



CB1. How to make better business decisions?

Using the Cigar Box Method[®]

by Olivier van Lieshout

Global Facts

www.globalfacts.nl

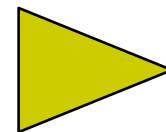
THE CONTEXT

SEE: [HTTPS://YOUTU.BE/5CQO200XQPU](https://youtu.be/5CQO200XQPU)

5P PROFIT PROGRAM[®]

On the road to profit, we follow a **logical** and **chronological** process of 5P's.

- P1. Planning
- P2. Product
- P3. Plant
- P4. People
- P5. Procedures



Profit Guaranteed!

Cigar Box Method®

The Cigar Box within the 5P Profit Program

Cigar Box 

- P1. Planning

- P2. Product

- P3. Plant

- P4. People

Cigar Box 

- P5. Procedures

P1. Planning

1. Select a suitable PMC. This means:

- Define your Product
- Define your Market
- Justify the Combination

2. Select a suitable value chain

- Define geographical location(s)
- Define suppliers and distributors

3. Calculate margins & contributions

CB1/CB2

4. Define investments needed

5. Calculate profit, ROI and PBP.

CB4

6. Write the business plan.

What is a **business plan**?

1. Define assumptions & actions that lead to profit.
2. Plan their execution.
3. Write a report, the business plan.
4. If you need credit: write a bankable proposal.

(business plan \neq bankable proposal)

P5. Procedures

Monitoring tools for better control:

- | | |
|--------------------------------------|------------|
| 1. Quality Assurance & Certification | To develop |
| 2. Cost prices | CB3 |
| 3. Equipment & maintenance | CB F4F |
| 4. Customer satisfaction | CB6 |

THE PRINCIPLES

Cigar Box Principles

- 1) Clear **cause** → **effect** relationships that are logic and chronologic.
- 2) An algorithm, a template, a model.
- 3) It makes calculations easy.
- 4) Garbage in,

Cigar Box is a toolkit to **calculate**
... and make better business decisions.

Cigar Box Method®

CB1: cost price for one single product	P1
CB2: cost price for a range of products	P1
CB3: cost price monitoring on a daily basis	P5
CB4: investment analysis	P1
CB5: value chain analysis	P1
CB6: customer satisfaction analysis	P1, P5

Visit: www.globalfacts.nl for free downloads.

Cigar Box applications worldwide > 100 users



Why are we in business?

To make profit!



