

USER GUIDE

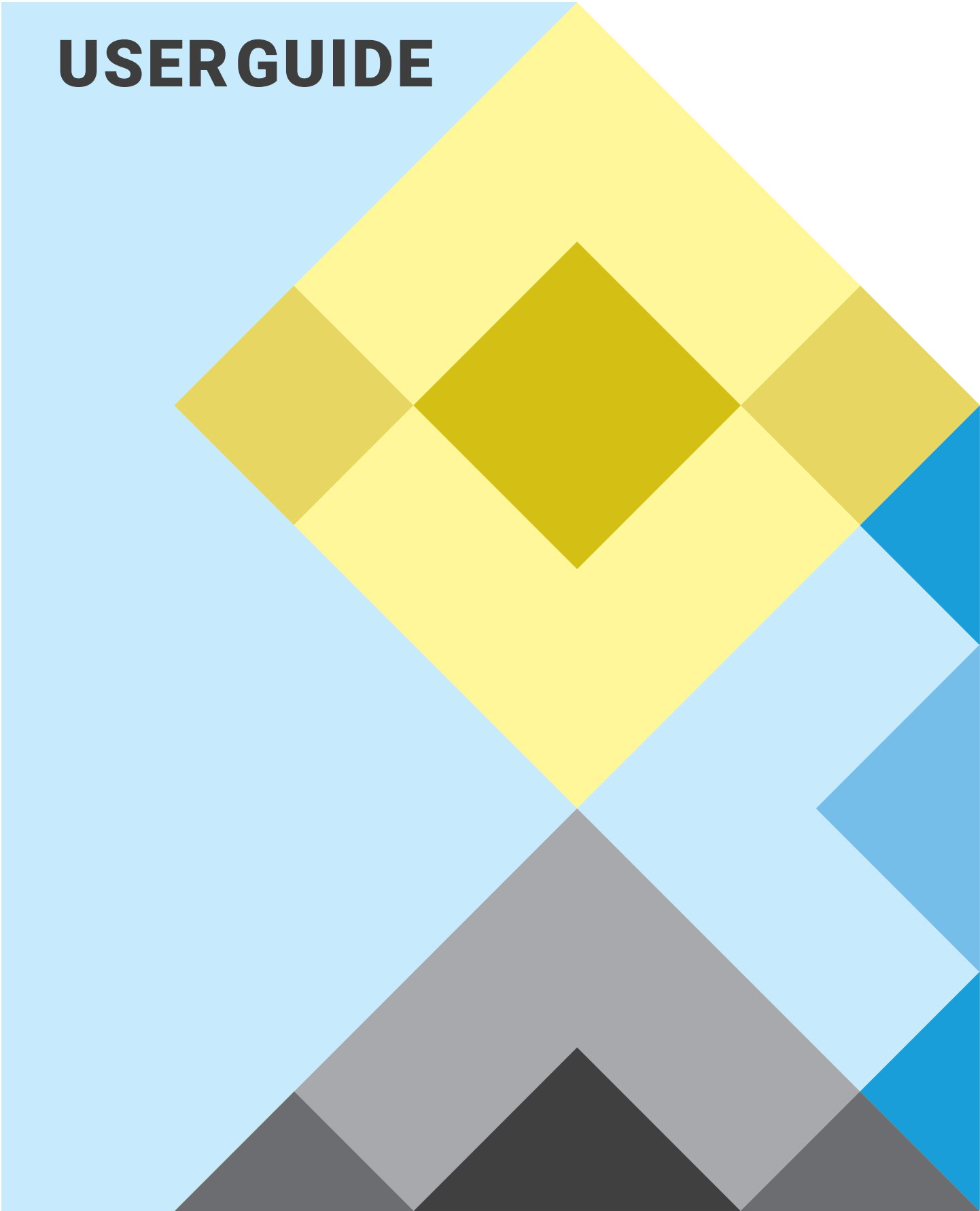


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Introduction

Welcome to CapsimCore, a business simulation that puts you in charge of running a company. Your company creates sensors, which you sell to other manufacturers that use your sensor in their products. Sensors are devices that observe physical conditions, and they are everywhere – in phones, vehicles, stop lights, and much more.

