Value Stream Costing in Process Industries
"Accounting to See"

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Introduction - Observations

- **We are implementing lean, improving the flow of value added activities in our value streams, but we are not seeing the impact in our financial statements**
  - Actually, our P&L looks worse….
- **When looking at investments, the business case calculations are not showing the (positive) impact of flow improvements/lead time reduction/inventory reduction. How to make sound decisions ?**
  - Therefore, Engineering calculated it was better to buy one big, fast production line (which now is a Shared Resource) instead of two smaller, slower ones (but which are Dedicated to our value stream)

Agenda

- **Traditional Accounting vs. Lean**
  - What is Lean?
  - Full Absorption Costing?
  - Financial results in the early stages of Lean
- **Throughput Accounting**
  - What is Throughput Accounting?
  - Key measures of Throughput Accounting
- **Value Stream Costing**
  - Understand what a value stream costing model is
  - How a value stream costing model supports value stream based decisions

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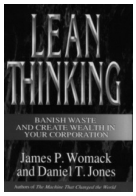
Part One

TRADITIONAL ACCOUNTING vs. LEAN

What is "Lean" ?

- **A business strategy for organizing and improving the operational activities of companies**
  - **Improved competitiveness**
  - **Flow**
- **Adapted from Toyota Production System**
- **5 steps**
  - **Correctly specify value for the customer**
  - **Identify the value stream and remove the waste**
  - **So we can improve flow**
  - **To work better @ the pull of the customer**
  - **While striving towards perfection**



(Lean Thinking - Womack, Jones)

The Problem

- **Which accounting system are we using to take internal decision?**
  - Financial Accounting vs. Management Accounting
- **Our traditional Financial Accounting system (Full Absorption Costing) promotes overproduction**
  - The search for the perfect 'unit cost'
  - In the P&L costs must always match the sales

Full Absorption Costing

- **Full absorption costing is a traditional method where all manufacturing costs are capitalized in the inventory**
  - Costs are charged to inventory and become assets
- **These costs will only be expensed when the inventory is sold**
- **Developed in an era of mass production based on a 'scarcity model'**
- **Is required for external reporting.**
  - GAAP (Generally Accepted Accounting Principles (US))
  - IFRS (International Financial Reporting Standards (EU))

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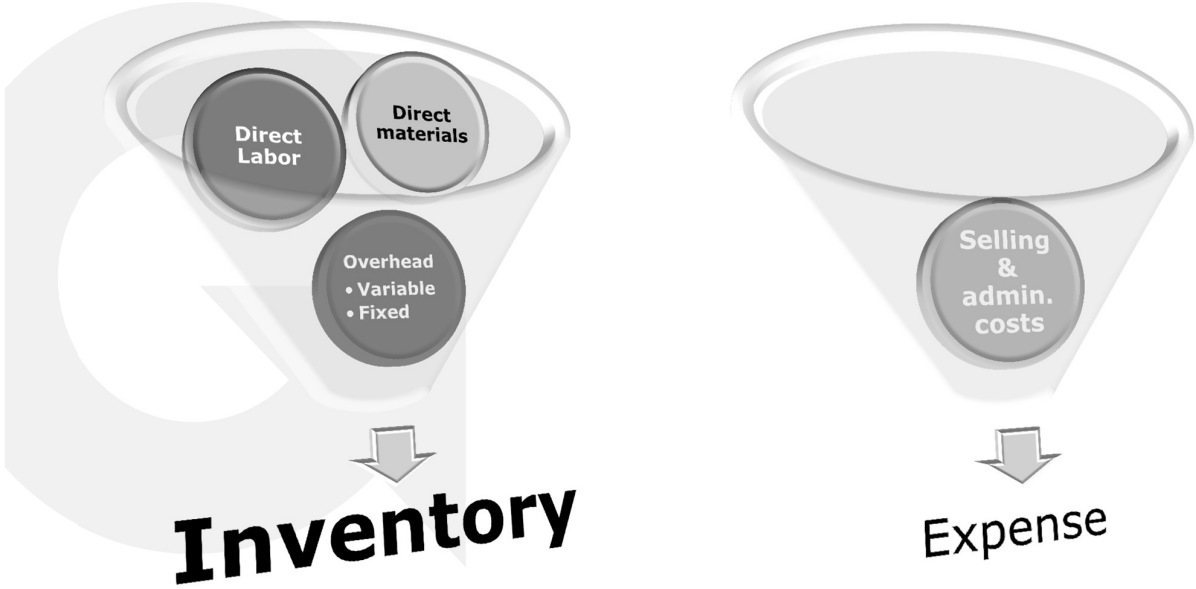
Full Absorption Costing

- **The full absorption method is also frequently used for internal reporting**
- **What kind of influence does this have on our:**
  - P&L?
  - Unit costs?
  - Behavior?

The early stages of Lean with Full Absorption Costing

	Prior to Lean improvement	Implementation pacemakerloop	Implementation molding loop	Implementation Sprue Plastics loop	Implementation stamping-debur loop	Implementation Copperfield loop	Implementation plotting-laminating loop	Implementation Insul loop	Future state
Net profit	€ 41.135	€ (7.792)	€ 33.857	€ 33.880	€ 47.405	€ 52.590	€ 55.798	€ 33.012	€ 67.016
Cashflow	€ 26.244	€ 36.016	€ 36.016	€ 51.016	€ 57.016	€ 59.016	€ 62.016	€ 65.016	€ 67.016
Inventory	€ 154.318	€ 110.510	€ 108.351	€ 91.215	€ 81.604	€ 75.178	€ 68.960	€ 36.956	€ 36.956

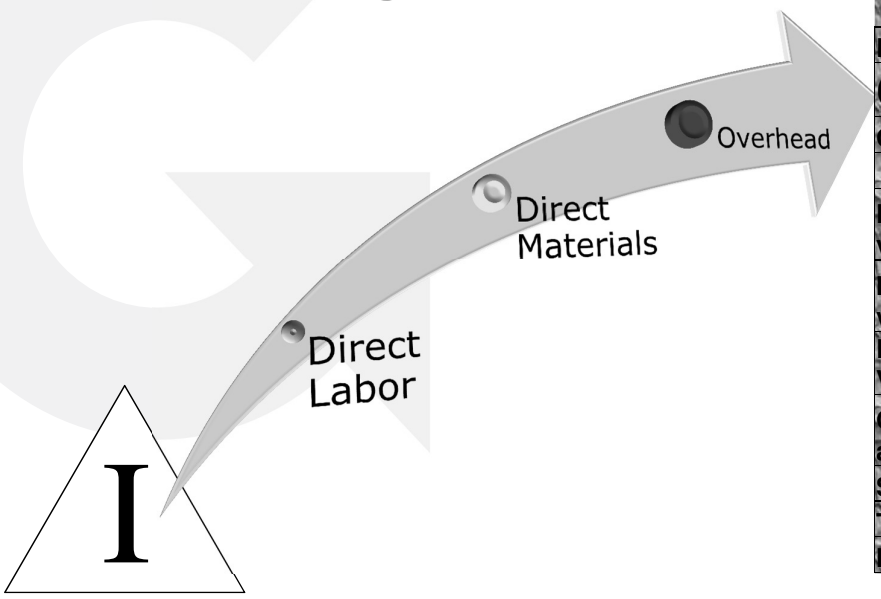
Full Absorption Costing



In this method, only selling and administrative costs are charged as expense. All the rest is charged to inventory.

