



INTERACTIVE LEARNING CENTER
INVESTABLISH

Players' Manual

Pure Business

Investabliish Interactive Learning Center
Dorpsstraat 2a
1182 JD Amstelveen
W: www.il-center.com
E: info@il-center.com
T: +31 20 893 2818

1. Login instruction

Dear Pure Business players,

Pure Business is part of *Doing Business*, a business game that introduces you to the world of entrepreneurship. An entrepreneur is someone who operates independently and takes risks to earn his/her money. The purpose of this game is for you as a team to fulfill the role of an entrepreneur, start a business and compete with other companies in the market.

Pure Business is situated in a monopolistic competitive environment in which companies try to sell their product. There are several quarters, each in which you need to think about strategy, goals, business decisions and calculate financial results, just like a real entrepreneur.

Below you find instructions on how to start playing Pure Business:

1. Go to www.il-center.com
2. Click on *Doing Business* under *Student Log-in*

For more information about *Doing Business*, visit www.il-center.com. Ask your instructor(s) for information on deadlines and other related topics.

Good luck!

2. The assignment

Define and carry out the company's policy

The assignment states that you should take charge of a company. Try to imagine how an entrepreneur runs his business. Together with 9 other teams you form a market in which all companies have to sell a product. Each company determines a policy and implements this policy in a number of cycles (quarters). Afterwards, you will need to report and discuss your policy.

The key to success

Together with your team-members you play the role of an entrepreneur. This implies that all of you need to take decisions and contribute to policy ideas. Try to improve your team's strategy by discussing and commenting on each other's ideas and suggestions. The key to success, therefore, is collaboration.

Cycle of Planning & Control

The competent entrepreneur implements his/her policy in a few concrete steps which form the cycle of Planning & Control:

Step 1: In the first step you determine the goal and strategy for the current period, after which you determine the tactics for the next quarter. In order to make a successful policy, it is important to carefully estimate the behavior of your competitors. Then you choose a goal and compose the marketing mix.

Step 2: The tactics will be reflected by decisions. Make sure to pre-calculate your decisions in order to optimize them. Use spreadsheets to make calculations. A spreadsheet template is available on the [Spreadsheets](#) section.

Step 3: Assess your decisions by checking your pre-calculations. Focus on sales and net income figures.

Step 4: Comparing your pre-calculations with the re-calculations gives you more insight into market developments and allows you to enter a new phase with more knowledge and experience.

The best entrepreneur

The best entrepreneur is the team that can show it has accomplished its goal. Just like in the real world, various goals can be set: 'highest profit', 'biggest market share', etc. This flexibility in setting targets and goals implies that there could be multiple 'winners'. However, there are two conditions: i) you must be able to show you have achieved your goal and ii) the goal must be economically justified. For example, the goal to go bankrupt is both unrealistic and unjustified on economic grounds.

The final report

The final report is the evaluation document that determines which team(s) wins the game. In oral and/or written presentations, the teams discuss their goal, strategy and results of product sales. What kind of report you should make depends on your program and will be communicated with you by your instructor(s).

3. Preconditions

Preconditions regarding data entry

Incorrect figures will directly be discarded. For example, if you enter in a negative sales figure, then the program immediately informs you that this is incorrect and you should re-evaluate your entry. This also applies to implausible figures. Keep in mind that '0' is counted as a number. Thus, for example, when you want to indicate you don't want to invest in product quality improvement, you should enter '0' in Image budget.

Preconditions regarding sales prices

When setting the sales prices, remember to cover all your costs. This means your sales price should be equal to or greater than the wholesale price plus all variable costs per unit. Image costs are also part of variable costs, so take this into account. The maximum sales price is set at €137.

Preconditions regarding entrepreneur's salary

Everybody needs money to live. This rule also applies to entrepreneurs. In fact, in the game you, as an entrepreneur, withdraw at least €3,000 each quarter in order to cover your living expenses. You could also withdraw more, but keep in mind that the pay-out should not exceed retained earnings and net income of the current quarter. Otherwise, there is a good chance your company will go bankrupt.

Rounding rules

The calculations will be split into several steps, so you should mind how you round off numbers. Generally, after each step, numbers must be rounded. For a more detailed description of rounding, please go to the [FAQ](#).

