

Supply Chain Financial Analysis

Managing Growth at Sunflower Nutraceuticals

LCL Executive Programme | Luxembourg | November 9, 2018



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Transportation & Logistics



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SIMULATION

Working Capital Simulation: Managing Growth V2

Sandeep Dahiya

Added on Mar 11, 2016 , Purchased on Feb 29, 2016

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2017 NOV SCFA WORKSHOP

CASE

Dakota Office Products

Robert S. Kaplan

SIMULATION

Working Capital Simulation: Managing Growth V2

Sandeep Dahiya

Added on Nov 06, 2017 , Purchased on Nov 06, 2017 , Expires on Nov 05, 2018

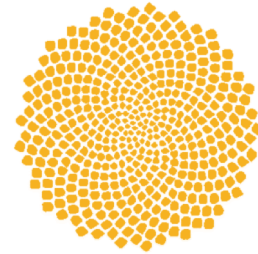
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How to Play

User Guide



Sunflower Nutraceuticals & the Nutraceutical Industry

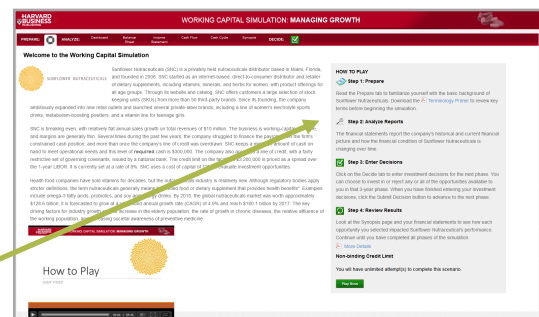
- You are the CEO of Sunflower Nutraceuticals (SNC).
 
- Sunflower Nutraceuticals – privately held nutraceuticals distributor, based in Florida
 - Essentially breaking-even with flat sales growth, total revenues of \$10M.
 - Started in 2006 as an Internet-based direct to consumer distributor and retailer of dietary supplements.
 - Product offering spans 100 SKUs from 50 third-party brands.
 - Had ambitious growth including expansion into new retail outlets and private label production.
- Nutraceutical Industry
 - Relatively new sector with strong growth potential, global market worth ~ \$128.6 billion.
 - The global market is forecasted to grow at a compound annual growth rate (CAGR) of 4.9% and reach \$180.1 billion by 2017.
 - Nutraceutical distribution business is working capital intensive and margins are generally thin.

How to Play

- Prepare
- Analyze reports
- Enter decisions
- Review
- **PLAY ONLY THE FIRST PHASE, THE JUST CLICK THROUGH THE FOLLOWING PHASES**

Prepare

This section gives information on your role, a company overview, and provides basic steps for How to Play.

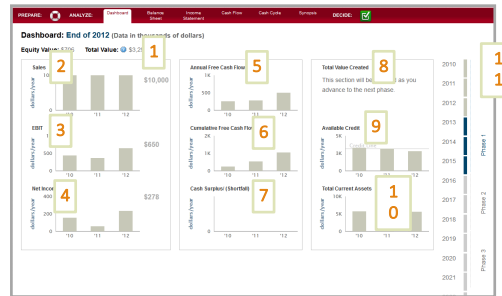


The Terminology Primer PDF downloadable from the "How to Play" introduces key concepts relevant to the simulation.

ANALYZE: Dashboard Overview

This page provides a visual summary of the current status of the simulation based on the most recent phase completed. The sim begins in Phase 1, with the Dashboard presenting historical data for years 2010-2012.

1. Equity Value and Total Firm Value
2. Annual Sales
3. Annual EBITDA
4. Annual Net Income
5. Annual Free Cash Flow
6. Cumulative Free Cash Flow
7. Cash Surplus/Shortfall
8. Total Value Created; and for each Phase
9. Incremental Credit Available
10. Total Value Created
11. Time Line – indicates your progress through the simulation



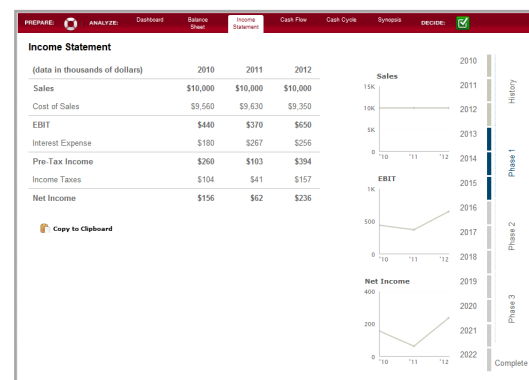
ANALYZE: Income Statement

The Income Statement depicts 3 years of data for the current phase of the simulation.

