

Time Element & Exposures



RIMS
OREGON CHAPTER

Introductions



Maximilian Glodde, CFA

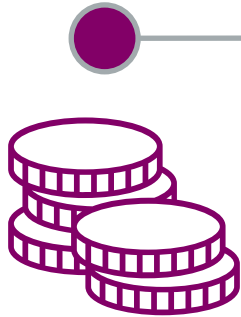
- 10+ years in risk and management consulting
- Specialize in complex value chain mapping & business continuity planning
- Helped 100+ companies manage risk and build more resilient businesses

- Perfectly average golfer

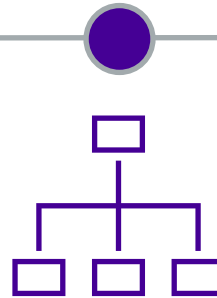


Today's Plan

Time Element
Values



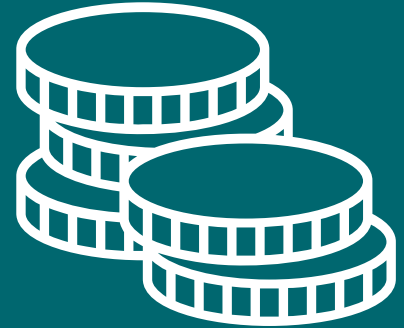
Dependencies



Exposures



Time Element Values



Importance of Good Values



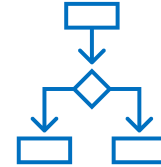
Equitable premiums



Appropriate policy
T&Cs



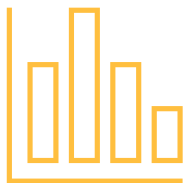
Accurate exposure
calculations



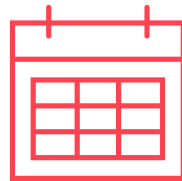
Informed risk
management decisions

No surprises!

Core “Principles” of Good Values



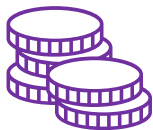
Revenue minus costs that vary with business activity



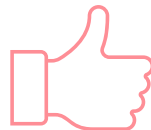
12-month, forward-looking



Not based on a specific scenario or “risk-adjusted”



Policy T&Cs are reflected in the rate, not the value



Deduction / Top Down approach is preferred



Depreciation is a fixed cost

Financial Reports

Form 10K / 10Q

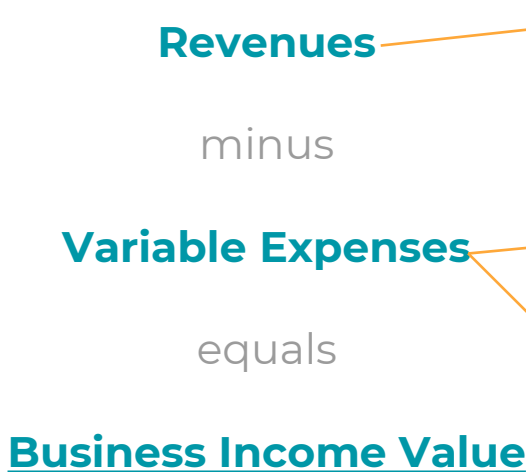
- Income Statement
- Cash flow statement
- Balance sheet



Other Items:

