

A large, stylized, light-colored 'DeuS' logo is positioned on the left side of the slide, partially overlapping the blue background. The letters are thick and rounded, with the 'D' and 'S' being particularly prominent.

European Open Design School for  
Regional Sustainable Development  
(DeuS)

# MEASURING DESIGN

Using data for pricing - Part one

# Design Management 1

DATA, MEASURING AND NAVIGATING

# Contents

## MEASURING DATA

### MICRO-ECONOMY

1. Calculation
2. Hourly wage
3. Project costs

### MESO-ECONOMY

4. R.O.I. of Design

### MACRO-ECONOMY

5. KAT- Study, Design ladder

## DATA COLLECTION

### MEDIATIZATION

1. User Models (Ethnographie)
2. Focus groups (qualitative methods)
3. Customer Experiences Analysis

### DATAFICATION

4. Datafication: Facebook – Google Analytics
5. Algorithm and Design Management

### KEY PERFORMANCE INDICATORS

# R.O.I. IN DESIGN

return of investment

## MEASURING DESIGN

What do you expect?



# ROI for the blue peahens and peacocks

**$a * b^n$**

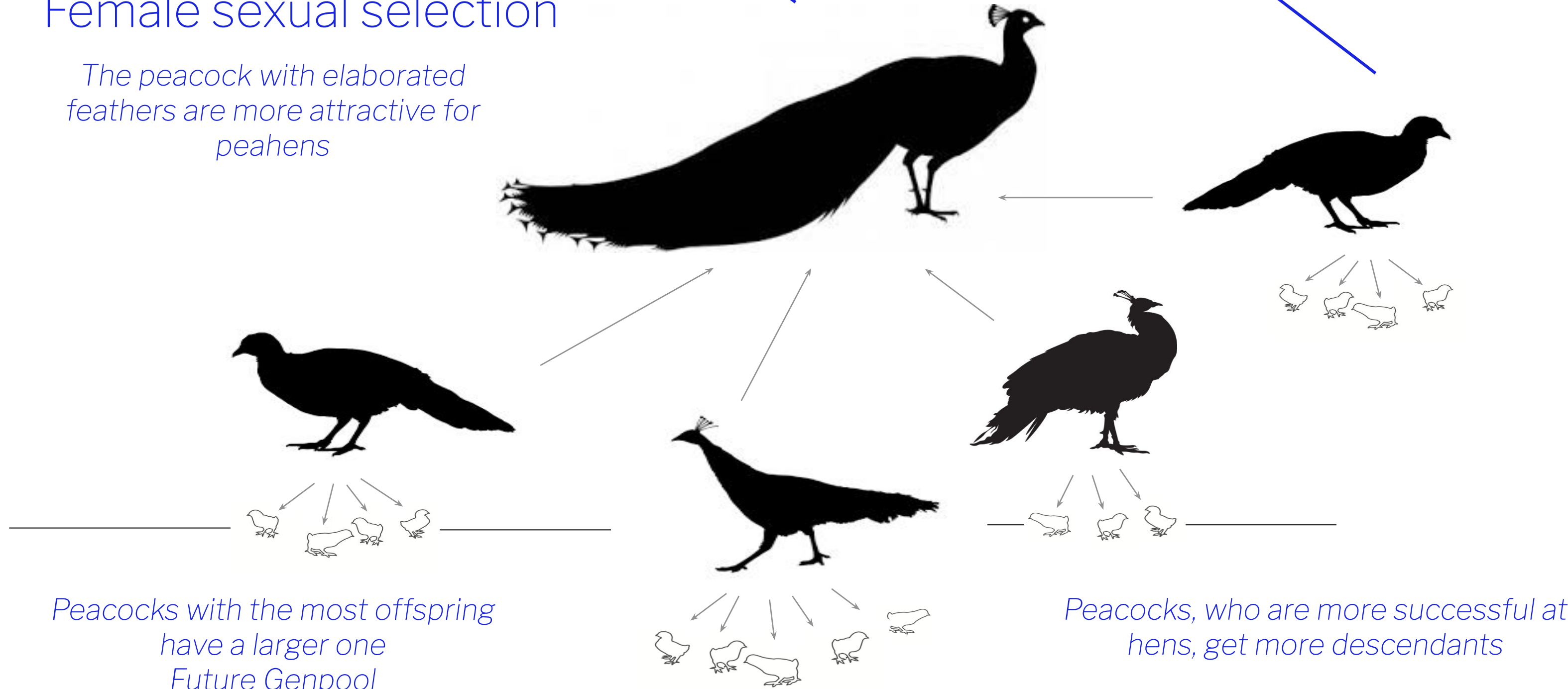
1	2	3	4	5
