

## Participants' Documents for the Management Simulation

### Content:

- Agenda for the Management Simulation
- Introduction to the Management Simulation
- Participants' manual

### Dear students,

Welcome to Pforzheim University! We would like to wish you a good start and successful and interesting studies beginning this Summer term 2024!

We would like to contribute to exciting studies right from the start – attached you will find the participants' documents for the one-day management simulation course that we have organized for you.

Time until the beginning of the course is, of course, rare during the exciting days at the beginning of your studies. Nevertheless, we already provide you with the documents for the management simulation that you can familiarize with your new management task. We are sure it will be interesting for you!

Please **notice** the **time frame** for the course and ensure that you can attend the course during the complete day from 8.30 until approx. 17.00. The **participants' manual** explains your company and your decision alternatives. It is recommended to bring a Laptop or Tablet. Please **read the participants' manual once before the course starts** and note questions.

You will receive further information at the venue.

We will be glad to answer your questions during the course and look forward to the day with you!

Best wishes,  
Your course instructor

Lars Andraschko

## Time Schedule for the Management Simulation Course of the SIC-program

From	Until	Room	Participants	Course instructor
	8.30	P (W3.2.04)	Arrival of participants	
8.30	9.45	P		Welcome Introduction Organizational information
9.45	10.00	T		Transfer to team rooms Self-organization of the teams
10.00	10.50	T	<b>Period 1</b>	
10.50	11.20		Coffee break	Evaluation period 1
11.20	12.05	P	Results period 1 Explanation of business reports part 1	
12.05	12.50	T	<b>Period 2</b>	
12.50	13.30		Lunch Break	Evaluation period 2
13.30	14.10	P	Results period 2 Explanation of business reports part 2	
14.10	14.55	T	<b>Period 3</b>	
14.55	15.25	T	Feedback of the participants	Evaluation period 3
15.25	16.15	P	Presentation of the final results	
16.15	17.00	P	Feedback to the team results	
17.00	18.00	P	Analysis of individual cases	

**rooms: P = plenum, T = team rooms**  
(team rooms will be announced during the introduction)

**Plenum blue: W3.2.04**



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## TOPSIM – easyManagement

### **Participants' Manual – Part I Introduction**

Version 2.3.3, adapted by Institute for Management-  
Simulation, Pforzheim University

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## 1. WHAT IS TOPSIM – easyManagement?

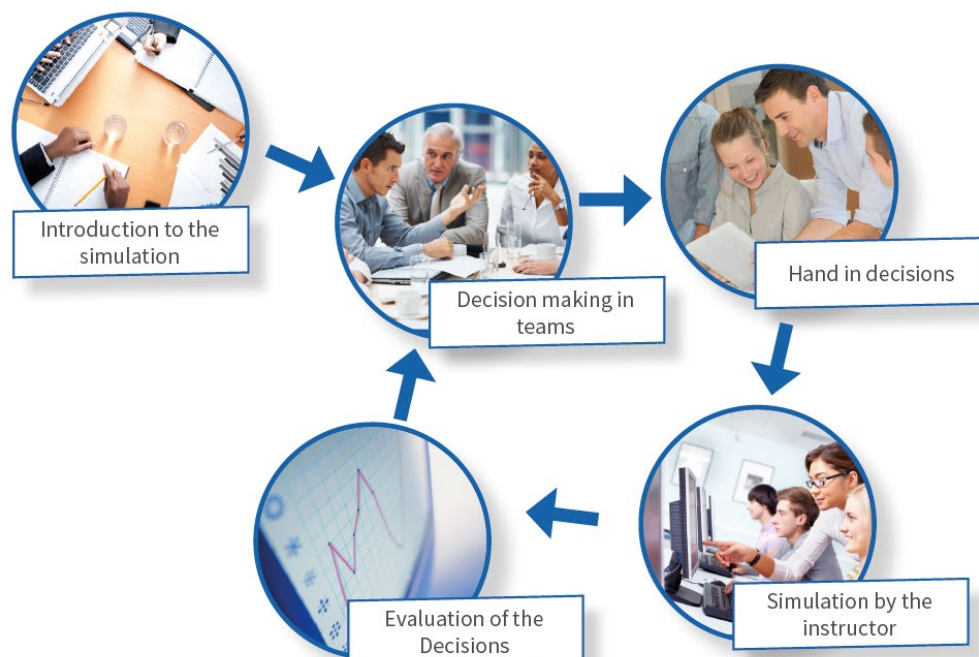
TOPSIM – easyManagement offers a challenging, computer-based management simulation. Together with your teammates you will form a management team that will take over the leadership of a company in the outdoor industry. The simulation presents a realistic model of a company and provides participants with the opportunity to:

- ▶ Learn quickly
- ▶ Learn in a risk-free way
- ▶ Gain practical experience with lasting, long-term effects

The management simulation is an interactive teaching and learning system based on the principle of:

# LEARNING BUSINESS BY DOING BUSINESS

The business simulation TOPSIM – easyManagement is structured into two distinct phases: decision phases and evaluation phases. During the **decision phase**, the participants take operational decisions for their company. During the **evaluation phase**, the participants analyze the results of the previous period and test their overall business strategy against the customers' needs, competition and current economic conditions. Usually, the instructors will use the time between these phases to either provide relevant background information to the participants or to offer a detailed evaluation of recent results and events from the simulation.



