit terms of “net 30,” payment is not due until 30 days from the date of the invoice, and the supplier is effectively letting the customer use its money for an extra 30 days.

The selling firm may also offer the buying firm a discount if payment is made early. The terms “2/10, net 30” mean that the buying firm will receive a 2% discount if it pays for the goods within 10 days; otherwise, the full amount is due in 30 days. Firms offer discounts to encourage customers to pay early so that the selling firm gets cash from the sale sooner. However, the amount of the discount also represents a cost to the selling firm because it does not receive the full selling price for the product.

Trade credit can be an attractive source of funds due to its simplicity and convenience. However, trade credit is like a loan from the selling firm to its customer. If a firm sells a product for $100 but offers its customer terms of 2/10, net 30, the customer can take advantage of the discount and pays $98 within the 10-day discount period. The customer also has the option to use the $98 for an additional 20 days (30 − 10 = 20). The interest rate for the 20-day term of the loan is $2/$98 = 2.04%. With a 365-day year, this rate over 20 days corresponds to an effective annual rate of

$$\text{Effective Annual rate (EAR)} = (1.024)^{\frac{365}{20}} - 1 = 44.6\%.$$ 

As long as the firm can obtain a bank loan at a lower interest rate, it would be better off borrowing at the lower rate and using the cash proceeds of the loan to take advantage of the discount offered by the supplier.

**Collection float** is the amount of time it takes for a firm to be able to use funds after a customer has paid for its goods. Firms can reduce their working capital needs by reducing their collection float. Collection float is determined by three factors.

- **Mail float:** How long it takes the firm to receive the check after the customer has mailed it.
- **Processing float:** How long it takes the firm to process the check and deposit it in the bank.
- **Availability float:** How long it takes before the bank gives the firm credit for the funds.

Firms can reduce collection float by streamlining in-house check-processing procedures and using automatic transfers from the customer’s bank account to the firm’s bank account.

**Disbursement float** is the amount of time it takes before payments to suppliers result in a cash outflow for the firm. Like collection float, it is a function of mail time, processing time, and check-clearing time. Although a firm may try to extend its disbursement float in order to lengthen its payables and reduce its working capital needs, it risks making late payments to suppliers.

The **Check Clearing for the 21st Century Act**, which became effective on October 28, 2004, is aimed at eliminating disbursement float due to the check-clearing process. Under the Act, banks can process check information electronically, and the funds are deducted from a firm’s checking account on the same day that the firm’s supplier deposits the check in its bank in most cases. Unfortunately, even though the funds are taken out of the check writer’s
account almost immediately under Check 21, the check recipient’s account is not credited as quickly.

26.3 Receivables Management

Establishing a credit policy involves three steps.

1. Establishing credit standards

Large firms perform this analysis in-house with their own credit departments. Small firms purchase credit reports from credit rating agencies such as Dun & Bradstreet. The decision of how much credit risk to assume plays a large role in determining how much money a firm ties up in its receivables. While a restrictive policy can result in a lower sales volume, the firm will have a smaller investment in receivables.

2. Establishing credit terms

The firm decides on the length of the period before payment must be made (the “net” period) and chooses whether to offer a discount to encourage early payments. If it offers a discount, it must also determine the discount percentage and the discount period. If the firm is relatively small, it will probably follow the lead of other firms in the industry in establishing these terms.

3. Establishing a collection policy

The content of this policy can range from doing nothing if a customer is paying late, to sending a polite letter of inquiry, to charging interest on payments extending beyond a specified period, to threatening legal action at the first late payment.

The accounts receivable days is the average number of days that it takes a firm to collect on its sales. An **aging schedule** categorizes accounts by the number of days they have been on the firm’s books. It can be prepared using either the number of accounts or the dollar amount of the accounts receivable outstanding. The aging schedule is also sometimes augmented by analysis of the payments pattern, which provides information on the percentage of monthly sales that the firm collects in each month after the sale.