4	16	64	256	1024

$a = 1$   
 $b = 4$   
 $n = 5$   
 $\wedge = \text{Potency}$   
*Snowball- Pyramid-, Ponzisystem*

$a = 1$   
 $b = 4$   
 $n = 5$   
 $\wedge = \text{Potency}$

## Female sexual selection

*The peacock with elaborated feathers are more attractive for peahens*



*Peacocks with the most offspring have a larger one Future Genpool*

*Peacocks, who are more successful at hens, get more descendants*



Source: Petrie, Halliday, & Sanders, 2001



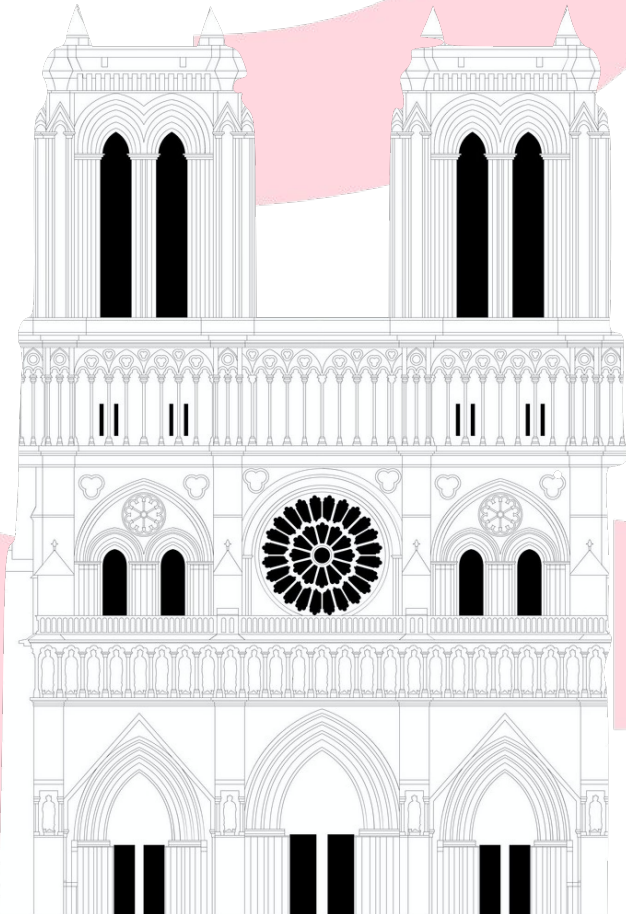
# Calculation of R.O.I.

**ROI** stands for "Return on Investment".

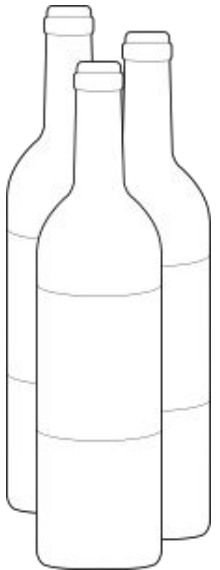
It is a way to measure the value of investments.  
You can use this formula to calculate it:

$$\text{ROI (\%)} = \frac{\text{total revenue} - \text{total costs}}{\text{total costs}} \times 100$$

## The well thought-out design sold to this day

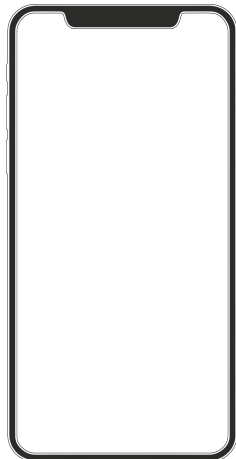


**1,2 millions  
visitors**



**75%**

of the respondents confirmed that the appealing design of a label for the purchase decision was of great importance.