Full Absorption Costing

After selling…



Profit & Loss		
Revenue	$	990.000
COGS	$	772.200
Gross Profit	$	217.800
Purchase price variance	$	87.200
Material usage variance	$	12.700
Labor Usage Variance	$	26.700
Overhead absorption variance	$	20.800
SG&A	$	19.800
Total Costs	$	167.200
Net Profit	$	50.600

A Simple Example

Output this month: 10 000 pcs produced

Total costs: 10 000€
=> Unit cost = 1€/pc

6 000 pcs sold @ 1.5 €/pc

4 000 pcs in the warehouse

Production P&L

Revenue	9 000€
COGS (1€ x 6 000pcs)	6 000€
Profit (EBIT)	3 000€

A Simple Example

10% increase in output !!

Output this month: 11 000 pcs produced

Total costs: 10 000€

⇒ Unit cost = 0.9€/pc

6 000 pcs sold @ 1.5 €/pc

5 000 pcs in the warehouse

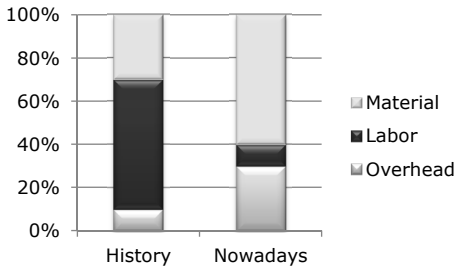
Production P&L

Revenue	9 000€
COGS (1€ x 6 000pcs)	6 000€
Profit (EBIT)	3 000€

Production P&L

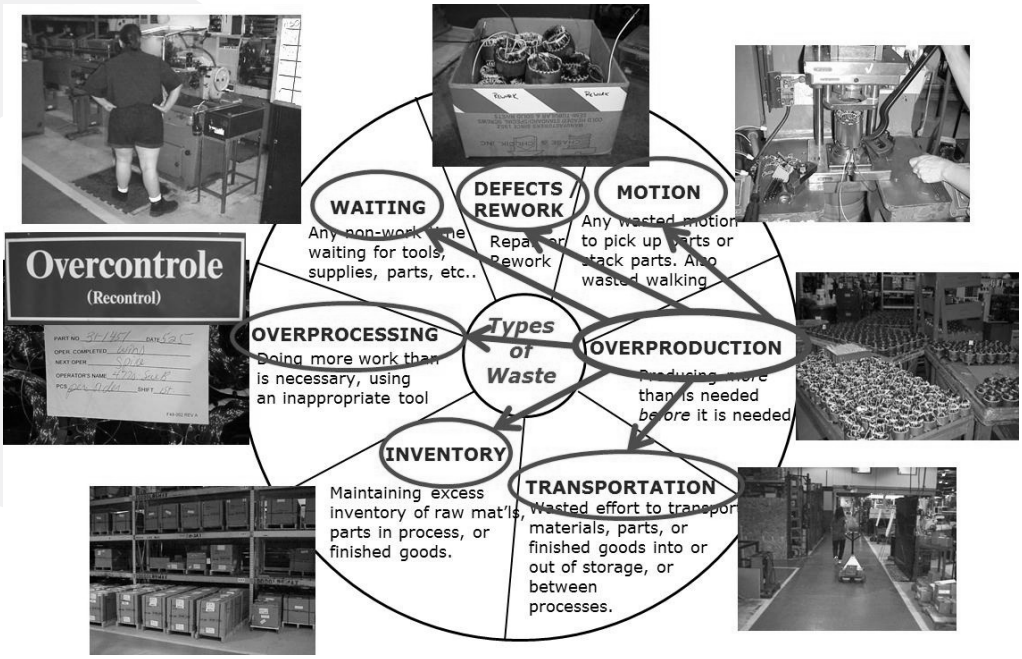
Revenue	9 000€
COGS (0,9€ x 6 000pcs)	5 400€
Profit (EBIT)	3 600€

Conclusion



- **'The Evil of Overhead'**
- **Full Absorption Costing is promoting large batches and overproduction**
  - Overproduction is put on the Balance Sheet, thus 'evaporates' for the Production P&L
  - By allocating overhead costs to individual products, our cost per piece is lower if we increase batch sizes
    - What about ABC costing ??
  - As we can only put costs of goods SOLD in the P&L: (calculated) profit goes up
    - While our bank account is going down….

This Phenomenon leads to…



Typical Financial Results in the early Stages of Lean

- **Revenue stays the same**
  - Although there may be some reduced backlog that brings revenue quicker
- **Costs stay about the same**
  - Although overtime and scrap costs may reduce a little
- **Operating profits may go down**
  - Because of the impact of reduced inventory on cost-of-sales
- **Cash flow from operation increases**
  - As a result of the inventory reduction
- **Average cost per unit sold has increased**
  - due to "increased costs"

(Maskell and Baggaley, Practical Lean Accounting. Productivity Press 2004)

