

# 1. Managing with Aggregate Information

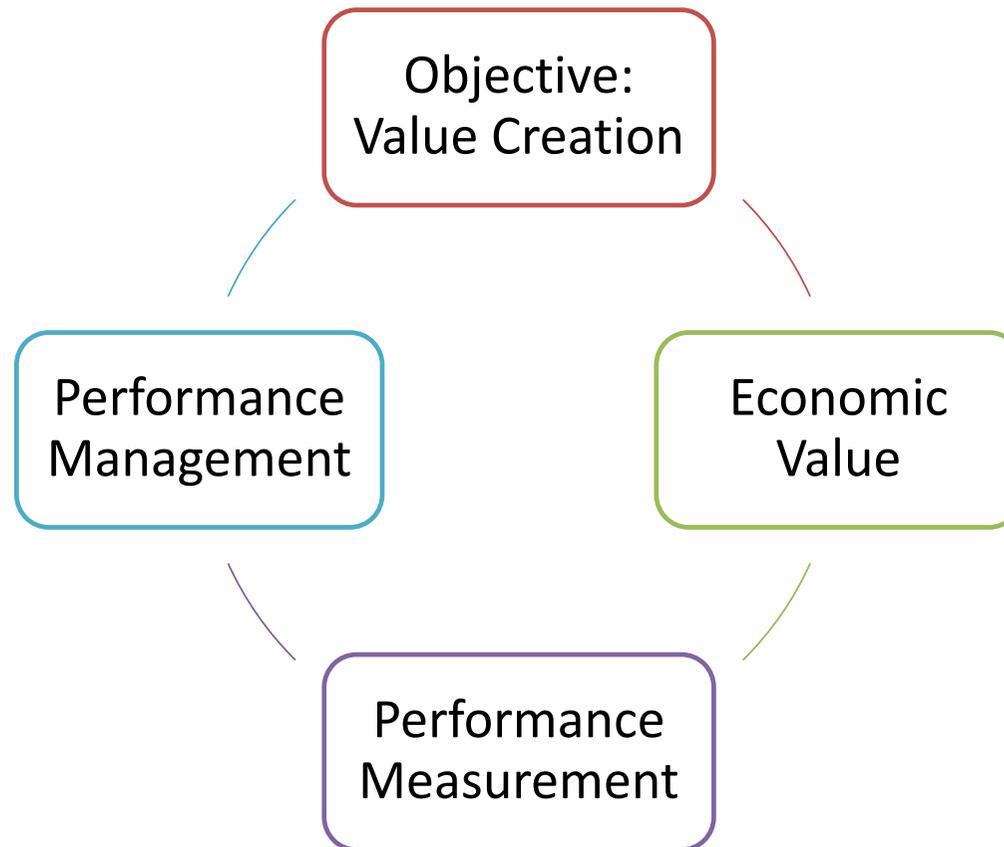
# Salem Telephone: Agenda

1. Context & Objective
2. Salem Telephone Company
3. Good P&Ls for Good Decisions
  1. Sensitivity: cost behavior.
  2. Comparability: cost relevance.
  3. Proximity: cost layers.
4. Summary

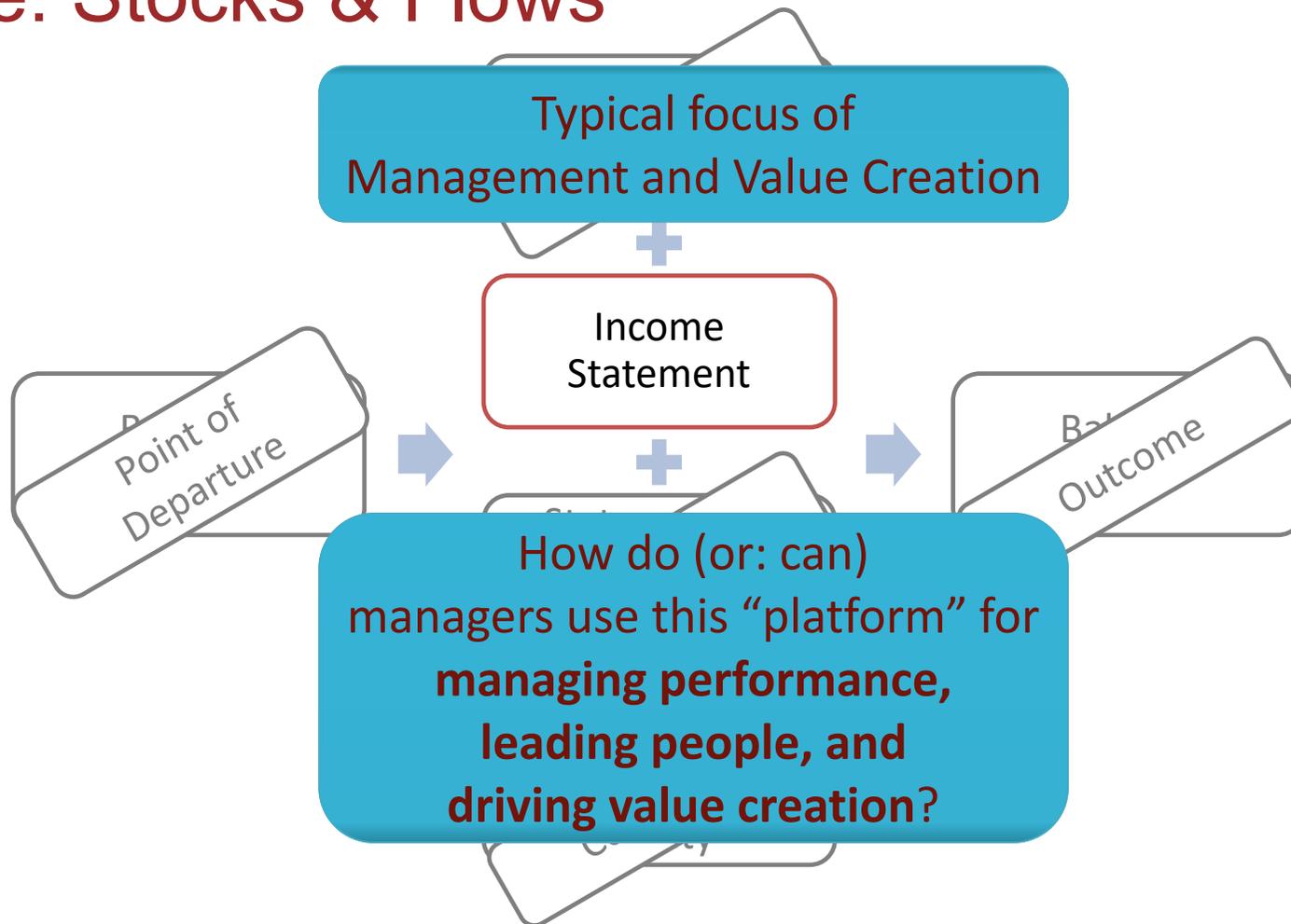
# Salem Telephone: Agenda

## 1. Context & Objective

# Value Creation



# Value: Stocks & Flows



# Salem Telephone: Agenda

1. Context & Objective
2. Salem Telephone Company

# What is the Question?

# No Profit, No Job ...

MACHTKAMPF IN WOLFSBURG

## VW will Führung der Software-Sparte rauswerfen

VON CHRISTIAN MÜSSGENS, HAMBURG - AKTUALISIERT AM 06.05.2023 - 10:32



Ein paar Monate lang war es ruhig um die krisengebeutelte Einheit Cariad. Doch jetzt plant Konzernchef Oliver Blume einen harten Schnitt – und löst damit ein Beben aus.

<https://www.faz.net/aktuell/wirtschaft/unternehmen/vw-will-die-fuehrung-seiner-software-sparte-cariad-abberufen-18873614.html>,  
accessed May 6, 2023

# Questions over Questions

- Can we turn Salem Data Services into a **profitable** operation?
  - **If yes, how?** More sales? More cost savings? Some accounting gimmicks? More spreadsheets? More meetings? More pressure?
  - **How many more** revenue hours do we have to sell before we start showing a profit?
  - What **course of action** might we take to achieve this?
- What if reaching profitability is difficult, improbable or **impossible**? Should we:
  - **Keep** the operation “as is”?
  - **Shut** down or try to sell?

# Exhibits 1 & 2 (abridged)

		Level of Activity		
		January	February	March
Revenue Hours	Intercompany sales	206	181	223
	Commercial sales	123	135	138
	<b>Total</b>	<b>329</b>	<b>316</b>	<b>361</b>
		Income Statement		
		January	February	March
Revenues	Intercompany sales	\$82,400	\$72,400	\$89,200
	Commercial sales	98,400	108,000	110,400
	<b>Total revenue</b>	<b>\$180,800</b>	<b>\$180,400</b>	<b>\$199,600</b>
Space		9,240	9,240	9,240
Equipment	Leases, Depreciation, Maintenance	126,580	126,580	126,580
	Power	1,546	1,485	1,697
		<b>128,126</b>	<b>128,065</b>	<b>128,277</b>
Wages and salaries	Operation Salaries & SGA	53,800	53,800	53,800
	Operations: hourly	7,896	7,584	8,664
		<b>61,696</b>	<b>61,384</b>	<b>62,464</b>
Sales promotions		7,909	7,039	8,083
Corporate services		15,424	15,359	15,236
<b>Total expenses</b>		<b>\$222,395</b>	<b>\$221,087</b>	<b>\$223,300</b>
<b>Net income (loss)</b>		<b>-\$41,595</b>	<b>-\$40,687</b>	<b>-\$23,700</b>

# What is the Answer?

## Another Sage ...



- Is accounting like a **box of chocolates**?
- You never know what you are gonna get?