4. Calculating expected sales

On the ILC website, www.il-center.com, you will find a detailed description on how to estimate sales. Here you will find additional instructions.

Determining base sales

Base sales-price combinations are listed on a price table. The table provides an overview of all base sales that are possible for each price. The minimum price is equal to the sum of the wholesale price and unit variable costs. Base sales must be corrected for various sales factors.

Correcting base sales

Base sales are subject to various sales factors, such as pricing policy. The magnitude of the effects of these factors can be calculated using multiples. For example, if your sales are 10% higher than the base sales, due to having a sound pricing policy, the multiple for 'pricing policy' will be $\frac{(100\%+10\%)}{100\%} = 1.1$. Thus, if you set your price at €70 and expect base sales of 482 units sold (as indicated by the price table), and you get a 10% bump due to pricing policy

and a 20% bump due to seasonal factors, then sales will be calculated as: $482 \times 1.1 \times 1.2 = 636$. Base sales multiplied by sales factors are called 'uncorrected sales'.

Effect of pricing policy

Pricing policy is about comparing your own price with the average of those of your competitors. Since this average price is unknown to you, you will have to estimate it. If your price is below the average, your sales will be higher than indicated by the price table. This is because you will attract customers from your competitors. The simulation is programmed such that, if your price is 10% below average, your sales will be 10% higher than base sales. The associated multiple therefore is 1.1. Conversely, if you set your price at 5% *above* average, your sales will be 5% short of base sales, with a multiple of $\frac{(100\% - 5\%)}{100\%} = 0.95$.

Effect of seasonal development

In order to calculate the seasonal development factor you need to make an estimate of the seasonal index for a particular quarter, i.e. the *quarterly index*. Dividing the quarterly index by 100 will generate the seasonal multiple. For example: if you expect the quarterly index for the third quarter to be 132, then the seasonal multiple will be $\frac{132}{100} = 1.32$. In time, you will receive information about *actual* seasonal development. Base your estimates of seasonal development on dynamics from previous years: 100, 160, 130 and 70, with the first quarter always being the period covering January, February and March.

Effects of image budget

The image budget is the amount you set aside to boost the quality of your product. You could also use this amount for advertising, for example, by attaching a gift with the sale of each of your product. Every euro invested in image or advertising will increase sales. The total effect is captured by the image budget multiple: sales increases by $1 \times \frac{\text{Image Budget}}{\text{Wholesale Price}} \times 100\%$, with a maximum of 20%. After calculating the percentage increase, convert the number into a multiple and round the number to two digits.

Calculating second-round effects from previous quarters

Whenever you implement quality improvement policies you strengthen customer relationships. This leads to a divergence between potential sales and uncorrected sales. Beginning in phase 2, 30% of the sales will be from the previous quarter, while uncorrected sales from the current quarter accounts for the remaining 70%. Potential sales therefore are sales generated, in part, by investing in customer relationships. Calculating potential sales goes as follows. You first calculate sales based on base sales from the pricing table and calculate uncorrected sales using the sales multiples. Then you sum up 70% of this figure with 30% of the sales from the *previous* quarter. Note that, if your price deviates too much, valuable customer relations will be lost and you are left with only potential sales. This 'customer shunning' occurs at price changes greater than 20%.

Effects of advertising budget

Divide the advertising budget by 100 in order to calculate advertising effects. This gives you the multiple by how much your sales change if you advertise. Remember to convert the percentage into a multiple and round to two digits. For example: setting an advertising budget of €1,200 will change base sales by $\frac{€1,200}{100} \times 1\%$. The advertising multiple therefore is $\frac{100\% + 12\%}{100\%} = 1.12$.

Effects of competitor's advertising

When your competitors start advertising they will attract customers away from you. This works against the effects of your own advertising. Luckily, this effect will be limited. In order to make a decent estimation of the effect of your competitor's advertising on your sales, you need to have an idea about the average amount your competitors will spend on advertising. Divide this amount by 200, convert the resulting percentage into a multiple and round to two digits. For example: If you think your competitor's total advertising budget amounts to €1,200, the total effect on your sales (in percentages) will be $\frac{€1,200}{200} \times 1\% = 6\%$, which implies a multiple of $\frac{100\% - 6\%}{100\%} = 0.94$.