26.4 Payables Management

A firm should choose to borrow using accounts payable only if trade credit is the cheapest source of funding. When a company has a choice between trade credit from two different suppliers, it should take the least-expensive alternative. In addition, a firm should always pay on the latest day allowed. Some firms ignore the payment due period and pay later, in a practice referred to as **stretching the accounts payable**.

26.5 Inventory Management

A firm needs its inventory to minimize the risk that the firm will not be able to obtain an input it needs for production because of factors such as seasonality in demand. The direct costs associated with inventory fall into three categories.

- Acquisition costs are the costs of the inventory itself over the period being analyzed (usually one year).
- Order costs are the total costs of placing an order over the period being analyzed.
- Carrying costs include storage costs, insurance, taxes, spoilage, obsolescence, and the opportunity cost of the funds tied up in the inventory.

©2011 Pearson Education
Some firms seek to reduce their carrying costs as much as possible. With “just-in-time” (JIT) inventory management, a firm acquires inventory precisely when needed so that its inventory balance is always zero, or very close to it.

26.6 Cash Management

Firm holds cash to meet day-to-day needs, to compensate for the uncertainty associated with its cash flows, and to satisfy bank requirements.

The amount of cash a firm needs to be able to pay its bills is sometimes referred to as a transactions balance. The amount of cash a firm holds to counter the uncertainty surrounding its future cash needs is known as a precautionary balance. A firm’s bank may require it to hold a compensating balance in an account at the bank as compensation for services that the bank performs. Compensating balances are typically deposited in accounts that either earn no interest or pay a very low interest rate.

Selected Concepts and Key Terms

Aging Schedule

A schedule that categorizes accounts receivable by the number of days they have been on the firm’s books. It can be prepared using either the number of accounts or the dollar amount of the accounts receivable outstanding.

Availability Float

How long it takes before the bank gives the firm credit for the funds.

Cash Conversion Cycle

Inventory Days + Accounts Receivable Days − Accounts Payable Days.

Cash Cycle

The length of time between when the firm pays cash to purchase its initial inventory and when it receives cash from the sale of the output produced from that inventory. The longer a firm’s cash cycle, the more working capital it has, and the more cash it needs to carry to conduct its daily operations.

Check Clearing for the 21st Century Act (Check 21)

Effective on October 28, 2004, the Act’s goal was to eliminate disbursement float due to the check-clearing process. Under the Act, banks can process check information electronically, and the funds are deducted from a firm’s checking account on the same day that the firm’s supplier deposits the check in its bank in most cases. Unfortunately, even though the funds are taken out of the check writer’s account almost immediately under Check 21, the check recipient’s account is not credited as quickly. As a result, the act does not eliminate collection float.

Collection Float

The amount of time it takes for a firm to be able to use funds after a customer has paid for its goods. Firms can reduce their working capital needs by reducing their collection float.
Compensating Balance
A minimum balance required by a bank as compensation for services that the bank performs. Compensating balances are typically deposited in accounts that either earn no interest or pay a very low interest rate.

Disbursement Float
The amount of time it takes before payments to suppliers result in a cash outflow for the firm. It is a function of mail time, processing time, and check-clearing time. Although a firm may try to extend its disbursement float in order to lengthen its payables and reduce its working capital needs, it risks making late payments to suppliers.

Mail Float
How long it takes the firm to receive the check after the customer has mailed it.

Operating Cycle
The average length of time between when a firm originally purchases its inventory and when it receives the cash back from selling its product. If the firm pays cash for its inventory, this period is identical to the firm’s cash cycle. However, most firms buy their inventory on credit, which reduces the amount of time between the cash investment and the receipt of cash from that investment.

Precautionary Balance
The amount of cash a firm holds to counter the uncertainty surrounding its future cash needs.

Processing Float
How long it takes the firm to process the check and deposit it in the bank.

Trade Credit
The credit that a firm extends to its customers when a firm allows a customer to pay for goods at some date later than the date of purchase. When this happens, it creates an account receivable for the firm and an account payable for the customer.

Transactions Balance
The amount of cash a firm needs to be able to pay its bills.