## 2. Introduction to Vallenberg Outdoor Inc. Company

According to their website, Vallenberg Outdoor Inc. employs the following divisions to help them meet their challenges:

### Administration

The material, design, and construction technology that we chose is combined to create exceptionally reliable tents. In “purchasing and administration,” all the materials and supplies needed to produce tents and ensure smooth business operations are purchased. In addition, all the administrative tasks are summarized in this area.

### Production

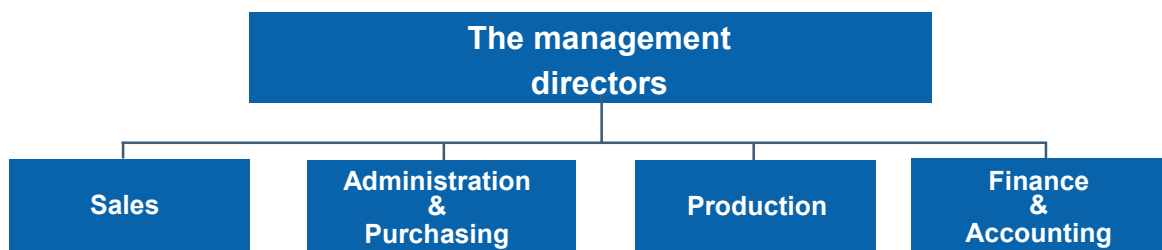
Vallenberg manufactures high-quality housings for outdoor adventures: “production” assembles and controls the quality of the “Expedition” outdoor tents. The highly qualified production staff guarantees an exact workmanship of the tents and a long service life.

### Sales

Our sales department is the interface between our customers and the company. Here all the requests are handled and coordinated. The sales team serves as a competent contact point for questions about the products - for customers and dealers as well as within the company.

## 3. The Decision Areas of the Company

In the TOPSIM – easyManagement business simulation, you assume the position of a new board member for Vallenberg Outdoor Inc. As a managing director, you take team decisions regarding all aspects of Vallenberg Outdoor Inc.:



In TOPSIM – easyManagement you and your team will take all of the relevant business decisions and submit them at the end of each respective simulation period. One period corresponds to one year. Your decisions should be based on the economic forecast for the next business year and the financial reports from the previous business year. The amount of decisions to take grows as the simulation progresses, so the complexity of your decisions gradually increases from period to period. The specific decision areas are explained below.

### 3.1. Sales

#### 3.1.1. Product Description and Product Policy

Vallenberg Outdoor Inc. produces and sells the quality tent production line, “Expedition“. You can differentiate from your competitors by improving the product quality (“technology”) through ways such as optimizing the design and material of the product. If your company succeeds in creating innovations, you can demand a higher price or increase your sales quantity. You can effectively influence the degree of innovation of your tents by signing development contracts with external engineering service providers. The budget for product development in period 0 was €25,000.

The impact of your decisions has a positive effect on the **technology index**. This index reflects the **degree of innovation** achieved by your “Expedition” products. The simulation begins with Expedition tents at a **starting index value of 1.0**. This index cannot decrease, but it increases with every additional investment. Increased customer demand and increased competitive pressure will force you to continually develop and improve your product.

#### Technology Index in Period 0: 1.0

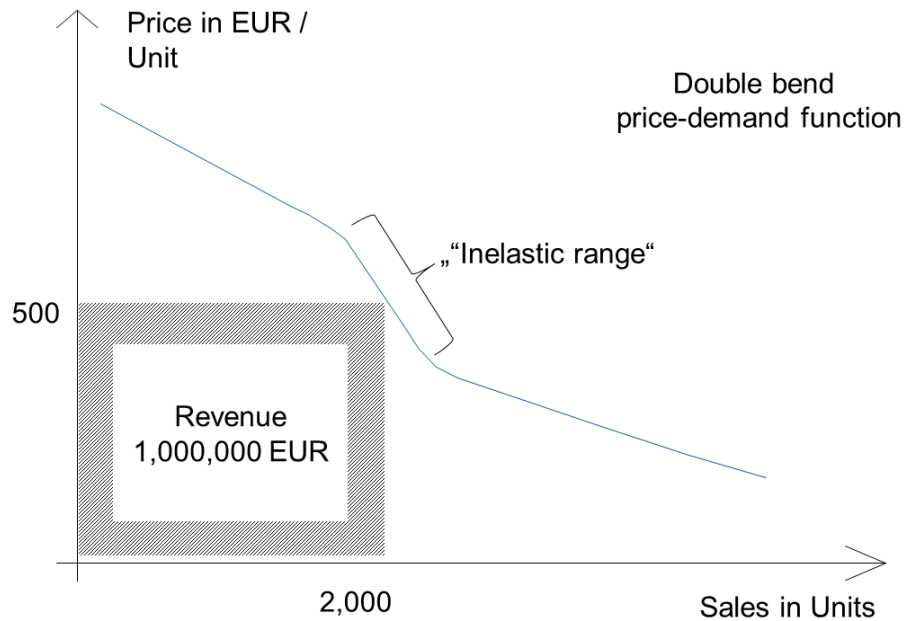
The higher the technology index, the higher the level of acceptance the product will have in the market. In addition to the absolute value of the technology index, the relative distance of the indices between competitors also plays a role in the level of acceptance.

Technology	
Decision	Expenses for external engineering services in the technology field (product quality)
Outcome	Increase the level of innovation (technology index rises)
Effect	Positive impact on market share

#### 3.1.2. Price Policy

When in competition with other tent manufacturers, the price is an important and immediately effective marketing tool. It can generally be assumed that if you increase your price, you will sell fewer tents. Conversely, demand increases as the price decreases.