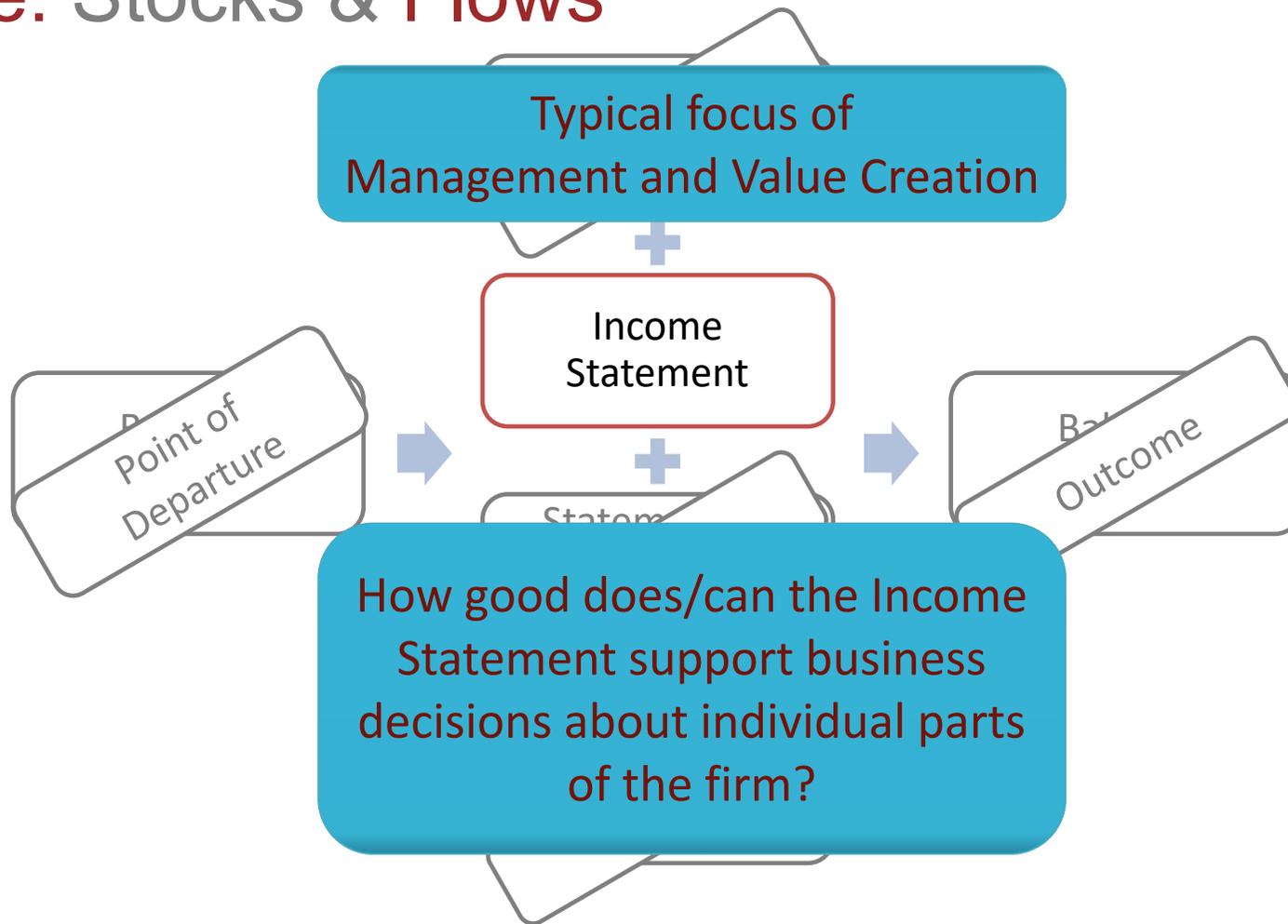
# Salem Telephone: Agenda

1. Context & Objective
2. Salem Telephone Company
3. **Good P&Ls for Good Decisions**

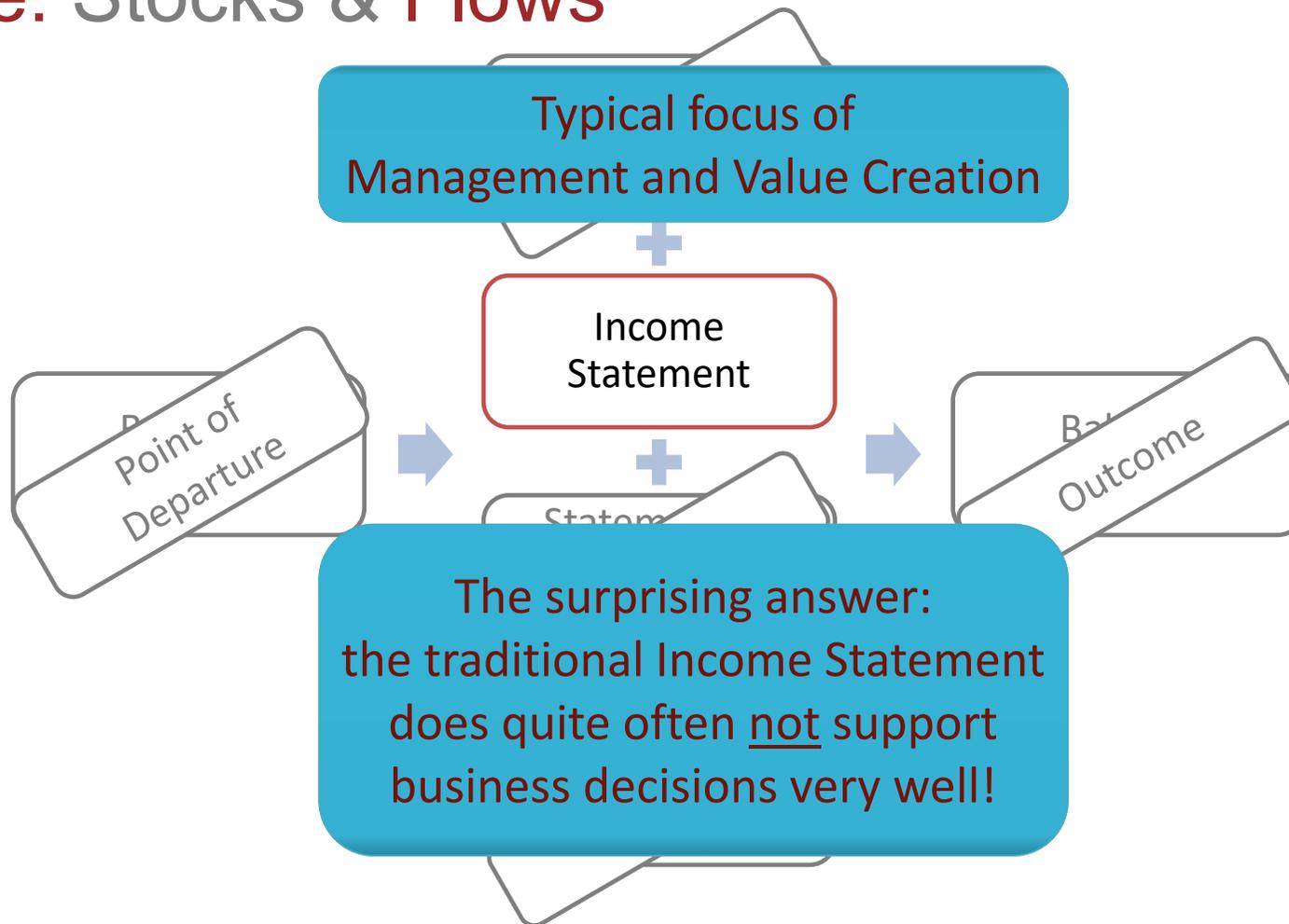
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# Value: Stocks & Flows



# Value: Stocks & Flows



# A typical P&L / Income Statement



# A desired P&L / Income Statement

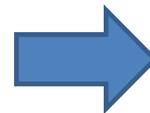


# The Challenge



# Exhibits 1 & 2 (abridged)

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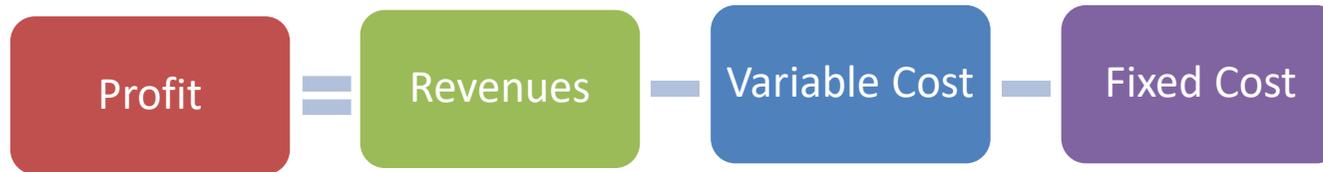


