FOUNDATION

Team Member Guide

The Course Road Map

Registration
Go to capsim.com/register, follow the onscreen instructions and register into your Industry.*
Create your User ID and Password.

** Your instructor may have given you an Industry ID Number. If not, you can locate your industry by using your school name/campus and either the course section number, start date or your instructor's initials.*

Getting Started
Login with your User ID and Password at capsim.com Click on Foundation. Go to Getting Started and follow the steps that include:

- Reviewing the Rehearsal Tutorial
- Opening the Foundation Spreadsheet
- Forming your company

Practice Rounds (if applicable)
Most instructors include team Practice rounds. When the Practice is over the simulation will restart from the beginning, using the unique model selected by your instructor.

Competition Rounds
When the Competition begins, your decisions count! Additional tasks could include:

- Optional Homework Assignments
- Peer Evaluations

See your Dashboard for complete information.

Comp-XM (if applicable)
Your instructor might include a Comp-XM exam. Go to the Course Page and choose Comp-XM. Follow the instructions on the Dashboard which include:

- Decision making using the Comp-XM Spreadsheet
- Board Queries (quizzes)

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1 Introduction

Congratulations, you are now in charge of a multimillion dollar company. You manufacture sensors, which you market to other manufacturers. They put your products into the devices they sell. Your company was created when the government split a monopoly into identical competitors. As a monopoly, operating inefficiencies and poor product offerings were not addressed because:

- Increasing costs could be passed onto customers; and
- Mediocre products would sell because customers had no other choices.

While last year's financial results were decent, your products are getting old, your marketing efforts are falling short, your production lines need revamping and your financial management is almost nonexistent.

Competition in the post-monopoly era means you can no longer ignore these issues. If you do, competitors with better products and/ or lower prices will take your market share.

Sensors Are Everywhere...

Sensors are devices that observe physical conditions. For example, the average cell phone contains dozens of sensors that allow it to interpret touch, spatial orientation and signal strength.

New sensor businesses are created every day in areas as diverse as security, aeronautics and biomedical engineering. You are in a business-to-business market, not a direct-toconsumer market; the sensors your company manufactures are incorporated into the products your customers sell.

1.1 The Industry Conditions Report

Each simulation industry is unique. As your simulation starts, the Industry Conditions Report, which is explained in Chapter 2, will outline the beginning business environment, including customer buying criteria.

> The Industry Conditions Report is available from your simulation Dashboard.

1.2 Management Tools

Here are the tools you need to run your company.

1.2.1 The Rehearsal Tutorial

Think of the Rehearsal Tutorial as a driving school for the simulation. The tutorial will show you ways to steer the company, including how to:

- Invent and revise products;
- Make marketing decisions;
- Schedule production and buy/sell equipment; and
- Ensure your company has the financial resources it needs for the upcoming year.

The sample resources used for the Rehearsal, including its Foundation FastTrack (see below) and Industry Conditions Report, mirror those used in the actual simulation.

> The Rehearsal is available from your simulation Dashboard.

1.2.2 The Foundation FastTrack

Every round, you and your competitors will have access to an industry newsletter called the Foundation FastTrack. The FastTrack (described in Chapter 5) is an extensive year-end report of the sensor industry. It includes customer buying patterns, product positioning, public financial records and other information that will help you get ahead. In business, knowledge is power. If you want to evaluate your company's performance or analyze your competitors, the FastTrack is the place to start.

Every product's Customer Survey Score (Chapter 3) can be found in the FastTrack's Segment Analysis pages. These scores determine sales distribution.

The FastTrack Reports "Last Year's Results"

The FastTrack available at the start of Round 1 displays results for Round 0, when all companies were equal just after the monopoly's breakup. The FastTrack available at the start of Round 2 will display the results for Round 1. As the simulation progresses and strategies are implemented, results among the competing companies will begin to vary.

The FastTrack is available from two locations:

- From the Foundation Spreadsheet, click Reports in the menu bar; and
- On the website, log into your simulation and click the Reports link.

1.2.3 The Situation Analysis

Completing the Situation Analysis (described in Chapter 9) will enable you to understand current market conditions and how the industry will evolve in the next few years. It will assist you with your operational planning.

The Situation Analysis comes in two versions:

- Online interactive
- Downloadable PDF (pen and paper)

The Situation Analysis is available from your simulation Dashboard or via the Getting Started area on your left-hand menu.

1.2.4 Proformas & Annual Reports

Proformas and annual reports are specific to your company. Proformas are projections for the upcoming year. Annual reports are the results from the previous year.