As you progress through the simulation, a toggle at the top will allow you to view historical data.

This screen includes three line graphs illustrating each phase's

- Sales
- EBITDA
- Net Income



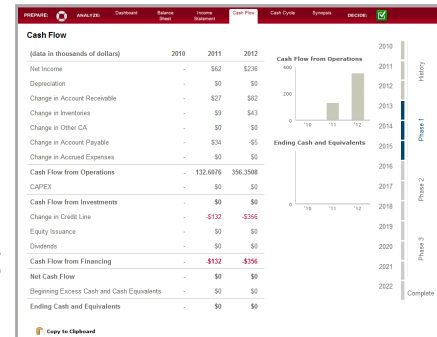
ANALYZE: Cash Flow

The Cash Flow Statement depicts 3 years of data for the current phase of the simulation.

As you progress through the simulation, a toggle at the top will allow you to view historical data.

This screen includes two bar charts illustrating each phase's

- Cash Flow from Operations
- Ending Cash and Cash Equivalents



DECIDE: Decisions

This is where all Decisions are entered. Each opportunity includes a detailed description and initial assumptions. You must decide to accept or decline each opportunity.

A green check indicates an opportunity has been selected.


Accepted Opportunities are listed.

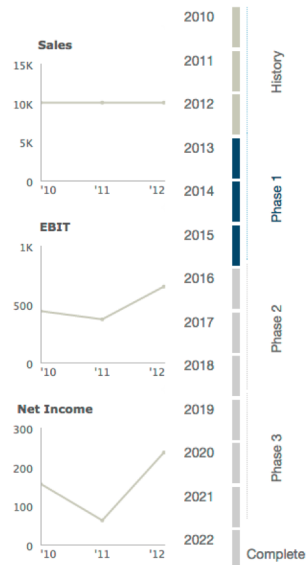
Your selections will not be final until you click "Submit Decisions".

Income Statement

(data in thousands of dollars)

	2010	2011	2012
Sales	\$10,000	\$10,000	\$10,000
Cost of Sales	\$9,560	\$9,630	\$9,350
EBIT	\$440	\$370	\$650
Interest Expense	\$180	\$267	\$256
Pre-Tax Income	\$260	\$103	\$394
Income Taxes	\$104	\$41	\$157
Net Income	\$156	\$62	\$236

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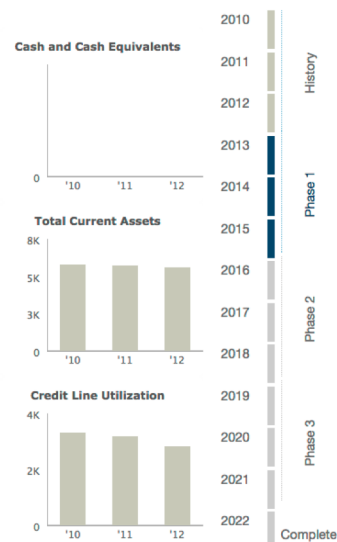


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Balance Sheet

(data in thousands of dollars)

	2010	2011	2012
Minimum Cash Requirement	\$300	\$300	\$300
Cash & Equivalents (Shortfall)*	\$0	\$0	\$0
Accounts Receivable	\$3,123	\$3,096	\$3,014
Inventories	\$2,357	\$2,348	\$2,305
Other CA	\$0	\$0	\$0
Total Current Assets	\$5,781	\$5,744	\$5,619
Net PP&E	\$40	\$40	\$40
Other FA	\$0	\$0	\$0
Total Assets	\$5,821	\$5,784	\$5,659
Accounts Payable	\$1,021	\$1,055	\$1,050
Accrued Expenses	\$0	\$0	\$0
Total Current Liabilities	\$1,021	\$1,055	\$1,050
Amount Borrowed from Credit Line	\$3,332	\$3,200	\$2,844
Total Liabilities	\$4,353	\$4,255	\$3,894
Common Stock	\$200	\$200	\$200
Retained Earnings	\$1,267	\$1,329	\$1,565
Total Stockholder's Equity	\$1,467	\$1,529	\$1,765
Total Liabilities & Equity	\$5,821	\$5,784	\$5,659