- BI Worksheet
- Financial Ratios
- Working capital

Income Statement



	<u>April</u>	<u>May</u>	<u>June</u>
Revenue			
Subscription License Revenue	\$ 275,000	\$ 270,000	\$ 285,000
Usage-based Revenue	\$ 150,000	\$ 185,000	\$ 210,000
Total Subscription Revenue	\$ 425,000	\$ 455,000	\$ 495,000
Professional Services	\$ 20,000	\$ 55,000	\$ 40,000
Other Revenue	\$ 12,000	\$ 1,000	\$ 7,000
Total Revenue	\$ 457,000	\$ 511,000	\$ 542,000
Cost of Goods			
Hosting Expenses	\$ 22,000	\$ 23,500	\$ 26,000
Internal Engineering (Salaries)	\$ 14,750	\$ 17,000	\$ 16,500
Customer Success (Retention Focused)	\$ 25,000	\$ 23,500	\$ 26,500
Direct Third Party Costs	\$ 2,750	\$ 2,700	\$ 2,850
Professional Services	\$ 37,000	\$ 38,500	\$ 39,000
Total CoGS	\$ 101,500	\$ 105,200	\$ 110,850
Gross Profit	\$ 355,500	\$ 405,800	\$ 431,150
Gross Profit Margin	78%	79%	80%
Operating Expenses			
Marketing	\$ 89,000	\$ 79,000	\$ 90,000
Sales and Customer Success (Sales Focused)	\$ 122,000	\$ 135,000	\$ 140,000
Product Development	\$ 112,000	\$ 118,000	\$ 155,000
General and Administrative	\$ 73,000	\$ 81,000	\$ 83,000
Total Operating Expenses	\$ 396,000	\$ 413,000	\$ 468,000
Operating Profit	\$ (40,500)	\$ (7,200)	\$ (36,850)
Software amortization	\$ (75,000)	\$ (74,000)	\$ (73,000)
Sales commissions amortization	\$ (30,000)	\$ (35,000)	\$ (45,000)
Interest Expense	\$ (7,000)	\$ (7,000)	\$ (7,000)
Net Income	\$ (152,500)	\$ (123,200)	\$ (161,850)

BI Worksheet

Deduction
Method



Business Income (BI) Value Calculation

Company: _____
 Account #: _____
 For the Period Ending: **December 31, 2019**
 Date Prepared: _____
 Index #: _____
 Currency / Exch Rate: **USD**
 Denomination ('000's, M) **'000s**

	Last Completed Fiscal Year (Actual)			Next Fiscal Year (Estimated)		
	Actual	% Variable	BI Value	Forecast	% Variable	BI Value
Net Sales / Revenue						
Products	4,500	100%	4,500	5,175	100%	5,175
Services	500	100%	500	575	100%	575
Total Net Sales / Revenue	5,000		5,000	5,750		5,750
Cost of goods sold / Cost of sales						
Direct material	1,500	100%	1,500	1,605	100%	1,605
Direct labor & benefits	1,000	100%	1,000	1,070	100%	1,070
Overhead - variable	500	100%	500	535	100%	535
Overhead - fixed	200	0%	-	214	0%	-
Total COGS / COS	3,200		3,000	3,424		3,210
Gross Profit / Margin	1,800		2,000	2,326		2,540
Operating Expenses						
Salaries & Wages	300	10%	30	321	10%	32
Bonus / Other Compensation	200	10%	20	214	10%	21
Payroll Taxes / Benefits	100	10%	10	107	10%	11
Contract Labor	300	50%	150	321	50%	161
Maintenance and Repairs	100	25%	25	107	25%	27
Depreciation	50	0%	-	54	0%	-
Total Operating Expenses	1,050		235	1,124		251
Selling, Gen. & Admin. Expenses						
Advertising & Marketing	100	0%	-	107	0%	-
Taxes - Property & Other	150	0%	-	161	0%	-
Rent - Office / Equipment	100	0%	-	107	0%	-
Commissions	50	100%	50	54	100%	54
Telecommunications / IT	10	25%	3	11	25%	3
Insurance	5	0%	-	5	0%	-
Travel & Business Expenses	25	50%	13	27	50%	13
Bad Debts	60	100%	60	64	100%	64
Total SG&A	500		125	535		134
Operating Income (Loss) / BI Value	250		1,640	668		2,155
BI Rate (Value as % of Revenue)			33%			38%
Add: Variable Salaries, Wages & Benefits (deducted above) (aka Ordinary Payroll)			1,060			1,134
# of Days Coverage for Ordinary Payroll (365 days annually)			90			90
Net Variable Salaries, Wages, & Benefits (Ordinary Payroll) Added To BI Value			261			280
BI Value (w/ ordinary payroll)			1,901			2,434
BI Rate (w/ ordinary payroll - Value as a % of Revenue)			38%			42%