This relationship is shown in the price-sales function on the next page:



Note: This figure is an example only and does not represent the exact price-demand function.

There is a certain price range where a change in price does not have a large effect on demand. This area, the “inelastic range,” is represented by the steeper part of the curve and is where the current price (from period 0) for “Expedition” tents is located. The “inelastic” range shown above covers roughly a +/- 5 % difference around the **average initial price of €500**. Remember to act entrepreneurially when changing prices. With a high price, you are expected to offer high quality. With a low price, you should be able to supply and produce at lower costs.

Market researchers expect the following reaction in the market (based on the data of period 0, assuming all other factors remain constant):

Price (EUR/piece)	Sales (piece)
525 (+ 5%)	ca. 1,950
500 (period 0)	2,000 (period 0)
475 (- 5%)	> 2,050

Revenue is calculated by multiplying the amount of tents sold by the corresponding price. The revenue of Expedition in period 0 was €1,000,000 (2,000 units sold multiplied by the product’s price of €500). When deciding on a price, it is important to try to estimate your expected sales, and accordingly the resulting revenues.

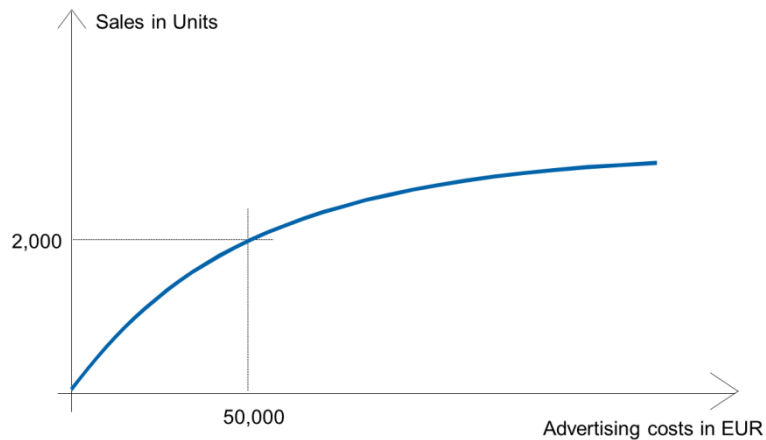
### 3.1.3. Communication Policy

#### 3.1.3.1. Advertising

Advertising expenditures generally increase sales. They have long-term effects which last more than one period (because consumers remember past advertisements). However, advertising is



most effective in the period in which it takes place. The advertising effects on sales are represented in the following diagram:



The advertising budget for your domestic market was €50,000 in period 0. Experts believe that spending €57,500 could have resulted in sales of about 2,120 units. Doubling the advertising expenditures would no longer have had an effect on the number of units sold.

**The amount spent on the advertising budget has a positive impact on sales, but this is also true for your competitors.**

So the amount of tents that can be sold is also influenced by the difference between the advertising expenses of all competitors

### 3.1.3.2. Corporate Identity

An additional communication instrument that can be employed by the company to increase the customer's awareness and positively influence sales is your company's corporate identity (CI).

The company's corporate identity is an important factor in the long term development of the company. It has a relatively strong **effect especially in the year after the investment in CI**. When planning the CI budget, you should also be aware that the more you increase your CI spending, the less the additional image and sales effects from it will become. In the initial situation, Vallenberg Outdoor Inc. invested **10,000 EUR** in CI.

### 3.1.4. Distribution Policy

In period 0, Vallenberg Outdoor Inc. had **two sales employees** who advised retailers and sold the "Expedition" tents. More sales employees will help you to sell more tents. However, keep in mind that hiring more employees also increases costs.

Please note that the number of sales employees should be considered in relation to the revenues. A significantly higher sales volume (in EUR) means that more sales employees will be needed in order to be able to maintain the sales quality.

### 3.1.5. Further Distribution Channel: Bulk Buyers

In addition to sales to the customers in your domestic market, new sales possibilities may arise. Bulk buyers will contact you with purchase offers from time to time.

Every company can participate in this form of sale, where the price and maximum supply amount is determined by the bulk buyer. This means you can also choose to sell fewer than the maximum tents on offer. Delivery will be made in the same period in which you accept the offer and there are no distribution costs, but bulk buyers have delivery priority over customers in the regular market. As a general rule of thumb, profit margins are typically lower for bulk buyers than in retail.

### 3.1.6. Marketing-Mix

Customer demand for your product depends on several factors. The factors that could have a particularly strong influence are called “marketing instruments”. These tools are the so-called four “P’s” of marketing (Product, Price, Place, and Promotion):

4 Ps	Explanation	Decision	Result
Product	Product Policy (Technology)	Budget for external engineer services in the field of technology (value in period 0: 25,000 €)	The higher the technology index, the higher the acceptance of the product in the market
Price	Price Policy (Price)	Set the price (value in P0: 500 €)	Immediate effect on sales
Place	Distribution Policy (Sales force)	Final number of sales personnel (2 employees in P0)	More sales employees increases sales opportunities
Promotion	Communication Policy	Communication expenses for:	
	▶ Advertising	▶ Investments in advertising (value in P0: 50,000 €)	Advertising expenditures generally increase sales and have effects over more than one period
	▶ Corporate Identity	▶ Investments in Corporate Identity (value in P0: 10,000 €)	Spending in Corporate Identity generally increases sales and has a particularly strong effect in the next period

Take the marketing-mix into consideration when planning your strategy (and vice versa). Keep in mind that the actions of your competitors also influence your sales potential. Since you cannot predict the other companies’ decisions with certainty, consider which strategies they have been following or might pursue in the future before taking your own marketing decisions. Your sales will be impacted by economic trends as well. You will receive economic forecasts at the beginning of each simulation period.