The proformas will help you envision the impacts of your pending decisions and sales forecasts. The annual reports will help you analyze last year's results.

Proformas are only available from the Foundation Spreadsheet's Proformas menu.

To access the annual reports:

- From the Foundation Spreadsheet, click Reports in the menu bar; or
- On the website, log into your simulation then click the Reports link.

1.2.5 The Foundation Spreadsheet

The Foundation Spreadsheet is the nerve center of your company where you formulate and finalize management decisions for every department.

After you log into your simulation, the spreadsheet is available from the Decisions link.

1.2.6 Just in Time Information

In the spreadsheet decision areas, look for the flag symbol shown to the right. Clicking it will give you detailed information about the area you are viewing.

1.3 Company Departments

The Rehearsal Tutorial and Chapter 4 discuss company activities. You have four main departments or functional areas:

- Research & Development, or R&D
- Marketing
- Production
- Finance

Many simulations utilize the Human Resources and TQM (Total Quality Management)/Sustainability modules. These modules require additional management decisions. Your simulation Dashboard will tell you if the modules are included.

Companies use the Foundation Spreadsheet to enter departmental decisions.

1.3.1 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.

1.3.2 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.

1.3.3 Production

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

1.3.4 Finance

Your Finance Department makes sure your company has the financial resources it needs to run through the year. The department can raise money via one-year bank notes, 10-year bonds or stock issues.

The department can also issue stock dividends, buy back stock or retire bonds before their due dates.

1.3.5 Plug-ins

Plug-ins are different than modules. Plug-ins and their decisions have a greater overall impact on your organization.

For example, the simulation might include the Ethics plug-in, which presents you with an unexpected dilemma. Group discussion and consensus is imperative because your decisions will affect your financial results.

Your simulation Dashboard will notify you if a plug-in has been scheduled.

1.4 Inter-Department Coordination

1.4.1 R&D and Marketing

R&D works with Marketing to make sure products meet customer expectations.

1.4.2 R&D and Production

R&D works with Production to ensure assembly lines are purchased for new products. If Production discontinues a product, it should notify R&D.

1.4.3 Marketing and Production

Marketing works with Production to make sure manufacturing quantities are in line with forecasts. Marketing's market growth projections also help Production determine appropriate levels of capacity. If Marketing wants to discontinue a product, it tells Production to sell the product's production line.

1.4.4 Marketing and Finance

Marketing works with Finance to project revenues for each product and to set the Accounts Receivable policy, which is the amount of time customers can take to pay for their purchases.

1.4.5 Finance and Production

Production tells Finance if it needs money for additional equipment.

If Finance cannot raise enough money, it can tell Production to scale back its requests or perhaps sell idle capacity.

1.4.6 Finance and All Departments

The Finance Department acts as a watchdog over company expenditures. Finance should review Marketing and Production decisions. Finance should cross-check Marketing's forecasts and pricing. Are forecasts too high or too low? Will customers be willing to pay the prices Marketing has set? Is Production manufacturing too many or too few units? Does Production need additional capacity? Has Production considered lowering labor costs by purchasing automation?

1.5 Practice and Competition Rounds

Practice Rounds allow you to organize workflow among the members of your company. You will begin to compete against the other companies in your simulation or, if you are in a Footrace competition, against a common set of computer-run companies.

Don't confuse the Rehearsal Tutorial with the Practice Rounds! During the Rehearsal Tutorial, you are shown how to make decisions in a scripted environment. During the Practice Rounds, you can experiment with your decisions in a competitive environment.

After the conclusion of the Practice Rounds the simulation is reset and the real competition begins. Now it's time to drive your company to success! Companies compete for up to eight rounds, with each round simulating one year in the life of your company.

1.5.1 Decision Audits

The Decision Audit is a complete trail of all team decisions. It will help you identify your decision-making strengths and weaknesses.

The audit is available from two locations:

- From the Foundation Spreadsheet, click Help in the menu bar; or
- On the website, log into your simulation then click the Decision Audit link.

1.6 Company Success

The board of directors, shareholders and other stakeholders expect you to make the company a market leader. Successful managers will:

- Analyze the market and its competing products;
- Create and execute a strategy; and
- Coordinate company activities.

Best of luck in running a profitable and sustainable company!

2 Industry Conditions

The information in your Industry Conditions Report will help you understand your customers.