**1,4**

**billions  
iPhones**

# Designer's dilemma

## Pareto-Effect or 80:20 rule

Is a statistical phenomenon in which a few elements determine almost the entire effect, e.g.:

**80%** of sales are usually achieved with 20% of the products,

**80%** of the benefits are only generated by 20% of the effort,

**80%** of sales are achieved with 20% of customers (= regular customers),

**80%** of the calls are carried out with 20% of its stored contacts,

**80%** of the agricultural area will be obsessed by only 20% of the population.

**The Pareto effect only occurs when the elements of the system are independent of each other.**

*It would be nice if all of the data which sociologists require could be enumerated because then we could run them through IBM machines and draw charts as the economists do.*

*However*

***not everything that can be counted counts and not everything that counts can be counted***

*Informal Sociology: A Casual Introduction to Sociological Thinking, William Bruce Cameron 1963*



# Mediatisation and Datification

Digitisation and convergence make everyday actions easily measurable.





# METHODS

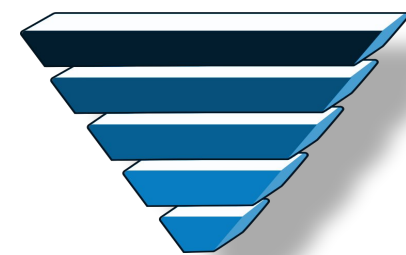
# Top-down vs Bottom-up



## COLOMBO PRINCIPLE

- At the beginning, victims and murderers are shown - the culprit is known from the beginning.
- Only then do the investigations in small steps lead to the result.

You start with the hypothesis, the result or previous knowledge. The recognition is based on single observations. This top-down method concludes from a series of observable numbers, data, facts and theories to the entirety of the event or population.



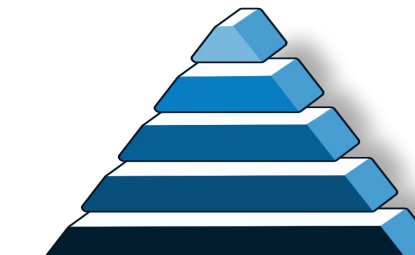
**DEDUCTIVE  
METHOD**



## MISS MARPLE PRINCIPLE

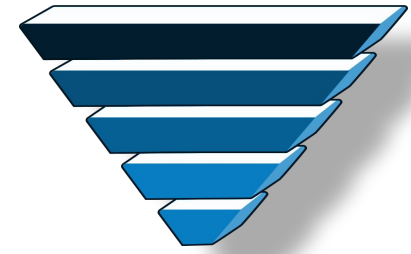
- At the beginning, a dead body is shown.
- A puzzle is presented, in which with a lot of sophistication the final evidence is built up.
- In the final there is a big revelation and a villain is uncovered.

The further progresses the case, the higher the information density. This method is referred to as a bottom-up method, because the topic is rolled up from the base.



**INDUCTIVE  
METHOD**

# Bottom-up vs Top-down



## DEDUCTIVE METHOD

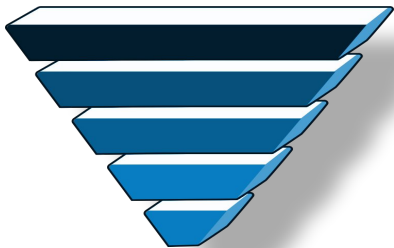


## INDUCTIVE METHOD

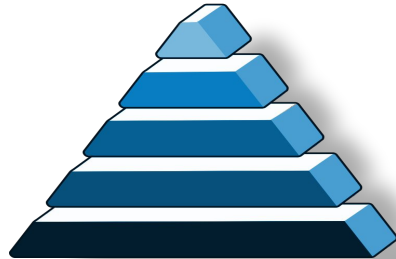
CRITERIA	Quantitative Research	Qualitative Research
Research perspective	View from the researchers external perspective	The perspective of those affected is the focus of interest
Context of the research	"Hard", replicable data	"Soft" and "close to reality" data
Research process	Static	Dynamic
Theory	Confirmation of pre-defined hypotheses	Discovery and development of hypotheses or theories from the found data / material
Approach	<b>Deductive</b> , measuring	<b>Inductive</b> , understanding meaning
Insight	Explain causal connections and generalisation of samples to total populations	Exploration of Lifestyles and interactions
Methods	z. B. experimentation or observation	z. B. Interview, group discussion, qualitative content analysis, observation