Your company was created when the government split a monopoly into identical competitors. Due to the monopoly, some issues were not resolved. Now that the market has opened up, competition will rise, so you must focus on improving your products, marketing efforts, production and finances.

At the start of the simulation, each company in your industry will begin from the exact same financial position. You can view your current status through the report, which is hosted under Reports on your dashboard and in the simulation interface.

In each round, which lasts one year, you will need to make decisions in four areas: Research and Development (R&D), Marketing, Production, and Finance.

Research & Development (R&D)

Your R&D Department designs your product line. The department needs to invent and revise products that appeal to your customers' changing needs.

Marketing

Your Marketing Department prices and promotes your products. It interacts with your customers via its sales force and distribution system. Marketing is also responsible for sales forecasts.

Production

Your Production Department determines how many units will be manufactured during the year. It is also responsible for buying and selling production lines.

Finance

Your Finance Department makes sure your company has the financial resources it needs to run through the year. The department can borrow money or pay it back through a few different options.

At the end of each round, the simulation will process, and you will be able to see how your company performed against the competition.



What is my goal?

Your goal in the simulation is to manage a healthy and profitable company. In CapsimCore, your companies have Key Performance Indicators (KPIs) passed down from your Board of Directors. Each round, you will be scored on five KPIs.

Sales (Revenue) – the total number, in dollars, that you sell in a single year.

Profit – the total number, in dollars, that you make after all revenue and costs are accounted for.

Stock Price – the value per share that your company is traded at on the public stock exchange.

Contribution Margin – the percentage your company earns on the sale of each unit. This is calculated by taking sales minus variable costs, and dividing by overall sales.

Emergency Loan – a loan provided when a company runs out of money during the year at an inflated interest rate. Emergency loans will only come as a result of your own decisions, so these can be avoided!

This measurement is the Star Summary. Each year, your company will be awarded a star if you have improved over the prior year. If you don't receive an emergency loan, you will receive a star, as well. For instance, if you had a stock price of \$13.50 last year, but improved to \$13.75 this year, you would receive a star for stock price. In contrast, if your yearly Sales remained flat at \$40,000, or decreased to \$39,950, you would not earn a star.

How do I make decisions?

In CapsimCore, you will be responsible for making company decisions across four primary areas: Research & Development (R&D), Marketing, Production, and Finance. Below, you can read about the most important things to consider when making decisions in each area. By earning stars in this way, you can build your company with an eye towards sustainable growth and avoid seriously altering your financial structure and adding risk.

Policy Decisions

In CapsimCore instructors have the option to turn on Policy Decisions for Research & Development, Marketing, Production or Finance. Policy Decisions ease the complexity of running your company. When activated, your responsibility for that department is simplified to one high-level policy decision each round.

For example, if your instructor wants to spend less time focusing on Finance, they can choose to activate Policy Decisions for the Finance department. In this case, you would be responsible for setting a high-level policy by choosing one of four options: Aggressive, Balanced, Conservative, or Do Nothing. In this, or any other department, your decision sets guidelines for how the department will run that year. For Finance, the Policy Decision determines your company's cash position, but each department has a different outcome to consider. Setting a Policy Decision each round allows you to be hands on with your company, but reduces the time it takes to make your decisions.

If your instructor has activated Policy Decisions for any department, the CapsimCore Training area will provide a short video to prepare you on how to make a policy decision for that department.



Research & Development

This department page is where the following decisions are made:

- › **Creating new products**
- › **Upgrading products**
- › **Retiring products from the market**

To create or move a product, you will need to look at what your customers are demanding. To identify what the market wants to see in the products for sale, look to the Buying Criteria in the R&D interface or the R&D section of the report.

Your product specifications are built in the gold decision sliders, and include:

Performance – The level of functionality each sensor has. The Performance scale is 0-20. The sensor becomes more appealing to customers as performance increases.

Size – The physical size and portability of the sensor. Size is on a scale of 20-0. As size decreases, the sensor becomes more appealing to customers. Performance and Size make up your product's positioning.