Your customers fall into different groups, which are represented by market segments. Customers within a market segment have similar needs. The segments are named for the customer's primary requirements such as:

- Low Tech
- High Tech

The Industry Conditions Report lists market segment sales percentages and projected growth rates unique to your simulation.

The Industry Conditions Report is published once at the beginning of the simulation. It is available from your simulation Dashboard.

2.1 Buying Criteria

Customers within each market segment employ different standards as they evaluate products. They consider four buying criteria: Price, Age, MTBF (Mean Time Before Failure) and Positioning.

2.1.1 Price

Each segment has different price expectations. Low Tech wants inexpensive products while High Tech, seeking advanced technology, is willing to pay higher prices.

2.1.2 Age

Each segment has different age expectations, that is, the length of time since the product was invented or revised. High Tech wants new technology while Low Tech prefers proven technology that has been in the market for a few years.

2.1.3 MTBF (Mean Time Before Failure) or Reliability

MTBF (Mean Time Before Failure) is a rating of reliability measured in hours. Segments have different MTBF criteria. High Tech prefers higher MTBF ratings while Low Tech is satisfied with lower ratings.

2.1.4 Positioning

Sensors vary in their dimensions (size) and the speed/sensitivity with which they respond to changes in physical conditions (performance). Combining size and performance creates a product attribute called positioning.

The Perceptual Map

Positioning is such an important concept that marketers developed a tool to track the position of their products and those of their competitors. This tool is called a Perceptual Map.

Note the Perceptual Map in Figure 2.1. You will see this map quite often through the course of the simulation.

The map measures size on the vertical axis and performance on the horizontal axis. Each axis extends from 0 to 20 units. The arrow in Figure 2.1 points to a product called Able with a performance measurement of 8.0 and a size of 12.0.

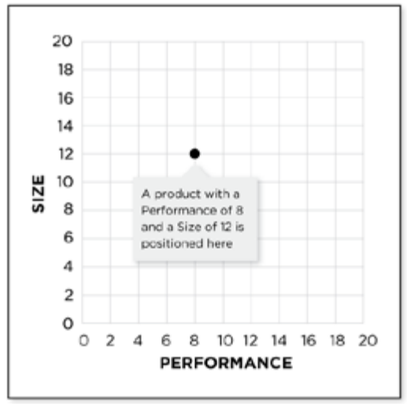


Figure 2.1 The Perceptual Map Used in the Simulation: The Perceptual Map plots product size and performance characteristics.

2.1.5 Market Segment Positions on the Perceptual Map

Market segments have different positioning preferences. The Low Tech segment is satisfied with inexpensive products that are large in size and slow performing. It wants products that fall inside the upper-left set of dashed and solid circles in Figure 2.2. The High Tech segment wants products that are faster performing and smaller in size. It wants products that fall within the lower-right set of dashed and solid circles.

Over time, your customers expect products that are smaller and faster. This causes the segments to move or drift a little each month. As the years progress the locations of the circles significantly change. The example in Figure 2.3 shows the location of the market segments at the end of the fourth year. Figure 2.4 shows the segments at the end of the eighth year.

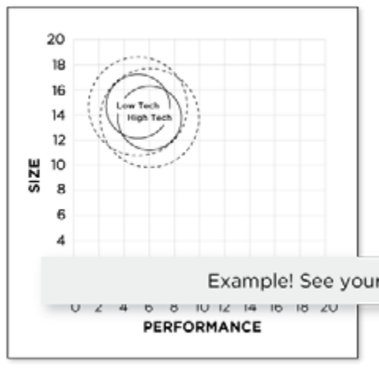


Figure 2.2 Beginning Segment Positions: At the beginning of the simulation, segment positions are clustered in the upper-left portion of the perceptual map.

Figure 2.3 Segment Positions at the End of Year 4: The segments have moved to the middle of the map. The overlap between the segments decreases because the Low Tech segment moves more slowly than the High Tech segment.

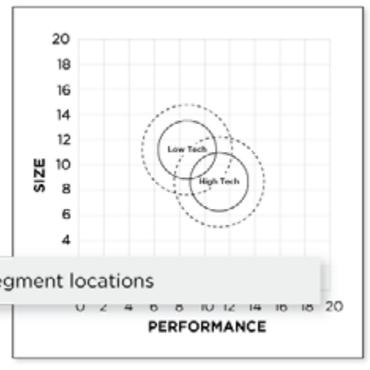


Figure 2.4 Segment Positions at the End of Year 8: The segments have moved to the lower right; very little overlap remains.