# Bottom-up vs Top-down



**DEDUCTIVE METHOD**

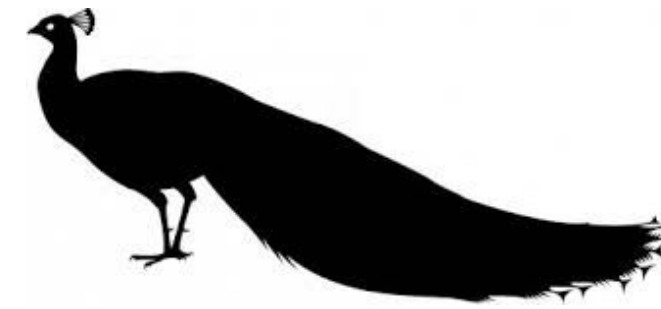


**INDUCTIVE METHOD**

FIELD	Quantitative Research	Qualitative Research
Business management	Success figures, Sales figures	Segmentation
Marketing	Key performance indicators	Customer Journey Maps
Research Design	Break Even	Personas
		Moodboards
Approach	Deductive, measuring	Inductive, Understanding meaning
Insight	Explain causal connections and generalisation of samples to total populations	Exploration of Lifestyles and interactions
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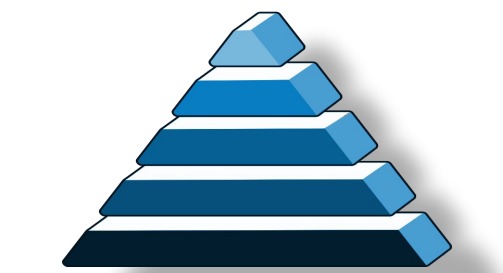
# 1. Summary

ROI for the blue peahens and peacocks



DEDUCTIVE  
METHOD

Top-Down



INDUCTIVE  
METHOD

Bottom-Up



Digitalisation  
Convergence  
Mediatisation  
Datafication

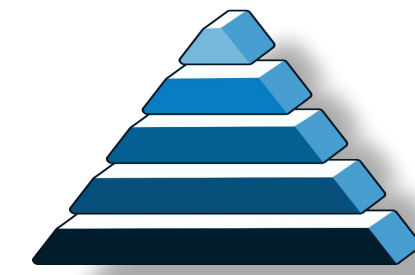
Design Management  
DATA, MEASURING AND NAVIGATING

# KPIs FOR DESIGN



# Types of costs

$$Y \text{ (Total Costs)} \\ = \\ V \text{ (Variable Costs)} + F \text{ (Fix Costs)}$$