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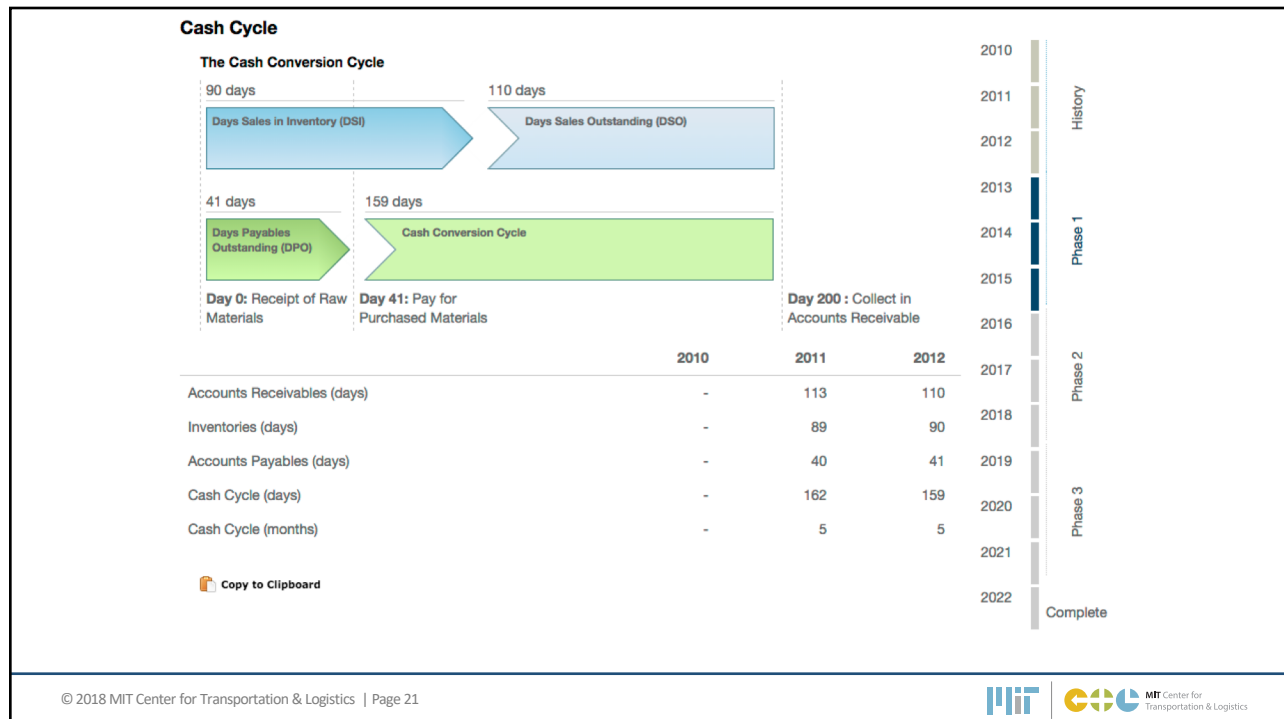
Financial Analysis of SNC

- Analyze each of the options in Phase 1, considering measures that align with the drivers of shareholder value
 - Revenue Growth
 - Operating Margin
 - Asset Utilization
- Decide whether to invest in each option in Phase 1
 - You can choose to invest in none or all of them
 - Beware – do not exceed your credit limit!

Warmup analysis: Cash Conversion Cycle for SNC

Calculate the following for 2012

- DSO: Days Sales Outstanding
- DPO: Days Purchases Outstanding
- DSI: Days Sales in Inventory
- CCC: Cash Conversion Cycle (in days)



Net Operating Working Capital Requirements

Working Capital = Current Assets - Current Liabilities

Net Operating Working Capital Requirements

- Consider it Cash Conversion Cycle Capital Requirements
- NOWC Requirement = $A/R + Inventory - A/P$
= Cash Conversion Cycle Capital
- Basically.....the company uses funds to pay for A/R and inventory, or....the company finances the A/R and inventory
- Firm receives financing from suppliers in the form of A/P
- Operational policies and realities with respect to A/R, A/P and inventory drive working capital requirements

Sunflower Nutraceutical WC Simulation

As the CEO.....