Reliability – The average time in hours before the device is expected to fail. Reliability is on a scale of 14,000 – 23,000 hours. Each 1,000 hours of Reliability adds \$.30 to the unit material cost.

Creating / Retiring Products

To create a new product, click the blue “+ New Product” button in the interface and select a product name from the dropdown box. Here, you can set your product's Performance, Size and Reliability in the same exact way as your other products.

You are not done preparing your product for launch yet, though. In order to actually produce units of the product for sale, you need to set a Capacity and Automation level in the Production department in the round you create the product. If you forget to add Capacity or Automation in that round, you will not be able to sell the product the following year, because it takes one year for any changes in Production to be implemented.

You also have the option to retire a product. You can do this by clicking the red “-” button. Upon doing so, you will see the product's specifications and remaining inventory, which will be sold off at 50% of the product's material cost. As you must remain selling at least one product to remain in the industry, you cannot retire all of your products at once.

Outputs

Age – Your decisions will affect the perceived age of the product. Each Performance or Size revision to your product will cut the perceived age of your product in half. Changes to Reliability only will not affect the age of your product.

Material Cost – Your material cost per unit is based on the positioning and reliability of your product. Costs rise as products move closer towards the High Tech segment's desired positioning and the upper limit of the Reliability scale.

Revision Date – Your revision date represents the day when your product is updated or released. At this point, all units of inventory are updated to the latest version of the product.



The Marketing department is responsible for pricing products, forecasting sales, promoting the brand and selling products.

This department page is where the following decisions are made:

- › **Setting product prices**
- › **Setting product promotion and sales investments**
- › **Forecasting sales for each product**

Price

To sell your products, first you must decide on a price for your products in each segment. Each segment has a \$20.00 price range. As you'd expect, customers prefer products towards the bottom of the range. As you'd also expect, buyers of High Tech goods are willing to spend more money on goods than those in the Low Tech segment. To find the acceptable price range for each region's segment, look to the Buying Criteria in the Marketing department or the Marketing section of the report.

Promotion Budget & Awareness

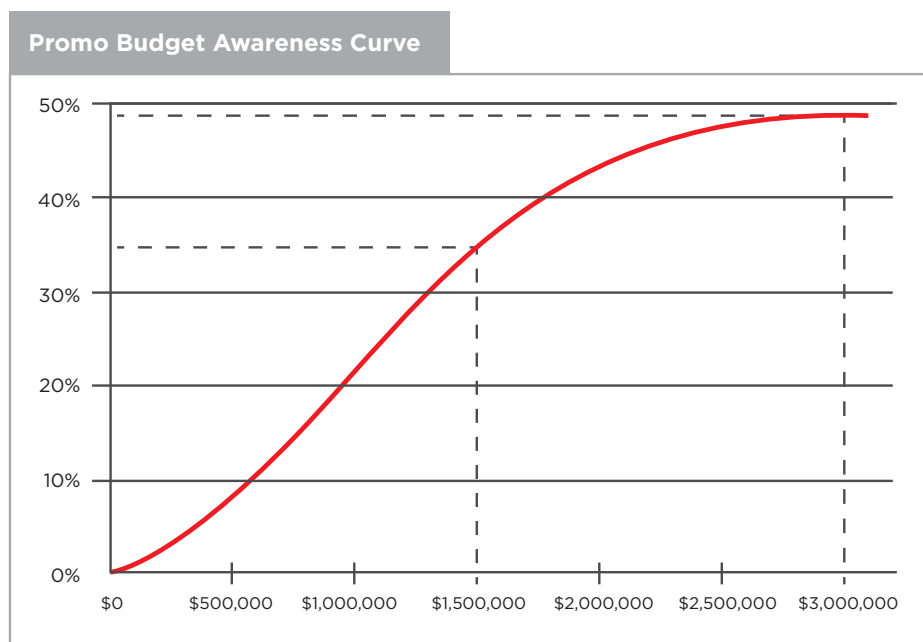
Each product's promotion budget determines its level of awareness. A product's awareness percentage reflects the number of customers who know about the product.