# Your Suggestions

# Salem Telephone: Agenda

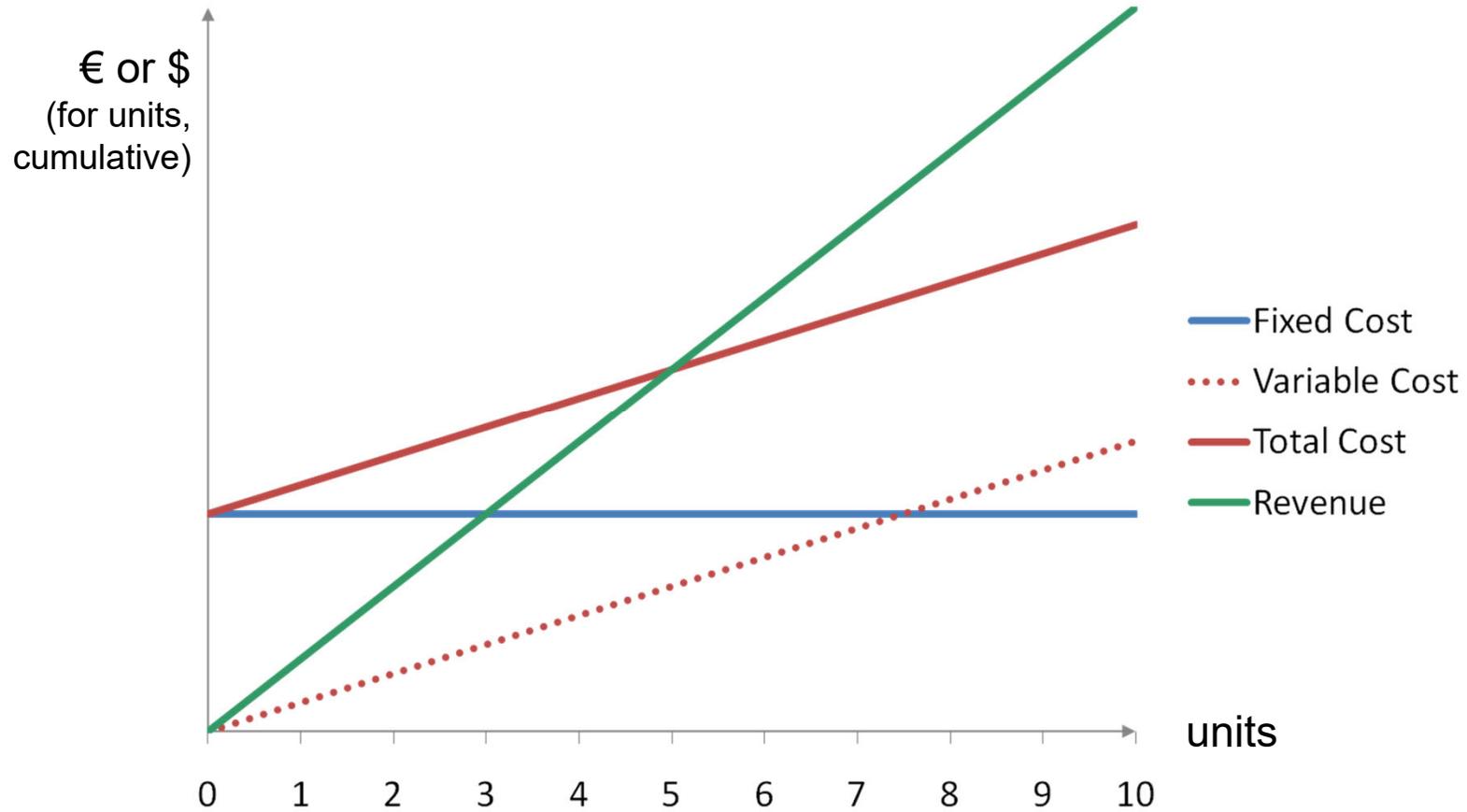
1. Context & Objective
2. Salem Telephone Company
3. Good P&Ls for Good Decisions
  1. Sensitivity: cost behavior.

# Cost Behavior

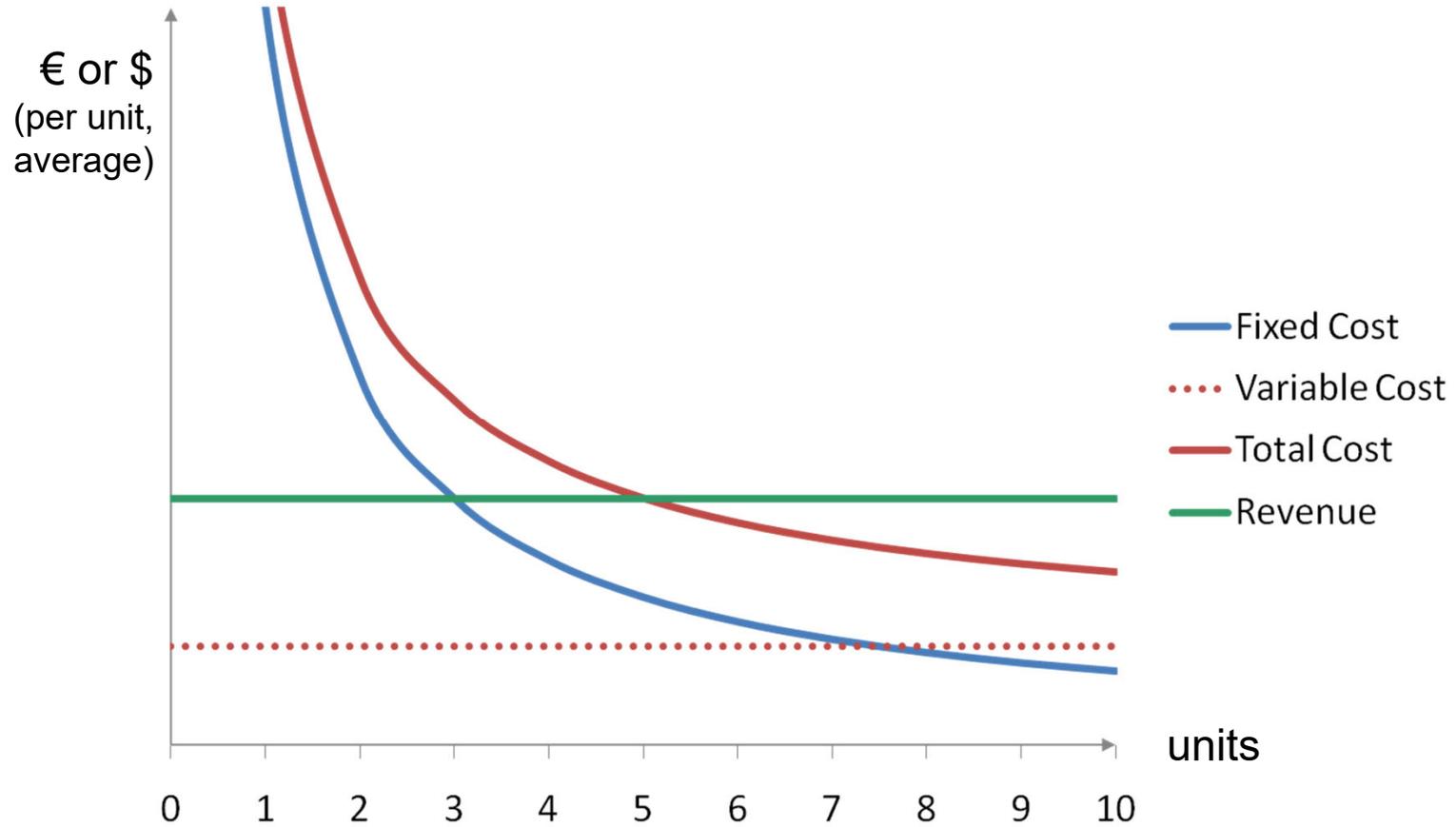


- Question
  - How does a cost position change in response to a change in the level of business activity?
- Distinction (prototypes)
  - Variable cost = cost that change proportionally.
  - Fixed cost = cost that do not change.