Concept Check Questions and Answers

26.1.1. What is the difference between a firm’s cash cycle and operating cycle?
A firm’s cash cycle is the length of time between when the firm pays cash to purchase its initial inventory and when it receives cash from the sale of the output produced from that inventory. The operating cycle is the average length of time between when a firm originally purchases its inventory and when it receives the cash back from selling its products.

26.1.2. How does working capital impact a firm’s value?
Working capital impacts a firm’s value by affecting its free cash flow.
26.2.1. What does the term “2 / 10, Net 30” mean?
The term “2/10, Net 30” means that the buying firm will receive a 2% discount if it pays for the goods within 10 days; otherwise, the full amount is due in 30 days.

26.2.2. Why do companies provide trade credit?
Because a “cash-only” policy may cause them to lose customers to competing firms.

26.3.1. Describe three steps in establishing a credit policy.
Establishing a credit policy involves three steps: establishing credit standards (who the firm will extend credit to), establishing credit terms (the length of the period before payment must be made), and establishing a collection policy to deal with late payments.

26.3.2. What is the difference between accounts receivable days and an aging schedule?
Accounts receivable days are the average number of days that it takes a firm to collect on its sales. An aging schedule categorizes accounts by the number of days they have been on the firm’s books.

26.4.1. What is accounts payable days outstanding?
It is the accounts payable balance expressed in terms of the number of days of cost of goods sold.

26.4.2. What are the costs of stretching accounts payable?
Suppliers may react to a firm whose payments are always late by imposing terms of cash on delivery (COD) or cash before delivery (CBD). The delinquent firm then bears the additional costs associated with these terms and may have to negotiate a bank loan to have the cash available to pay. The supplier may also discontinue business with the delinquent customer, leaving the customer to find another source, which may be more expensive or of lower quality. A poor credit rating might also result, making it difficult for the firm to obtain good terms with any other supplier.

26.5.1. What are the benefits and costs of holding inventory?
The benefit is that it helps minimize the risk that the firm will not be able to obtain an input it needs for production, especially when factors such as seasonality in demand mean that customer purchases do not perfectly match the most efficient production cycle. The direct costs of holding inventory are acquisition costs, order costs, and carrying costs.

26.5.2. Describe “just-in-time” inventory management.
With “just-in-time” inventory management, the firm acquires inventory precisely when needed so that its inventory balance is always zero, or very close to it.

26.6.1. List three reasons why a firm holds cash.
A firm holds cash to meet its day-to-day needs to compensate for the uncertainty associated with its cash flows and to satisfy bank requirements.

26.6.2. What trade-off does a firm face when choosing how to invest its cash?
When choosing how to invest its cash, a firm faces a return-risk trade-off. In fact, the firm may choose from a variety of short-term securities that differ somewhat with regard to their default risk and liquidity risk: The greater the risk, the higher the expected return on the investment. The financial manager must decide how much risk she is willing to accept in return for a higher yield.
Examples with Step-by-Step Solutions

Solving Problems

Problems may require understanding the components of a firm’s working capital and determining the number of days in a firm’s cash conversion cycle. You should also understand trade credit terms and be able to determine the cost of forgoing a trade credit discount. Finally, you should be able to construct an accounts receivable aging schedule.

Examples

1. Last year, Dell had sales of $57 billion, cost of goods sold of $46 billion, and the following end of year balance sheet (in billions):