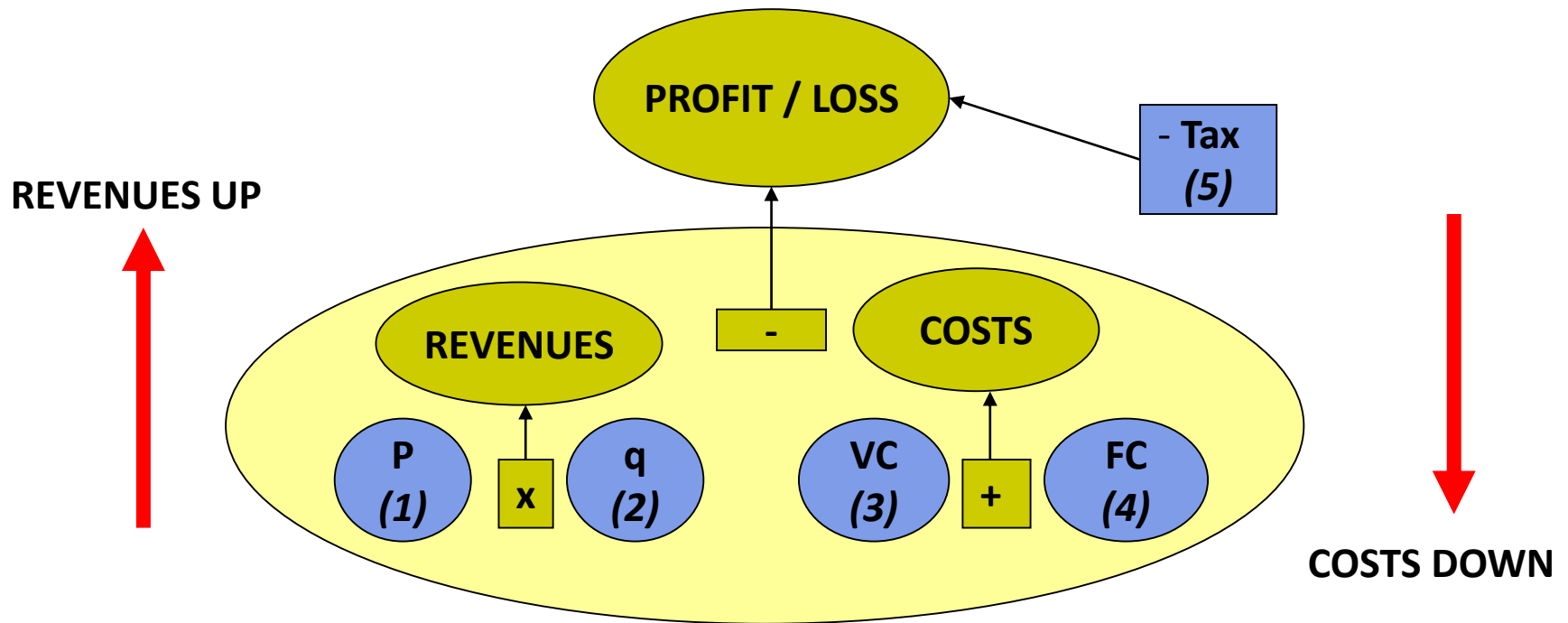
Chapter 1

CB1. Profit calculation made easy

Learning objectives:

1. *There are only five profit parameters.*
2. *Difference variable and fixed costs.*
3. *Difference between margin and contribution.*
4. *Difference bookkeeping and Cigar Box Method.*

How to calculate profit ?



1. P = price
2. q = quantity sold
3. VC = variable cost (raw materials, processing, packaging)
4. FC = fixed cost (depreciation, interests, overhead)
5. Tax = taxes, duties (creative bookkeeping, connections, ...) ¹⁴

Profit parameters

There are **ONLY FIVE** parameters

- P Price (*per unit*)
- VC Variable cost (*per unit*)
- q Quantity (*in units per period*)
- FC Fixed cost (*per period*)
- T Tax % of profit (*per period*)

*Note: P, VC, q must refer to the **same unit**.*

*q, FC, T must always refer to the **same period**.*

But only four can be influenced by the entrepreneur!

Profit parameter 1: Price

Price has many components:

Price

EUR/ton

DDP Delivered, duties paid 20

DDU Delivered, duties unpaid 18

CIF Cost, Insurance, Freight 18

C&F Cost and Freight 17

DAF Delivered at Frontier 14

FOB Free on Board 12

INCO TERMS

EXW Ex Works 10

Profit parameter 2: VC

Variable cost has four components:

VC

- VC1 Cost of raw materials and ingredients
- VC2 Cost of processing inputs into outputs
- VC3 Cost of packaging
- VC4 Cost of delivery
 - transport, sales commission, import duties



Profit parameter 3: quantity

- q = actual quantity sold per period
- q_{CAP} = quantity at full capacity utilization
quantity/hour * hours/day * days/year (harvest season)
3 ton/hour * 22 hours/day * 90 days/yr = 5940 ton/year
- q_{BE} = break-even quantity, where profit = 0

Profit parameter 4: FC

Fixed cost has four components:

FC

- FC1 Depreciation of fixed assets
- FC2 Interest paid on capital
- FC3 Overhead
 - salaries, rent, maintenance, etc.
- FC4 Marketing
 - advertisement, design of packaging, etc.

Profit parameter 5: Tax

- This Tax refers only to profit tax
- Other taxes are either VC or FC
- Tax is only paid when there is a profit
- Conclusion:

Tax does not cause losses...



Is Quality a Profit Parameter?

NO! But **Quality** affects how?

- **P.** Price
- **VC.** Variable Costs
- **q.** Quantity sold
- **FC.** Fixed costs
- Conclusions:
 1. Quality is Choice!
 2. Know the price elasticities!

What causes losses?

- P – too low
- VC – too high
- q – too low
- FC – too high

- Which parameter is the most difficult one to control by management?
- Answer: **q – the quantity sold**
 - In agro-processing: $q_{(RM)}$ the available raw material
 - In farming: $P_{(BE)}$ the breakeven sales price

Recognize costs - exercise

Are the following Variable or Fixed costs?