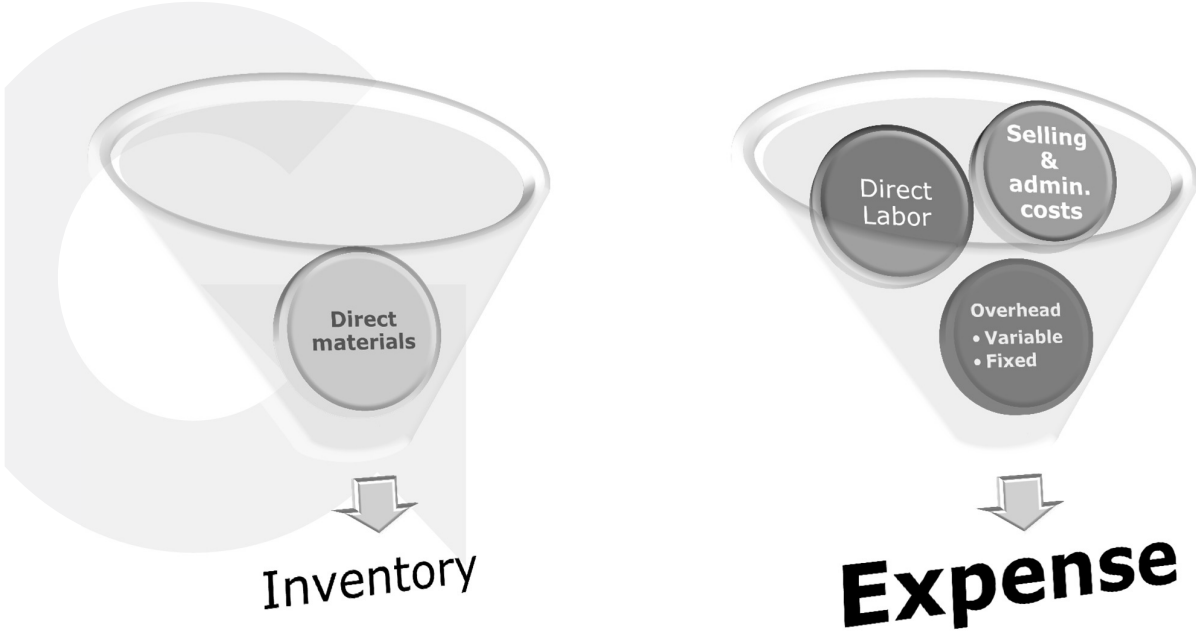
Part Two

THROUGHPUT ACCOUNTING

Throughput Accounting (TA)

- **Throughput accounting (costing), is deducted from Goldratt's Theory of Constraints(TOC)**
- **It is largely in line with the JIT philosophy**
- **TA assumes that a manager has the following resources:**
  - Buildings
  - Capital
  - Labor
- **Using these resources, purchased materials and parts must be processed to generate sales revenue**

Throughput Accounting



Throughput Accounting

- **The purpose is not to determine the perfect 'unit cost'. Besides direct material cost (valued at purchasing cost), no other costs are allocated to the products.**
- **The focus is more on 'period costs', which is more in line with actual cash flow.**
- **The shorter the lead times and the better we produce to (real) demand, the more TA results are similar to Full Absorption Costing**

Throughput Accounting

- **TOC uses three key measures:**
  - ❑ Investments (I)
  - ❑ Operational expenses (OE)
  - ❑ Throughput (T)

- **To make a decision according TOC, one needs to quantify the decision's impact on those three measurements, and translate it back to Net Profit (NP) and Return On Investment (ROI)**

Throughput Accounting

Throughput (T) =  Sales -  Variable costs

Investment (I) =  Inventory +  Machines +  Buildings

Operating Expense (OE) =  Conversion costs

Decision Making Parameters

Net Profit (NP) =
Throughput (T) - Operating Expense (OE)

Return On Investment (ROI) =
Net Profit (NP) / Investment (I)

Productivity =
Throughput (T) / Operating Expense (OE)

Investment turns =
Throughput (T) / Investment (I)

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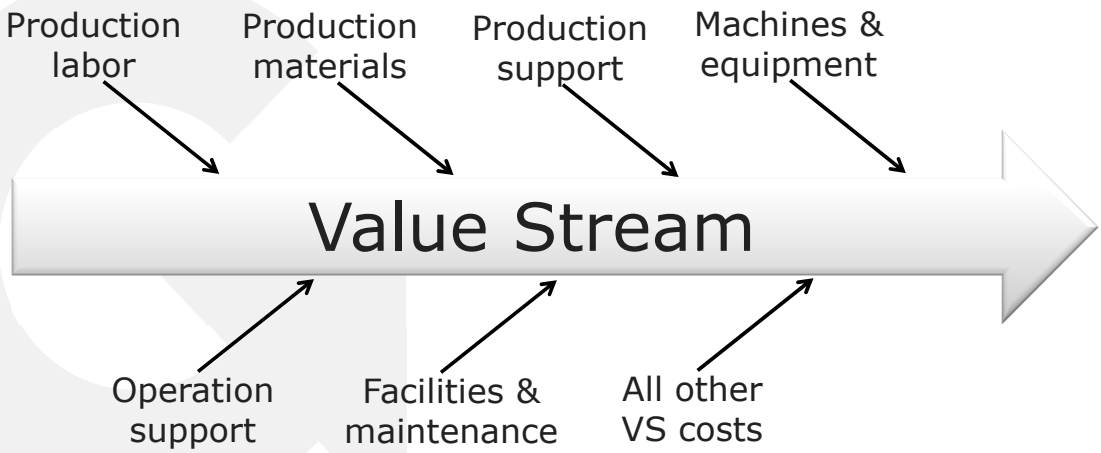
Part Three

VALUE STREAM COSTING

Value Stream Costing



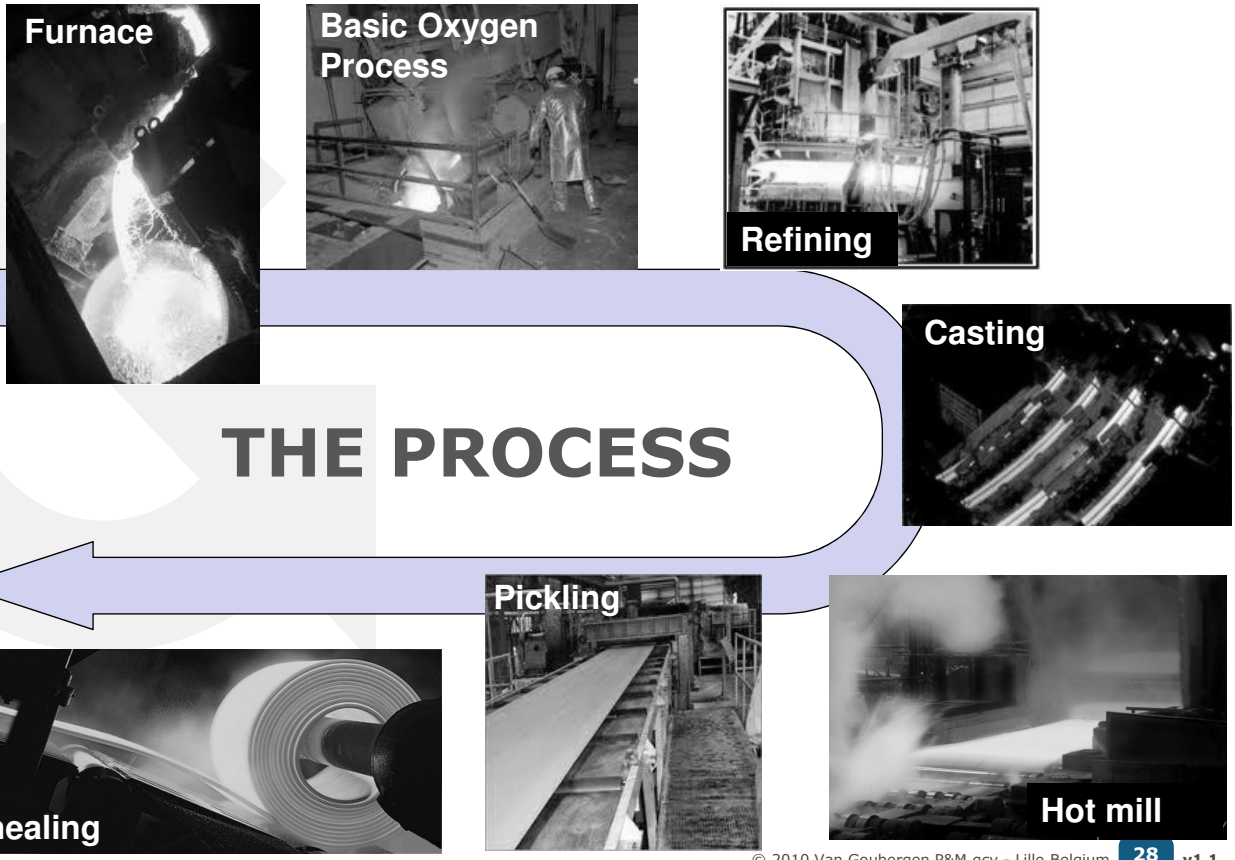
- **All labor, machine, materials, support services and facilities directly within the Value Stream**
- **'Real' costs over a period**
- **Little or no allocation**