<table>
<thead>
<tr>
<th>Assets</th>
<th>Liabilities &amp; Equity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash</td>
<td>Accounts Payable</td>
</tr>
<tr>
<td>Accounts Receivable</td>
<td>Notes Payable</td>
</tr>
<tr>
<td>Inventory</td>
<td>Accrued Items</td>
</tr>
<tr>
<td>Total Current Assets</td>
<td>Total Current Liabilities</td>
</tr>
<tr>
<td>Net Plant, Property &amp; Equipment</td>
<td>Long-term Debt</td>
</tr>
<tr>
<td>Total Assets</td>
<td>Common Equity</td>
</tr>
<tr>
<td></td>
<td>Total Liabilities &amp; Equity</td>
</tr>
<tr>
<td>$9.0</td>
<td>$6.0</td>
</tr>
<tr>
<td>7.5</td>
<td>2.5</td>
</tr>
<tr>
<td>0.5</td>
<td>7.5</td>
</tr>
<tr>
<td>17.0</td>
<td>16.0</td>
</tr>
<tr>
<td>6.0</td>
<td>3.0</td>
</tr>
<tr>
<td>4.0</td>
<td>4.0</td>
</tr>
<tr>
<td>$23.0</td>
<td>$23.0</td>
</tr>
</tbody>
</table>

[A] How much does Dell have invested in working capital?
[B] How long is Dell’s cash cycle?
[C] If Dell had the industry average inventory days of 30, what would the cash cycle be?

Step 1. Determine net working capital.

Net working capital is current assets minus current liabilities, so Dell’s investment in working capital is $17.0 – $16.0 = $1 billion.

Step 2. Determine the cash conversion cycle.

The cash conversion cycle (CCC) is equal to the inventory days plus the accounts receivable days minus the accounts payable days. Dell’s cash conversion cycle is:

\[
CCC = \frac{\text{inventory}}{\text{average daily COGS}} + \frac{\text{accounts receivable}}{\text{average daily sales}} - \frac{\text{accounts payable}}{\text{average daily COGS}}
\]

\[
CCC = \frac{0.5}{\frac{46}{365}} + \frac{7.5}{\frac{57}{365}} - \frac{6}{\frac{46}{365}}
\]

\[
= 4 \text{ days} + 48\text{ days} - 48\text{ days} = 4 \text{ days}.
\]

Step 3. Determine the cash conversion cycle if Dell had the industry average inventory days.

If Dell’s inventory days had been 30 days, its cash conversion cycle would have been:

\[
CCC = 30 \text{ days} + 48\text{ days} - 48\text{ days} = 30 \text{ days}.
\]
2. You have just purchased $30,000 worth of components from a supplier that offers credit terms of 3/10 net 30. If you pay today, how much would you pay? Should you pay today? What is the effective cost of the trade credit if you pay on day 30?

**Step 1.** Determine the size of discounted payment.

The terms offer a 3% discount if you pay within 10 days. Thus, you would pay:

\[(1-0.03) \times 30,000 = 29,100.\]

However, since you would pay the same amount in 10 days, you should wait 10 days if you chose to take advantage of the discount.

**Step 2.** Determine the cost of using the trade credit by paying in 30 days.

If you wait until day 30, you will owe $30,000. Thus, you are paying $900 in interest for a 20-day loan (from day 10 to day 30). The interest rate over this period is:

\[
\frac{900}{29,100} = 0.031 = 3.1\%.
\]

The number of 20-day periods in a year is 365/20 = 18, so the effective annual cost of the trade credit is:

\[\text{EAR} = (1.031)^{18} - 1 = 73.2\%.\]

3. Your company has the following accounts receivable:

<table>
<thead>
<tr>
<th>Customer</th>
<th>Accounts Receivable</th>
<th>Age in days</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$50,000</td>
<td>25</td>
</tr>
<tr>
<td>2</td>
<td>70,000</td>
<td>55</td>
</tr>
<tr>
<td>3</td>
<td>90,000</td>
<td>30</td>
</tr>
<tr>
<td>4</td>
<td>110,000</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>40,000</td>
<td>22</td>
</tr>
<tr>
<td>6</td>
<td>20,000</td>
<td>22</td>
</tr>
<tr>
<td>7</td>
<td>80,000</td>
<td>44</td>
</tr>
<tr>
<td>8</td>
<td>30,000</td>
<td>76</td>
</tr>
</tbody>
</table>

The firm extends credit on terms of 1/15, net 45. Develop an aging schedule using 15-day increments through 60 days.