Balance Sheet

The balance sheet should never be the sole document used to determine values

Example Company Balance Sheet December 31, 2015

ASSETS

Current assets	
Cash	\$ 2,100
Petty cash	100
Temporary investments	10,000
Accounts receivable - net	40,500
Inventory	31,000
Supplies	3,800
Prepaid insurance	1,500
Total current assets	<u>89,000</u>
Investments	<u>36,000</u>
Property, plant & equipment	
Land	5,500
Land improvements	6,500
Buildings	180,000
Equipment	201,000
Less: accum depreciation	<u>(56,000)</u>
Prop, plant & equip - net	<u>337,000</u>
Intangible assets	
Goodwill	105,000
Trade names	200,000
Total intangible assets	<u>305,000</u>
Other assets	<u>3,000</u>
Total assets	<u>\$ 770,000</u>

LIABILITIES

Current liabilities	
Notes payable	\$ 5,000
Accounts payable	35,900
Wages payable	8,500
Interest payable	2,900
Taxes payable	6,100
Warranty liability	1,100
Unearned revenues	<u>1,500</u>
Total current liabilities	<u>61,000</u>
Long-term liabilities	
Notes payable	20,000
Bonds payable	400,000
Total long-term liabilities	<u>420,000</u>
Total liabilities	<u>481,000</u>

STOCKHOLDERS' EQUITY

Common stock	110,000
Retained earnings	220,000
Accum other comprehensive income	9,000
Less: Treasury stock	<u>(50,000)</u>
Total stockholders' equity	<u>289,000</u>
Total liabilities & stockholders' equity	<u>\$ 770,000</u>

The notes to the sample balance sheet have been omitted.

Cash Flow Statement

Shows how a
company uses cash

Example Corporation Statement of Cash Flows For the year ended December 31, 2021

Cash flows from operating activities	\$230,000
Net income	
<i>Adjustments to reconcile net income to net cash provided by operating activities:</i>	
Depreciation and amortization	63,000
Loss on sale of equipment	15,000
<i>Changes in current assets and liabilities:</i>	
Increase in accounts receivable	(21,000)
Decrease in prepaid expenses	3,000
Decrease in accounts payable	<u>(28,000)</u>
Net cash provided by operating activities	<u>262,000</u>
Cash flows from investing activities	
Capital expenditures	(300,000)
Proceeds from sale of equipment	<u>40,000</u>
Net cash used for investing activities	<u>(260,000)</u>
Cash flows from financing activities	
Proceeds from issuing debt	200,000
Dividends paid	<u>(110,000)</u>
Net cash provided by financing activities	<u>90,000</u>
Net increase in cash during the year	92,000
Cash at the beginning of the year	101,000
Cash at the end of the year	<u>\$193,000</u>

Notes to the financial statements.

Working Capital

Current Assets:

Cash	\$ 20,000.00
Accounts Receivable	15,000.00
Inventories	45,000.00
	<hr/>
	80,000.00

Current Liabilities

Accounts Payable	\$ 25,000.00
Short-term Borrowings	5,000.00
Accrued Liabilities	10,000.00
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	40,000.00

Working Capital \$ 40,000.00



Useful Documentation

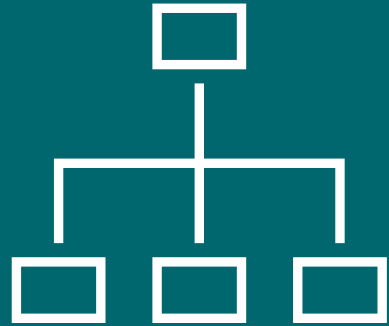
- Monthly profit and loss statements
- Production volumes
- Inventory levels
- Payroll reports
- Key contracts
- Gross margin by location