With Value Stream Costing we are going to focus on…

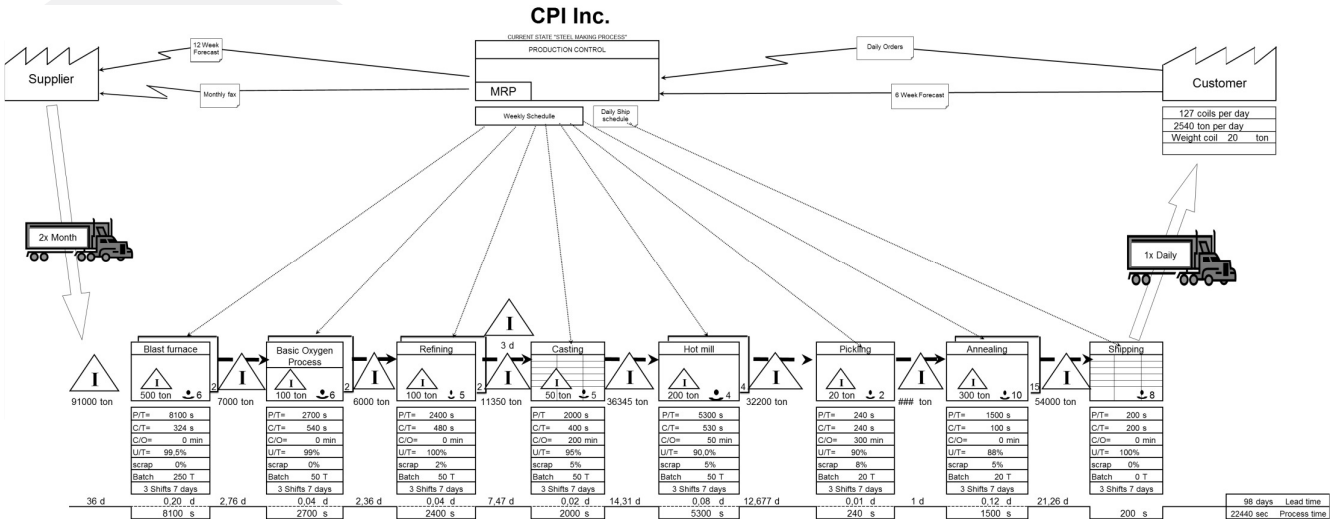
- **Financial performance of the value stream**
- **Financial impact of going from the current to the future state**
- **Translating lead-time reduction into financial figures**
- **The financial impact of investments on the value stream**

Elements of the Value Stream Cost Model

- **Value stream**
- **Inventory Module**
- **Cost Module**
- **Capacity/EPEI Module**
- **Profit Module**

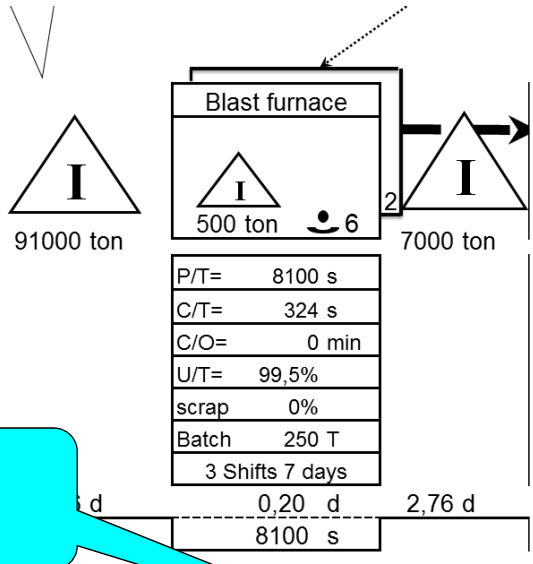


Current State Value Stream



Inventory Module

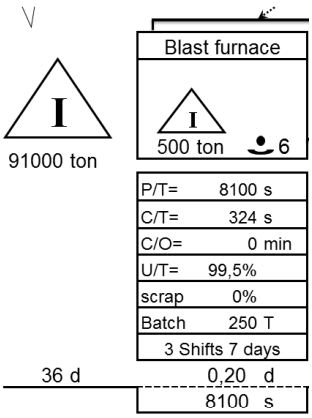
- **Throughput accounting**
- **Valuation Inventory => Only material costs!**
- **Calculate only the value of the inventory of this value stream**



€ 1.200,- x 7.000 ton =
€ 8.400.000,-

Inventory	Steelprice/ton € 1.200		€ 109.200.000		€ 600.000	€ 8.400.000

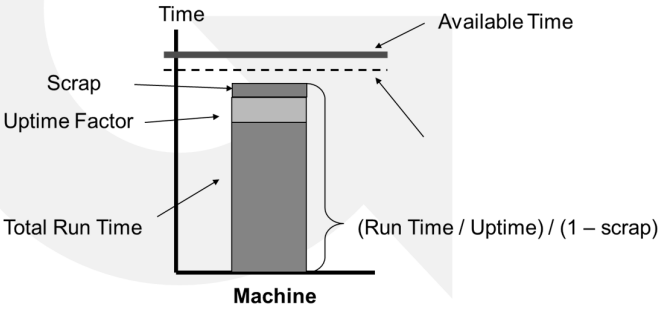
Cost Module

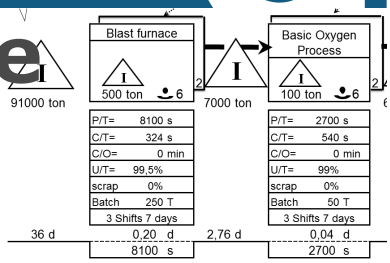


Inventory	Steelprice/ton € 1.200	€ 290.118.000	€ 109.20	€ 600.000
VS Cost module	Direct materials Total	€ 81.280.000		
	Direct Labor	€ 101.918		€ 15.460
	Maintenance	€ 3.543		
	Machine depreciation	€ 225.950		€ 77.377
	Indirect Labor	€ 45.332		
	Space	€ 12.004		
	Energy	€ 1.900.000		
	Rent	€ 23.945		
	Other costs	€ 1.200.000		