# Cost Behavior



# Cost Behavior



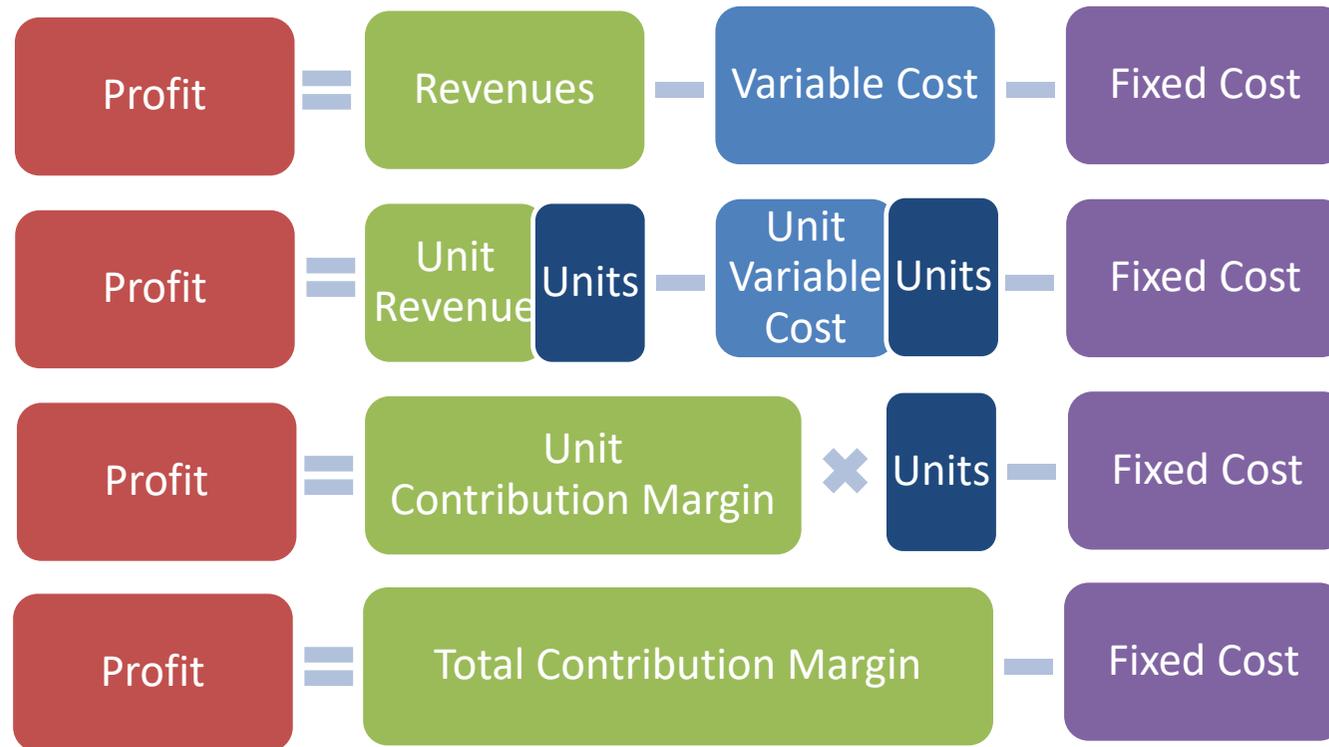
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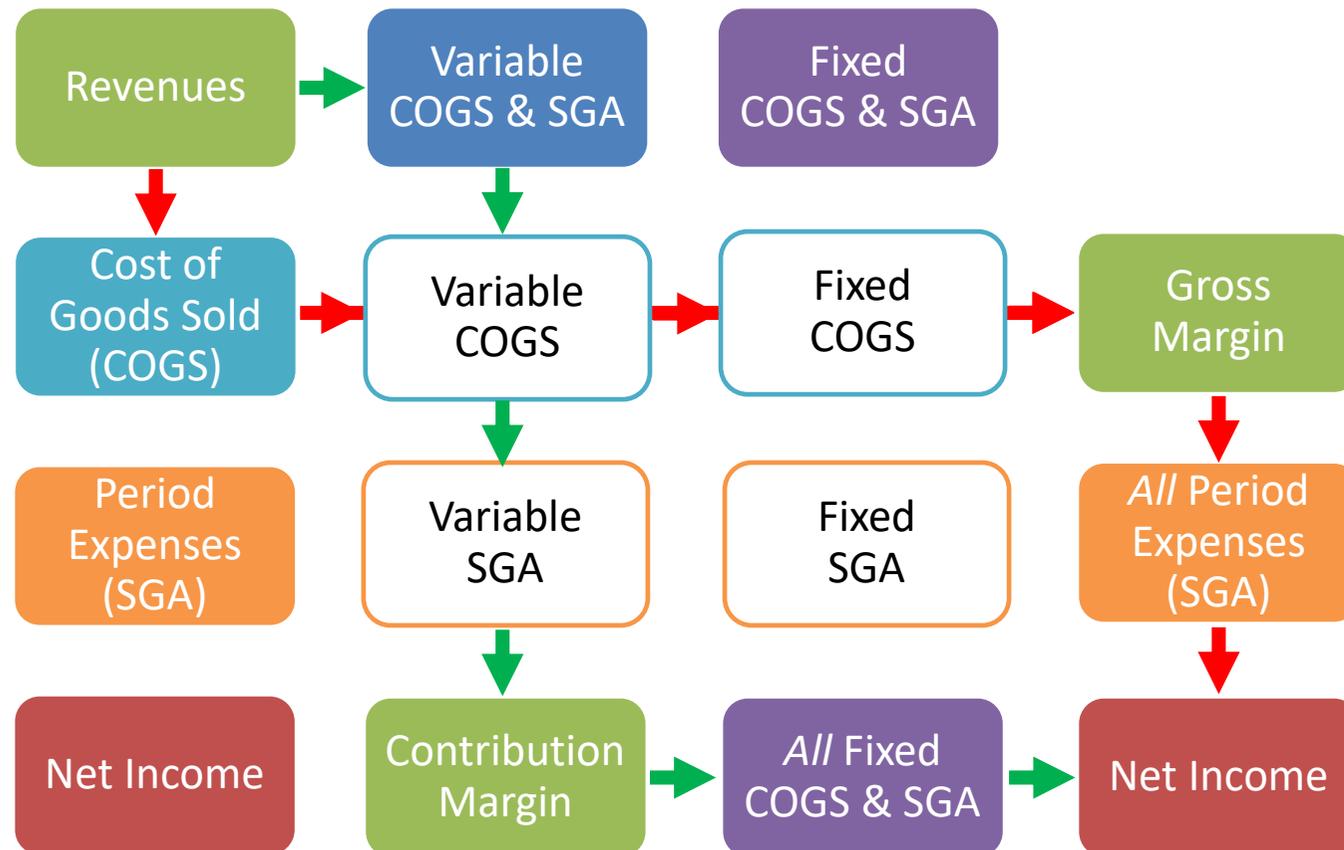
# Exhibits 1 & 2 (\$ per hour)

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		January	February	March	
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	Commercial sales	123	135	138	
	<b>Total</b>	<b>329</b>	<b>316</b>	<b>361</b>	
		Income Statement			
		January	February	March	
Revenues	Intercompany sales	\$400.00	\$400.00	\$400.00	
	Commercial sales	\$800.00	\$800.00	\$800.00	
	<b>Total revenue</b>	<b>\$549.54</b>	<b>\$570.89</b>	<b>\$552.91</b>	
Space		28.09	29.24	25.60	<b>F</b>
Equipment	Leases, Depreciation, Maintenance	384.74	400.57	350.64	<b>F</b>
	<b>Power</b>	<b>4.70</b>	<b>4.70</b>	<b>4.70</b>	<b>V</b>
		389.44	405.27	355.34	
Wages and salaries	Operation Salaries & SGA	163.53	170.25	149.03	<b>F</b>
	<b>Operations: hourly</b>	<b>24.00</b>	<b>24.00</b>	<b>24.00</b>	<b>V</b>
		187.53	194.25	173.03	
	<b>Sales promotions</b>	<b>24.04</b>	<b>22.28</b>	<b>22.39</b>	<b>not V</b>
	<b>Corporate services</b>	<b>46.88</b>	<b>48.60</b>	<b>42.20</b>	<b>~F</b>
	<b>Total expenses</b>	<b>\$675.97</b>	<b>\$699.64</b>	<b>\$618.56</b>	
	<b>Net income (loss)</b>	<b>-\$126.43</b>	<b>-\$128.76</b>	<b>-\$65.65</b>	

