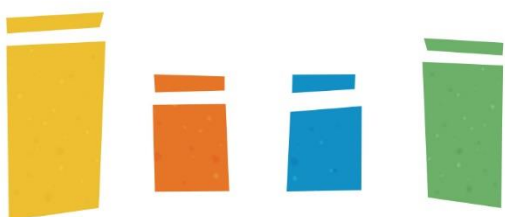




MANUAL



GearBike
Advanced Retail



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Introduction

Dear Participant!

In the GearBike simulation, your team takes control of a bicycle shop chain as top management. Data needs to be analysed, decisions have to be made, and the operation should be optimized. The goal is to run the company efficiently and maximize your evaluation score (see Performance Evaluation).

The simulation focused on the development of business decisions, and also offers cooperation opportunities for the participants, and develops teamwork, decision-making ability, analytical skills. The game can also be played individually, but teams usually participate in it.

The simulation is multi-periodic, with each period representing a quarter year. For each deadline, decisions for the next period must be made and typed in the decision fields on the simulation interface. Based on the decisions made, the simulation model generates analytics and statistics, which are business reports on the operation of the company, the market and the virtual economy. It is worth studying this manual together with the online simulation interface.

The purpose of this manual is to present the virtual economic environment in which a company operates. **We first talk about the game, the decisions to be made and the economic and management framework**, and then give a detailed description of the reports.

The numbers in this manual are for reference only and are provided as an example. **The actual data are always on the surface of the simulation game or can be calculated from them.**

Important! This manual is only a summary, and it summarizes the information for reasons of length. This should be supplemented by your own experience gained during the actual game.

Structure of the simulation

Decisions within a team need to be made on time: this requires internal organization, teamwork, collaboration, and delegation of tasks.

The game usually involves several (4-6) teams per market, each managing 1 virtual company. During the game, the decisions of the competitors also affect your companies!

Competitors in the game are companies of a similar size, founded a few years ago, with a similar structure and market position. All teams start from the exact same position at the beginning of the game.

During the simulation, teams can make decisions as store managers. Decisions must be made within a pre-determined period of time. At the deadline, the simulation system evaluates the decisions and then the players receive the results. The other decision periods are similar to the first one. A period corresponds to 1 quarter, with the same length, each 3 months. The first

quarter you need to make decisions for is the first quarter. You will see the business reports of the last quarter of the previous year, so you can use them for your decision-making.

The EcoSim Edu simulation surface

	p0 (tény)	p1 (terv)
Nyitó létszám, fő	203	162
Felvétel (+) / Elbocsátás (-), fő	0	0
Fluktuáció, fő	-41	-32
Záró létszám, fő	162	130
Alapbér	650	650
Jutalék	0	21 125
Max kapacitás (árbevétel)	1 118 610	897 650
Kihasználtság, %	127	239
Munkaerő kölcsönzés költsége	39 353	162 177

The header

On the left, there is the simulation panel, where you can navigate among the different statements. **Important!** It is worth reviewing each panel during a decision making, as there are decisions or useful information about the company everywhere.

The upper left part of the header is the **information panel**. Here you can see the selected round, your team's name, the next current deadline and the period number. It is a good idea to submit your decisions 2 minutes before the current deadline, as the system will close automatically. You can use the arrows to select the periods if you want to see the previous ones, but you can always make a decision only in the current one. The **"View"** button on the right side of the header is important if the simulation has several rounds (e.g., Trial and Live rounds), in which case we can switch between rounds and access our previous data. With the **"Export"** button you can save the data of the closed periods in Excel format. With the **"Save"** button we can save our decisions, which can be overwritten at any time by the deadline. The Save button will turn into green after you press it, however, if you change anything, you will see it in blue again.