### 3.1.7. Insufficient Ability to Supply

The delivery priorities of “Expedition” tents follow this order:

1. Supplying a commitment to a bulk buyer
2. Supplying customers in the domestic market

If you create demand (according to your marketing mix) that your company is unable to satisfy, you will lose these sales due to your insufficient ability to supply. Approximately 80 % of the demand that you are unable to meet in the market will then be distributed among the other companies in the simulation in proportion to their existing market shares. As a result of this distribution, one of the other companies might also face an inability to supply. In this case, the demand which was not satisfied by this company will not be redistributed to the rest of the companies. It is thus possible that less than 80 % of the unsatisfied demand is distributed to other companies.

### 3.1.8. Customer Satisfaction

Customer satisfaction is an important factor which influences demand, although it is hard to predict due to the large, psychological circumstances. The following factors affect the level of customer satisfaction:

Influence factors	Effect on customer satisfaction
Reliable delivery	Inability to supply disappoints customers. Disappointed customers order less in the following period.
Value for money (price to technology ratio)	Your product needs to be high quality (compared to competition) to allow you to charge higher prices without compromising satisfaction

Customer satisfaction is determined for each company and is expressed as an index. In period 0, the index value was 1.00. The higher the index value, the more satisfied your customers are.

## 3.2. Procurement & Inventory

### 3.2.1. Requirements and Conditions

To produce tents, raw materials are required from suppliers. To produce one “Expedition” tent, 1 nylon set and 1 set of rods is needed. You begin the simulation with an ongoing procurement contract set up by your predecessor. This provides you with an automatic supply of your products with the correct amount of raw materials (Just in Time delivery). So initially, you do not need to take any purchasing decisions. Per nylon set, you will be charged €110. A rod costs €15. However, due to the low price, the supplier expects a prompt payment of the invoice.

### 3.2.2. Inventory and Materials / Parts

The storage costs for input materials / parts are (see next page):

**€8 per nylon set and  
€2 per set of rods.**

Due to the purchase conditions negotiated, the storage of raw materials is not necessary in the initial period.

### 3.2.3. Inventory for Finished Goods

The storage costs of finished products are:

**per tent “Expedition”: €10**

You can see your remaining inventory in the inventory report. New inventory is valued at costs of goods manufactured. These costs include mainly the use of raw materials (nylon and rods) and operating supplies, as well as personnel costs for the production staff and the depreciation of production lines. In the last period 2,000 units of “Expedition” tents were produced that were also sold during the financial year. Therefore you currently have no finished products in your “Expedition” warehouse.

Storage ties up capital. In other words, your company has already paid for the products sitting in inventory. This money is practically “parked” (tied up) in the goods, you cannot spend it. Only if you sell the tents you will receive the return in the form of payments from your customers

## 3.3. Production

### 3.3.1. Production Volume

You decide on the production quantity. Please keep in mind your planned sales volume, your capacity in your production facilities, and the remaining quantity of tents stored from the previous period. You may produce more than you can sell, but the extra products get stored, resulting in storage costs (see 3.2.3).

### 3.3.2. Stock of Production Lines

To produce your tents, you need special production lines. In period 0 Vallenberg Outdoor Inc. had four Type A production lines. Each production line is internally marked with a number. The following data apply to the machines used in period 0:

Production lines		Capacity (Units/ Period)	Acquisition Period	Acquisition Value (TEUR)	Remaining Book Value (Periods)	Depreciation (TEUR/ Period)	Net Book value (TEUR)	Other fixed costs (TEUR/ Period)	Maintenance and Repair (TEUR/ Period)
Type	No								
A	1.1	500	-1	200	9	20	180	2.5	5.0
A	1.2	500	-1	200	9	20	180	2.5	5.0
A	1.3	500	-1	200	9	20	180	2.5	5.0
A	1.4	500	-1	200	9	20	180	2.5	5.0
Σ		2,000		800		80	720	10.0	20.0

The key figures above remain the same for the rest of the production line's lifetime. Other fixed costs, such as maintenance and insurance costs, are determined by current contracts. The machines are depreciated using straight-line depreciation, where: depreciation amount = purchase price / estimated years in use.

Thus the costs for a production line sum up to 27.500€ per year, originating from depreciation, maintenance and other fixed costs. Therefore it is advisable to make use of the production lines to a relatively large extent.

**If a production line is completely depreciated it still can be used at full production capacity.**

### 3.3.3. Options for Adjusting Production Capacity

The available production capacity in a period can be influenced through the following means:

- ▶ Investments in new lines
- ▶ Disinvestment of old lines

#### 3.3.3.1. Investments in New Production Lines

To increase the production volume of "Expedition", you can choose to buy production lines. The defined production capacity relates to one fiscal year. The current performance data of the Type A production machines are shown in the following table:

Production lines (Type)	Purchase price (TEUR)	Duration (Periods)	Capacity (Units/Period)	Other fixed costs (TEUR/Period)	Maintenance and Repair (TEUR/Period)
A	200	10	500	2.5	5.0

Newly acquired production lines are immediately available for production (in the same period).