An awareness of 50% indicates half of the potential customers know it exists. From one year to the next, a third (33%) of those who knew about a product forget about it. This creates the formula below:

$\text{Last Year's Awareness} - (33\% * \text{Last Year's Awareness}) = \text{Starting Awareness}$

You can view your Awareness within the Marketing department interface. However, you can calculate exactly what your Awareness will be through the following calculation.

$\text{Starting Awareness} + \text{Additional Awareness from Promo Budget Curve} = \text{New Awareness}$



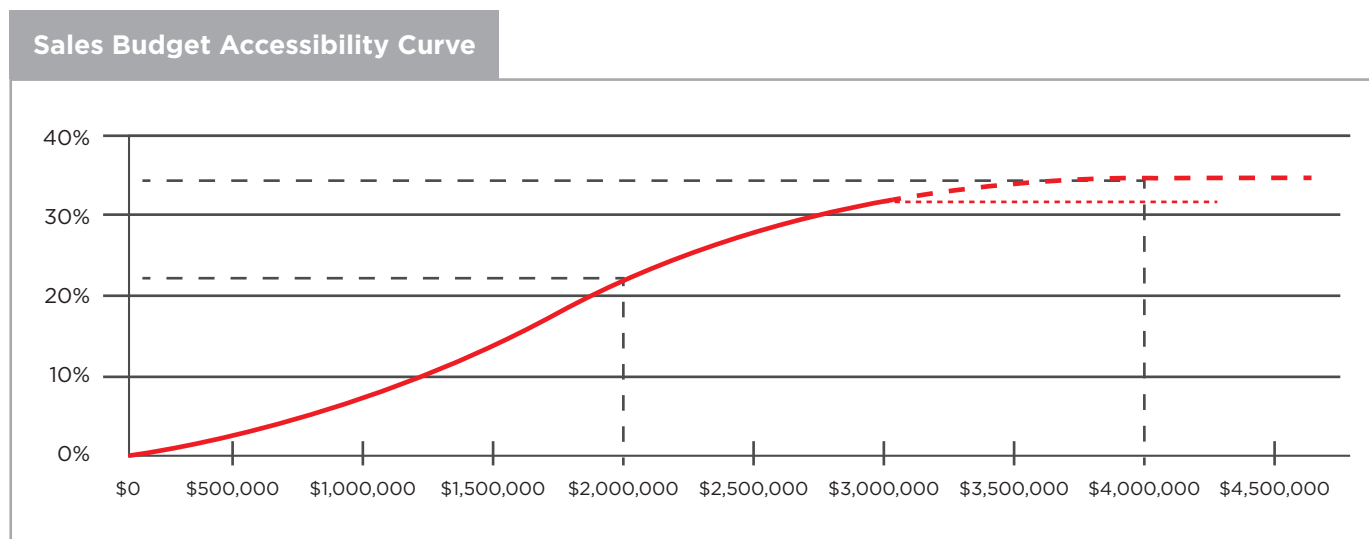
Finally, new products are newsworthy events. The buzz creates 25% awareness at no cost. The 25% is added to any additional awareness you create with your promotion budget.

Sales Budget & Accessibility

Each product's sales budget contributes to segment accessibility. A segment's accessibility percentage indicates the number of customers who can easily interact with your company via salespeople, customer support, delivery, etc. Like awareness, if your sales budgets drop to zero, you lose one third of your accessibility each year. Unlike awareness, accessibility applies to the segment, not the product. If your product exits a segment, it leaves the old accessibility behind. When it enters a different segment, it gets that segment's accessibility.

Your accessibility calculation is exactly the same as the awareness calculation. However, the contributions for Sales and Promo budgets differ. You can view the Accessibility within the Marketing interface, but if you want to calculate Accessibility, use the following calculation. Is the same as the Starting Accessibility equation:

Starting Accessibility + Additional Accessibility from Sales Budget Curve = New Accessibility



Think of awareness and accessibility as “before” and “after” the sale. The promotion budget drives awareness, which persuades the customer to look at your product. The sales budget drives accessibility, which governs everything during and after the sale. The promotion budget is spent on advertising and public relations. The sales budget is spent on distribution, order entry, customer service, etc. Awareness and accessibility go hand in hand towards making the sale. The former is about encouraging the customer to choose your product; the latter is about closing the deal via your salespeople and distribution channels.