The statements

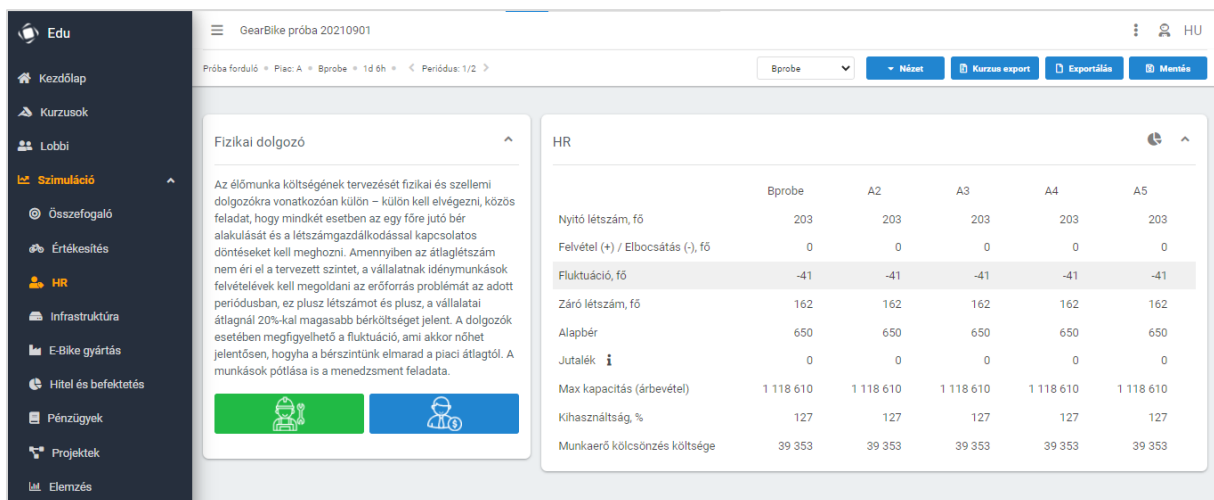
In each statement you will find an **actual (fact) and target (plan) column**. The fact column shows the closed period, i.e., the past, while the plan column shows the next period for which we make decisions. (For example, suppose we are on January 1, 2018, then the actual period would be 2017, while the target period would be 2018.)

We cannot change the data for the actual period, but we influence the target period with our decisions. When the deadline expires, a period change occurs, which means that the current period increases by one (from p1 to p2) and the previous target column becomes the actual

column, with the data created during the simulation, of course. Some data will not match our plans (such as sales plan numbers) as we cannot predict what decisions the market competition teams will make.

In the Decision fields, it is possible to change certain parameters in the operation of the company. These decisions always apply to the next period. The numbers in the target column automatically re-counted if you change a decision.

To see the data of the market competitors of the already closed period, click on the pie chart icon in the upper right corner of certain statements to see the market research view:



The **forecasts** are usually diagrams that show a present or future information about a particular product. In this case, this is Consumer Preferences or Demand Values. We will discuss later how to interpret them.

The decision making

Decisions are made on the basis of a separate business management topics, the sales and procurement of goods, the cost and resource management, financial management for the actual period.

You can change your decisions by clicking on the input field to rewrite the number, but you can also use the lower and upper arrows at the edge of the field to move step by step. It is possible to deviate from the initial decisions, but there are recommended and mandatory limits for all decisions. We may notice, for example, that by moving the arrows to increase a decision, we can reach a level where it is no longer possible to increase further with this method. We do not recommend that you make a decision outside the specified limits, as this will usually lead to an unfavourable result. Beyond the mandatory limits, it is not possible to enter a number, for example, the production value cannot be negative.

When planning the next year, you can safely rewrite the decisions and try different strategies (with the numbers in the automatically recalculated target column), as the decisions are only

recorded if you click the **Save** button, then the system only serves as a kind of planning interface.

When we are done making the decisions, so we can save the decisions by clicking the Save button. We can change and save our decisions until the deadline; the new save will always overwrite the previous one. If the team is using more than one tool (laptop, tablet, mobile or PC), this principle still applies so that the latest decisions overwrite the previous ones. Regardless, you can change decisions on multiple machines at once, but you need to talk about who will save the final version.

Decisions can basically be divided into four groups. Companies need to make sales and sourcing decisions on one hand, plan the use of resources and the costs associated with the resources on the other hand, and finally make decisions for balanced cash management, and they can also decide on business development projects. These are described in detail in the relevant chapters.

Performance evaluation

We announce results after the last decision period of the business simulation. You can score points in the 0-100 interval. The company with the highest score wins in this analysis and planning simulation challenge (score acquire the company the 0-100 interval).

Points based on accumulated profit

The simulation system determines the points based on the accumulated profit achieved so far, the company with the highest total profit gets 100 points, the other companies get points proportionally.

Example: the highest cumulative profit is 5 000 000, reached by the 'A1' company, so the score of A1 is 100. 'A2' company has 4 500 000 as cumulated profit, thus its core 90.

Point deduction

Points are deducted if the following conditions are met:

- Utilisation of the sales area exceeds 100% (-1 point)
- Warehouse utilization exceeds 100% (-1 point)
- Physical labour utilization exceeds 100% (-1 point)
- Utilization of office labour exceeds 100% (-1 point)
- The company has more than 50,000 overdrafts loan (-5 points)

Since we do not aggregate the points earned in each period, the point deduction is only significant in the last period. Before it, this is only an indication value.