1. Ingredients
2. Labels
3. Bank charges
4. Machine repair
5. Machine maintenance
6. Sugar transport
7. Depreciation
8. Social tax
9. Diesel for the boiler
10. Electricity in the factory
11. Electricity in the office
12. Temporary labor
13. Management salary
14. Detergents and gloves
15. Rental of bill board
16. Carton boxes

Margin and contribution

What is **MARGIN**?

- Margin = earnings per unit
- Margin = price – variable cost per unit
- Margin = $P - VC$

What is **CONTRIBUTION**?

- Contribution = earnings per period
- Contribution = margin per unit * units sold
- Contribution = $(P - VC) * q$

Margin %

- Formula: $(P-VC)/P * 100\%$
- Margin % indicates **risk**
- Usual risk levels in food processing and bakery are:

Margin %	Level	Comment
<15%	Very risky	Only acceptable when the production process parameters and all prices are fully under control.
15-25%	Risky	Only acceptable if production and price fluctuations are within 5-10% range.
25-35%	Normal	
35-45%	Robust	
45-70%	Very robust	
>70%	Unlikely	Check your calculations again!

What causes profits?

- Margins – higher
- Quantity sold – higher
- Contribution – higher
- Fixed cost cannot be controlled in short term
- **Hence: maximize contribution!!**
 - Low margin * low quantity
 - Low margin * high quantity
 - High margin * low quantity
 - High margin * high quantity

Profit calculation (repetition)

- P → Price (per unit)
- VC → Variable costs (per unit)
- q → quantity (in units per period)
- FC → Fixed costs (per period)
- $(P-VC)$ → Margin (per unit)
- $(P-VC)*q$ → Contribution (per period)
- $(P-VC)*q - FC$ → Profit (per period)

Eight cost types (repetition)

- VC1 → Cost of raw material & ingredients
- VC2 → Cost of processing (electricity, labor, ...)
- VC3 → Cost of packaging
- VC4 → Cost of delivery (transport, duties, ...)
- FC1 → Cost of depreciation
- FC2 → Cost of capital (interest, bank charges)
- FC3 → Overhead (salaries, rent, phones, ...)
- FC4 → Marketing (advertisements,...)

Recognize costs - exercise

Specify these costs

1. Apples
2. Stickers
3. Bank commission
4. Repair on transformer
5. Pump maintenance
6. Transport crates of beer
7. Depreciation
8. Pension payment
9. Furnace oil for the boiler
10. Electricity for the cooler
11. Import duties
12. Harvest labor
13. Management perks
14. Detergents and gloves
15. Sales commission
16. New packaging design

CB1

*An overview:
Profit calculation for one product
for one year*

4 parameters

	EUR	
	per ton	
Price (delivered client)	1,270	100%
VC4 Sales commission (0%)	-	0%
VC4 Distribution costs	112	9%
Price (EXW)	1,158	91%

	EUR	
	per year	
Revenues (Own shop + Wholesale)	4,318,000	
Total Cost	4,241,532	
Profit Before Tax	76,468	
Profitability %		2%

24 data fields...

Price (flour delivered)	194	
Processing ratio	0.40	
Raw Material cost	78	10%
Other ingredients	392	49%
VC1	470	59%
Production cost per hour	127	
Production in tons per hour	0.800	
VC2	159	20%
Cost of packing (in 5.4 kg carton)	0.27	
Number of crates per ton	185	
VC3	49	6%
FG losses % in storage/ returned goods	18%	
VC	797	100%

Define your profit.

Asset value (+stocks of goods)	3,537,857	
Depreciation %	6.4%	
FC1	225,610	20%
Debts	827,226	
Interest rate	5.6%	
FC2	45,989	4%
Number of FTE employed	100	
Overhead bakeries	327,787	28%
Overhead HQ	97,535	8%
FC3 - Bakeries + HQ overhead	425,322	37%
FC4 - Shops Overhead	453,387	39%
FC % attributed to product	100.0%	
FC (attributed to product)	1,150,308	100%

Get the big picture first.