Forecasting

The sales forecasts are used by the Production department to set production levels for the year and the Finance department to calculate the Proformas, or projected results. Accurate sales forecasting is a key element to company success.

There are two different primary methods to forecast in the simulation.

1. Use last year's actual sales and multiply by the current round's segment size.
2. Use last year's potential sales and multiply by the growth rate.

Potential Sales represents the amount of total units you would expect to sell in a perfect market. This takes into account product stock-outs from your company and your competitors. While both methods are similar, using your product's potential sales in each segment will provide you a better idea of what you will likely sell next year, should no new products enter the market.



Production

The Production department is responsible for ensuring that the forecasted demand for products is met. In addition, it decides the level of capacity and automation in the plant in order to manage costs. Each of your products has its own assembly line.

This department page is where the following decisions are made:

- › **Scheduling Production of Units**
- › **Buying or Selling Capacity**
- › **Increasing Automation**

Production Schedule

Each year, you are responsible for setting a production schedule for each of your products. One percent of all products ordered will be thrown out with defects, and the result is shown in the Production after Adjustment line. To meet the demand set in your Marketing forecast, add your current Inventory on hand to your Production after Adjustment. This is the total number of units available for sale this year.

Capacity

Each new unit of capacity costs \$6.00 for the floor space plus \$4.00 multiplied by the automation rating. For each unit of capacity, you can schedule overtime work equal to 100% of your Plant Capacity, meaning that you can produce double your capacity. Overtime labor costs are 50% higher than producing in your first shift. Your product starts with 800 units of capacity, meaning you can produce 800 units in your first shift and an additional 800 units in overtime.

Automation

As automation levels increase, the number of labor hours required to produce each unit falls. The lowest automation rating is 1.0; the highest rating is 10.0.

At an automation rating of 1.0, labor costs are highest. Each additional point of automation decreases labor costs approximately 10%. At a rating of 10.0, labor costs fall about 90%. Automating comes at a cost, however. The higher your automation level, the longer it takes your products to be revised by Research & Development. Due to the massive costs of tailoring product development to robotic manufacturing, at an automation level of 10.0, any changes to your products will take at least one year to complete.

For each point that automation is changed, there is a \$4 charge per unit of capacity. At 1000 units of capacity, increasing automation by 1 point will cost \$4,000.



Finance

Your Finance Department is primarily concerned with financing the company's investments and making sure the cash position is positive at the end of the year.

There are three main functions in the Finance Department:

1. Raising Capital
2. Retiring Debt/Stock
3. Issuing Dividends

Finance decisions should be made after all other departments enter their decisions. After the management team decides what resources the company needs, the Finance Department addresses funding issues and financial structure.

Raising Capital

There are three ways to acquire capital, each with advantages and disadvantages. Capital can be acquired through:

Current Debt (Bank Loans) – these are one-year loans that are paid off on January 1 of next year. The yearly interest rate applies to current debt.

Stock Issues – selling common stock to the public.

Bond Issues (Long-term Debt) – the amount of money that the bond markets will issue you. You are capped at having up to 80% of last year's fixed assets.

Retiring Debt/Stock

If you're flush with cash, want to reduce the number of outstanding shares, or amount of long-term debt, you can choose to retire stock or bonds.

Retire Stock – You can buy back up to 5% of your outstanding shares each round.

Retire Bonds – You can retire any of your long-term debt, or bonds, earlier than the 10-year period if you want to. You must pay a small, 1.5%, brokerage fee to retire bonds early, and these will be settled at the closing price listed in the Outstanding Bonds box in the Finance interface.

Issuing Dividends to Shareholders

Sometimes the owners of a company like to see some return on the money they invested in the enterprise. You do that by paying dividends. Paying dividends can impact the stock price. A healthy stock price increases your ability to raise capital for investments, which in turn can return further profits, which can be passed onto shareholders as further dividends.