Product portfolio description

The store chain sells 6 product types:

1. Children's bicycle
2. City bicycle
3. Road bike
4. Mountain Bike
5. Electric bicycle (e-bike)
6. Sportswear

Factors influencing sales

A competitive product means that the manufacturer's brand is also sold by other retailers in the stores' area, so they have different shares among the teams depending on the sales incentive decisions. The extent of this, i.e., the volume of products that can be sold, is determined based on the simulation's calculation. The potential market is divided by weighting the sales incentives.

The weight of the factors influencing the sales volume can be characterized as follows, presented on the example of the e-bike product.



Price elasticity

Product	Price sensitivity	Marketing sensitivity
Children's bicycle	*	***
City bicycle	**	**
Road bike	***	*
Mountain Bike	**	***
E-bike	***	*
Sportswear	***	***

It's worth modelling where the optimal price is, where the margin can be maximized.

Marketing

The marketing budget can be determined by product type. Your colleagues will cover the various promotions, newsletters, billboard rentals and advertising placements from your marketing budget.

In the effect of marketing budget, we also took into account that the increasing marketing cost gradually has a smaller promotional effect. These values also differ by product category (see Preferences graph in the Sales menu of the simulation interface).

Diminishing marginal utility for marketing costs means that it is no longer worthwhile to raise marketing spending above a certain threshold, because the profit mass does not increase further. Therefore, when planning marketing costs, take into account that the effect on turnover gradually decreases as the marketing amount increases, i.e., the return on marketing investment (ROMI%) decreases.

Other factors affecting sales

In addition to price and marketing budget, the services provided by the company also have an impact on customers. The bicycle service, home delivery and consulting can be launched with business development projects. The projects have different effects on different product types.

In the case of e-bikes, quality appears as a preference factor. If you take e-bike production into your own hands (also a project decision), you can also determine the quality of the product. This allows you to produce a different product from non-self-manufactured competitor products. Buyers are, of course, looking for better quality, but its production cost is also higher.

In quarterly periods, demand for bicycles and sportswear products shows strong seasonality. Demand forecast data can be found in the Sales panel on the demand graphs on the simulation interface.

The decisions

I. – Sales and procurement

Sales

Sales plans are decided by product categories.

When you determine your price, you should take into consideration the purchase price, and the price elasticity and in addition the seasonal demand.

Price index: The price index is an estimated feedback from the market. From the price index you can deduct the price elasticity of the market and the maximum prices can also be guessed, since above the maximum price the index shows 0. There will be no sales at this price, or if you are more expensive than the market average, there will be fewer buyers.

You can also decide the marketing budget per product.

Marketing Index: The marketing index shows how customers evaluate your marketing activity for each product. Its value can be 0% as a minimum, where 0 means that there is essentially no activity. The higher the rating, the more they buy from you, but as you spend more and more money, marketing becomes more and more inefficient.

Procurement

The procurement and inventory management functions of the company is one of the key processes. On the one hand, if there is no adequate inventory to meet demand, the company will lose significant potential revenue. On the other hand, if too much inventory is formed and a significant stock remains at the end of the period, the rotation rate of inventories will be slow and a large amount of cash will be tied up in inventories, which will weaken the company's liquidity and keep inventory costs higher than optimal.

You can calculate the procurement needs based on the opening stock and the planned sales volume. It is also worth counting on above-average sales potential in the preliminary estimates to form a reserve in case you "win too much" in the market.

Teams also receive information on sales revenue, margins and inventory movements by product category, as well as sales data for competitors.

II. – Resources

The task of the companies is to plan and calculate the operation costs in order to achieve the maximum profit on the one hand, and to ensure the necessary resource capacity for the core business. All this therefore means an optimization task based on the following parameters.

Labour (HR)

The planning of the cost of labour must be done separately for physical and office workers, in both cases it is a common task to make the decision of the per capita wage and the decisions related to the personnel management.

Number of employees

The capacity (quota) means that a shop assistant how much revenue can handle in one period. The quarterly headcount requirement can be calculated on the basis of the planned turnover and the quota set for the sales staff. If the closing headcount does not reach the required level, the company will have to hire seasonal workers to solve the resource problem in the given period, which means an extra labour cost.

The final number of office workers should be 25% of manual workers. If the number of employees does not reach the planned level, the company will have to hire part-time people to solve the resource problem in the given period, which means extra headcount and extra labour costs.