**Step 1.** Sort the accounts receivable customers by the age of their receivables.

<table>
<thead>
<tr>
<th>Customer</th>
<th>Accounts Receivable</th>
<th>Age in days</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>110,000</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>40,000</td>
<td>22</td>
</tr>
<tr>
<td>6</td>
<td>20,000</td>
<td>22</td>
</tr>
<tr>
<td>1</td>
<td>$50,000</td>
<td>25</td>
</tr>
<tr>
<td>3</td>
<td>90,000</td>
<td>30</td>
</tr>
<tr>
<td>7</td>
<td>80,000</td>
<td>44</td>
</tr>
<tr>
<td>2</td>
<td>70,000</td>
<td>55</td>
</tr>
<tr>
<td>8</td>
<td>30,000</td>
<td>76</td>
</tr>
</tbody>
</table>
**Step 2.** Determine the Aging Schedule.

<table>
<thead>
<tr>
<th>Percent of Days Outstanding</th>
<th>Accounts Receivable</th>
<th>Accounts Receivable</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-15</td>
<td>110,000</td>
<td>22.4</td>
</tr>
<tr>
<td>16-30</td>
<td>200,000</td>
<td>40.8</td>
</tr>
<tr>
<td>31-45</td>
<td>80,000</td>
<td>16.3</td>
</tr>
<tr>
<td>46-60</td>
<td>70,000</td>
<td>14.3</td>
</tr>
<tr>
<td>over 60</td>
<td>30,000</td>
<td>6.1</td>
</tr>
<tr>
<td>490,000</td>
<td>100.0%</td>
<td></td>
</tr>
</tbody>
</table>

Questions and Problems

1. Last year, Ford had sales of $170 billion, cost of goods sold of $140 billion, and the following end of year balance sheet (in billions):

<table>
<thead>
<tr>
<th>Assets</th>
<th>Liabilities &amp; Equity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash</td>
<td>Accounts Payable</td>
</tr>
<tr>
<td>$21.0</td>
<td>$25.0</td>
</tr>
<tr>
<td>Accounts Receivable</td>
<td>Notes Payable</td>
</tr>
<tr>
<td>20.0</td>
<td>15.5</td>
</tr>
<tr>
<td>Inventory</td>
<td>Accrued Items</td>
</tr>
<tr>
<td>10.0</td>
<td>7.5</td>
</tr>
<tr>
<td>Total Current Assets</td>
<td>Total Current Liabilities</td>
</tr>
<tr>
<td>51.0</td>
<td>48.0</td>
</tr>
<tr>
<td>Net Plant, Property &amp; Equipment</td>
<td>Long-term Debt</td>
</tr>
<tr>
<td>219.0</td>
<td>210.0</td>
</tr>
<tr>
<td>Total Assets</td>
<td>Common Equity</td>
</tr>
<tr>
<td>$270.0</td>
<td>12.0</td>
</tr>
</tbody>
</table>

[A] How much does Ford have invested in working capital?  
[B] How long is Ford’s cash cycle?

2. You have just purchased inventory from a supplier that offers credit terms of 1/10 net 45. What is the effective cost of the trade credit if you pay on day 45?

3. What is the effective annual cost of credit terms of 1/15, net 45, if the firm stretches the accounts payable to 60 days?

4. Your company has the following accounts receivable:

<table>
<thead>
<tr>
<th>Customer</th>
<th>Accounts Receivable</th>
<th>Age in days</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$100,000</td>
<td>22</td>
</tr>
<tr>
<td>2</td>
<td>170,000</td>
<td>33</td>
</tr>
<tr>
<td>3</td>
<td>170,000</td>
<td>29</td>
</tr>
<tr>
<td>4</td>
<td>10,000</td>
<td>56</td>
</tr>
<tr>
<td>5</td>
<td>80,000</td>
<td>8</td>
</tr>
<tr>
<td>6</td>
<td>220,000</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td>40,000</td>
<td>14</td>
</tr>
<tr>
<td>8</td>
<td>20,000</td>
<td>21</td>
</tr>
<tr>
<td>9</td>
<td>70,000</td>
<td>88</td>
</tr>
</tbody>
</table>

Develop an aging schedule using 15-day increments through 60 days.