Common Pitfalls

- Adjusting BI value for risk, too early
- Reporting revenue as BI value
- Assuming the entire company will burn down
- Financials that are too high level
- Deducting inventory from BI value
- Basing the BI value calculation on a scenario

**Accurate values are one of the most
critical building blocks to effective
operational risk management**

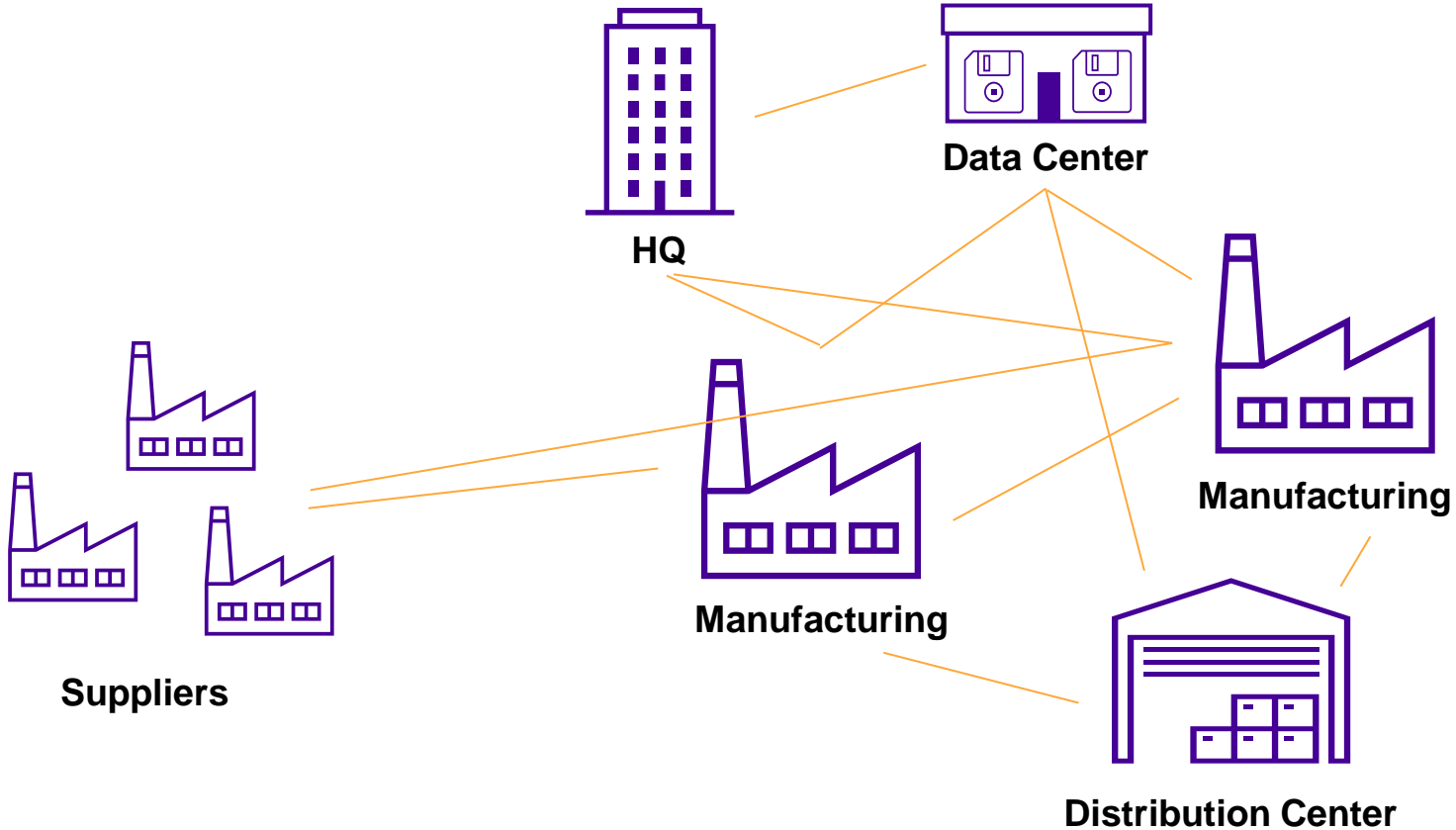
Dependencies



Dependencies

- Understanding your company's value chain is essential to exposure quantification
- Just because it doesn't sell finished goods, doesn't mean it's not important
- Suppliers can cause severe disruptions outside of our control
- Dependency mapping must be updated as the business changes

Dependencies



Dependency Matrix

		PRODUCT (or other appropriate business segmentation)				
AUDM		Power	Prodigy	Marvel	Total	
Revenue					4,000	
Bl margin					25%	
Bl value					1,000	
Location	Functions & processes					
Head office	Corporate functions, sales order processing and helpdesk.					
Data centre	Hosts all applications, including website and ERP system.					
Assembly - Power	Receives components from internal component plant and external suppliers.					
Assembly - Prodigy & Marvel	Receives components from internal component plant and external suppliers.					
Internal component plant	Manufactures components for all panels; receives inputs from external suppliers.					
Distribution centre	Packages and distributes all panels to customers worldwide.					

Dependency Matrix

		PRODUCT (or other appropriate business segmentation)						
AUDM		Power		Prodigy		Marvel		Total
Revenue		2,000		1,000		1,000		4,000
Bl margin		10%		30%		50%		25%
Bl value		200		300		500		1,000
Location	Functions & processes							
Head office	Corporate functions, sales order processing and helpdesk.							
Data centre	Hosts all applications, including website and ERP system.							
Assembly - Power	Receives components from internal component plant and external suppliers.							