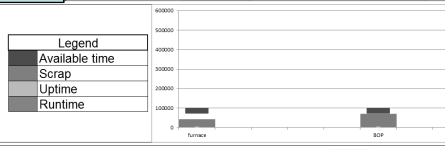
- **All costs are directly linked to the value stream**
- **Allows you not only "to see" the costs, but also to easily associate them with processes**
- **You can easily shape your chart of accounts**

Capacity/EPEI Module





Inventory	Steelprice/ton € 1.200		€ 109.200.000	€ 600.000	€ 8.400.000	€ 120.000
VS Cost module	Direct materials Total					
	Direct Labor			€ 15.460		€ 18.000
	Maintenance					
	Machine depreciation			€ 77.377		€ 27.560
	Indirect Labor					
	Space					
	Energy					
	Rent					
	Other costs					
Capacity				furnace		BOP
	Available time (sec)			86400		86400
	Runtime (sec)			41148		68580
	Uptime			207		693
	Scrap			0		0
	Equipment required			48%		80%
	Time left for C/O			45045		17127
	# of C/O per EPEI			1		1
	EPEI (days)			1,0		1,0
	Current C/O time (min)			0		0
	Max C/O time (min)			#DEEL/0!		#DEEL/0!
	Free capacity per day			#DEEL/0!		#DEEL/0!



Profit Module

Throughput Costing ratios	
Net Profit	
Throughput - Operating Expense	€
Return on Investments	
Net Profit / Investments	%
Productivity	
Throughput / Operating Expense	%
Investment turns	
Throughput / Investments	%
Cashflow	
NP - (I_t - I_{t-1} + depreciation cost $_t$)	€

Profit Module

Unit cost calculation	
Material per coil	€
OE per coil	€
Unit cost coil	€

$$Material\ per\ coil = \frac{direct\ material\ cost\ per\ period}{Quantity\ sold\ per\ period}$$

- It is possible that a product family contains products with different kinds of materials. In this case you need to quantify the material cost and the quantity sold for each product separately

$$OE\ per\ coil = \frac{Operating\ Expense\ per\ period}{Quantity\ sold\ per\ period}$$

- This is also called conversion costs per product. In a product family the conversion costs are the same for every product.

Current State Value Stream Cost Model

# of goods produced	70000	Ton
# of goods sold	50800	Ton

Profit module

Operating Expense (OE)		*Investments (I)*		*Throughput (T)*	
Direct Labor	€ 102.469	Inventory	€ 290.118.000	Sales	€ 106.680.000
Indirect Labor	€ 45.332	Capital	€ 27.114.000	Variable Costs	€ 78.860.629
Fixed costs	€ 3.352.264	TOTAL (I)	€ 317.232.000	THROUGHPUT	€ 27.819.371
TOTAL (OE)	€ 3.500.065				

Throughput Costing ratios	
Net Profit	
Throughput - Operating Expense	€ 24.319.305
Return on Investments	
Net Profit / Investments	8%
Productivity	
Throughput / Operating Expense	795%
Investment turns	
Throughput / Investments	9%
Cashflow	
NP - (It - It-1 + depreciation costt)	€ 1.066.533

Unit cost calculation	
Material per unit	€ 31.047
OE per unit	€ 1.378
Unit cost	€ 32.425

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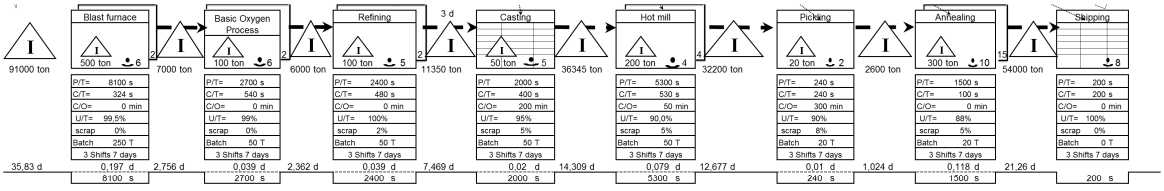
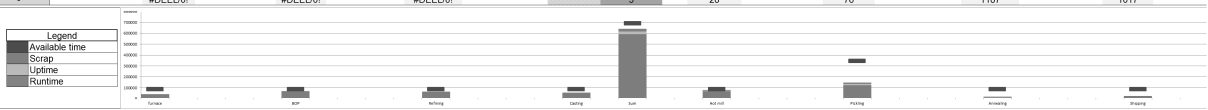
Current State Value Stream Cost Model



Steelprice/ton € 1.200	€ 290.118.000	€ 109.200.000	€ 600.000	€ 8.400.000	€ 120.000	€ 7.200.000	€ 120.000	€ 13.620.000	€ 60.000	€ 43.614.000	€ 240.000	€ 38.640.000	€ 24.000	€ 3.120.000	€ 360.000	€ 64.800.000
Direct materials Total	€ 78.860.629	€ 78.860.629														
Direct Labor	€ 102.469		€ 15.460		€ 18.000		€ 10.736		€ 7.717		€ 12.000		€ 4.000		€ 30.920	€ 3.636
Maintenance	€ 3.543	€ 3.543														
Machine depreciation	€ 212.772		€ 77.377		€ 27.560		€ 32.562		€ 10.546		€ 12.300		€ 28.629		€ 20.180	€ 3.619
Indirect Labor	€ 45.332															
Space	€ 12.004	€ 12.004														
Energy	€ 1.900.000	€ 1.900.000														
Rent	€ 23.945	€ 55.000														
Other costs	€ 1.200.000	€ 1.200.000														

		furnace	BOP	Refining	Casting	Sum	Hot mill	Pickling	Annealing	Shipping
Available time (sec)	1641600	86400	86400	86400	86400	691200	86400	345600	86400	86400
Runtime (sec)	1039218	41148	68580	60960	50800	590400	67310	121920	12700	25400
Uptime	50520	207	693	0	2674	24189	7479	13547	1732	0
Scrap	47849	0	0	1244	2814	27315	3936	11780	760	0
Equipment required	-	48%	80%	72%	65%	93%	91,12%	42,61%	17,58%	29,40%
Time left for C/O	-	45045	17127	24196	30112	49295	7675	198354	71209	61000
# of C/O per EPEI	-	1	1	1	2	4	2	10	10	10
EPEI (days)	-	1,0	1,0	1,0		8,0	1,0	4,0	1,0	1,0
Current C/O time (min)	-	0	0	0		200	50	300	0	0
Max C/O time (min)	-	#DEEL/0!	#DEEL/0!	#DEEL/0!		205	63,96	330,59	118,68	101,67
Free capacity per day	-	#DEEL/0!	#DEEL/0!	#DEEL/0!		3	28	76	1187	1017