Margin per ton	361	
Margin %	28%	
VC	797	70%
Fixed Cost / q	338	30%
Total Cost / q	1,136	100%
Profit / q	22	

Volume sold q (ton/year)	3,400
Contribution per year	1,226,776
Break even volume (sales in ton/year)	3,188
Break even volume (flour in ton/year)	1,275
Output capacity per hour in ton	0.8
Production hours per day	20
Length of production season in days	350
Maximum capacity per year (tons)	5,600
Capacity utilization	61%

Play with your data: what if...?

Be sure

ELITE FARM - FIRST MULTIPLICATION FIELD | IRRIGATED |

2015

CB1 Potatoes from F2 seed; 50% sold for seed; 50% packed in 10 kg bags for consumer market

Hectares planted	4.8	ha	Yield per ha	19.5	ton/ha	Season	120 days																																																																																																																																																			
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Note: figures in blue are assumptions; figures in pink are calculated in another sheet; figures in black are formulas



Chapter 2

Why use the Cigar Box Method?

Argument 1:

Bookkeeping is incomplete and leads to wrong business decisions

Profit formula 1

Bookkeeper's method

- Profit = Revenues – Total costs
- Formula:
- Profit = $P * q - (VC * q + FC)$

“Total revenue, minus total cost is profit”

Which documents are needed?

Profit formula 2

Cigar Box method

- Profit = Contribution – Fixed costs
- Formula:
- Profit = **$(P - VC) * q - FC$**

“Contribution minus fixed cost is profit”

Which documents are needed?

Comparing methods

Bookkeeping:

$$P * q - (VC * q + FC) = \text{Profit}$$

Sales per period
Costs per period

Cigar Box:

$$(P - VC) * q - FC = \text{Profit}$$

Margin per unit * units per period
per period

Contribution per period

End result: is the same!

Why Cigar Box method?

- Bookkeeping:

Year 1	A	B	C	Total
P	100	150	200	
q	15	10	10	
Revenues	1500	1500	2000	5000
Variable costs				4300
Contribution				700
Fixed costs				500
Profit before tax				200

Year 2	A	B	C	Total
P	100	150	200	
q	15	20	13	
Revenues	1500	3000	2600	7100
Variable costs				6350
Contribution				750
Fixed costs				500
Profit before tax				250

- Profit yr 2: up 25%

- Cigar Box:

Year 1	A	B	C	Total
P	100	150	200	
Variable cost/unit	80	160	150	
Margin/unit	20	-10	50	
q	15	10	10	
Contribution	300	-100	500	700
Fixed costs				500
Profit before tax				200

Year 2	A	B	C	Total
P	100	150	200	
Variable cost/unit	80	160	150	
Margin/unit	20	-10	50	
q	15	0	13	
Contribution	300	0	650	950
Fixed costs				500
Profit before tax				450

- Profit yr 2: up 125%!



CB2 – Contribution Analysis

CB2 Bakery, Bosnia			2012			BAM	Bosnian Mark	BAM	
1	Category		1	2	3	4	5	6	50
2	Product	Details	Baked	Baked	Baked	Frozen	Frozen	Frozen	Baked
3	Primary and secondary packaging	Per Year	Hljeb posavac Paper bag, 15 in a crate (1x15)	Domaci hljeb 600 g Paper bag, 15 in a crate (1x15)	Pogaca ispod saca Paper bag, 18 in a crate (1x18)	Mini francuz tijesto 250 gr Plastic bag, 60 (1x60)	Mini francuz tijesto pp	Lisnato virsla tijesto	Hljeb casteggio
4	Unit weight	in gram	600	600	720	200	200	140	600
5	Price point of unit	in Mark	1.01	1.09	1.17	0.25	0.39	0.96	1.24
12	Price EXW	per kg	1.31	1.60	1.54	1.14	1.84	6.74	1.95
15	VC1 / kg		0.56	0.57	0.57	0.73	0.73	2.46	0.64
16	VC1 %		71%	71%	67%	71%	69%	87%	74%
20	VC2 / kg		0.15	0.15	0.20	0.28	0.28	0.28	0.15
21	VC2 %		19%	19%	24%	27%	26%	10%	18%
26	VC3 / kg		0.03	0.03	0.02	0.01	0.03	0.05	0.01
27	VC3 %		4%	4%	3%	1%	3%	2%	1%
28	Returned goods %		7.0%	7.0%	7.0%	1.0%	1.0%	1.0%	7.0%
29	VC		0.80	0.81	0.85	1.03	1.06	2.81	0.86
30	Margin	per kg	0.51	0.79	0.69	0.11	0.78	3.93	1.10
31	Margin %		49%	39%	50%	45%	10%	43%	58%
38	Production per year	in units	1,552,496	243,450	165,438	64,611	140,052	101,550	31,778
41	Production per year	in kg	547,622	146,070	99,263	46,520	28,010	20,310	4,449
42	Contribution		520,430	74,140	78,840	32,020	3,200	15,880	17,480
43	Contribution %		100%	14%	15%	6%	1%	3%	3%