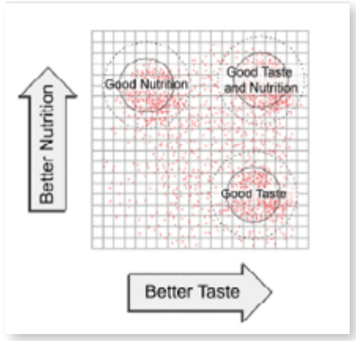
Example! See your Industry Conditions Report for exact segment locations

Each year, the High Tech segment demands greater improvement than the Low Tech segment. Therefore they drift at different rates. High Tech moves faster and farther than Low Tech. As time goes by, the overlap between the segments diminishes.

> Drift rates are published in the Industry Conditions Report.

Market segments will not move faster to catch up with products that are better than customer expectations. Customers will refuse to buy a product positioned outside the circles. Customers are only interested in products that satisfy their needs. This includes being within the circles on the Perceptual Map!

> **Perceptual Maps Can Be Used for Many Types of Products...**
>
> Perceptual Maps can be used to plot any two product characteristics. For example, cereal manufacturers could plot nutrition and taste. The dots in the figure below represent sales of breakfast cereals based on ratings of taste and nutrition. There are few sales in the lower-left corner– not many consumers want products that have poor taste and poor nutrition.
>
> As they review product sales, marketers would notice three distinct clusters. The cluster to the upper left indicates a group of customers that is more interested in nutrition than taste. The cluster to the lower right indicates a group that is more interested in taste than nutrition. The cluster to the upper right indicates a group that wants both good taste and good nutrition.



> The clusters, or market segments, could then be named "Taste," "Nutrition" and "Taste/Nutrition." The simulation uses a similar positioning method to name its market segments.

> In the simulation, there are zero customers interested in products positioned outside of the dashed circles.

Your R&D and Marketing Departments have to make sure your products keep up with changing customer preferences. To do this, R&D must reposition products, keeping them within the moving segment circles. See "4.1 Research & Development (R&D)" for more information.

2.2 Buying Criteria by Segment

Buyers in each segment place a different emphasis upon the four buying criteria. For example, some customers are more interested in price, while others are more interested in positioning.

> Positioning criteria change every year. Price, age and MTBF criteria always remain the same.

Buying Criteria for the previous year are reported in the Foundation FastTrack's Segment Analysis pages. As you take over the company to make decisions for Round 1, your reports reflect customer expectations as of December 31, Round 0 (yesterday). The Industry Conditions Report displays the Round 0 buying criteria for each market segment. Here are two example segments.

Example 1: Customers seek proven products at a modest price.

- Age, 2 years– importance: 47%
- Price, $15.00-$35.00– importance: 23%
- Ideal Position, size 16.0/performance 4.0– importance: 21%
- MTBF, 14,000-20,000– importance: 9%

Example 2: Customers seek cutting-edge technology in size/ performance and new designs.

- Ideal Position, size 12.4/performance 6.6– importance: 43%
- Age, 0 years– importance: 29%
- MTBF, 20,000-26,000– importance: 19%
- Price, $20.00-$40.00– importance: 9%

3 The Customer Survey Score

In any month, a product's demand is driven by its monthly customer survey score. Assuming it does not run out of inventory, a product with a higher score will outsell a product with a lower score.

Watch a video overview at: http://capsim.com/go/v/fcss

Customer survey scores are calculated 12 times a year. The December customer survey scores are reported in the Foundation FastTrack's Segment Analysis pages.

A customer survey score reflects how well a product meets its segment's buying criteria. Company promotion, sales and accounts receivable policies also affect the survey score.

Scores are calculated once each month because a product's age and positioning change a little each month. If during the year a product is revised by Research and Development, the product's age, positioning and MTBF characteristics can change quite a bit. As a result, it is possible for a product with a very good December customer survey score to have had a much poorer score–and therefore poorer sales–in the months prior to an R&D revision.

Prices, set by Marketing at the beginning of the year, will not change during the year.

3.1 Buying Criteria and the Customer Survey Score

The customer survey starts by evaluating each product against the buying criteria. Next, these assessments are weighted by the criteria's level of importance. For example, one segment can assign a higher importance to positioning than the other. A well-positioned product in a segment where positioning is important will have a greater overall impact on its survey score than a well-positioned product in a segment where positioning is not important.

The Industry Conditions Report and the FastTrack's Market Segment Analysis pages break down each segment's criteria in order of importance.