# of goods produced	70000	Ton
# of goods sold	50800	Ton

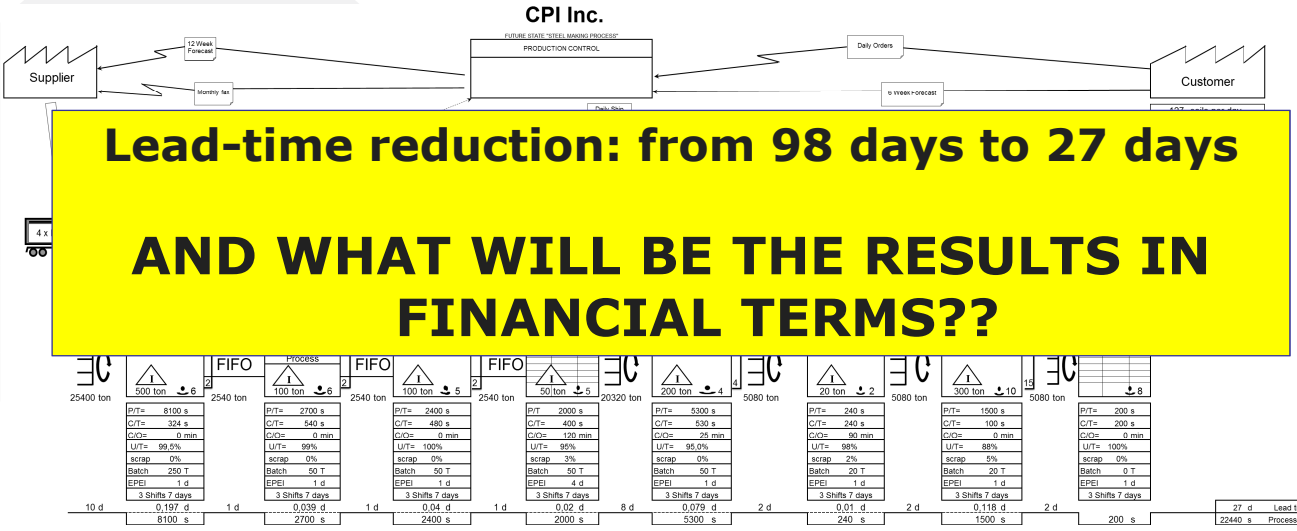
Operating Expense (OE)		*Investments (I)*		*Throughput (T)*	
Direct Labor	€ 102.469	Inventory	€ 290.118.000	Sales	€ 106.680.000
Indirect Labor	€ 45.332	Capital	€ 27.114.000	Variable Costs	€ 78.860.629
Fixed costs	€ 3.352.264	TOTAL (I)	€ 317.232.000	THROUGHPUT	€ 27.819.371
TOTAL (OE)	€ 3.500.065				

Throughput Costing ratios	
Net Profit	
Throughput - Operating Expense	€ 24.319.305
Return on Investments	
Net Profit / Investments	8%
Productivity	
Throughput / Operating Expense	795%
Investment turns	
Throughput / Investments	9%
Cashflow	
NP - (It - It-1 + depreciation costt)	€ 1.066.533

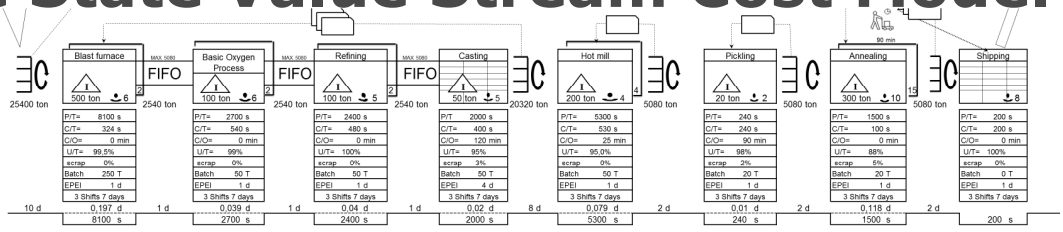
Unit cost calculation	
Material per unit	€ 31.047
OE per unit	€ 1.378
Unit cost	€ 32.425

Legend
VS Coated + VS Lam
Shared Resource
Exceeds Max

And now the Future State…



Future State Value Stream Cost Model



Inventory

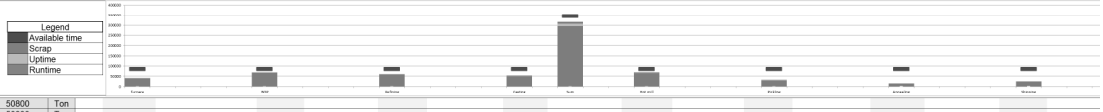
Steelprice/ton € 1.200	€ 83.820.000	€ 30.480.000		€ 600.000	€ 3.048.000		€ 120.000	€ 3.048.000		€ 120.000	€ 3.048.000		€ 60.000	##########	€ 240.000	€ 6.096.000		€ 24.000	€ 6.096.000		€ 360.000	€ 6.096.000

VS Cost module

Direct materials Total	€ 67.503.073	€ 67.503.073														
Direct Labor	€ 102.420		€ 15.460		€ 18.000		€ 10.736						€ 7.668		€ 12.000			€ 4.000			€ 30.920		€ 3.636
Maintenance	€ 3.543													€ 3.543									
Machine depreciation	€ 212.707		€ 77.377		€ 27.560		€ 32.562						€ 10.480		€ 12.300			€ 28.629			€ 20.180		€ 3.619
Indirect Labor	€ 45.332																						
Space	€ 12.004													€ 12.004									
Energy	€ 1.900.000													€ 1.900.000									
Rent	€ 23.945													€ 55.000									
Other costs	€ 1.200.000													€ 1.200.000									