- You get to make the decisions to ACCEPT or DECLINE the options

There are 10 opportunities over 8 years

- We will consider just the first 4 in Phase 1

Do not exceed credit limitations, \$3.2M

- Or you will be fired

Multiple resources available

- Spreadsheet access
- Technology primer
- Online tutorial video

Decisions Phase 1: 2013 - 2015

Acquire a New Customer

SNC is considering an opportunity to add Asteris Wellness, a large, successful health food chain as a new corporate customer for its natural nutritional product line. Taking on this customer would immediately increase SNC's sales by \$4 million per year (a one-time increase of 40%) and EBIT by \$800,000. The profit margins and net working capital terms would remain the same as for SNC's existing business.

What would you like to do about this opportunity?

Opportunities Selected

No opportunities selected yet.

Incremental Summary Income Statement (\$ in thousands)

	2013	2014	2015	Post 2015
Sales	\$4,000	\$4,000	\$4,000	\$4,000
Cost of Sales	\$3,740	\$3,740	\$3,740	\$3,740
EBIT	\$260	\$260	\$260	\$260

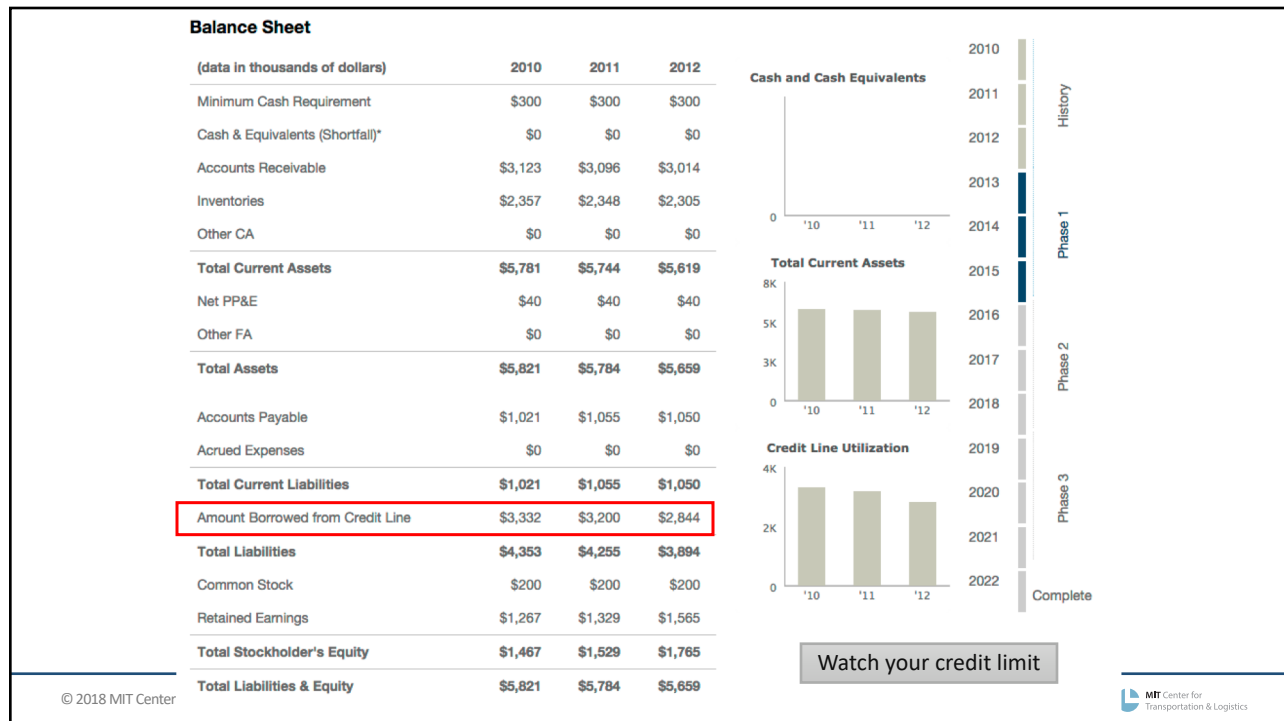
Incremental Balance Sheet (\$ in thousands)

	2013	2014	2015	Post 2015
Accounts Receivable	\$1,200	\$1,200	\$1,200	\$1,200
Inventories	\$602	\$602	\$602	\$602
Accounts Payable	\$400	\$400	\$400	\$400

Consider your briefing to the investor

What are your objectives in making decisions (in rank order)?