Assembly - Prodigy & Marvel	Receives components from internal component plant and external suppliers.							
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Dependency Matrix

PRODUCT (or other appropriate business segmentation)									
AUDM		Power		Prodigy		Marvel		Total	
Revenue		2,000		1,000		1,000		4,000	
Bl margin		10%		30%		50%		25%	
Bl value		200		300		500		1,000	
Location	Functions & processes	% Dependency of product on location							
Head office	Corporate functions, sales order processing and helpdesk.	35%		35%		35%			
Data centre	Hosts all applications, including website and ERP system.	100%		100%		100%			
Assembly - Power	Receives components from internal component plant and external suppliers.	100%		20%		15%			
Assembly - Prodigy & Marvel	Receives components from internal component plant and external suppliers.	15%		90%		100%			
Internal component plant	Manufactures components for all panels; receives inputs from external suppliers.	100%		70%		35%			
Distribution centre	Packages and distributes all panels to customers worldwide.	100%		100%		100%			

Dependency Matrix

PRODUCT (or other appropriate business segmentation)								
		Power	Prodigy		Marvel		Total	
AUDM								
Revenue		2,000		1,000		1,000		4,000
Bl margin		10%		30%		50%		25%
Bl value		200		300		500		1,000
Location	Functions & processes	\$ Dependency of product on location						
Head office	Corporate functions, sales order processing and helpdesk.	35%	70	35%	105	35%	175	
Data centre	Hosts all applications, including website and ERP system.	100%	200	100%	300	100%	500	
Assembly - Power	Receives components from internal component plant and external suppliers.	100%	200	20%	60	15%	75	
Assembly - Prodigy & Marvel	Receives components from internal component plant and external suppliers.	15%	30	90%	270	100%	500	
Internal component plant	Manufactures components for all panels; receives inputs from external suppliers.	100%	200	70%	210	35%	175	
Distribution centre	Packages and distributes all panels to customers worldwide.	100%	200	100%	300	100%	500	