Emergency Loans

An emergency loan is a one-year loan from an emergency lender. If your company runs out of money during the year, you will require an emergency loan to keep your company afloat. Because of the "quick fix" nature of the emergency loan, interest rates to repay emergency loans are extremely high (7.5% above the current interest rate). ***Try to avoid these at all costs!***

Stock Price

Stock price is a function of four things:

- › **Book value, defined as total equity.**
- › **Earnings per share (EPS), defined as profits divided by shares outstanding.**
- › **Dividends per share, set directly by you. Dividends set higher than the year's EPS negatively impact stock price.**
- › **Emergency loans also negatively impact the stock price.**

Human Resources

The Human Resources module has been added to your course, so you now have the ability to invest in the people that run your company. When the Human Resources module is active, you will see decisions appear in a new department, aptly titled Human Resources.

With Human Resources active, you have the opportunity to invest in three areas of your company: Research & Development, Marketing, and Production. There are three total decisions that you can choose to invest in.

Decisions

Manufacturing – Training & Assembly Teams

Determine the investment in training your manufacturing employees to work in assembly teams. Assembly teams are known to increase productivity and quality, which increases production after adjustment. Employees also prefer to work in teams, which reduces turnover.

Each round you can invest up to \$2 million to train your manufacturing staff to work in a more effective manner.

Scientists – Recruitment & Retention

Determine how much you will spend to recruit and retain scientists to work on new R&D projects for your company. This will impact how quickly you release new products and product updates, as well as how customers perceive the quality of your products.

Each round you can invest up to \$2 million to attract and retain scientists to work on your sensors. The more you spend, the better the return will be.

Sales – Compensation

Determine how much you will compensate your sales force. This decision will impact how accessible your products are to customers and your employee turnover.

Each round you can invest up to \$2 million in additional compensation for your sales force.

Total Quality Management

The Total Quality Management (TQM) module has been added to your course, so you now have the option to invest in the people that run your company. When the TQM module is active, you will see decisions appear in a new department – Total Quality Management.

With TQM active, you can reduce material, labor, and administrative costs, shorten the length of time required for R&D projects to complete and increase demand for the product line. The impacts of the investments produce returns in the year they are made and in each of the following years. There are ten total TQM initiatives that you can choose to invest in, which you can see below.

Your company needs to determine which initiatives best serve its purposes. If you are keeping automation levels low so R&D projects complete more quickly, you might want to invest in areas that lower labor costs (for example, Quality Initiative Training). If your company is competing in the high technology segments, with high material costs, you might consider initiatives that reduce material costs (for example, Continuous Process Improvement). To maximize the effect, companies should find complementary initiatives and invest in each of them. For example, to reduce material costs, companies should consider investing in both CPI Systems and GEMI TQEM Sustainability.

Decisions

Process Management Initiatives

The impacts of these initiatives improve business procedures, resulting in improved efficiencies and cost structures:

CPI (Continuous Process Improvement) Systems

Reduces material cost and to a lesser degree labor costs.

Vendor/JIT (Just in Time [Inventory])

Reduces Material costs and Administrative overhead.

QIT (Quality Initiative Training)

Reduces labor costs.

Channel Support Systems

Increases the effectiveness of the sales budget, and therefore demand.

Concurrent Engineering

Reduces R&D cycle time, the time needed to move sensors on the Perceptual Map and to change MTBF specifications. R&D costs are determined by the length of time they require, therefore Concurrent Engineering also lowers R&D costs.

UNEP Green Program

The United Nations Environment Program increases the effectiveness of the sales budget (customers prefer products made by socially responsible manufacturers), and therefore increases demand. Green programs also reduce waste and therefore material costs.

TQM Initiatives

The impacts of these initiatives improve product quality while reducing the time and resources required to design, manufacture, warehouse and ship products.

Benchmarking

Reduces Administrative overhead.

Quality Function Deployment Effort

Reduces R&D cycle time and enhances the effectiveness of the Promotion and Sales Budgets.