What approach will you use to evaluate options?



If you burn through the cash...

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WORKING CAPITAL SIMULATION: MANAGING GROWTH

PREPARE:  **Choose a Saved Run to Continue**

Date	Scenario	Completed	Fired?	Total Firm Value	
07/27/16 2:46 PM	Binding Credit Limit	Phase 2	Yes	\$3,023	Resume

[Or Start a New Run](#)

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Working capital requirements for SNC

How much working capital was required at the end of 2012?

WC Required₂₀₁₂:
Current Assets – Current Liabilities
= 5619 - 1050 = 4569

How much working capital was in the cash conversion cycle?

Cash Conversion Cycle Capital₂₀₁₂:
A/R + Inventory – A/P =
3014 + 2305 - 1050 = 4269

Balance Sheet

(data in thousands of dollars)	2010	2011	2012
Minimum Cash Requirement	\$300	\$300	\$300
Cash & Equivalents (Shortfall)*	\$0	\$0	\$0
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Capital requirements for option 1

Decisions Phase 1: 2013 - 2015

Acquire a New Customer

Leverage Supplier Discount

Tighten Accounts Receivable

Drop Poorly Selling Products

SNC is considering an opportunity to add Atlantic Wellness, a large, successful health food chain as a new corporate customer for its herbal nutraceutical product line. Taking on this customer would immediately increase SNC's sales by \$4 million per year (a one-time increase of 40%) and EBIT by \$260,000. The profit margins and net working capital terms would remain the same as for SNC's existing business.

What would you like to do about this opportunity?

Accept Decline

Opportunities Selected

No opportunities selected yet.

Submit Decisions

Incremental Summary Income Statement (\$ in thousands)

	2013	2014	2015	Post 2015
Sales	\$4,000	\$4,000	\$4,000	\$4,000
Cost of Sales	\$3,740	\$3,740	\$3,740	\$3,740
EBIT	\$260	\$260	\$260	\$260

Incremental Balance Sheet (\$ in thousands)

	2013	2014	2015	Post 2015
Accounts Receivable	\$1,205	\$1,205	\$1,205	\$1,205
Inventories	\$922	\$922	\$922	\$922
Accounts Payable	\$420	\$420	\$420	\$420

Cash Conversion Cycle Capital_{Option1}: A/R + Inventory – A/P = 1205 + 922 - 420 = 1707

Play!

Working Capital Debrief

Questions for your briefing to the investor

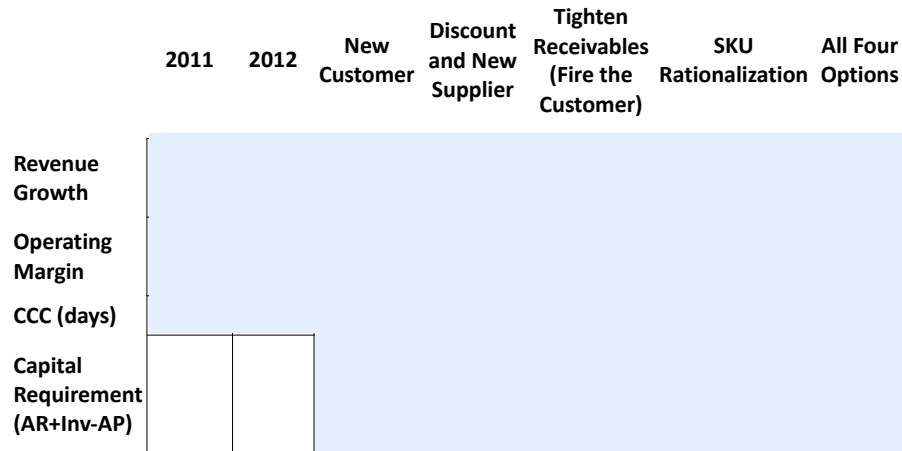
What were your objectives in making decisions?