A perfect customer survey score of 100 requires that the product: Be positioned at the ideal spot (the segment drifts each month, so this can occur only one month per year); be priced at the bottom of the expected range; have the ideal age for that segment (unless they are revised, products grow older each month, so this can occur only one month per year); and have an MTBF specification at the top of the expected range.

Your customers want perfection, but it is impractical to have "perfect" products. In many cases you will have to settle for "great" products, but the better the products, the higher the costs. Your task is to give customers great products while still making a profit. Your competitors face the same dilemma.

3.1.1 Positioning Score

Marketers must understand both what customers want and their boundaries. In terms of a product's size and performance (as discussed in "Section 2.1.5"), the Perceptual Map illustrates these ideas with circles. Each segment is described with a dashed outer circle, a solid inner circle and a dot we call the ideal spot (Figure 3.1).

Rough Cut Circle
The dashed outer circle defines the outer limit of the segment. Customers are saying, "I will NOT purchase a product outside this boundary." We call the dashed circle the rough cut boundary because any product outside of it "fails the rough cut" and is dropped from consideration. Rough cut circles have a radius of 4.0 units.

Fine Cut Circle
The solid inner circle defines the heart of the segment. Customers prefer products within this circle. We call the inner circle the fine cut because products within it "make the fine cut." Fine cut circles have a radius of 2.5 units.

Ideal Spot
The ideal spot is that point in the heart of the segment where, all other things being equal, demand is highest.

Segment Movement
Each segment moves across the Perceptual Map a little each month. In a perfect world your product would be positioned in front of the ideal spot in January, on top of the ideal spot in June and trail the ideal spot in December. In December it would complete an R&D project to jump in front of the ideal spot for next year.

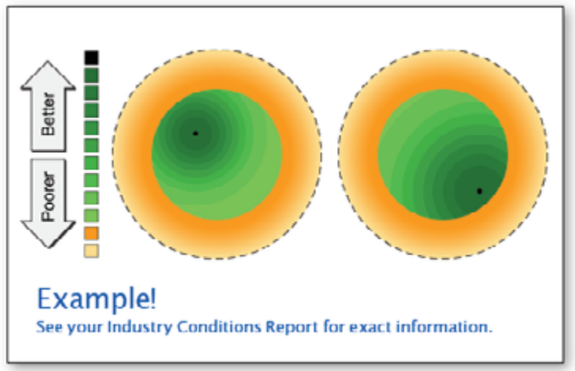


Figure 3.1 Positioning Scores: The dashed outer circle defines the edge of the rough cut. It measures 4.0 units from the center of the circle. The inner circle defines the edge of the fine cut. It measures 2.5 units from the center. Segment ideal spots are represented by the black dots.

The example on the left displays a positioning score for a segment that prefers products with slower performance and larger size. The example on the right displays a score for a segment that demands cutting-edge products with high performance and small size. The orange areas represent the segment rough cuts, where scores rapidly decrease towards zero.

Positioning Rough Cut
Products placed in the rough cut area (orange rings, Figure 3.1) are between 2.5 and 4.0 units from the center of the circle. Products here are poorly positioned and they will have reduced customer survey scores. The farther they are from the fine cut circle, the more the scores are reduced. Just beyond the fine cut, scores drop 1%. Halfway across the rough cut, scores drop 50%. Scores drop 99% for products that are almost to the edge of the rough cut.

Sensors that are about to enter the rough cut can be revised by Research & Development (see "4.1.1 Changing Performance, Size and MTBF").

The location of each segment's rough cut and fine cut circles as of December 31 of the previous year appears on page 8 of the FastTrack.

Positioning Fine Cut
Products inside the fine cut (green areas, Figure 3.1) are within 2.5 units of the center of the circle. Ideal spots for each segment are illustrated by the black dots. The example on the left illustrates a segment that prefers proven, inexpensive technology. The ideal spot is to the upper left of the segment center, where material costs are lower. The example on the right illustrates a segment that prefers cutting-edge technology. The ideal spot is to the lower right of the segment center, where material costs are higher (see Figure 4.1 for an illustration of material positioning costs).

Participants often ask, "Why are some ideal spots ahead of the segment centers?" The segments are moving. From a customer's perspective, if they buy a product at the ideal spot, it will still be a cutting-edge product when it wears out. For contrast, if they buy a product at the trailing edge, it will not be inside the segment when it wears out.

A product's positioning score changes each month because segments and ideal spots drift a little each month. Placing a product in the path of the ideal spot will return the greatest benefit through the course of a year.