Wages

Wages include taxes, so they do not have to be taken into account.

Physical workers in each period receive their wages 25% as a commission, if the actual period total revenue exceeds the previous period revenue with a determined percentage (details on the simulation surface!).

In the case of office workers, the condition for the payment of the commission is that the margin reduced by operating costs, which is also the basis for the calculation of the bonus, is higher than in the base period.

The reward rate is 3% of the calculation base, this is calculated automatically by the simulation model.

Infrastructure

The infrastructure cost is determined by the change in the store (sales) area, its equipment and the storage capacity measured in square meters. The goal is to change the size of the infrastructure to such an extent that limited capacity does not hinder the achievement of business goals, while not incurring unnecessary costs.

The specific sales revenue calculated on the basis of the store floor area at the end of the period is the maximum capacity of the leased sales area indicated in the simulation. If sales revenue become higher than this, the store will rent extra area for an additional cost.

The warehouse buildings are owned by the company, which means they are depreciated. You can also buy and sell storage capacity. If the stock is over the warehouses' maximum capacity, it means overcrowding, which prevents the continuous supply of goods. In this case, the company rents extra storage space, which leads to additional costs.

It is not worth investing more than necessary, as this means extra investment cash flow and depreciation costs.

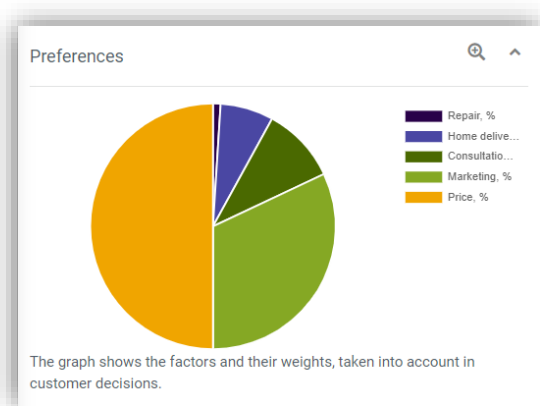
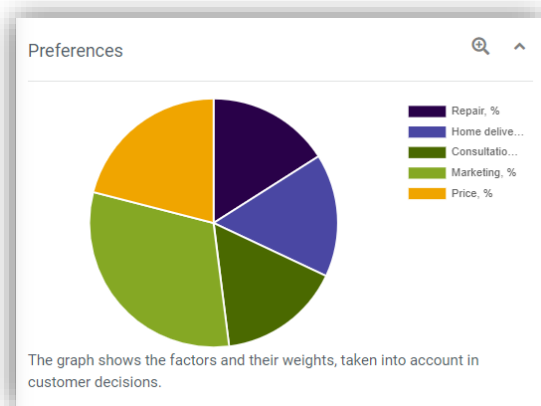
We cannot ignore the maintenance of sales area equipment. The equipment is also owned by the company, and the size of the leased sales area determines how much is necessary (there can be more, of course). If you do not have the appropriate quantity of equipment, you will experience temporary lease, just like in the case of the warehouse.

Projects

By launching projects, the company has the opportunity to expand its operations, such as launching new services or taking over the production of e-bikes.

It is important, that a started project **cannot be undone** later, another period!

Under the sales menu, the preference diagrams shows the factors and their weights, taken into account in customer decisions. For projects, the general truth is that if you starts a project that has a priority weight in the customer preferences, you can expect that your offer is more attractive than your competitor's offer, who did not start that project.



Project descriptions also show impacts and costs on the simulation surface.

The e-bike project

We write more about the e-bike project here in this manual, as it will make the e-bike panel available on the simulation interface.

In the e-bike production panel, you can make decisions about HR, machines and parts procurement. It is important that the narrowest production resource (labour, machinery or parts) will determine the e-bike production numbers, which can be lower than the plan, if you do not have enough resources.

The quality of an e-bike is determined by the qualifications of the people working in the assembly and the quality of the parts.

The total cost line includes all costs related to e-bike production, even the amortization cost of the e-bike producing machines; the total production cost is the COGS.

With optimal resource management, manufacturing can be cheaper than purchasing. The unit cost is affected by the number of employees, wages and training, depreciation of the production machines and the cost of the parts used.

III. – Financing

Long-term loan

The company can take a long-term loan for long-term financing, with interest payments. Investment in securities is forbidden if your company has any long-term loan.

Working capital loan

The company can have working capital loan to finance its everyday operation. Interest is charged on a working capital loan. It is not possible to make a bank deposit with a working capital loan.