### 3.3.3.2. Divestment of Production Lines

Production lines can be divested (scrapped). When this happens, the scrapped machine is no more available from the beginning of the relevant period. The respective net amount is immediately recorded as extraordinary expenses in the net book value. Extraordinary income from the scrap metal is measured as a percentage of the net book value.

Type A	
Proceeds from scrap (residual income) as % of remaining net book value	25.0

Impacts of divestment
Profit and loss statement
Write-off (100% of residual net book value) is recorded as an extraordinary expense.
Residual income (from scrap metal, 25% of residual net book value) is recorded as extraordinary income.
Finance Report
Residual income (from scrap metal) is recorded as a deposit of extraordinary income.

### 3.3.3.3. Operating Supplies

Every "Expedition" product made incurs €10 costs for operating materials (e.g. hardware, paint color, energy costs like electricity, etc.). The required quantity of these materials is automatically purchased.

## 3.4. Personnel

### 3.4.1. Work Force in the Initial Period

In period 0, staff and salary costs at Vallenberg Outdoor, Inc. were allocated as follows:

	Administration	Production	Sales
Initial situation (employees)	0.5	6	2
Wages/salaries (EUR)	12,500	168,000	80,000
Additional employee costs (EUR)	2,500	33,600	16,000
Sum of personnel costs (EUR)	15,000	201,600	96,000

Administrative costs include the department costs of purchasing, human resources, finance and accounting, and general administrative services. The additional employee costs amount to 20 % of the respective employee's salary (social security portion from the employer).

### 3.4.2. Personnel Decisions

Vallenberg Outdoor Inc. currently employs 8.5 employees for administration, production, and sales activities. You take the following decisions for personnel:

- ▶ Hiring / dismissal of production staff
- ▶ Final number of sales staff

As a rule, the adjustment of staffing occurs through hiring and dismissals. A company's final amount of personnel can also be affected by employee resignations (attrition = voluntary departure from a company) which will be announced beforehand. To produce your tents, you need a sufficient number of production employees.

Therefore you can decide to hire or dismiss production employees. **A production worker** can produce **350 units** of "Expedition" per fiscal year. If your production staff cannot produce the quantity of tents you specified temporary workers will be hired to make up for the difference. The cost of a temporary worker is generally higher than the cost of a normal production employee. In the initial fiscal year (period 0), the cost of a **temporary worker** was **€50,000 per period**. But the costs that actually occur for temporary workers vary proportionally with the number of hours (part-time) you order their services for your production.. Please note that to produce tents, you not only need enough employees, but enough production capacity in your production lines as well.

For the sales team, you, as a manager, decide on the final number of sales employees. Hiring and dismissing occurs automatically according to the desired head count. The number of sales staff will affect the sales.

The number of administrative employees is dependent on the revenue of the company. Variations in revenues affect the number of administrative employees needed, the adjustments (hiring or dismissing employees) will happen automatically.

Revenue (EUR)	Administration staff required
> 0	0.5 employees
> 1,200,000	1 employee
> 1,400,000	1.5 employees
> 1,600,000	2 employees
> 1,800,000	2.5 employees
> 3,000,000	4 employees

Be aware that hiring and dismissing workers generates additional costs, such as workplace equipment, job advertisement, etc. In the initial period personnel costs were as follows:

	Administration	Production	Sales
Salary per employee (EUR)	25,000	28,000	40,000
Hiring costs (EUR)		4,000	
Dismissal costs (EUR)		2,000	

### 3.5. Finance and Accounting

#### 3.5.1. Liquidity Planning

Your minimum cash balance in one period is €10,000. If your sales revenue does not cover payment obligations, you must cover the difference ordering enough loans to reach the minimum cash balance. The bank will automatically grant you an overdraft loan at the current rate. The overdraft loan will be paid out immediately and the interest due (at the current interest rate) will be paid in the same period you took out the loan. The loan itself must be paid back in the following period.

**The interest rate for overdraft loans is 4 % in period 0.**

#### 3.5.2. Administration Costs

You cannot influence your company's administrative costs, which – apart from costs for personnel already discussed above - result from administrative tasks (paper, phone, etc.).

**Administration costs amount to 2% of the company revenue in period 0.  
Additional fixed administration costs amount to €6,333 per period.**

#### 3.5.3. Other Expenses

You rent the space necessary to run your business, for which you must pay yearly rental and operating costs.

**The rental costs are €15,000 per period.  
The operating costs are €11,067 per period.**

#### 3.5.4. Taxation

If your company earns a profit, you have to pay taxes on your profit before tax. Any losses will be carried forward and offset annual pretax profits until a positive balance (for which taxes must be paid) is attained. Tax payments occur in the current period.



The company's tax burden currently is 40 %.

### 3.5.5. Planning Quality

The owners of the company and the banks, which provide the necessary external capital, need reliable revenue forecast from you. The more accurate you are planning, the more convincing you appear as an entrepreneur to stakeholders. First assess the results of your marketing decisions in terms of predicted sales. Then enter your planned revenues (excluding bulk sales) in the decision form for each period.

To determine your planning quality, your planned revenues are compared with your potential revenues, i.e. the demand you created by your marketing decisions (the planning value of the current period can be found in the profit and loss report). If your planning was completely correct, then you will receive 1 planning point. If your planned values deviate from the actual results by 50 %, then you will not receive any planning points. If your planning is off by 100 %, then you will receive a negative planning point (-1). It is also possible to obtain proportional planning points.