3.1.2 Price Score

Each segment has a $20.00 price range. Customers prefer products–the ideal–towards the bottom of the range.

Segment price expectations correlate with the segment's position on the Perceptual Map. High Tech customers are willing to pay higher prices than Low Tech customers.

Price Rough Cut
Sensors priced $10.00 above or below the segment guidelines will not be considered for purchase. Those products fail the price rough cut.

Sensors priced $1.00 above or below the segment guidelines lose about 10% of their customer survey score (orange lines, Figure 3.2). Sensors continue to lose approximately 10% of their customer survey score for each dollar above or below the guideline, on up to $9.99, where the score is reduced by approximately 99%. At $10.00 outside the range, demand for the product is zero.

Price Fine Cut
Within each segment's price range, price scores follow a classic economic demand curve (green curve, Figure 3.2): As price goes down, the price score goes up.

3.1.3 MTBF Score

Each segment sets a 6,000 hour range for MTBF (Mean Time Before Failure), the number of hours a product is expected to operate before it malfunctions. Customers prefer products towards the top of the range.

MTBF Rough Cut
Demand scores fall rapidly for products with MTBFs beneath the segment's guidelines. Products with an MTBF 1,000 hours below the segment guideline lose 20% of their customer survey score. Products continue to lose approximately 20% of their customer survey score for every 1,000 hours below the guideline, on down to 4,999 hours, where the customer survey score is reduced by approximately 99%. At 5,000 hours below the range, demand for the product falls to zero.

MTBF Fine Cut
Within the segment's MTBF range, the customer survey score improves as MTBF increases (Figure 3.3). However, material costs increase $0.30 for every additional 1,000 hours of reliability.

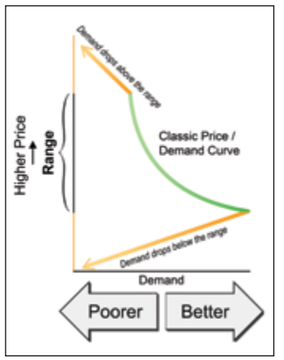


Figure 3.2 Classic Price/ Demand Curve (Green Bow): As price drops, demand (price score) rises. Scores drop above and below the price range (orange lines).

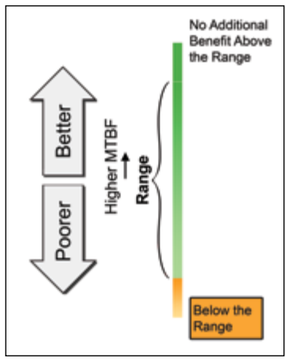


Figure 3.3 Mean Time Before Failure (MTBF) Score: As MTBF increases, the score increases. Customers are indifferent to MTBFs above the segment range.

Customers ignore reliability above the expected range– demand plateaus at the top of the range.

3.1.4 Age Score

The age criteria do not have a rough cut; a product will never be too young or too old to be considered for purchase.

High Tech customers demand cutting-edge technology. They prefer newer products. Low Tech customers prefer older products with proven technology.

Each month, customers assess a product's age and award a score based upon their preferences. Examples of age preferences are illustrated in Figure 3.4.

> Age preferences for each segment are published in the Industry Conditions Report and the Segment Analysis pages of the Foundation FastTrack.

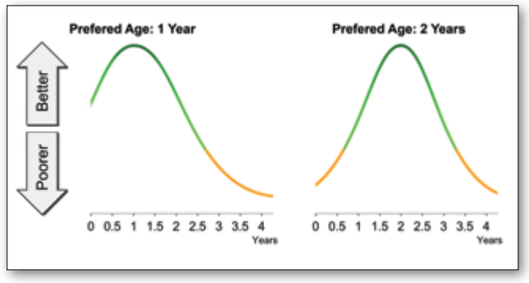


Figure 3.4 Age Scores: The example on the left displays a score for a segment that prefers products with an age of one year. The example on the right displays a score for a segment that prefers products with an age of two years.

3.2 Estimating the Customer Survey Score

The customer survey score drives demand for your product in each segment. Your demand in any given month is your score divided by the sum of the scores. For example, if your product's score in April is 20 and your competitors' scores are 27, 19, 21 and 3, then your product's April demand is:

$$20 / (20+27+19+21+3) = 22\%$$

Assuming you had enough inventory to meet demand, you would receive 22% of segment sales for April.