Why use the Cigar Box Method?

Argument 2:

*Allocating fixed costs leads to
wrong business decisions.*

Cost price formula

- Total cost = Variable costs + Fixed costs
- Cost price per unit = TC / q
- Formula:

$$TC/q = VC + FC/q$$

Is the cost price a constant figure?

Answer: **no**, it fluctuates with q , the quantity sold!

In the cost price, the variable costs are fixed and the fixed costs are variable...!

Allocating fixed costs to SKU's

CB2 Bakery, Bosnia			2012			BAM			Bosnian Mark			BAM		
1	Category		1	2	3	4	5	6	50					
2	Product	Details	Baked	Baked	Baked	Frozen	Frozen	Frozen	Baked					
3	Primary and secondary packaging	Per Year	Hljeb posavac Paper bag, 15 in a crate (1x15)	Domaci hljeb 600 g Paper bag, 15 in a crate (1x15)	Pogaca ispod saca Paper bag, 18 in a crate (1x18)	Mini francuz tijesto 250 gr Plastic bag, 60 (1x60)	Mini francuz tijesto pp	Lisnato virsla tijesto	Hljeb casteggio					
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20	VC2 / kg		0.15	0.15	0.20	0.28	0.28	0.28	0.15					
21	VC2 %		19%	19%	24%	27%	26%	10%	18%					
26	VC3 / kg		0.03	0.03	0.02	0.01	0.03	0.05	0.01					
27	VC3 %		4%	4%	3%	1%	3%	2%	1%					
28	Returned goods %		7.0%	7.0%	7.0%	1.0%	1.0%	1.0%	7.0%					
29	VC		0.80	0.81	0.85	1.03	1.06	2.81	0.86					
30	Margin	per kg	0.51	0.79	0.69	0.11	0.78	3.93	1.10					
31	Margin %		49%	39%	50%	45%	10%	43%	58%	56%				
32	FC	per kg	358,284	0.65	0.65	0.65	0.65	0.65	0.65					
33	TC (EXW)	per kg		1.45	1.46	1.50	1.68	1.71	3.47	1.51				
34	TC (EXW)	per unit		0.87	0.88	1.08	0.34	0.34	0.49	0.91				
35	Profit (loss)	per kg		-0.15	0.14	0.03	-0.54	0.13	3.28	0.44				
36	Profit (loss)	%	15%	-11%	9%	2%	-47%	7%	49%	23%				
38	Production per year	in units	1,552,496	243,450	165,438	64,611	140,052	101,550	31,778	6,112				
41	Production per year	in kg	547,622	146,070	99,263	46,520	28,010	20,310	4,449	3,667				
42	Contribution		520,430	74,140	78,840	32,020	3,200	15,880	17,480	4,030				
43	Contribution %		100%	14%	15%	6%	1%	3%	3%	1%				



Why use the Cigar Box Method?

Argument 3:

*Classic P&L is not actionable
CB2 P&L helps with business
decisions.*



Better understanding of P&L

Table 1 - P&L Classic		June 2013 - May 2014	
Revenues from sales	Direct costs	4,318,000	
Other revenues		-174,393	
Total revenues		4,143,607	96%
COGS		2,473,565	
Gross profit		1,670,041	39%
G&A		634,552	15%
Indirect taxes	Indirect costs	3,414	0%
Distribution		408,049	9%
Marketing		45,339	1%
EBITDA		578,689	13%
D&A		225,610	5%
EBIT		353,079	8%
Interest + leasing		36,340	
FX Loss/FX Gain	Indirect costs	5,001	
Provision recovery		1,460	
Oth. Fin. expenses		827	
Non-recurring costs		2,361	
Profit before tax		307,090	7%
Taxes		603	
Net Income		306,487	7%
Cash flow		532,097	12%