Capacity

		furnace	BOP	Refining	Casting	Sum	Hot mill	Pickling	Annealing	Shipping
Available time (sec)	1036800	86400	86400	86400	86400	345600	86400	86400	86400	86400
Runtime (sec)	652578	41148	68580	60960	50800	295200	67310	30480	12700	25400
Uptime	21564	207	693	0	2674	12095	3543	622	1732	0
Scrap	12063	0	0	0	1654	9015	0	635	760	0
Equipment required	-	48%	80%	71%	64%	92%	82.01%	36.73%	17.58%	29.40%
Time left for C/O	-	45045	17127	25440	31272	29290	15547	54663	71209	61000
# of C/O per EPEI	-	2	2	2	2	4	10	10	10	10
EPEI (days)	-	1,0	1,0	1,0		4,0	1,0	1,0	1,0	1,0
Current C/O time (min)	-	0	0	0		120	25	90	0	0
Max C/O time (min)	-	#DEEL/0!	#DEEL/0!	#DEEL/0!		122	25,91	91,11	118,68	101,67
Free capacity per day	-	#DEEL/0!	#DEEL/0!	#DEEL/0!		2	9	11	1187	1017



# of goods produced	50800	Ton
# of goods sold	50800	Ton

Profit module

Operating Expense (OE)		Investments (I)		Throughput (T)	
Direct Labor	€ 102.420	Inventory	€ 83.820.000	Sales	€ 106.680.000
Indirect Labor	€ 45.332	Capital	€ 26.901.293	Variable Costs	€ 67.503.073
Fixed costs	€ 3.352.199	TOTAL (I)	€ 110.721.293	THROUGHPUT	€ 39.176.927
TOTAL (OE)	€ 3.499.951				

Throughput Costing ratios	
Net Profit	
Throughput - Operating Expense	€ 35.676.976
Return on Investments	
Net Profit / Investments	32%
Productivity	
Throughput / Operating Expense	1119%
Investment turns	
Throughput / Investments	35%
Cashflow	
NP - (It - It-1 + depreciation cost)	€ 241.974.976

Unit cost calculation	
Material per coil	€ 26.576
OE per coil	€ 1.378
Unit cost coil	€ 27.904

Legend
VS Coated + VS Lam
Shared Resource
Exceeds Max

Scorecard

		Current State	Future State	Change
	Leadtime	98	27	-71
	Total inventory value	€ 290.118.000	€ 83.820.000	-€ 206.298.000
VS Cost module	Direct materials	€ 78.860.629	€ 67.503.073	-€ 11.357.557
	Direct Labor	€ 102.469	€ 102.420	-€ 48
	Maintenance	€ 3.543	€ 3.543	€ 0
	Machine depreciation	€ 212.772	€ 212.707	-€ 66
	Indirect Labor	€ 45.332	€ 45.332	€ 0
	Space	€ 12.004	€ 12.004	€ 0
	Energy	€ 1.900.000	€ 1.900.000	€ 0
	Internal logistics	€ 23.945	€ 23.945	€ 0
	Other costs	€ 1.200.000	€ 1.200.000	€ 0
Profit module	***Operating Expense (OE)***			
	Direct Labor	€ 102.469	€ 102.420	-€ 48
	Indirect Labor	€ 45.332	€ 45.332	€ 0
	Fixed costs	€ 3.352.264	€ 3.352.199	-€ 66
	TOTAL (OE)	€ 3.500.065	€ 3.499.951	-€ 114
	Investments (I)			
	Inventory	€ 290.118.000	€ 83.820.000	-€ 206.298.000
	Capital	€ 27.114.000	€ 26.901.293	-€ 212.707
	TOTAL (I)	€ 317.232.000	€ 110.721.293	-€ 206.510.707
	Throughput (T)			
	Sales	€ 106.680.000	€ 106.680.000	€ 0
	Variable Costs	€ 78.860.629	€ 67.503.073	-€ 11.357.557
	THROUGHPUT	€ 27.819.371	€ 39.176.927	€ 11.357.557
	Net Profit	€ 24.319.305	€ 35.676.976	€ 11.357.671
	Return on investment	8%	32%	25%
	Productivity	795%	1119%	325%
	Investments turns	9%	35%	27%
	Cashflow	€ 1.066.533	€ 241.974.976	€ 240.908.443
	Unit price calculation			
	Material per coil	€ 31.047	€ 26.576	-€ 4.471
	OE per coil	€ 1.378	€ 1.378	€ 0
	Unit price per coil	€ 32.425	€ 27.954	-€ 4.472

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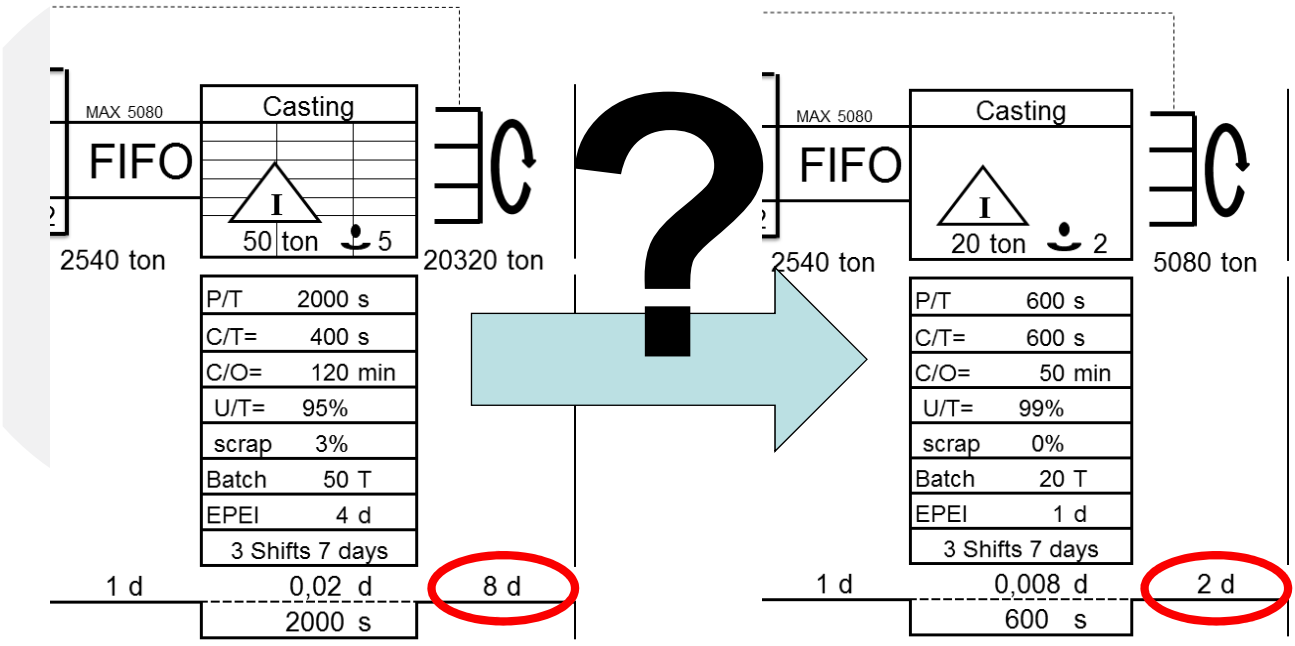
VSCM: Decision making

Dedicated Casting Machine ?