What generates the score itself? Marketers speak of "the 4 P's"–price, product, promotion and place. Price and product are found in the buying criteria. Together they present a price-value relationship. Your promotion budget builds "awareness," the number of customers who know about your product before sourcing. Your sales budget (place) builds "accessibility," the ease with which customers can work with you after they begin sourcing. To the 4 P's we can add two additional elements– credit terms and availability. Credit terms are expressed by your accounts receivable (A/R) policy. Availability addresses inventory shortages.

3.2.1 Base Scores

To estimate the customer survey score, begin with the buying criteria available in the FastTrack's Segment Analysis reports. For example, suppose the buying criteria are:

- Age, 2 years– importance: 47%
- Price, $20.00-$40.00– importance: 23%
- Ideal Position, size 16.0 /performance 4.0– importance: 21%
- MTBF, 14,000-20,000– importance: 9%

A perfect score of 100 requires that the product have an age of 2.0 years, a price of $20.00, a position at the ideal spot (16.0 and 4.0) and an MTBF of 20,000 hours.

The segment weighs the criteria at: Age 47%, Price 23%, Positioning 21% and MTBF 9%. You can convert these percentages into points then use these numbers to estimate a base score for your product. For example, price is worth 23 points. The perfect price of $20.00 would get 23 points, but at the opposite end of the price range, a price of $40.00 would get zero points.

> You can use the age and positioning charts in your Industry Conditions Report to estimate average points for those criteria.

However, the base score can fall because of poor awareness (promotion), accessibility (place) or the credit terms you extend to your customers.

3.2.2 Accounts Receivable

A company's accounts receivable policy sets the amount of time customers have to pay for their purchases. At 90 days there is no reduction to the base score. At 60 days the score is reduced 0.7%. At 30 days the score is reduced 7%. Offering no credit terms (0 days) reduces the score by 40% (see "4.4.5 Credit Policy").

3.2.3 Awareness and Accessibility

After your product leaves the factory and enters the marketplace, the calculations for its score become less exact. The score will be affected by the level of the product's awareness (the percentage of people who know about your product) and its segment's accessibility (the number of customers who can easily interact with your company).

Awareness is built over time by the product's promotion budget. Promotion budgets fund advertising and public relations campaigns. Accessibility is built over time by the product's sales budget. Sales budgets fund salespeople and distribution systems to service customers within the product's market segment.

Similar products with higher awareness and accessibility will score better than those with lower percentages (see "4.2 Marketing" for more information on awareness and accessibility).

> If the TQM/Sustainability module is enabled, some initiatives can increase the customer survey score (see "7.1 TQM/Sustainability").

3.3 Stock Outs and Seller's Market

What happens when a product generates high demand but runs out of inventory ("stocks out")? The company loses sales as customers turn to its competitors. This can happen in any month.

> The Market Share Report of the Foundation FastTrack (page 7) can help you diagnose stock outs and their impacts.

Usually, a product with a low customer survey score has low sales. However, if a segment's demand exceeds the supply of products available for sale, a seller's market emerges. In a seller's market, customers will accept low-scoring products as long as they fall within the segment's rough cut limits. For example, desperate customers with no better alternatives will buy:

- A product positioned just inside the rough cut circle on the Perceptual Map– outside the circle they say "no" to the product;
- A product priced $9.99 above the price range– at $10.00 customers reach their tolerance limit and refuse to buy the product; and
- A product with an MTBF 4,999 hours below the range– at 5,000 hours below the range customers refuse to buy the product.

Watch out for two common tactical mistakes in a seller's market:

1. A company disregards products that are in the positioning rough cut. These products normally can be ignored because they have low customer survey scores. However, when the company increases the price, the customer survey score falls below the products in the rough cut areas, which are suddenly more attractive than their product.
2. The company fails to add capacity for the next round. A seller's market sometimes appears because a competitor unexpectedly exits a segment. This creates a windfall opportunity for the remaining companies. (However, a well-run company will always have enough capacity to meet demand from its customers.)

How can you be sure of a seller's market? You can't, unless you are certain that industry capacity, including a second shift, cannot meet demand for the segment. In that case, even very poor products will stock out as customers search for anything that will meet their needs.

> See "How Is the Customer Survey Score Calculated?" in the Online Guide's FAQ|Reports section for more information on assessing your products.

4 Managing Your Company

It's time to unlock the doors and turn on the lights. Welcome to your company. The Rehearsal Tutorial (described in Section 1.2.1) shows you the mechanics of the company departments described below. Remember, entering decisions is the easy part; determining what decisions to enter requires some thought. This chapter and the Rehearsal Tutorial will help you get started.