### 3.5.6. Success Value

The TOPSIM – easyManagement success value plays a key role when comparing different companies. It is designed as an index that is influenced by net income, planning quality, and customer satisfaction. In period 0, the success value was 59.9.



### 3.6. Decision-Taking Process

At the beginning of the simulation you take control of the company. However, before you start to take decisions and deal with the flood of information, it is highly recommended that your team discuss the strategic direction the company will take. The following questions can be helpful while assessing strategies:

- ▶ Which strategy should our company use to compete on the market?
- ▶ Which changes in the market can we expect according to the economic forecast?
- ▶ Which quantity can be sold at what price?
- ▶ What marketing actions should we take?
- ▶ Is our personnel planning compatible with our other plans?

You should also include the development of the market in your decision making process. For more information about this, please refer to the economic forecasts for each period. Next you can begin taking decisions for the upcoming fiscal year.

As a guide for the first decision round, the following method has proven useful:

**1. Set the price, estimate your market share, sales, and revenue**

- ▶ What does the economic forecast predict?
- ▶ What can be achieved and what do you want to achieve?
- ▶ How will the competition behave?
- ▶ How should the marketing mix be developed?
- ▶ What product quality do the customers want?

In this planning exercise it is also necessary to think about which strategy to pursue. Would you like to sell the large quantities at low prices and costs (price quantity strategy)? Or is it better to sell smaller quantities of a high quality product with more sales personnel and communication budgets at a higher price (premium strategy)? You may also think about ways to combine both strategies.

**2. Coordination of sales, inventory, and the production volume**

- ▶ What do we expect to sell?
- ▶ Do we have any finished products in inventory?
- ▶ How many tents do we have to produce?

**3. Determine the capacity for production lines and production workers and, if required, the amount of raw materials to purchase**

- ▶ How many units can we produce?
- ▶ Do we need to invest in new machines or scrap existing ones?
- ▶ Do we have a sufficient amount of production staff?
- ▶ Do we need to hire or dismiss production employees?
- ▶ How many raw materials do we need to purchase so we can produce the desired number of tents

## 3.7. Decision Form of the former management

Company: 

Period: 0

Sales	Product	Tent
	Retail price (€/Item)	500
	Print advertising (€)	50,000
	Corporate Identity (€)	10,000
	Sales personnel (final stock) → ½ staff possible	2

R&D (design)	External expenses (€)	25,000
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Production	Machines			
	Purchase (quantity)	-	Disinvestment (line number)	-

Staff in production	New hires (quantity) => ½ staff possible	-
	Lay-offs (quantity) => ½ staff possible	-

Production volume tents	2,000
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## TOPSIM – easyMANAGEMENT