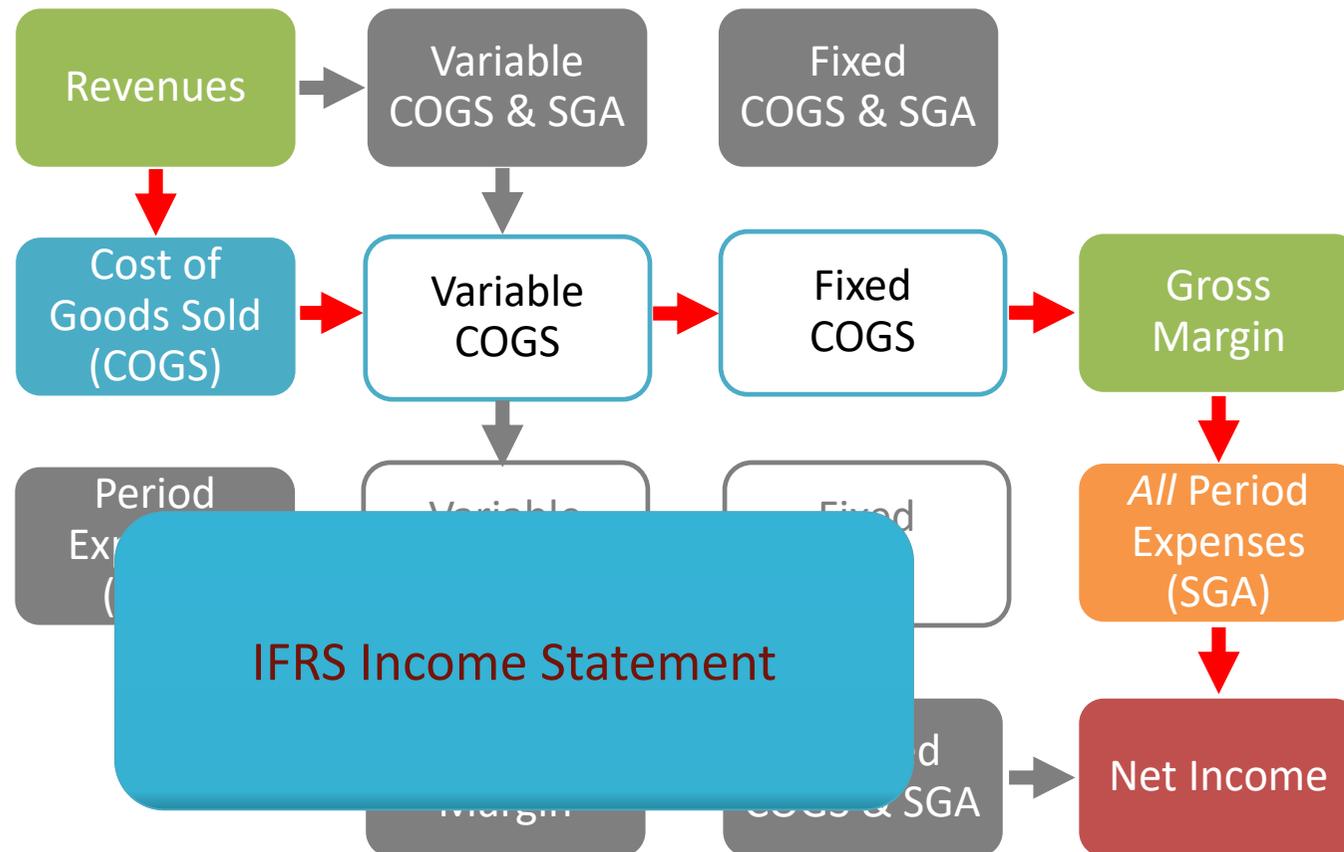
# Contribution Margin



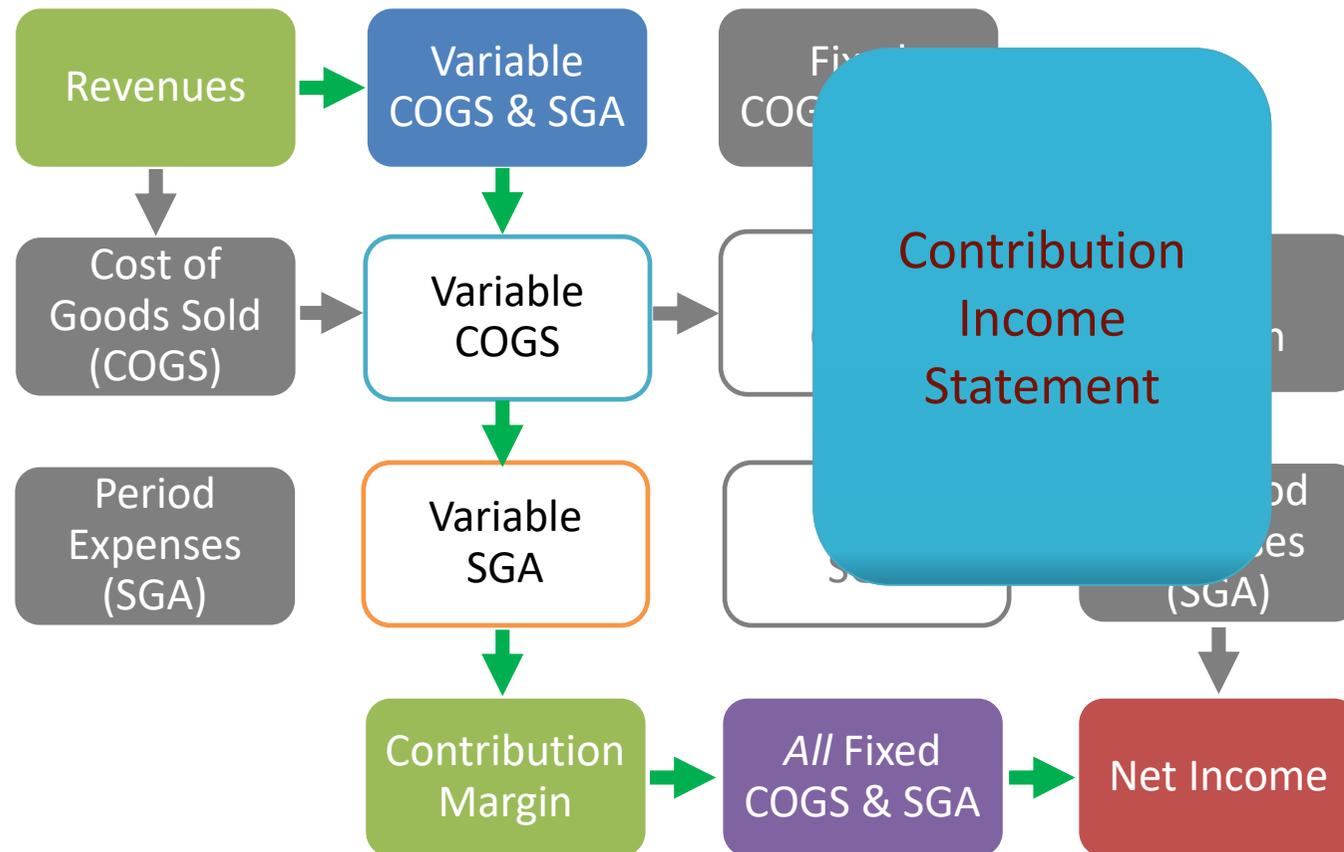
# Income Statement



# Income Statement



# Income Statement



Let's do this together

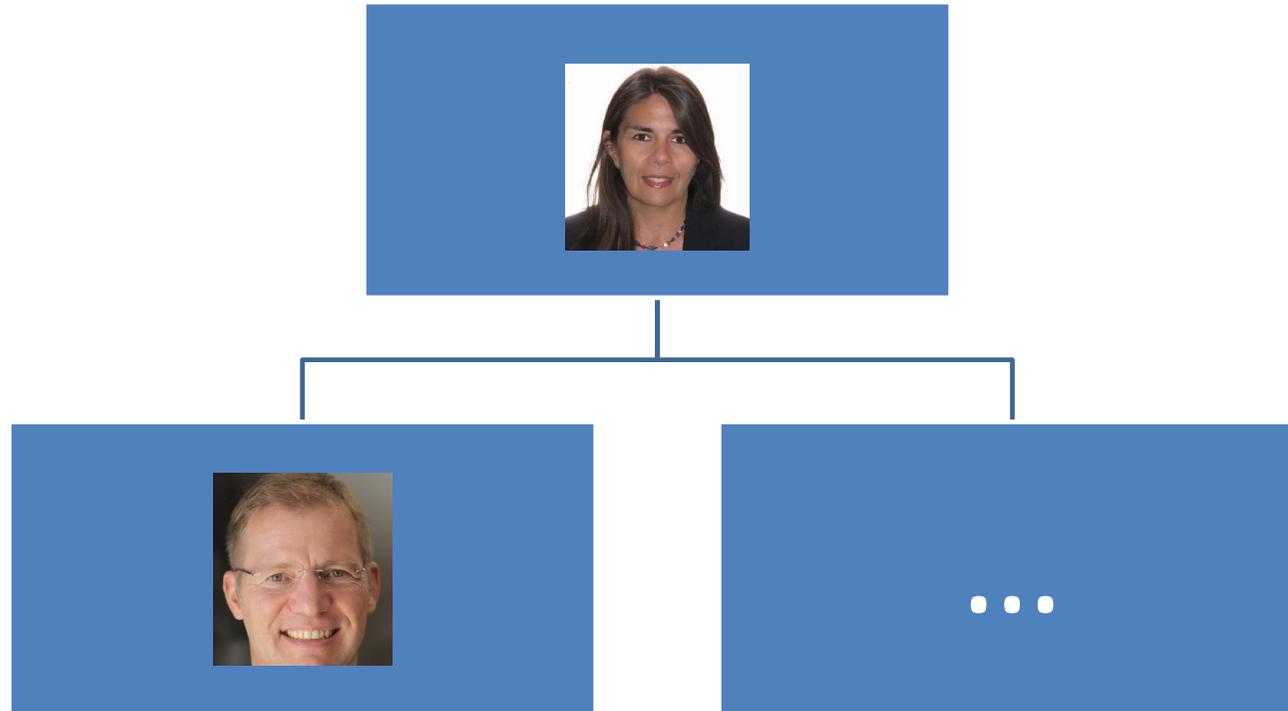
# Step 1: Contribution Income Statement (?)

(indicative of average month)	<u>Variable</u>		<u>Fixed</u>	<u>Total</u>
	Hours	Rate		
<b>Contribution margin</b>				
Revenues (at market price)	138	800.00		\$110,400
Variable costs				
Power	138	-4.70		-\$649
Operations: hourly	138	-24.00		-\$3,312
<b><i>Contribution margin of commercial sales</i></b>		<u><b>771.30</b></u>		<u><b>\$106,439</b></u>
Revenues (at subsidized price)	205	400.00		\$82,000
Variable costs				
Power	205	-4.70		-\$964
Operations: hourly	205	-24.00		-\$4,920
<b><i>Contribution margin of intracompany sales</i></b>		<u><b>371.30</b></u>		<u><b>\$76,117</b></u>
 Total contribution margin				\$182,556
<hr style="border-top: 1px dashed red;"/>				
<b>Fixed cost</b>				
Space			-\$9,240	-\$9,240
Leases, Depreciation, Maintenance			-\$126,580	-\$126,580
Operation Salaries & SGA			-\$53,800	-\$53,800
Sales promotions			-\$8,083	-\$8,083
Corporate services			-\$15,236	-\$15,236
<b><i>Total fixed costs</i></b>			<u><b>-\$212,939</b></u>	<u><b>-\$212,939</b></u>
<b>Net income (loss)</b>				<b>-\$30,383</b>

# Salem Telephone: Agenda

1. Context & Objective
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  1. Sensitivity: cost behavior.
  2. Comparability: cost relevance.