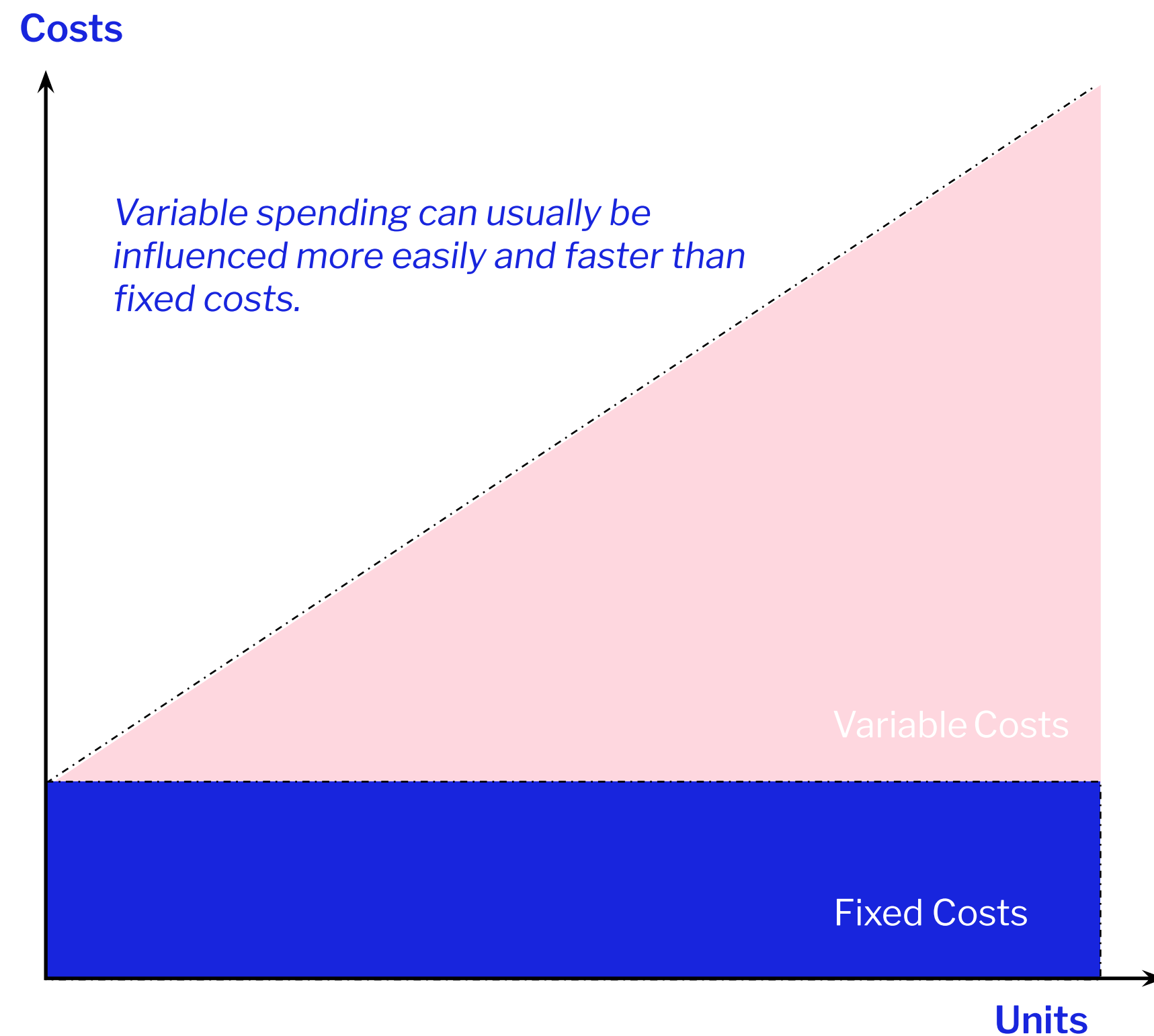
## INDUCTIVE METHOD

### VARIABLE COSTS TYPES

- Wages influenced by the order situation and therefore fluctuate, for example for chord work.
- Energy costs for machine operation: They only arise when worked, and their height depends on the workload
- Fuels: Expenditure for this depends on the actual driving performance.
- Raw materials: Prices depend on larger purchase quantities.

### FIXED COSTS

- Rent for offices or production rooms
- Insurance
- Salaries of the company management and other permanent employees
- Energy costs that are not dependent on production, e.g. the lighting of the offices
- Payments for maintenance and cleaning
- Tax advice services
- All costs, even if no production takes place