Current account credit

An automatic decision that is “handled” by the simulation system. The bank automatically provides the necessary overdraft loan to the company in case of cash shortage. Its interest rate is higher than other loans. If a company has more than 50 000 overdrafts, it 5 points will be deducted!

Bank deposit

If the company does not have an overdraft, you can make a bank deposit, at the interest rate indicated on the interface. It is not allowed or worthwhile to invest from a loan, as the cost of credit is usually higher than the available deposit interest. Deposits and investments can be eliminated on the basis of a company decision; thus, the cash stock can be increased.

Securities

If you do not have loan, you may purchase securities. It is not allowed or worthwhile to invest from a loan, as the cost of credit is higher than the available interest rate. The and investments can be eliminated on the basis of a company decision, thus the cash stock can be increased.

Taxation

Income tax

The Company pays income tax on its pre-tax profit for the period. After deducting the tax, we get the After-Tax result, which is included in the cumulative profit during the simulation.

VAT

The value-added tax (VAT) is 25% and VAT must be accounted for and comply with the obligations relating to the payment or refund of the tax. The paid and refundable VAT on the basis of invoices issued and received. The main lines of the VAT return are based on this:

Total VAT based on sales income

VAT of Tangible Asset Purchase

VAT of Purchased Goods / Services

VAT payable or recoverable

Recoverable VAT is calculated after the following items:

- Purchased materials
- Finished goods purchases
- Operating cost
- Investments

Operating expenses include rents related to the permanent and temporary expansion and closure of the sales area, the elimination of temporary capacity shortages after the replacement of warehouses and equipment, as well as marketing, project and logistics costs. During the investments, we will expand the warehouse and purchase equipment.

Increasing and decreasing the sales area also comes at a cost, these are the costs of concluding and terminating the contract, as well as the design, beside the rent cost.

VAT charged to customers is calculated on the basis of sales.

The financial settlement of the tax payable or recoverable will take place in the next period, this should be taken into account when planning the cash flow.

Financial statements

Income statement

The Income Statement shows the company's profit for the quarter. As a company manager, this is one of your most important values. Basically, the profit comes from the difference between income and expenditure, we will show you this in a simplified way, in reality there are more factors. Revenues are positive numbers, while expenditures are negative.

Total Margin: The difference between total sales and COGS. What is a COGS? Well, it is nothing more than the Cost of Goods Sold. Total Margin shows the direct result of sales. However, this does not mean that the operation is profitable, you have to look at the costs as well.

Operating expenses include overheads such as rental costs, projects, marketing, etc., and the results of financial operations must also be taken into account.

The tax rate on profits is payable only if the business is profitable, in which case the amount of tax is calculated from the Profit before tax. The difference between the two will be the Profit After Tax.

Profit after tax is included in Cumulative profit, which is one of the evaluation factors.

Balance Sheet

The Balance Sheet is a statement showing the composition of the assets (Assets) and the financing side of these assets (Liabilities) for a given date. Due to the balance sheet principle, all assets are equal to all liabilities.

Clarification of some concepts:

Assets

- Stock: The remaining inventories are recorded in the balance sheet. It's not good to have too much stock because it can lead to funding problems.
- Accounts receivable: There are times when customers request a deferral of payment, these debts are also recorded.
- Cash: Cash available based on a cash flow statement.

Liability

- Capital stock: Share capital is the amount of money subscribed or in kind that, in the case of companies, is permanently made available to the company by the owners. The value of these is indicated on the surface only as an amount.

- Retained profit: The profit reserve is the profit carried over from the previous year and remains in the company, which changes with the amount of profit after tax.
- Profit after tax: one of the most important, if not the most important, indicators of a company's profitability is the profit after tax for a given business period. The amount is the same as the last line of the Income Statement.
- Loans: It may happen that you run out of cash during operation, even if you need it, in which case the bank will give you an account loan, but you will have to pay interest after that. With proper inventory management and efficient operation, this can be avoided, but it can come in handy with a larger investment.
- Vendors: Like customers (Accounts receivable), you have a deferred payment to vendors.

Cash-Flow

Cash flow shows the inflow and outflow of cash. The Statement shows the changes in cash and cash equivalents during the period.

To understand cash flows, it is worth thinking about what each cash flow affects. On the one hand, it is possible that the cash outflow is immediately recognized as an expense, so there is an effect on profit or loss, such as labor costs. On the other hand, cash flows do not necessarily have an effect on profit or loss, such as an asset or liability reallocation or depreciation. In the statement, cash inflows that increase cash are shown positive and cash outflows that decrease cash are shown negative.