# Person vs. Family



## Step 2: “Keep As Is” (a)

(indicative of average month)	<u>Total</u>	<u>Total</u>
<b>Contribution margin</b>		
Revenues (at market price)	\$110,400	\$110,400
Variable costs		
Power	-\$649	-\$649
Operations: hourly	-\$3,312	-\$3,312
<b>Contribution margin of commercial sales</b>	<b><u>\$106,439</u></b>	<b><u>\$106,439</u></b>
Revenues (at subsidized price)	\$82,000	\$0
Variable costs		
Power	-\$964	-\$964
Operations: hourly	-\$4,920	-\$4,920
<b>Contribution margin of intracompany sales</b>	<b><u>\$76,117</u></b>	<b><u>-\$5,884</u></b>
<b>Total contribution margin</b>	<b>\$182,556</b>	<b>\$100,556</b>
<hr style="border-top: 1px dashed red;"/>		
<b>Fixed cost</b>		
Space	-\$9,240	\$0
Leases, Depreciation, Maintenance	-\$126,580	-\$126,580
Operation Salaries & SGA	-\$53,800	-\$53,800
Sales promotions	-\$8,083	-\$8,083
Corporate services	-\$15,236	\$0
<b>Total fixed costs</b>	<b><u>-\$212,939</u></b>	<b><u>-\$188,463</u></b>
<b>Net income (loss)</b>	<b>-\$30,383</b>	<b>-\$87,907</b>

As yourself:  
which positions  
really change  
with my  
decision?

## Step 2: “Keep As Is” (b)

(indicative of average month)	<u>Total</u>	<u>Total</u>
<b>Contribution margin</b>		
Revenues (at market price)	\$110,400	\$110,400
Variable costs		
Power	-\$649	-\$649
Operations: hourly	-\$3,312	-\$3,312
<b>Contribution margin of commercial sales</b>	<u><b>\$106,439</b></u>	<u><b>\$106,439</b></u>
Revenues (at subsidized price)	\$82,000	\$0
Variable costs		
Power	-\$964	-\$964
Operations: hourly	-\$4,920	-\$4,920
<b>Contribution margin of intracompany sales</b>	<u><b>\$76,117</b></u>	<u><b>-\$5,884</b></u>
<b>Total contribution margin</b>	\$182,556	\$100,556
<hr style="border-top: 1px dashed red;"/>		
<b>Fixed cost</b>		
Space	-\$9,240	\$0
Leases, Depreciation, Maintenance	-\$126,580	-\$126,580
Operation Salaries & SGA	-\$53,800	-\$53,800
Sales promotions	-\$8,083	-\$8,083
Corporate services	-\$15,236	\$0
<b>Total fixed costs</b>	<u><b>-\$212,939</b></u>	<u><b>-\$188,463</b></u>
<b>Net income (loss)</b>	<b>-\$30,383</b>	<b>-\$87,907</b>

*Ignore* non-differential “left-pocket-right pocket” costs that do not change STC’s value.

# Step 2: “Shut Down”

(indicative of average month)

Variable costs  
 External sourcing of IT-needs from a service provider (at market price)

**Total costs**

**Net income (loss)**

**Total**

-\$164,000  
**-\$164,000**

**-\$164,000**

**-\$164,000**

Consider opportunity cost: what value would STC receive or surrender alternatively?

## Step 2: STC's Decision

	"Keep As Is"	"Shut Down"
Net Income	-\$87,907	-\$164,000
Net Benefit	<b>\$76,093</b>	



The Income Statement's implicit benchmark ("zero") is not a good benchmark. The next best alternative is.

# Salem Telephone: Agenda

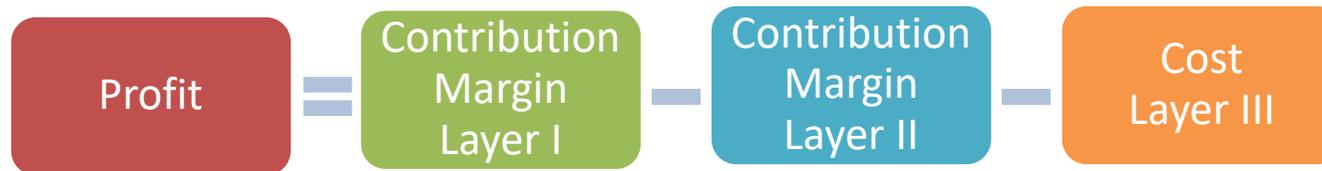
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# A very “German” Approach

## Mehrstufige Deckungsbeitragsrechnung

<u>DB I</u>	Erlöse - variable Kosten <hr/> = Deckungsbeitrag I
<u>DB II</u>	Summe der Deckungsbeiträge I - Produktfixkosten <hr/> = Deckungsbeitrag II
<u>DB III</u>	Summe der Deckungsbeiträge II - Produktgruppenfixkosten <hr/> = Deckungsbeitrag III
<u>DB IV</u>	Summe der Deckungsbeiträge III - Bereichsfixkosten <hr/> = Deckungsbeitrag IV
<u>DB V</u>	Summe der Deckungsbeiträge IV - Unternehmensfixkosten <hr/> = Deckungsbeitrag V

# Cost Layers



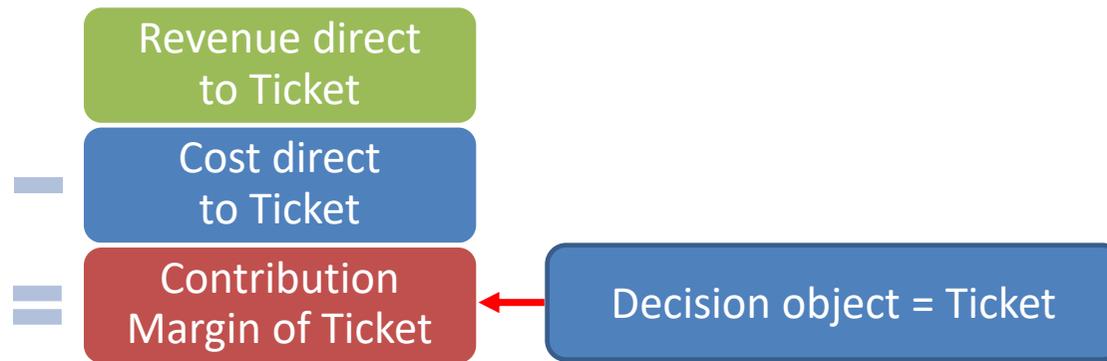
- Questions
  - How **close** is a cost position to the final step of value creation, i.e. top-line revenue?
  - To which **decision object** layer does the cost position relate?
- Distinction
  - **Layer I** cost = **direct** to the smallest decision object “unit of sale” (e.g. product, service).
  - **Layer II** cost = **indirect** to the “unit of sale”, direct to the decision object “line of sale” (e.g. product line, service range).

## Let's Go Back to the Sage ...



- An example of layered contribution margins

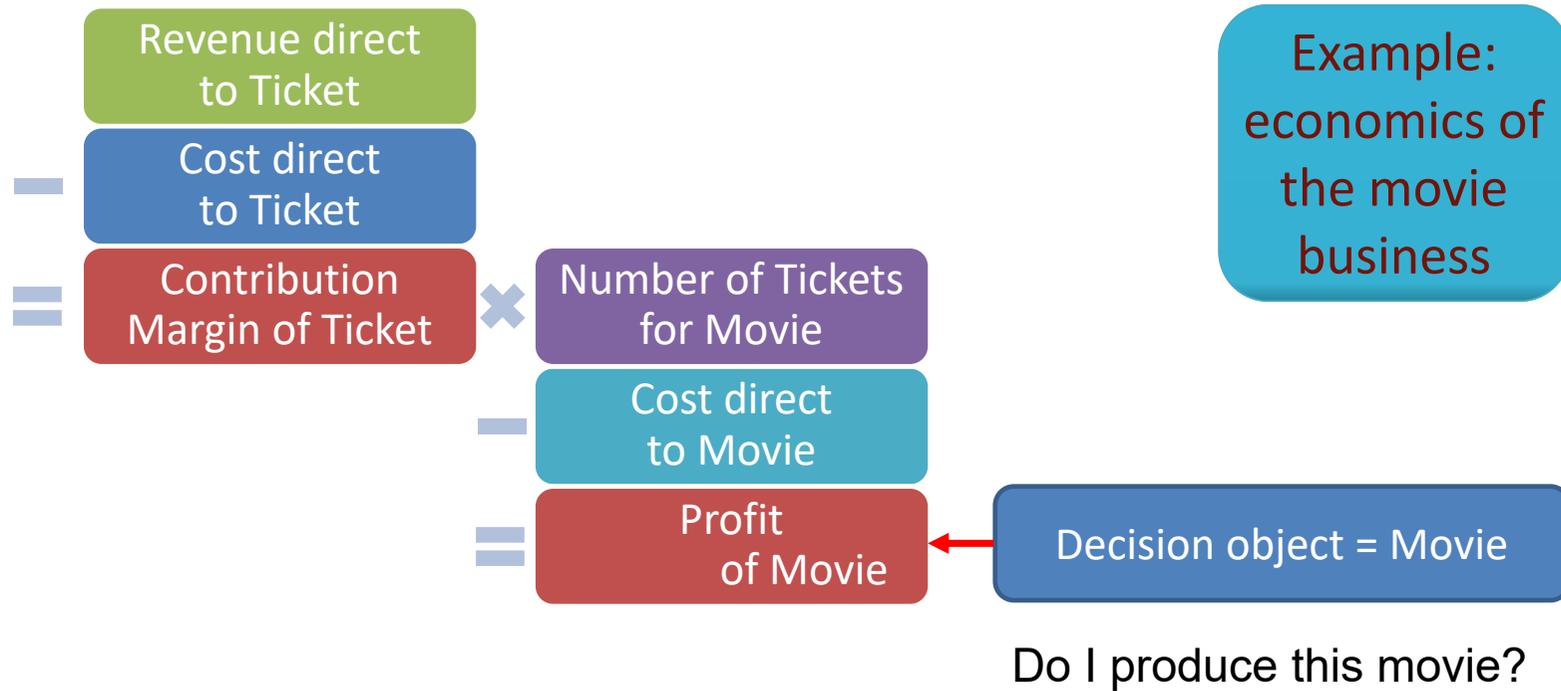
# Cost $\Rightarrow$ Profit Layers: Ex.