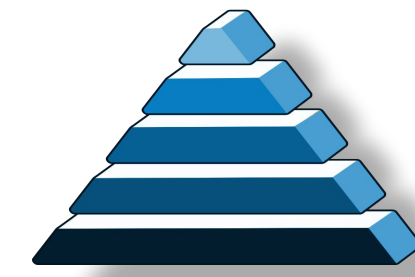


# Annual working hours

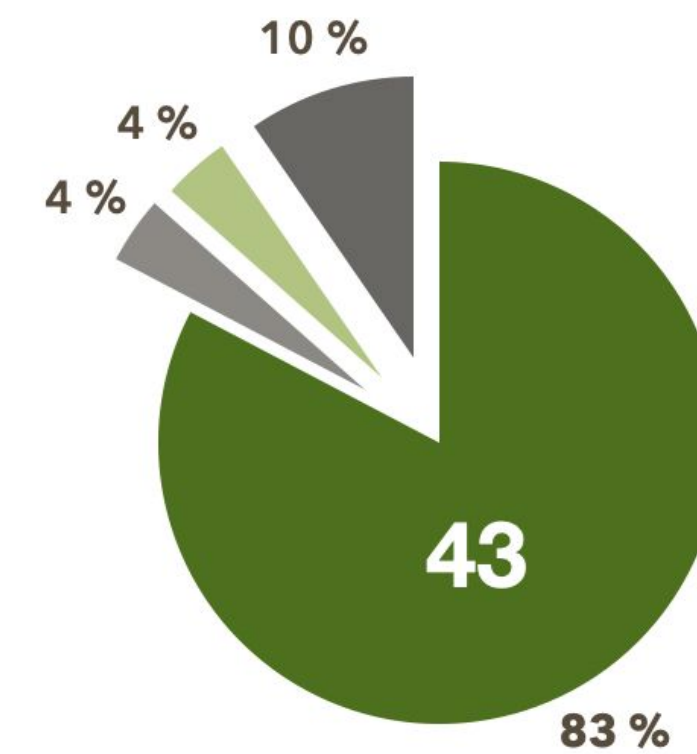


Annual working hours approx.

$$52 - 5 - 2 - 2 = 43 \text{ Weeks} \times 40 \text{ h} = 1720 \text{ h}$$



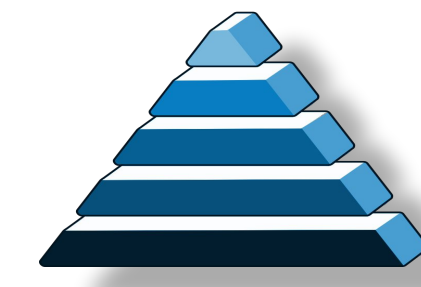
## INDUCTIVE METHOD



- 43 Work weeks
- 2 Free weeks
- 2 Week sick leave
- 5 Weeks vacation

# Minimum hourly rate

	direct costs/ month	months	total	
Flat	€ 700,00	12	€ 8.400,00	
Food	€ 460,00	12	€ 5.520,00	
Transport	€ 150,00	12	€ 1.800,00	
Computer	€ 1.400,00		€ 1.400,00	
Social Insurance/Pension	€ 450,00	12	€ 5.400,00	
Telecom	€ 150,00	12	€ 1.800,00	
Rental fee	€ 350,00	12	€ 4.200,00	
Various issues	€ 120,00	12	€ 1.440,00	Average Costs
<b>Total expenses</b>			<b>€ 29.960,00</b>	€ 17,42 /17,50)
				Average Income
Income	€ 2.500,00	12	€ 30.000,00	€ 17,44 (17,50)
<b>Total outgoing/incoming</b>			<b>€ 59.960,00</b>	
Annual Working Hours			1.720h	€ 34,86 (35,00) ø Minimum Hourly Rate



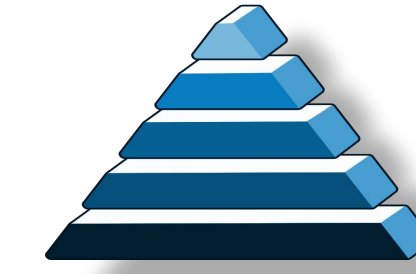
**INDUCTIVE METHOD**




$$\begin{aligned}
 & Y \text{ (Total Cost) / } 1720 \text{ (Annual working hours)} \\
 & = \\
 & X \text{ (Minimum Hourly Rate)}
 \end{aligned}$$