What approach did you use to evaluate options?

Let's review each versus the base case (2012)

- Revenue Growth
- Margin
- CCC (proxy for asset utilization)
- Working Capital Requirement (proxy for asset utilization)

Phase 1 Impact of Each Option



Opportunities Summarized

Phase 1 Opportunities				
#	Description	Financial Impact		Lessons
1	Acquire a New Customer	• Revenue ↑		<ul style="list-style-type: none"> • Not value creating • "Growth for growth's sake"
2	Leverage Supplier Discount	<ul style="list-style-type: none"> • Costs ↓ • Margin ↑ 		<ul style="list-style-type: none"> • Trade-off between IS / BS • ↑WC using own funds • Only worth pursuing if can be financed (i.e., if #3 is done also)
3	Tighten Accounts Receivable	<ul style="list-style-type: none"> • Revenue ↓ • Margin ↓ • Working Capital ↑ 		<ul style="list-style-type: none"> • Provides SNC with ability to undertake #2 above
4	Drop Poorly-Selling Products	<ul style="list-style-type: none"> • Revenue ↓ • Margin ↓ • Working Capital ↑ 		<ul style="list-style-type: none"> • Attempts to be everything to everyone imposes significant burden on the balance sheet • Provides SNC with the ability to undertake #2 above

Sunflower Nutraceutical's Situation

What does SNC need to do to succeed?

Possible answers:

- Keep cost structure low
 - Low margin business
- Grow revenues
- Seek more financing

Why is the company capital constrained?

Possible answers:

- Private
- Small
- Limited cash flow generation

What general effects are associated with limited access to financing?

Possible answers:

- May need to give value enhancing opportunities
- Higher sensitivity to liquidity shocks like losing a big customer or a credit crunch
- Focus on short-term metrics like pay-back rather than "theoretically pure" metrics like NPV

Key Takeaways: Practical Execution Tactics

Accounts Payable

- Test supplier's terms
 - Understand where the limits lie
- Prioritize vendors
 - During a cash crisis prioritize vendors based on terms and strategic importance to the business
- Purchase on consignment when possible

Inventory

- Add inventory forecasting systems
- Off-load buffer inventory levels when possible
- Adjust production to better accommodate demand cycles
- Make sure you conduct regular physical audits to ensure that "real" (physical) inventory is actually worth the "accounting" value.

Accounts Receivable

- Actively monitor accounts receivable aging reports
- Enforce collections policies
- Offer discounts for pre-payment when sensible
- Establish a rapport with customers' AP function
- "Fire" bad customers
- Train sales staff to understand the "true cost" of selling on "credit"

Key Takeaways

Fallacy: Pursuing Growth for Growth's Sake

- Growth is important *but* must be weighed against a few key *issues*:
 - Does the business have access to external funding?
 - Does the business have high profit margins?
 - Has the business been paying attention to its working capital management?

Fallacy: Every Customer Is Worth Keeping

- Sometimes firing a customer is the best course of action
- The income statement does not always capture the true cost of serving a customer

Fallacy: A Larger Product Portfolio Is Better

- A large product portfolio imposes significant weight on the balance sheet
- It also adds complexity which can impose significant costs, particularly for a small business

Sunflower Nutraceutical's Situation

What does SNC need to do to succeed?

Why is the company capital constrained?

What general effects are associated with limited access to financing?

Options for Managing Working Capital

- Collect receivables quickly
 - Consider creating sales terms and conditions to provide incentive to pay early (e.g. 2% discount if paid within 10 days)
- Stretch out payables as long as possible – but beware of damaging supplier relationship
 - Consider creating purchasing terms and conditions to establish longer pay cycle
- Reduce inventory to lowest level capable of serving customer need
- Possibly convert current liabilities to long-term liabilities
- Produce product faster → shortens DIO, starts the receivable earlier

Working Capital & SCM

- SC responsible for one primary component of WC
 - Inventory
- SC has impact on two other primary components
 - Accounts Receivable
 - Accounts Payable
- SC actions
 - Maintain minimal but necessary inventory levels to serve business needs while keeping inventory 'fresh' / 'current'
 - Support policies and terms that allow quick collection of receivables
 - Support policies and terms that delay payment to suppliers (while maintaining supplier health)

Key Takeaways



Understand
the current
working
capital
position



Anticipate
working
capital
requirements



Consider
combining
initiatives for
best working
capital use



Can the SC free
up working
capital to take
on additional
initiatives?