CCE (Concurrent Engineering)/6 Sigma Training

Reduces material costs and labor costs.

GEMI TQEM Sustainability

The Global Environmental Management Initiative Total Quality Environmental Management initiative reduces labor costs as it minimizes environmental risks. These include production methods which protect employee health and redesign of products to have fewer toxic by-products. The initiative also reduces material costs, as it promotes recycling and other material use efficiencies.

For each impact, complementary initiatives combine to increase the total effect. You should bundle your investments in multiple initiatives that have an impact important to your company's strategy. By spreading your investment among complementary initiatives, you can invest more in each impact than the limit of \$2,000,000 for an individual initiative.

You can target multiple impacts, such as both material and labor cost reduction; this can be a substantial investment in any given year. As you fine tune your decisions, keep an eye on the Projected Cumulative Impacts to ensure that your investments are creating cost-effective returns.

Companies that invest in the same initiatives over two or three rounds (depending on the amount of money) will experience decreasing and eventually no additional returns for their investments.

What information do I need to make decisions?

Each round, customers in each segment demand faster and higher performing sensors. High Tech customers demand more out of the products they are seeking, but even Low Tech customers want better products. In turn, the segment circles you see in the Perceptual Map will drift to the bottom right.

Segment Drift Rates

Each segment will drift uniquely in the simulation. Analysts are projecting a consistent drift over the next 8-10 years, which is projected below.

	Low Tech	High Tech
Performance	+0.5	+0.7
Size	-0.5	-0.7

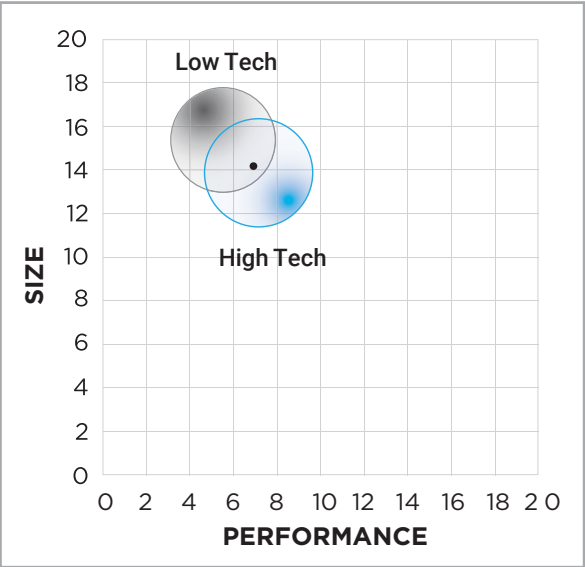
Segment Ideal Spots

Due to differing customer demands in the High and Low Tech Segments, the ideal spots for each segment will also drift at different rates. As you can see below, the segments – and ideal spots – will drift further apart over time.

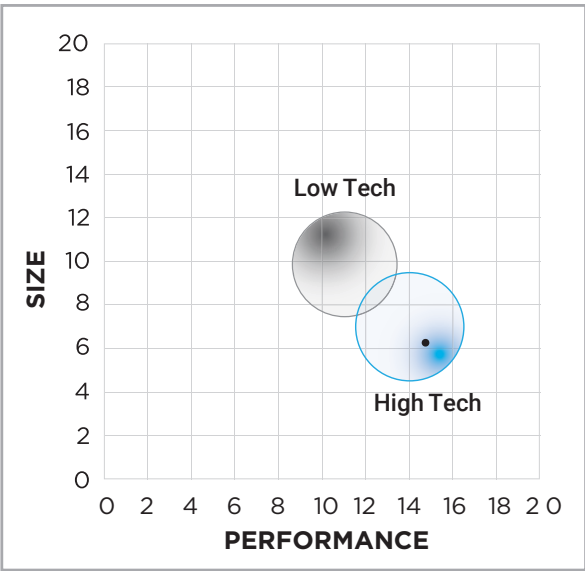
	Low Tech	High Tech
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Perceptual Map