Outdoor Tent Scenario

Version 2.3.3



## WHAT IS A MANAGEMENT SIMULATION?





## WHAT IS A MANAGEMENT SIMULATION?

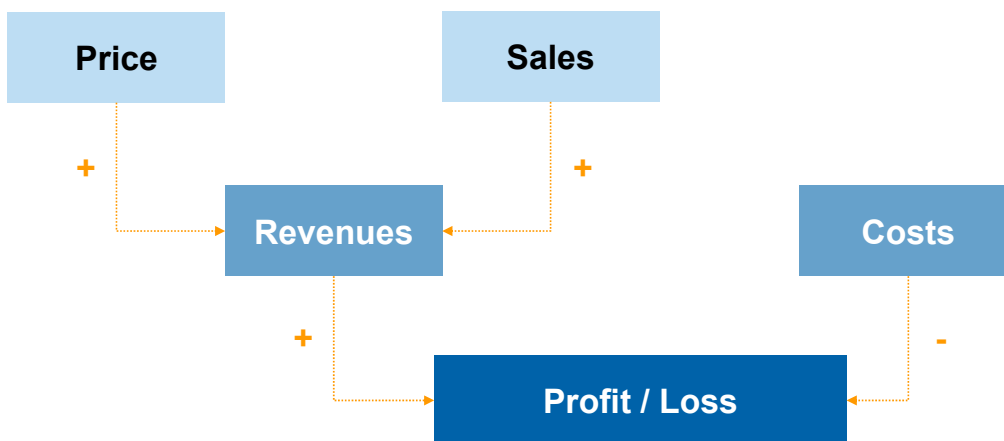


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## LINEAR THINKING

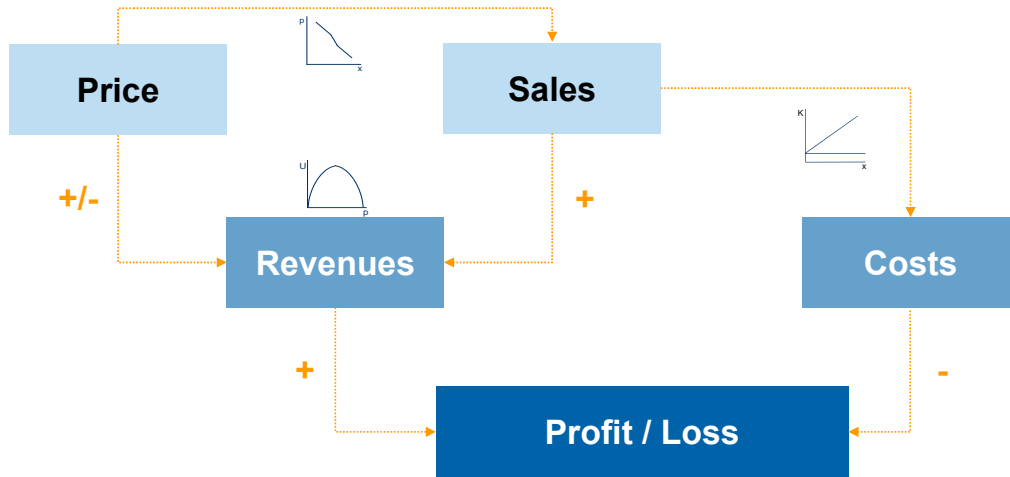


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## HOLISTIC THINKING



## OVERVIEW: THE COMPANY








## THE VALLENBERG OUTDOOR GMBH

- ▶ Traditional small family business in the outdoor market
- ▶ Innovative manufacturer of high-quality outdoor tents
- ▶ Current model: „Expedition“
- ▶ **Selected key figures of the company (previous period 0):**
  - ▶ 8,5 Employees
  - ▶ Revenue: 1 MEUR
  - ▶ Annual Profit: 91.200 EUR



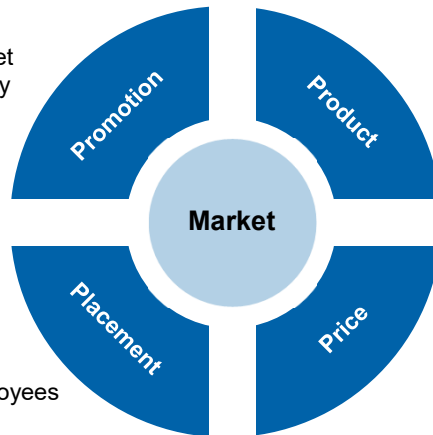
## INTRODUCTION TO THE VALLENBERG OUTDOOR GMBH

<b>SALES</b>  In this department, you take all market-related decisions.	<b>R &amp; D</b>  Here, you decide on the product features of your tent.	<b>PURCHASING</b>  You will plan the procurement of input materials required for production in this department.
<b>PRODUCTION</b>  Here, you will plan the production of your tents.	<b>HUMAN RESOURCES</b>  You decide how and where to deploy your staff.	<b>FINANCE &amp; ACCOUNTING</b>  In this department, you take care of the financial situation of your company.



## MARKETING-MIX

50.000 EUR Advertising budget  
10.000 EUR Corporate Identity



Outdoor tent „Expedition“  
Technology index: 1,0

Sales force: 2 employees

Retail price: 500 EUR

▶ Sales quantity in period 0: 2000 tents „Expedition“



## FIRST SOLUTIONS FOR THE MANAGEMENT SIMULATION

**Price:** If you increase the price while all other conditions remain constant...

- ▶ ... the amount of products sold decreases.
- ▶ ... the amount of products sold remains constant.
- ▶ ... the amount of products sold increases.
- ▶ ... there is no statement possible about the amount of products sold.
- ▶ ... the profit per unit usually increases (margin per tent).
- ▶ ... the profit per unit usually decreases (margin per tent).





## FIRST SOLUTIONS FOR THE MANAGEMENT SIMULATION

**Product:** In this management simulation you can increase the quality of the product by investing in research and development (placing an R&D-order to a design and engineering firm). The so called “technology index“ increases!

Name two creative examples that comprise such measures (R&D investments)!



## FIRST SOLUTIONS FOR THE MANAGEMENT SIMULATION

**Product:** What is correct? Tick the correct answer(s)!

An investment in the quality of a product (R&D, Design) in period 1...

- ▶ ... affects period 1 immediately.
- ▶ ... establishes over several periods.
- ▶ ... increases the technology index permanently.
- ▶ ... increases the technology index only for period 1.



## FIRST SOLUTIONS FOR THE MANAGEMENT SIMULATION

**Promotion:** What is correct? Tick the correct answer(s)!!

No ad makes you go bad! Generally, promotions will be in journals. The advertising budget is about € 50 thousand in period 0.

- ▶ The promotion affects only in period 0.
- ▶ The promotion affects in several periods.
- ▶ At € 57.5 thousand, a sales volume of 2,120 units would have been generated in period 1 (all other conditions remain constant).
- ▶ Doubling your advertising expenses is particularly effective.
- ▶ Halving your advertising expenses is particularly effective.



## FIRST SOLUTIONS FOR THE MANAGEMENT SIMULATION

**Corporate Identity:** What is correct? Tick the correct answer(s)!

A positive company's image increases the customer's willingness to buy.

The budget for corporate identity is about € 10 thousand in period 0.

- ▶ The € 10 thousand for Corporate Identity affect only in period 0.
- ▶ The € 10 thousand for Corporate Identity affect in period 1.
- ▶ The € 10 thousand for Corporate Identity will be in period 0 and will have a general impact in period 1.
- ▶ The more the CI-budget is increased, the smaller will be the additional impact.
- ▶ The more the CI-budget is increased, the higher will be the additional impact.



## FIRST SOLUTIONS FOR THE MANAGEMENT SIMULATION

**Distribution:** Your tent construction company employs 2 sales people who visit and advise customers (sports retailers). Hence, the sales staff brings your product to the customer! What do these two employees cost in total per year (including ancillary costs)?