Table 1 - P&L Cigar Box		June 2013 - May 2014	
Sales		4,318,000	
VC4 distribution costs		379,984	9%
Sales (EXW)	Variable costs	3,938,016	
VC1 (Raw materials)		1,597,831	64%
VC2 (Processing cost)		540,431	22%
VC3 (Packing materials)		167,963	7%
FG Losses, Returned goods		174,393	7%
Total VC		2,480,618	100%
Contribution		1,457,398	34%
FC3 (Bakeries + HQ overhead)		425,322	10%
FC4 (Shops overhead)		453,387	10%
EBITDA	Fixed costs	578,689	13%
FC1 (Depreciation)		225,610	5%
EBIT		353,079	8%
FC2 (Interest + fin. cost)		45,989	1%
Total FC		696,921	16%
Taxes		603	
PROFIT AFTER TAX		306,487	7%
Cash flow		532,097	12%



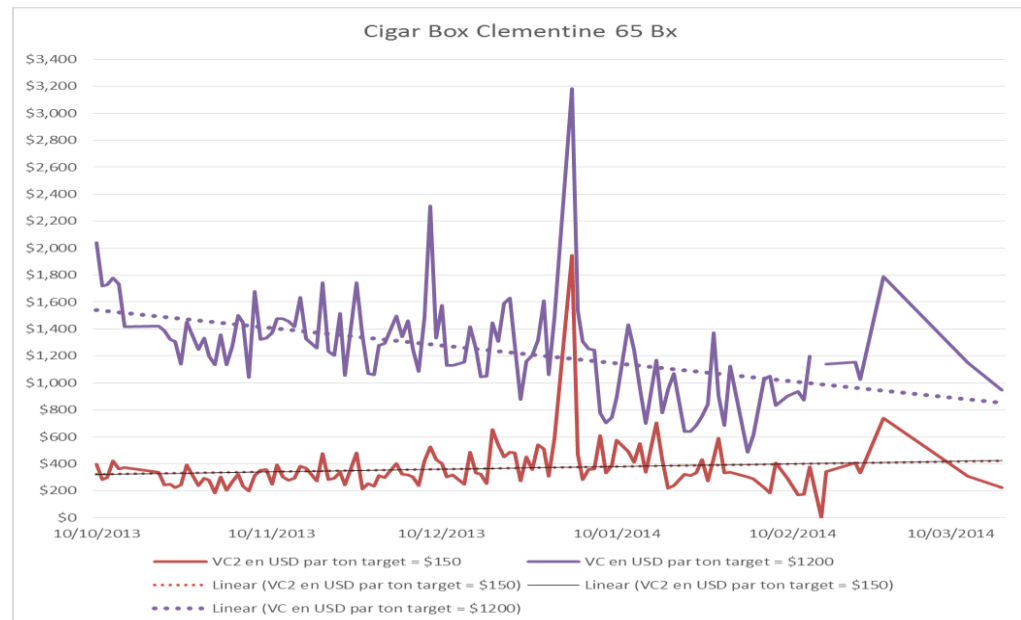
Why use the Cigar Box Method?

*Argument 4:
Daily KPI updates,
not analysis after one month.*



CB3 – Operational monitoring

- Keep track of costs & KPI on a daily basis
- Benchmark costs & KPI's
- Take action on deviations
- Continuous improvement





How to apply the Cigar Box?

- Stand alone in Excel
- **CB2:** Adapt existing bookkeeping system
 - Add CB labels to chart of accounts
 - Add CB labels to articles lists
 - Design CB2 periodic report
- **CB3:** Adapt existing ERP system
 - Add actual VC1, VC2, VC3 to production orders
 - Add non-financial KPI's (kWh, liters, machine hours, OEE, Scada, MES)
 - Design CB3 daily report

Who can apply the Cigar Box?

- Your local software supplier
- In consultation with a certified Cigar Box specialist.
- Quite easy really.... 😊



Cigar Box Method®

We guarantee...

...your profit!

[Click to review how we do that](#)



How Can You Make Better Business Decisions?

Use the Cigar Box Method®

Thank you for your attention!