Programme Summary

Value Creation from Finance and SC

The firm invests in operational assets

→ those assets and the operation generate cash flow and profit

Together – finance and operations (supply chain) – create value

→ Finance provides/acquires funding and allocates/invests in assets

→ Supply chain uses assets and generates cash flow and profits



The firm must create cash flows and generate profits

→ or there will be no firm

So the supply chain is CENTRAL to the firm's success

Income Statement and Balance Sheet

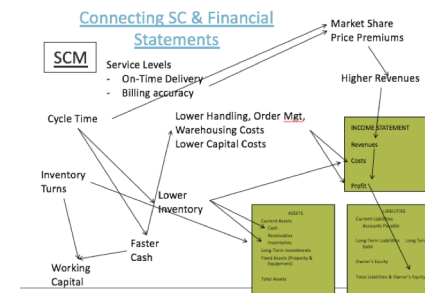
- The Income Statement - all operating flows in (revenue) and out (expenses) of the firm over a period of time; the net difference is the firm's profit or loss.
- The Balance Sheet gives a snapshot of the assets and obligations of the firm at a single moment in time.
- Net income (from Income Statement) = Change in Retained Earnings (from Balance Sheet)
 - A direct connection between the two reports.
- Gross Margin** compares production efficiency.
- Operating Margin** compares pricing and operational efficiency.
- Together, the Income Statement and Balance Sheet provide a basic – but not complete – understanding of the performance of the firm.

AMAZON.COM, INC.		Year Ended December 31	
CONSOLIDATED BALANCE SHEETS		2014	2013
(in millions, except per share data)			
Current assets:			
Cash and cash equivalents		\$ 70,080	\$ 40,967
Marketable securities		18,805	13,548
Receivables			
Accounts receivable, net and			
Prepaid expenses and other			
Goodwill			
Other assets			
Total current assets		\$8,588	\$9,412
Current liabilities:			
Accounts payable			
Accrued expenses and other			
Unearned revenue			
Total current liabilities		\$6,530	\$5,707
Long-term debt			
Other long-term liabilities			
Commitments and contingencies			
Stockholders' equity:			
Preferred stock, \$0.01 per share			
Authorized shares -- 50			
Issued and outstanding			
Common stock, \$0.01 per share			
Additional shares -- 1.5			
Issued shares -- 485 and			
Outstanding shares -- 485			
Treasury stock, at cost			
Additional paid-in capital			
Accumulated other comprehensive loss			
Retained earnings			
Total stockholders' equity		\$ 24,000	\$ 40,239
Total liabilities and stockholders' equity		\$ 34,588	\$ 54,899

Ref.: Amazon 2014 Annual Report

Connecting SCM to Financial Statements

- One can connect supply chain transactions directly to the income statement and the balance sheet
- These enable the supply chain leader to communicate with company leaders in the language of business – finance
- There is great power in developing the ability to communicate with business leaders in their language – about the value creation that the SC contributes to financial performance



Cost Systems/ABC

- Cost accounting provides costs for use by management to support decision making
 - These systems and methods are different than financial accounting
- Traditional cost systems are not effective enough in today's environment where labor content of products is a small portion of the product cost
- ABC can provide a more accurate assessment of costs by allocating overhead on the basis of activities
 - Works in environments with large expenses in indirect and support resources
 - Multiple product, customer or process environments
- How accurate is enough?

Working Capital and CCC

- Working capital represents the resources utilized to operate the business
- The supply chain has control of inventory and influence on two other critical elements of working capital
 - Reduce working capital requirements → faster cycle time, longer pay cycle, shorter receivables
 - Consider using SC Finance options for cash acquisition, risk management
- A company can operate on negative working capital (meaning using OPM)
- The cash conversion cycle = $DIO + DSO - DPO$
 - These components combine to indicate how long a company needs to fund its operations
- Net Operating Working Capital indicates how much is needed to operate the business
 - $NOWC = \text{Inventory} + \text{Receivables} - \text{Payables}$

Thank you!