Round 1



Round 8



Round	Performance	Size	Performance	Size
0	4.8	15.2	7.4	12.6
1	5.3	14.7	8.1	11.9
2	5.8	14.2	8.8	11.2
3	6.3	13.7	9.5	10.5
4	6.8	13.2	10.2	9.8
5	7.3	12.7	10.9	9.1
6	7.8	12.2	11.6	8.4
7	8.3	11.7	12.3	7.7
8	8.8	11.2	13.0	7.0

Segment Growth Rates

Both the Low and High Tech segments are projected by analysts to grow very steadily over the next 8-10 years. The Low Tech segment is projected to grow by 10% each year, while the High Tech segment is projected to grow by 20%.

Everything else you need, such as the Customer Buying Criteria, can be found in the Report or within the R&D or Marketing pages of the simulation interface.

Where do I see my results?

When a round is processed, you can view your scoring results through your dashboard. Your score on the Star Summary is shown in the center of the dashboard. There, you can view how you did on the five key measurements in the simulation. Stars are awarded for increases in sales, profits, stock price, and contribution margin. A final star is awarded if you did not run out of money and receive an emergency loan during the year.

For more detailed analysis of your results, click the Reports tab within the dashboard or interface. Here, you can assess your performance, broken down in each area of the simulation.

How do I read the report?

The CapsimCore Report shows each company's performance over the previous year.

This begins by addressing some of the key metrics your company is measured on in the High Level Overview. Here, you can see where your company stands next to the competition and the industry average. Each subsequent section is designed to assist you alongside the department you are making decisions in.

Research and Development

The R&D section of the report gives you information in three areas:

Customer Buying Criteria – detailed buyer information for the Low Tech and High Tech segments.

Perceptual Map – image showing where the customer segments and ideal spots are located.

Product List – complete list of products in the industry, along with specifications, ages, and revision dates.

Marketing

The Marketing section of the report provides you with all information needed to make your company's marketing decisions. The report is broken down into two sections: Low Tech and High Tech segments.

Each segment shows the following:

Customer Buying Criteria – identical to the R&D section, this shows detailed buyer information for the segment.

Demand Information – market size, growth rate and sales information for last year.

Market Share – company market share, measured by overall sales of all products in the segment.

Top Products – a complete list of products that sold in the segment the prior year, with information on price, units sold, sales & promo budget, accessibility & awareness, and customer satisfaction. You can also see if your product stocked out and what your potential sales would have been had the market if no products stocked out. Using your potential sales is a great baseline for forecasting sales for the next year.

Production

The Production section is broken down into two areas: unit costs and manufacturing plants.

In the costs section, assess your company's material and labor costs, and how they impact each product's contribution margin. Here, you can compare how your product costs match up to your competitors.

In the plant section, you can see all information relating to your product's manufacturing efforts, including units produced, inventory leftover from last year, and your plant utilization. You can also see what next year's automation and capacity will be for each product in the industry.

Finance

The Finance section of the report focuses on drilling down into the numbers that reflect the year in your industry. There are four sections of the Detailed Financials section:

Income Statement – this illustrates each company's high-level sales and costs to provide you with last year's net profit. Variable costs include direct labor and material costs, while fixed costs include R&D, sales, and administrative expenses. Interest is calculated based on the debt you owe, and each company pays taxes of 32% on any remaining profits.

Cash Flow Statement – this shows where each company's cash went over the past year, including cash from operating expenses, investing in plant and equipment, and financing activities. The Closing Cash Position reflects how much cash you have on hand coming into the year.

Balance Sheet – this identifies the dollar value of what each company owns (assets), what it owes (liabilities), and the amount contributed by investors (equity). Assets always equal liabilities and equity. Your assets and liabilities are broken down into two categories: current and fixed (or long-term). Current assets can be quickly converted to cash, while current liabilities include any short-term debt. Fixed assets take longer to convert to cash, and include your plant and equipment. Long-term liabilities are your company's long-term debt holdings (bonds).

Product Income Statement – the report closes with a more detailed assessment of your products through the product income statement. Here, you can see the contribution of each of your products and how they impacted your company's profitability.