Dependency Matrix

PRODUCT (or other appropriate business segmentation)								
AUDM		Power		Prodigy		Marvel		Total
Revenue		2,000		1,000		1,000		4,000
BI margin		10%		30%		50%		25%
BI value		200		300		500		1,000
Location	Functions & processes	Dependency of product on location						Annual BI dependency
Head office	Corporate functions, sales order processing and helpdesk.	35%	70	35%	105	35%	175	350
Data centre	Hosts all applications, including website and ERP system.	100%	200	100%	300	100%	500	1,000
Assembly - Power	Receives components from internal component plant and external suppliers.	100%	200	20%	60	15%	75	335
Assembly - Prodigy & Marvel	Receives components from internal component plant and external suppliers.	15%	30	90%	270	100%	500	800
Internal component plant	Manufactures components for all panels; receives inputs from external suppliers.	100%	200	70%	210	35%	175	585
Distribution centre	Packages and distributes all panels to customers worldwide.	100%	200	100%	300	100%	500	1,000

Annual BI Dependency forms basis for Exposure Quantification

Exposures



Exposures

Are risk adjusted

- Downtime, inventory, mitigation Strategies, etc.

Inform risk management decisions

- Increasing physical resilience (i.e., risk improvement)
- Business continuity planning
- Insurance limits
- Prioritizing CAPEX spend

Support accurate underwriting

Calculating Exposures

Location	Functions & processes	Annual BI dependency	Restoration period	Gross BI exposure	BCP	Downtime with BCP	Inventory	Mitigated BI exposure
Head office	Corporate functions, sales order processing and helpdesk.	350	9 months		✓	1 month	3 months	
Data centre	Hosts all applications, including website and ERP system.	1,000	12 months		✓	1 month	3 months	
Assembly - Power	Receives components from internal component plant and external suppliers.	335	15 months		✗	15 months	3 months	
Assembly - Prodigy & Marvel	Receives components from internal component plant and external suppliers.	800	18 months		✓	4 months	3 months	
Internal component plant	Manufactures components for all panels; receives inputs from external suppliers.	585	15 months		✗	15 months	3 months	
Distribution centre	Packages and distributes all panels to customers worldwide.	1,000	6 months		✓	2 months	1 month	

Calculating Exposures

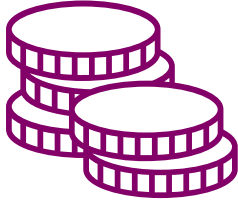
Location	Functions & processes	Annual BI dependency	Restoration period	Gross BI exposure	BCP	Downtime with BCP	Inventory	Mitigated BI exposure
Head office	Corporate functions, sales order processing and helpdesk.	350	9 months	263	✓	1 month	3 months	-
Data centre	Hosts all applications, including website and ERP system.	1,000	12 months	1,000	✓	1 month	3 months	-
Assembly - Power	Receives components from internal component plant and external suppliers.	335	15 months	419	✗	15 months	3 months	335
Assembly - Prodigy & Marvel	Receives components from internal component plant and external suppliers.	800	18 months	1,200	✓	4 months	3 months	67
Internal component plant	Manufactures components for all panels; receives inputs from external suppliers.	585	15 months	731	✗	15 months	3 months	585
Distribution centre	Packages and distributes all panels to customers worldwide.	1,000	6 months	500	✓	2 months	1 month	100

Now What?!

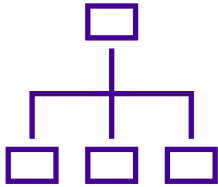
A repeatable process to support:

- Accurate underwriting
- Contingent Time Element decisions
- Appropriate terms and conditions
- Targeted risk management
- Efficient deployment of resources
- Supply chain exposures
- Business Continuity Plans
- Protecting Enterprise Value

In Summary



Detailed financials form the foundation for good values



Dependencies are critical to support accurate exposure quantification



Exposures can inform more accurate risk management decisions

Discussion & Questions



**Thank
you.**