# Real hourly wage



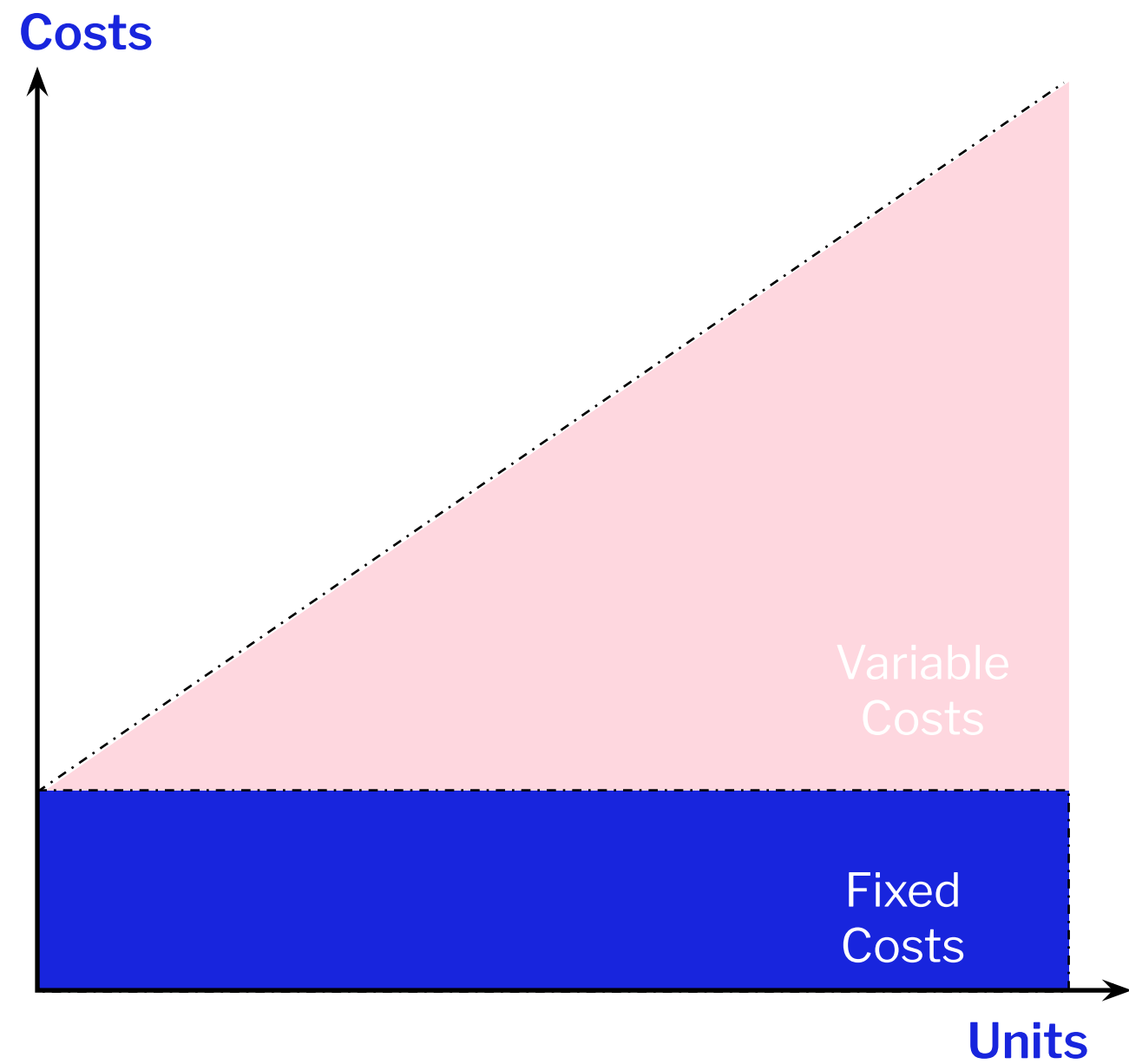
## INDUCTIVE METHOD

Daily rate e.g. Consulting > 8h/day		€ 600	€ 1.200,00
Profit surcharge/mark-up 30%		€ 75,00	€ 150
Real Productivity 1 / 3h € (Factor 1,6)		€ 56,00	€ 112
Sold hours 50% (Factor 2)		€ 35,00	€ 70
		.....	.....
		<b>€ 17,50</b>	<b>€ 35</b>

