

# plant - procurement

period 1

turn	inventory in inspection line			inventory ahead inspection line		
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
sum						
÷ 10						
value/unit	8 €	4 €	12 €	20 €	10 €	30 €
Current value	€	€	€	€	€	€



€ **1**

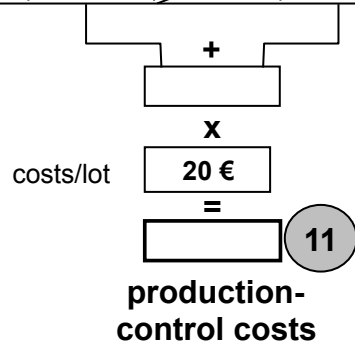
value inventory





## order backlog material

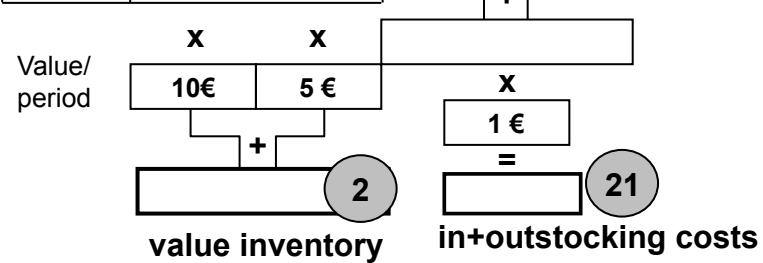
turn	black				white				red			
	No.	quantity	Plan	actual	No.	quantity	Plan	actual	No.	quantity	Plan	actual
-5	1	9	1									
-4	4	9	2		2	8	1					
-3	7	9	3		5	8	2		3	7	1	
-2	10	9	4		8	8	3		6	7	2	
-1	13	9	5		11	8	4		9	7	3	
-0	15	9	6		14	8	5		12	7	4	
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												

number incoming orders/period  $\frac{15}{10} = 1.5$ 
 $+$ 
 costs/order  $30 \text{ €}$ 
 $=$ 
**€ 10** purchase order costs

production plan				
turn	 black	 white		
	plan	actual	plan	actual
1	4		4	
2	3		5	
3	4		4	
4	3		5	
5	4		4	
6	3		5	
7	4		4	
8	3		5	
9	4		4	
10	3		5	
sum lots				





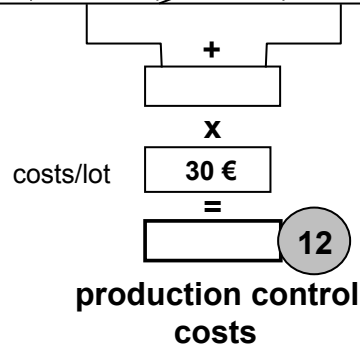
inventory in stock, work in process			entry	
turn	 black	 white	 black	 white
	black	white	black	white
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
sum				
÷ 10				









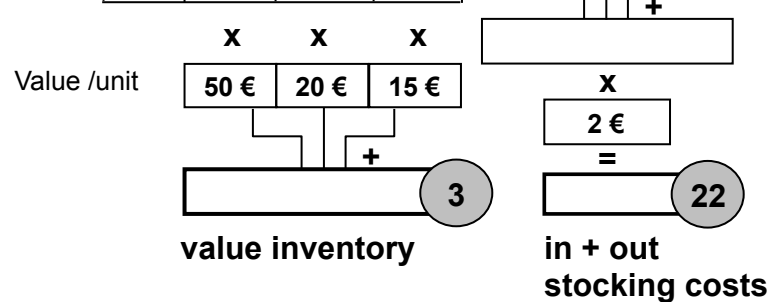
# plant - final assembly

period 1

production plan				
turn	 black	 white		
	plan	actual	plan	actual
1	0		8	
2	6		0	
3	0		8	
4	6		0	
5	0		8	
6	6		0	
7	0		8	
8	6		0	
9	0		8	
10	6		0	
sum lots				







inventory				entry		
in stock, work in process						
turn	 black	 white	 red	 black	 white	 red
	1					
2						
3						
4						
5						
6						
7						
8						
9						
10						
sum						
÷10						