SCORECARD

		Current State	Future State	Future State + INV	Change + INV
	Leadtime	98	27	21	-6
	Total inventory value	€ 290.118.000	€ 83.820.000	€ 65.340.000	-€ 18.480.000
VS Cost module	Direct materials	€ 78.860.629	€ 67.503.073	€ 65.477.981	-€ 2.025.092
	Direct Labor	€ 102.469	€ 102.420	€ 99.152	-€ 3.268
	Maintenance	€ 3.543	€ 3.543	€ 3.543	€ 0
	Machine depreciation	€ 212.772	€ 212.707	€ 217.260	€ 4.553
	Indirect Labor	€ 45.332	€ 45.332	€ 45.332	€ 0
	Space	€ 12.004	€ 12.004	€ 12.004	€ 0
	Energy	€ 1.900.000	€ 1.900.000	€ 1.900.000	€ 0
	Internal logistics	€ 23.945	€ 23.945	€ 23.945	€ 0
	Other costs	€ 1.200.000	€ 1.200.000	€ 1.200.000	€ 0
Profit module	*Operating Expense (OE)*				
	Direct Labor	€ 102.469	€ 102.420	€ 99.152	-€ 3.268
	Indirect Labor	€ 45.332	€ 45.332	€ 45.332	€ 0
	Fixed costs	€ 3.352.264	€ 3.352.199	€ 3.356.752	€ 4.553
	TOTAL (OE)	€ 3.500.065	€ 3.499.951	€ 3.501.236	€ 1.285
	Investments (I)				
	Inventory	€ 290.118.000	€ 83.820.000	€ 65.340.000	-€ 18.480.000
	Capital	€ 27.114.000	€ 26.901.293	€ 27.549.660	€ 648.367
	TOTAL (I)	€ 317.232.000	€ 110.721.293	€ 92.889.660	-€ 17.831.633
	Throughput (T)				
	Sales	€ 106.680.000	€ 106.680.000	€ 106.680.000	€ 0
	Variable Costs	€ 78.860.629	€ 67.503.073	€ 65.477.981	-€ 2.025.092
	THROUGHPUT	€ 27.819.371	€ 39.176.927	€ 41.202.019	€ 2.025.092
	Net Profit	€ 24.319.305	€ 35.676.976	€ 37.700.784	€ 2.023.808
	Return on investment	8%	32%	41%	8%
	Productivity	795%	1119%	1177%	57%
	Investments turns	9%	35%	44%	9%
	Cashflow	€ 1.066.533	€ 241.974.976	€ 261.825.864	€ 19.850.888
	Unit price calculation				
	Material per coil	€ 31.047	€ 26.576	€ 25.779	-€ 797
	OE per coil	€ 1.378	€ 1.378	€ 1.378	€ 1
	Unit price per coil	€ 32.425	€ 27.954	€ 27.157	-€ 797

Conclusions

- **Traditional accounting** (full absorption costing), used for external reporting is **not** the best method **for internal decision making**
- For **management accounting** purposes it is better to use **throughput accounting** (with the same basic input data as the financial accounting)
- In order to **quantify financial benefits** while implementing lean we need a **value stream cost model** in order not to take decisions based on suboptimization
- A Value Stream Cost Model provides **readable, comprehensive insights into the cost structure**

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Who am I?

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Education:
* MS in Mechanical Engineering (1991) – Royal Military Academy, Brussels (B)
* MS in Industrial Management (1997) – Ghent University/Vlerick Management School (B)
* PhD in Industrial Engineering (2004) – Ghent University (B)

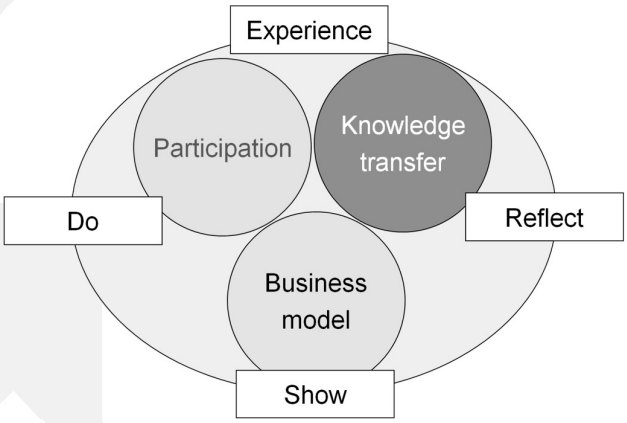
Professional experience:
1992-2004 Lecturer in Industrial Engineering at HORITO College Turnhout (B)
2000-2004 Research Associate at Ghent University – Dept. of Industrial Management (B)
* Grad. classes on Design of Production Systems and Operations Management
2004-… Professor at Ghent University – Dept. of Industrial Management (B)
* Grad. classes on Design of Manufacturing and Service Operations, Operations Management, Method Engineering and Work Measurement.
2000-… Guest lecturer at the Grado Dept. of Industrial and Systems Engineering at Virginia Tech, Blacksburg VA (USA)
2002 Examiner for the US Senate Productivity and Quality Award for the State of Virginia (USA)
2004-2010 Program Director 'Fellow in Industrial Engineering' program from the Flemish Engineers Chamber VIK (B)
2005-… Guest Professor at the Antwerp University (B)
* Grad. Class on Cost and Performance Benchmarking
2005-2010 Program Director of the "Master in Industrial Management" program at the Ghent University (B)
2005-… Founder and Coordinator of the 'Black Belt in Lean' training and certification program at the Ghent University (B)
2009-… Guest lecturer at the Vlerick Leuven-Gent Management School (B)
2010-… Member of the Advisory Board of the Institute of Industrial Engineers – Process Division (USA)

1993-.. Founder and president of VAN GOUBERGEN P&M Productivity Improvement (www.vangoubergen.com)
* +15 years of international experience in the area of set-up reduction, lean management and productivity improvement in different manufacturing and service industries throughout Europe, North America and Asia (a.o. Volvo, Akzo, Atlas Copco, Masterfoods/Mars, Danone, Philips, Coca Cola, Imperial, Lays, Belgian Railways, …)
2006-.. Founder and President of the CENTER FOR PRODUCTIVITY IMPROVEMENT ROMANIA (www.productivity.ro)

Senior Member of the Institute of Industrial Engineers, Member of the International Society for Occupational Ergonomics and Safety

Van Goubergen P&M Productivity Improvement

Training/Education (15%) - Implementation (85%)



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Some of our references...