Do I sell this Ticket?

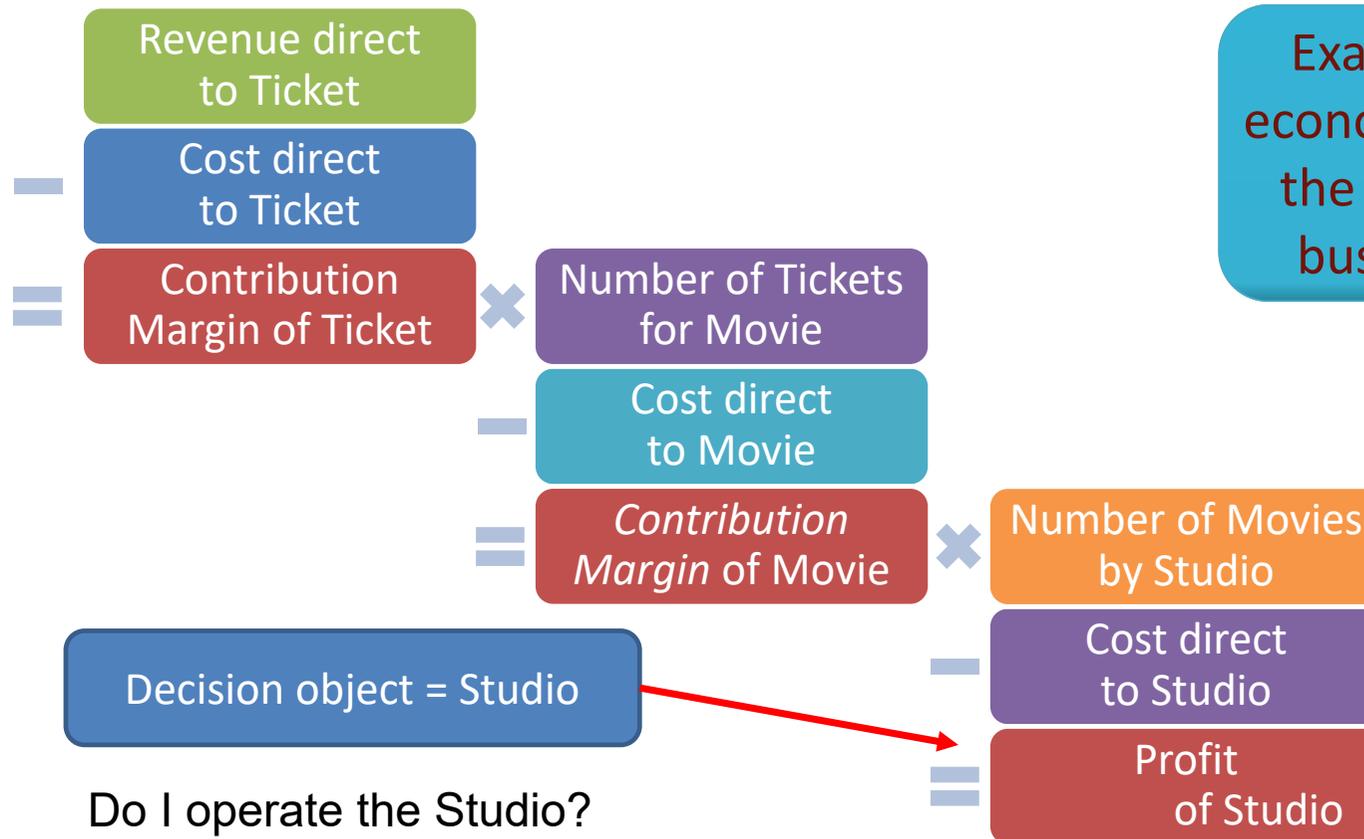
Example:  
economics of  
the movie  
business