Total effect of advertising

The total effect of advertising can be calculated by multiplying the two rounded advertising multiples. Note that the advertising effect can be no larger than 30%. For example: if the effect of your *own* advertising is 1.08 and the effect of that of your *competitor's* is 0.96, then the total effect of advertising is $1.08 \times 0.96 = 1.04$ (rounded to two digits).

5. Break-even analysis

Calculating break-even sales

You calculate break-even sales by summing up constant costs and dividing the result by the contribution margin per unit sale.

Constant costs include all costs unrelated to sales, such as warehouse maintenance costs. These costs are generally fixed per quarter. Stocking costs also fall under constant costs. Even though these costs depend on the total number of units that are stored in the warehouse at the beginning of the quarter, and could therefore vary per quarter, they are unrelated to sales.

The contribution margin is the sales price minus the wholesale price and minus all other variable costs per unit. Variable costs per unit include the wholesale price, overhead expenses, image budget and other sales costs per unit.

You therefore divide *euros per period* by *euros per unit* and the result will be *units per period*. So, break-even sales tells you the number of units the entrepreneur must sell, in a certain period, in order to cover all costs. If the result is a fraction, you should round up. For example, if you find break-even sales of 408.1 units per period, you should sell at least 409 units in order to cover all costs. The formula therefore is:

$$\frac{\text{Constant Costs}}{\text{Contribution Margin}} = \frac{\text{Constant Costs}}{\text{Sales Price} - \text{Wholesale Price} - \text{Variable Costs per Unit}}$$

Break-even sales

Calculate break-even sales by the sales price in order to get the amount in euros.

6. Estimating market share

Rough market share estimation

Estimating market share is a rather complex exercise. Therefore, a reasonable estimate will suffice. Start with the market share your team would have had if all teams would set the same price. So, for example, if there are 5 teams, then your market share would be $\frac{100\%}{5 \text{ teams}} = 20\%$. If, however, your price is 10% higher than the average expected market price (for instance, your price is €77, while you expect the average market price to be €70) your market share would be 10% below this 'base' market share. In this case, your market share would be $20\% - 10\% \times 20\% = 18\%$. Remember to account for advertising effects. For now, it suffices to add $\frac{1\%}{\text{no. of teams}}$ to your market share for each €100 you spend on advertising.

Accurate market share estimation

In order to make an accurate market share estimation, you need to crawl into the skin of your competitor and envisage what decisions he/she would make. Generally, you can base your expectations on the fact that your competitor will choose the average market price and the average advertising budget. Then you must calculate the pricing and advertising multiple of your competitor in order to calculate the sales of your competitor (which then could be used to get an estimation of total market size). You can neglect the image budget multiple.

An example. Say there are three teams. Your team sets a price of €80 while you expect your competitors to set an average price of €60. That means your pricing multiple would be: $\left(\frac{€60-€80}{€60}\right) + 1 = 0.67$. Your competitor, however, will expect a different average market price, namely: $\frac{€80+€60}{2} = €70$, which makes their pricing multiple: $\left(\frac{€70-€60}{€70}\right) + 1 = 1.14$. Notice that this multiple differs from your own pricing multiple. Then, calculate the average sales of your competitor by multiplying the average base sales of your competitors, associated with the average market price, with this pricing multiple, the seasonal multiple and the total advertising multiple. Using this estimation of your competitor's sales, calculate expected total market size in order to find your market share.

The total advertising multiple will also be different for your competitor, so again you need to imagine how your competitor would make his/her calculations. You would expect the average advertising budget to be the budget of the imaginary competitor divided by the 'own advertising' parameter. Thus, you first need to calculate the average advertising budget of the competitors of your imaginary competitor, which is:

$$\frac{\text{Your Own Budget} + [(\text{no. of competitors} - 1) \times \text{Av. Budget of Competitors}]}{\text{No. of Competitors}}$$

Finally, you divide this average by the 'competitor's advertising' parameter.

7. Calculation of operating expenses

Operating expenses are composed of different items

Calculation of operating expenses can be broken down into three parts:

$$\text{Operating Expenses} = \text{Purchasing Costs} + \text{Overhead Costs} + \text{Selling Costs}$$

Where:

$$\begin{aligned}\text{Purchasing Costs} &= \text{Sales} \times \text{Purchasing Costs per Unit} \\ \text{Overhead Costs} &= \text{Warehouse Costs} + \text{Other General Costs} \\ \text{Selling Costs} &= \text{Variable Selling Costs} \\ &\quad + \text{Fixed Selling Costs}\end{aligned}$$

Overhead costs can subsequently be split up into fixed and variable general costs. Information costs are included in the fixed selling costs.