# plant - finished good stock, delivery, order processing

period 1

entry		
turn	 black	 white
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
sum		

in stock and transit		
turn	 black	 white
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
Sum		
÷ 10		

order backlog - device			
black		white	
No.	quantity	turn	
		expected	confirmed
101	6	1	1
102	6	2	2
103	8	3	3
104	4	4	4
105	7	5	5
106	4	6	6
-----			



In + out stocking costs/unit  $\times$  3 € = In + out stocking costs 23



inventory Value/unit  $\times$  100 €  $\times$  60 € = inventory-/device + value inventory 4

number incoming orders/period  $\times$  60 € costs/order = Internal order costs 9

# sales - distribution center

period 1

entry		
turn	 black	 white
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
sum		

inventory + transit		
turn	 black	 white
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
sum		
÷ 10		

customer order	
turn	number of orders
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
sum	

transportation costs/units

X	X
30 €	15 €
=	=

transportation costs internal

+	
	6

procedural costs/unit

X
3 €
=

in+out stocking - costs

	24
--	----

inventory/units

X	X
150 €	90 €
=	=

value inventory

+	
	5

costs/order

X
40 €
=

order processing costs

	8
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# sales – order management

period 1

black



turn	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
initial	6																
+ entry		102 / 6		104 / 4		106 / 4											
- outflow	#3 / 5		#6 / 3														
			#4 / 2														
			#10 / 2														
= final stock																	

white



turn	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
initial	3																
+ entry	101 / 6		103 / 8		105 / 7		107 / 6										
-outflow	#5 / 2																
= final stock																	

# customer

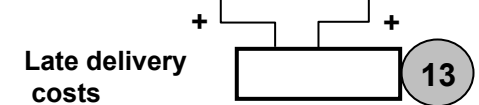
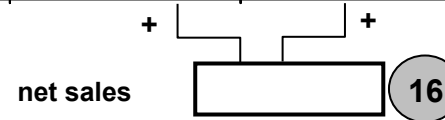
period 1

## order backlog

No.	device	quantity	turn expected	turn confirmed	turn delivered
1	W	3	1	1	
2	B	4	1	1	
3	B	5	3	3	
4	B	2	5	5	
5	W	2	3	3	
6	B	3	5	5	
7	W	6	1	1	
8	B	3	7		
9	W	6	2	2	
10	B	2	5	5	
11	B	2	7		
12	W	5	3		

net sales		device	
turn	black	white	
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
Σ			
net sales/unit	200€	120€	
net sales			

late delivery costs		quantity x turn	
turn	black	white	
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
Σ			
costs/unit	25 €	20 €	
sum			



- (A) number of capable orders
- (B) number of reliable orders
- (C) number of processed orders

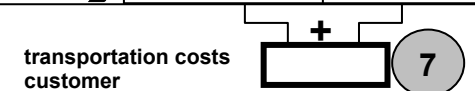
### delivery capability (DC)

$$DC = \frac{(A) \times 100\%}{(C)} = \boxed{\phantom{0000}} \text{ 14}$$

### delivery reliability (DR)

$$DR = \frac{(B) \times 100\%}{(C)} = \boxed{\phantom{0000}} \text{ 15}$$

transportation costs		
	black	white
quantity		
costs/units	40 €	25 €
Σ		



## cost survey and EVA calculation

Nr.		period 1	period 2	period 3
1	plant - procurement			
2	plant - subassembly			
3	plant – final assembly			
4	plant-finished goods stock			
5	sales- distribution center			
	<b>sum inventories</b>			
	fixed assets	24.000	24.000	24.000
	<b>sum assets</b>			
	capital charge(10%)			
6	transport costs (internal)			
7	transport cost customer			
8	order processing costs			
9	internal order costs			
10	purchase order costs			
11	production control cost			
12	production control cost(FP)			
13	late dlivery costs			
	<b>in+outstocking costs</b>			
21	material stock			
22	component stock			
23	finished product stock			
24	sales stock			
25	depreciation (10%)	2.400	2.400	2.400
26	others			
	<b>sum costs (6-26)</b>			
16	net sales			
	<b>EBIT (net sales - costs)</b>			
	<b>EVA(EBIT- capital charge)</b>			
14	<b>delivery capability</b>			
15	<b>delivery reliability</b>			