5. Apple Computer had $16 billion in sales in 2005. Its cost of goods sold was $10 billion, and its average inventory balance was $500 million.

[A] What is Apple’s inventory days ratio? What does it mean?  
[B] Dell’s turns over its inventory every four days. By how much would Apple reduce its investment in inventory if it could improve its inventory turnover ratio to match Dell?
Solutions to Questions and Problems

1. [A] Net working capital is current assets minus current liabilities, so Ford’s investment in working capital is $51 – $48 = $3 billion.

[B] The cash conversion cycle (CCC) is equal to the inventory days plus the accounts receivable days minus the accounts payable days. Ford’s cash conversion cycle is:

\[
CCC = \frac{\text{inventory}}{\text{average daily COGS}} + \frac{\text{accounts receivable}}{\text{average daily sales}} - \frac{\text{accounts payable}}{\text{average daily COGS}}
\]

\[
CCC = \frac{\$20}{\frac{\$140}{365}} + \frac{\$10}{\frac{\$170}{365}} - \frac{\$25}{\frac{\$140}{365}}
\]

\[
= \frac{52}{365} + \frac{22}{365} - \frac{65}{365} = 9 \text{ days.}
\]

2. The terms offer a 1% discount if you pay within 10 days. Thus, you would pay:

\[
(1 - 0.01) \times X
\]

If you wait until day 30, you will owe $X. Thus, you are paying \((0.01) \times X\) in interest for a 35-day loan (from day 10 to day 45). The interest rate over this period is:

\[
\frac{(0.01) \times X}{(0.99) \times X} = 0.0101 = 1.01%.
\]

The number of 35-day periods in a year is \(365/35 = 10.429\), so the effective annual cost of the trade credit is:

\[
\text{EAR} = (1.0101)^{10.429} - 1 = 11.0%.
\]

3. If they wait until day 60, they will owe $X. Thus, they are paying \((0.01) \times X\) in interest for a 50-day loan (from day 10 to day 60). The interest rate over this period is:

\[
\frac{(0.01) \times X}{(0.99) \times X} = 0.0101 = 1.01%.
\]

The number of 50-day periods in a year is \(365/35 = 7.30\), so the effective annual cost of the trade credit is:

\[
\text{EAR} = (1.0101)^{7.3} - 1 = 7.6%.
\]

4. Aging Schedule.

<table>
<thead>
<tr>
<th>Days Outstanding</th>
<th>Accounts Receivable</th>
<th>Percent of Accounts Receivable</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-15</td>
<td>340,000</td>
<td>22.4</td>
</tr>
<tr>
<td>16-30</td>
<td>290,000</td>
<td>40.8</td>
</tr>
<tr>
<td>31-45</td>
<td>170,000</td>
<td>16.3</td>
</tr>
<tr>
<td>46-60</td>
<td>10,000</td>
<td>14.3</td>
</tr>
<tr>
<td>over 60</td>
<td>70,000</td>
<td>6.1</td>
</tr>
<tr>
<td></td>
<td>880,000</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

©2011 Pearson Education
5. [A] The inventory days ratio is equal to the inventory divided by average daily cost of goods sold.

\[
\text{Inventory Days} = \frac{\text{Inventory}}{\text{Average Daily COGS}} = \frac{\$500 \text{ million}}{\$10 \text{ billion}} = 18.25 \text{ days}
\]

This implies that Apple’s average inventory is around for about 18 days; i.e. it turns over inventory every \( \frac{365}{18.25} = 20 \) days.

[B] Apple could decrease its inventory days to 4 days by reducing its inventory to:

\[
\text{Inventory Days} = \frac{\text{inventory}}{\text{average daily COGS}} = 4 = \frac{X \text{ million}}{\$10 \text{ billion}} \Rightarrow X = \$110 \text{ million}
\]

Thus, Apple would reduce its inventory by \( \$500 \text{ million} - \$110 \text{ million} = \$390 \text{ million} \).