Calculation of purchasing costs

In this program, purchasing costs primarily consist of direct purchasing costs. Find the amount used for purchasing costs per unit in the section Data.

Calculation of warehouse costs

Warehouse costs consist of three parts:

property rent;

fixed maintenance costs per quarter; and

storage costs

The latter can be calculated by multiplying inventory at the beginning of the quarter with the storage costs per unit. For simplicity, we assume that, at the end of the quarter, all products enter or exit the warehouse. In reality, the in- and outflow of products would be smoothed across the quarter more evenly, yet this would make calculations unnecessarily cumbersome.

8. Setting up the Income Statement

Calculation of gross and net income

Calculation of gross income of a business concern is as follows:

$$\begin{aligned} \text{Gross Income} &= \text{Sales} - \text{Costs of Goods Sold} \\ \text{Sales (in euros)} &= \text{Sales} \times \text{Sales Price} \\ \text{Costs of Goods Sold} &= \text{Sales} \times \text{Wholesale Price} \\ \text{Net Income} &= \text{Gross Income} - \text{Operating Expenses} \end{aligned}$$

Appendix Calculation schemes

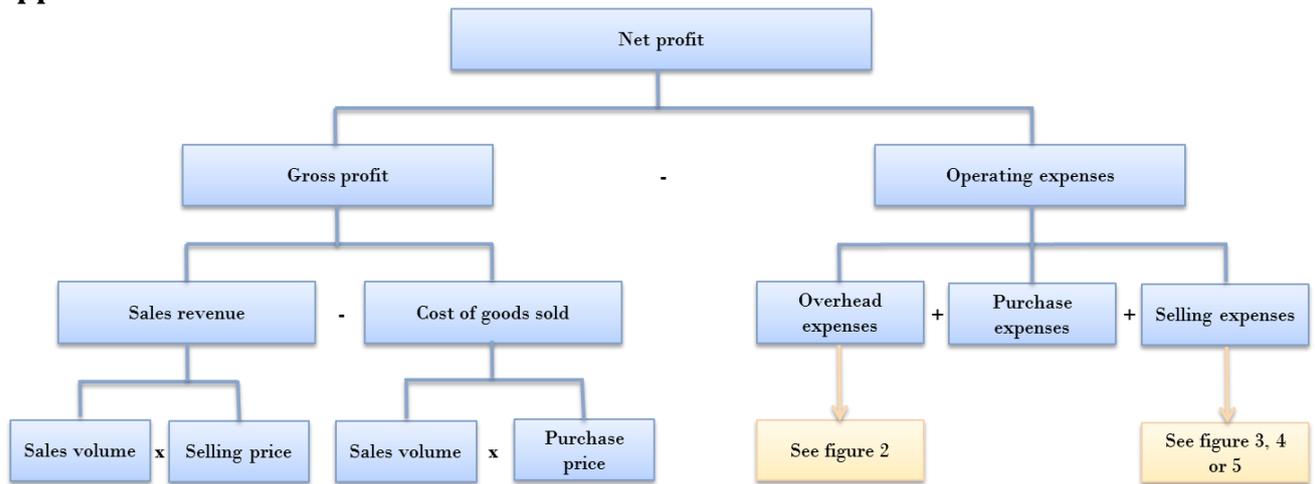


Figure 1: calculation of net profit

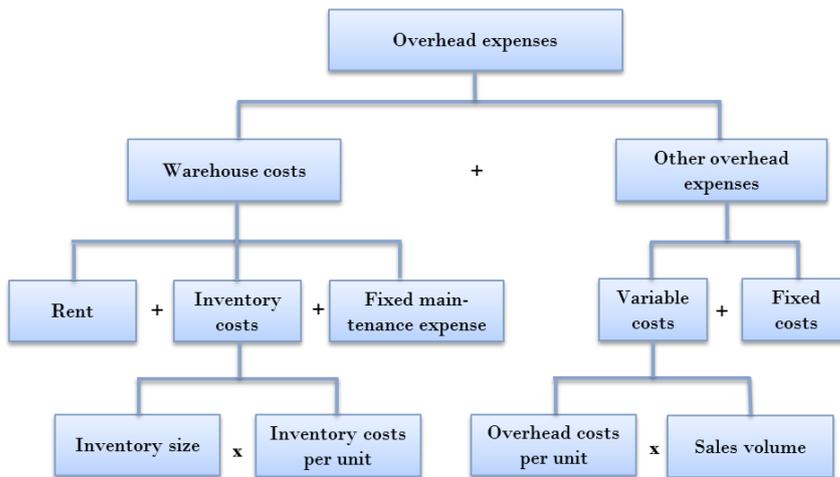


Figure 2: calculation of overhead expenses

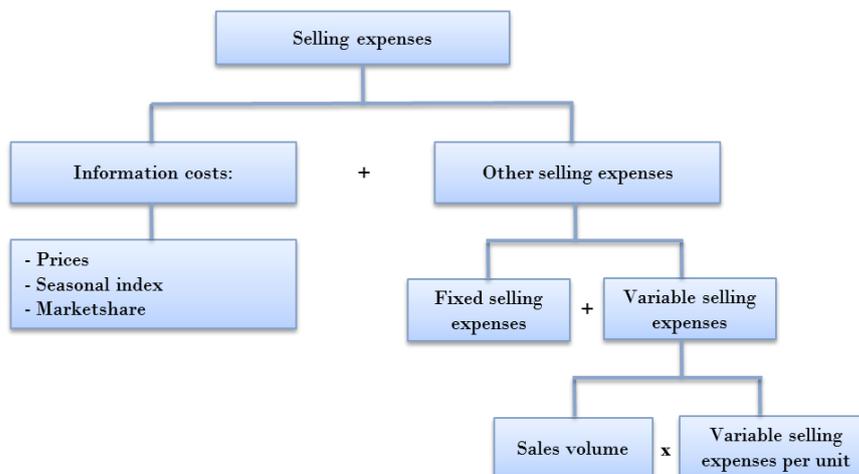


Figure 3: calculation of selling expenses in phase 1



Figure 4: calculation selling expenses in phase 2

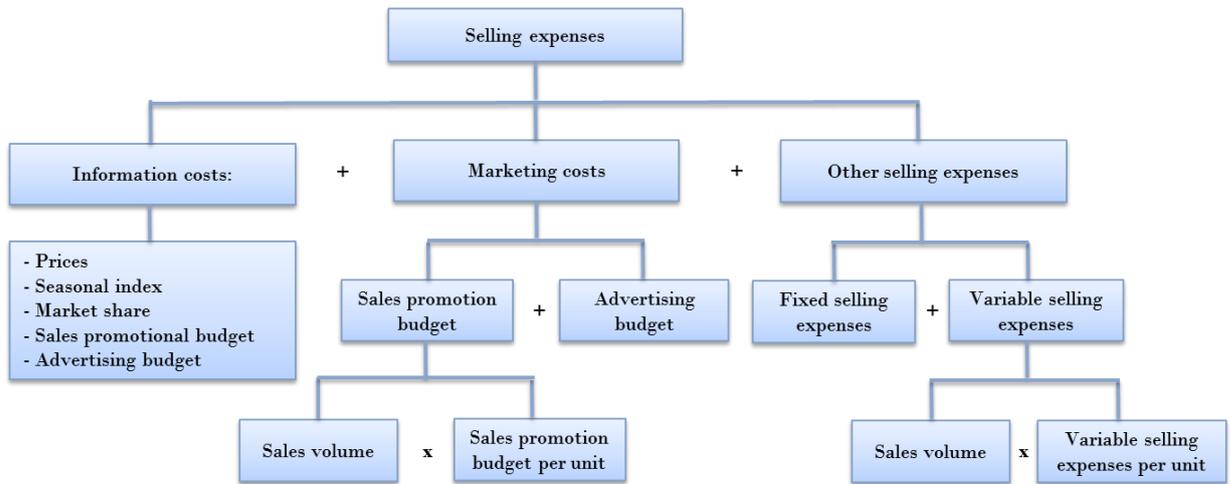


Figure 5: calculation selling expenses in phase 3