# Cost $\Rightarrow$ Profit Layers: Ex.

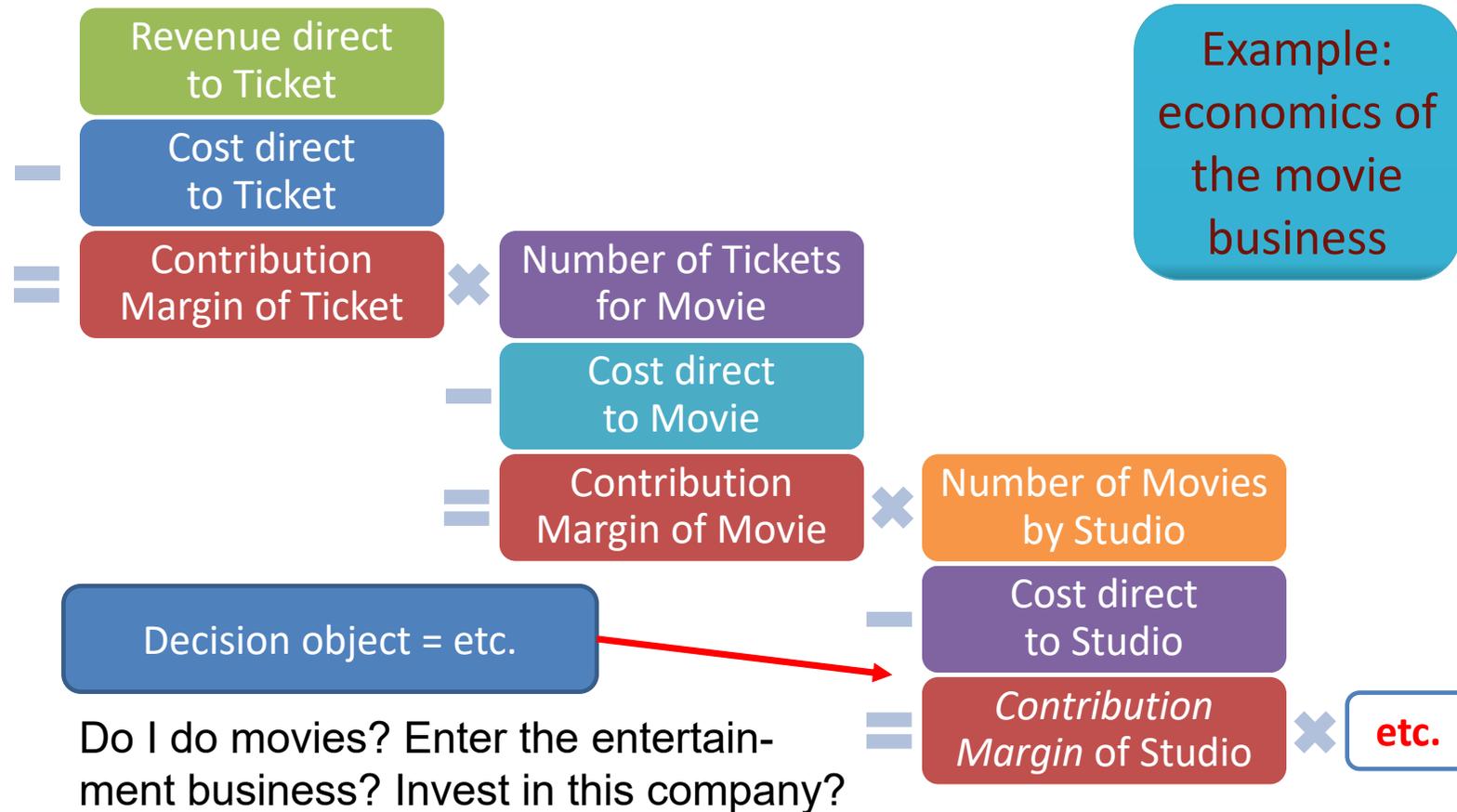


# Cost ⇒ Profit Layers: Ex.

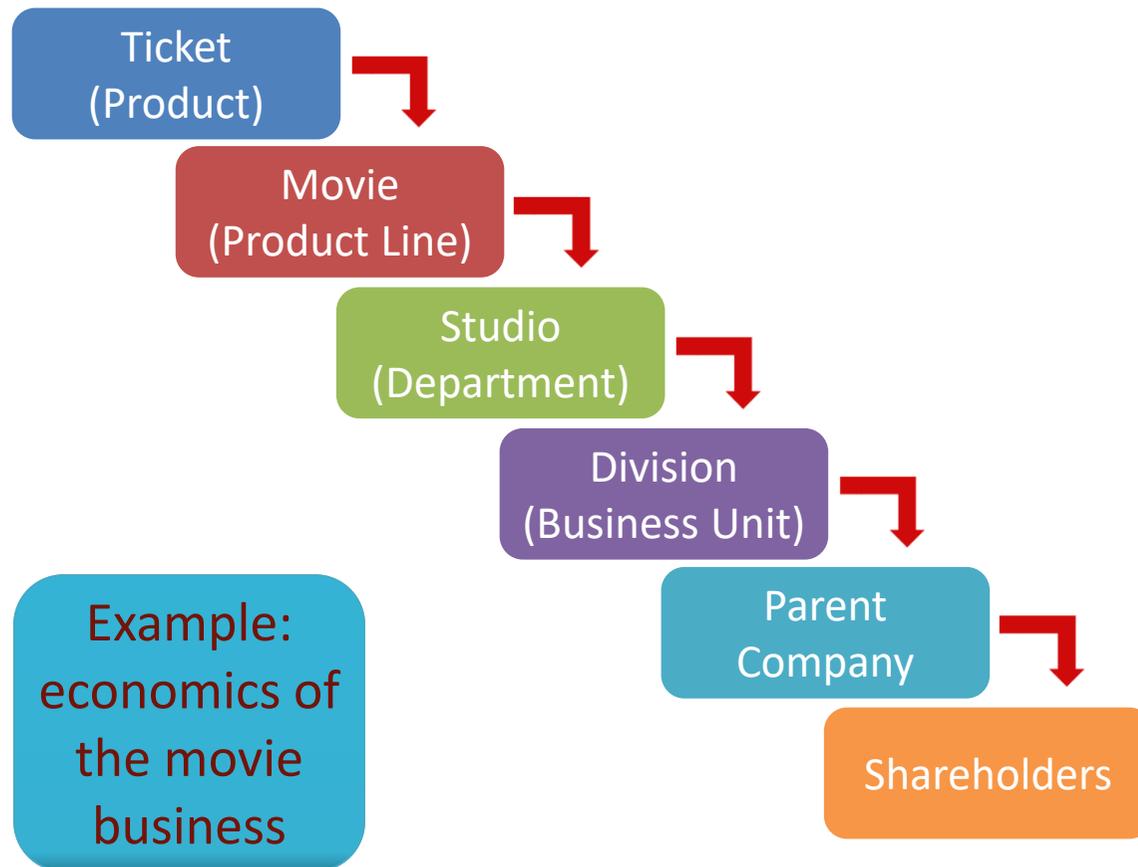
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# Cost $\Rightarrow$ Profit Layers: Ex.

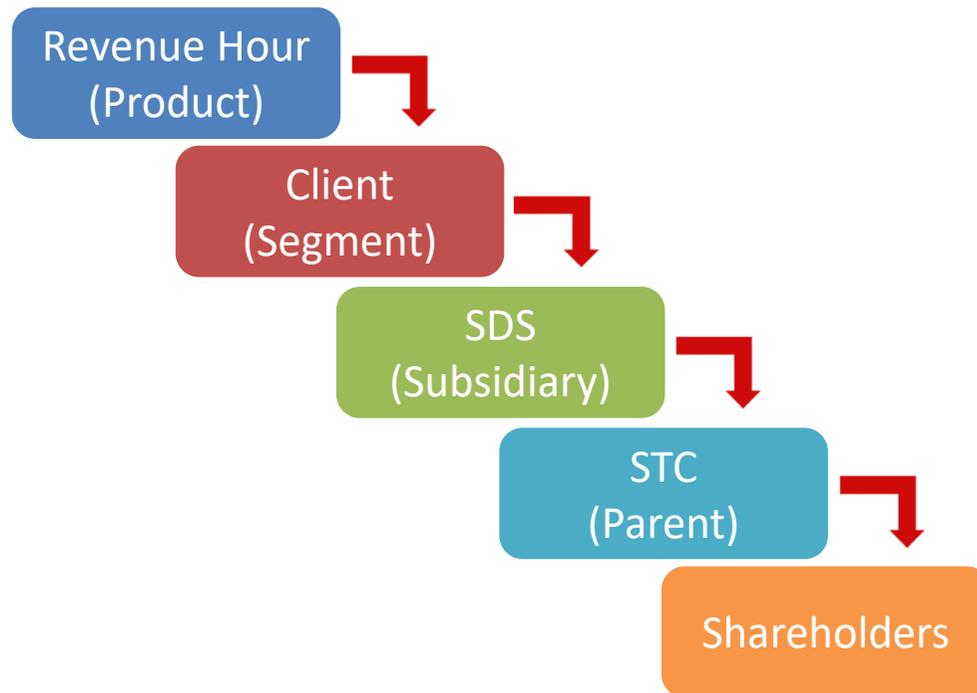


# “Cascade” of Profit Layers



- The profit of a ticket contributes to the profit of the movie.
- The profit of a movie contributes to the profit of the studio.
- The profit of a studio contributes to the profit of the entertainment division.
- And so on.

# Salem: Desired Layout



- The profit of a revenue hour contributes to the profit of a client segment.
- The profit of a client segment contributes to the profit of the subsidiary.
- The profit of the subsidiary contributes to the profit of the parent.
- The profit of the parent contributes to the profit of the shareholders.

# Step 3: Contribution Income Statement (!)

(indicative of average month)		<u>Variable</u>		<u>Fixed</u>	<u>Total</u>
	Hours	Rate			
<b>Contribution margin</b>					
Revenues (at market price)	138	800.00			\$110,400
Variable costs					
Power	138	-4.70			-\$649
Operations: hourly	138	-24.00			-\$3,312
→ Contribution margin of commercial sales to SDS		<u>771.30</u>			<u>\$106,439</u>
<b>Direct fixed costs</b>					
Sales promotions				-\$8,083	-\$8,083
Leases, Depreciation, Maintenance				-\$126,580	-\$126,580
Operation Salaries & SGA				-\$53,800	-\$53,800
Total direct fixed costs				<u>-\$188,463</u>	<u>-\$188,463</u>
Direct profit					-\$82,024
<hr style="border-top: 1px dashed red;"/>					
<b>Cost savings generated</b>					
Market price of services	205	800			\$164,000
Variable costs					
Power	205	-4.70			-\$964
Operations: hourly	205	-24.00			-\$4,920
→ Net cost savings		<u>771.30</u>			<u>\$158,117</u>
→ <b>Contribution of SDS to STC</b>					<b>\$76,093</b>

# Step 4?: Segment Income Statement

(indicative of average month)		<u>Variable</u>		<u>Fixed</u>	<u>Total</u>
	Hours	Rate			
<b>Contribution margin</b>					
Revenues (at market price)	138	800.00			\$110,400
Variable costs					-\$3,961
→ Contribution margin of commercial sales to SDS		<u>771.30</u>			<u>\$106,439</u>
→ <b>Identifiable fixed costs ?</b>					
Sales promotions				-\$8,083	-\$8,083
Leases, Depreciation, Maintenance	@ 50% (for			-\$63,290	-\$63,290
Operation Salaries & SGA	illustration only)			<u>-\$26,900</u>	<u>-\$26,900</u>
Total direct fixed costs				<u>-\$98,273</u>	<u>-\$98,273</u>
→ <b>Segment contribution margin</b>					<b>\$8,166</b>
<hr style="border-top: 1px dashed red;"/>					
<b>Cost savings generated</b>					
Service needs (at market price)	205	800			\$164,000
Variable costs					-\$5,884
Net variable cost savings		<u>771.30</u>			<u>\$158,117</u>
→ <b>Identifiable fixed costs ?</b>					
Leases, Depreciation, Maintenance	@ 50% (for			-\$63,290	-\$63,290
Operation Salaries & SGA	illustration only)			<u>-\$26,900</u>	<u>-\$26,900</u>
Total identifiable fixed costs				<u>-\$90,190</u>	<u>-\$90,190</u>
→ <b>Net cost savings</b>					<b>\$67,927</b>
→ <b>Contribution of SDS to STC</b>					<b>\$76,093</b>

# Salem Telephone: Agenda

1. Context & Objective
2. Salem Telephone Company
3. Good P&Ls for Good Decisions
  1. Sensitivity: cost behavior.
  2. Granularity: cost specificity.
  3. Proximity: cost layers.
4. Summary

# Learning Points

- “**Good use of good accounting**”: the role of accounting in preparing and making business decisions.
- “... good accounting”: **decision support**.
  - Internal accounting reports: decision-centric design
  - Reflection of the business economics, incl.:
    - **Actual** (with others) vs. **artificial** (with yourself) revenues & costs.
    - **Opportunity** benefits/costs (if identifiable & measurable).
  - Contribution Income Statement.
- “Good use ...”: **decision-making**.
  - Rigorous accounting-driven analysis.
  - Model and compare the expected economic consequences of alternatives.
  - Crucial: back up your intuition with numbers.

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