- ▶ 96.000 €

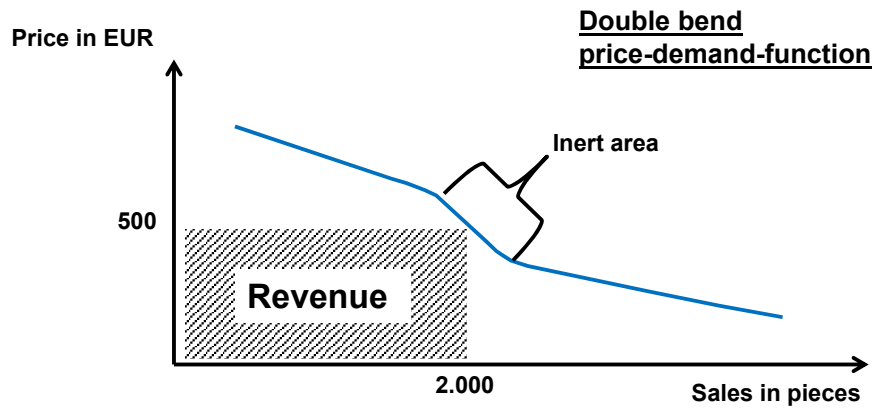


## INABILITY TO SUPPLY

- ▶ When you generate a larger demand by your marketing decisions, than your company is able to satisfy, you run into an **inability to supply**
- ▶ In case of inability to supply by one or more companies, 80% of the not satisfied demand will be distributed among the remaining companies according to their market share



## HOW DOES THE MARKET REACT?



\*Note: exemplary portrayal, not true to scale



## CUSTOMER SATISFACTION

- ▶ Customer satisfaction is an important factor influencing the demand
- ▶ Factors affecting customer satisfaction:



- ▶ Customer satisfaction in one year influences the demand of the **following** year



## PURCHASING AND STORAGE

### Purchasing of raw materials / parts:

- ▶ **You will need for the production of a tent "Expedition":**
  - A set of Ripstop-Nylon for 110 EUR
  - A set of rods for 15 EUR
  - Operating supplies at a price of 10 EUR

### Stock planning:

- ▶ **Material / Parts:**
  - Storage costs: 8 EUR per set and 2 EUR per rod
  - Final inventory period 0: no stock due to "Just In Time"-delivery
- ▶ **Finished Products:**
  - Storage costs: 10 EUR per Unit
  - Final inventory period 0: no stock



## PRODUCTION VOLUME AND CAPACITY

- ▶ The sum of your production line capacities (in period 0 = 2,000 units) corresponds to your maximum production quantity per period
- ▶ In each period you can invest in extra capacity or sell (divest) plants (but: selling plants leads to high expenses as you can only recover a part of their residual value)
- ▶ An employee can produce 350 tents in a period
- ▶ For small additional production quantities a temporary worker can be employed part – time (by the hour) besides your regular production staff



## PRODUCTION LINES

- ▶ Production lines in period 0: 4 identical machines (Type A)
- ▶ Investment in new production lines (Type A) possible

Type of production line	Purchase price (EUR)	Life cycle (Periods)	Depreciation (EUR/per.)	Normal capacity (Units per period)	Other fixed costs (EUR/period)	Maintenance costs (EUR/per.)
A	200.000	10	20.000	500	2.500	5.000
$\sum_{k=1}^4 A$	800.000	-	80.000	2.000	10.000	20.000



## FIRST SOLUTIONS FOR THE MANAGEMENT SIMULATION

**Production:** What is correct? Tick the correct answer(s)!

Suppose you want to sell 2,300 tents in period 1 (period of first decisions). What has to be done?

- ▶ Nothing.
- ▶ The production volume has to be increased.
- ▶ The production volume can remain constant. There is a "just-in-time" delivery indeed.
- ▶ The production volume can remain constant. There is enough on stock.
- ▶ There is no need to buy a machine.
- ▶ A machine has to be bought.
- ▶ Two machines have to be bought.
- ▶ There are enough production employees.
- ▶ Production employees have to be hired or temporary workers are requested automatically.



## PERSONNEL COSTS PERIOD 0

	ADMINISTRATION	PRODUCTION	SALES	TOTAL
<b>Staff</b>	0,5	6	2	8,5
<b>Wages / year</b>	12.500 EUR	168.000 EUR	80.000 EUR	260.500 EUR
<b>Non-salary costs / year</b>	2.500 EUR	33.600 EUR	16.000 EUR	52.100 EUR
<b>Total staff costs</b>	15.000 EUR	201.600 EUR	96.000 EUR	312.600 EUR

The number of administration employees depends on the revenues and is managed automatically

### Recruitment and dismissal costs:

- ▶ Recruitments: 4.000 EUR
- ▶ Dismissals: 2.000 EUR
- ▶ Non – salary staff costs: 20%
- ▶ Costs for temporary worker: 50.000 EUR per worker and year, hire only for small additional production quantities!



## LOANS AND TAXES

### ▶ Overdraft Loan

- Overdraft loans are automatically granted when your cash balance drops below its minimum of 10.000 EUR
- Interest payment in the current period
- Repayment in the following period

**INTEREST RATE IN PERIOD 0: 4,0 %**

### ▶ Tax Rate

- In period 0: 40% on the pre – tax profit

### ▶ Additional administration expenses (besides personnel):

- 2% of revenues plus 6.333 EUR additional fixed costs



## CRITERIA FOR SUCCESS



## COURSE OF THE SEMINAR