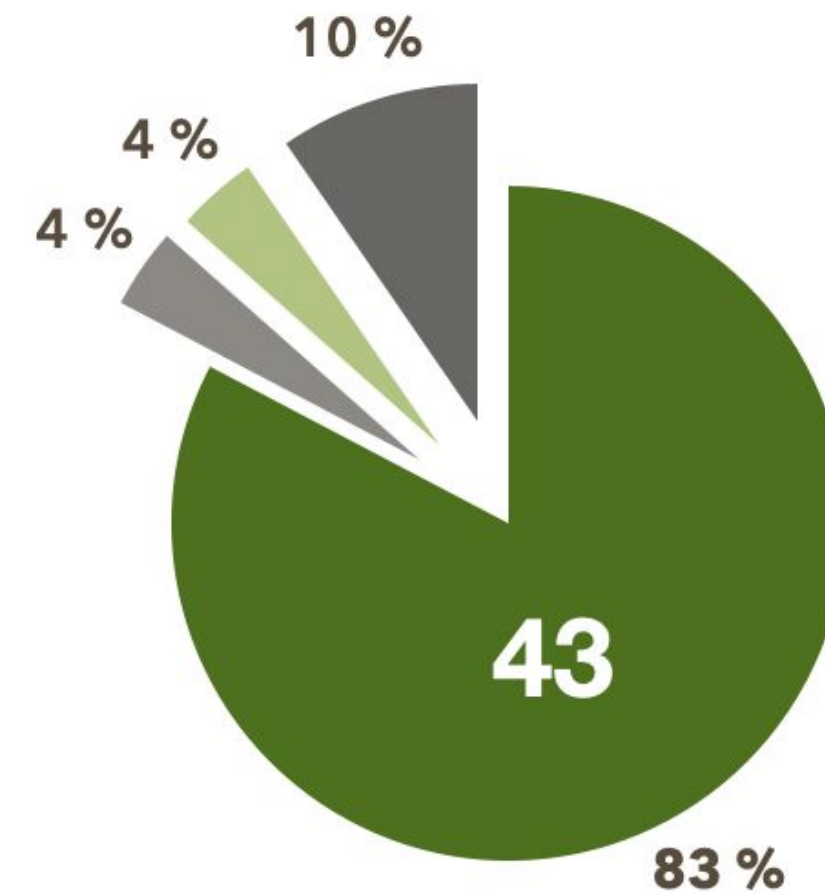
All prices are rounded

$X$  (Minimum Hourly Wage ) x  $Z$  (Profit Mark Up) =  $R$  (Real Hourly Wage)  
 $17,42€ \times 0,5 = 35€$  (50% of Sold Hours)  
 $35€ \times 1,6 = 56€$  (only  $\frac{1}{3}$  productive Hours,  $\frac{2}{3}$  administrative/ communication etc)  
 $56€ + \text{Profit Margin of } 30\% = 75€$  Minimum of Real hourly Wage  
 150€ hourly rate is recommended which equals in a daily rate of 1.200€

# 2. Summary



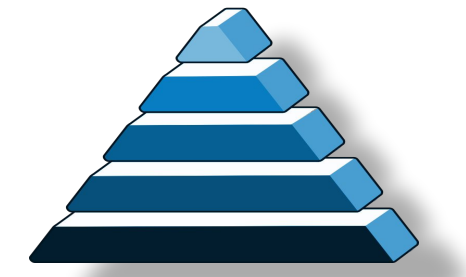
$$Y \text{ (Total Costs)} = V \text{ (Variable Costs)} + F \text{ (Fix Costs)}$$



- 43 Work weeks
- 2 Free weeks
- 2 Week sick leave
- 5 Weeks vacation

$$Y \text{ (Total Cost)} / 1720 \text{ (Annual working hours)} = X \text{ (Minimum Hourly Rate)}$$

$$X \text{ (Minimum Hourly Wage)} \times Z \text{ (Profit Mark Up)} = R \text{ (Real Hourly Wage)}$$



**INDUCTIVE  
METHODS**

**Design Management**  
DATA, MEASURING AND NAVIGATING

# Do you want more?

You can connect with the DeuS community at [www.deuscci.eu](http://www.deuscci.eu)  
and get in touch with experts from all over Europe.