Every company starts the simulation with one sensor product. The product sells to both Low Tech and High Tech customers. Products can be terminated or added. Your company must have at least one product and cannot have more than five. Products can be targeted to one segment or both segments. Your decisions, made every year on January 1, are carried out by your employees throughout the year.

> Your simulation might also include additional modules and plug-ins. Your simulation Dashboard will notify you if these decisions are scheduled.

4.1 Research & Development (R&D)

The Research and Development (R&D) Department oversees invention and redesign. It develops the innovations needed to keep the company ahead of the competition. R&D is responsible for the "product" portion of the 4 P's of Marketing ("product, price, place and promotion"). This makes R&D an essential part of any marketing process.

Your R&D Department invents new products and changes specifications for existing products. Changing size and/or performance repositions a product on the Perceptual Map. Improving performance and shrinking size moves the product towards the lower right on the map (see "2.1.4 Positioning").

Watch a video overview at: http://capsim.com/go/v/frd

Your R&D decisions are fundamental to your Marketing and Production plans. In Marketing, R&D addresses:

- The positioning of each product inside a market segment on the Perceptual Map
- The number of products in each segment
- The age of your products
- The reliability (MTBF rating) of each product

In Production, R&D affects or is affected by:

- The cost of material
- The purchase of new facilities to build new products
- Automation levels (The higher the automation level, the longer it takes to complete an R&D project.)

All R&D projects begin on January 1. If a product does not have a project already under way, you can launch a new project for that product. However, if a project begun in a previous year has not finished by December 31 of last year, you will not be able to launch a new project for that product (the decision entry cells in the R&D area of the Foundation Spreadsheet will be locked).

4.1.1 Changing Performance, Size and MTBF

A repositioning project moves an existing product from one location on the Perceptual Map to a new location, generally (but not always) down and to the right. Repositioning requires a new size attribute and/or a new performance attribute. To keep up with segment drift, a product must be made smaller (that is, decrease its size) and better performing (that is, increase its performance).

Positioning Costs

Positioning affects material costs (Figure 4.1). The more advanced the positioning, the higher the cost. At the beginning of the simulation, the trailing edge of the Low Tech fine cut has the lowest positioning cost of approximately $1.50; the leading edge of the High Tech fine cut has the highest positioning cost of approximately $10.00.

Reliability (MTBF) Costs

The reliability rating, or MTBF, for existing products can be adjusted up or down. Each 1,000 hours of reliability (MTBF) adds $0.30 to the material cost. A product with 20,000 hours of reliability includes $6.00 in reliability costs:

($0.30 × 20,000) / 1,000 = $6.00

Improving positioning and reliability will make a product more appealing to customers, but doing so increases material costs.

> Material costs displayed in the spreadsheet and reports are the combined positioning and reliability (MTBF) costs.

Inventing Sensors

New products are assigned a name (click in the first cell that reads NA in the name column), performance, size and MTBF. Of course, these specifications should conform to the criteria of the intended market segment. The name of all new products must have the same first letter of the company name.

The Production Department must order production capacity to build the new product one year in advance. Invention projects take at least one year to complete.

> All new products require capacity and automation, which should be purchased by the Production Department in the year prior to the product's revision (release) date. If you don't buy the assembly line the year prior to its introduction, you cannot manufacture your new product!

It is not possible to produce new products prior to the revision date. A new product with a revision date of July 1 will be produced in the second half of the year. The capacity and automation will stand idle for the first half of the year.

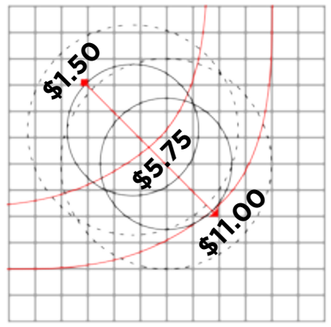


Figure 4.1 Approximate Material Positioning Costs: Material costs are driven by two factors, reliability (MTBF) and positioning.

Positioning costs vary depending on the product's location on the Perceptual Map. Products placed at the trailing edge of the segments have a positioning cost of approximately $1.50; products placed on the arc of the leading edge have a positioning cost of approximately $10.00. Products placed on the arc halfway between the trailing and leading edges have a positioning material cost of approximately $5.75.

While the segments will drift apart and the distance between the leading and trailing edges will increase, the positioning cost range will not change. The leading edge will always be approximately $10.00, the trailing edge will always be approximately $1.50 and the midpoint will always be approximately $5.75.

4.1.2 Project Management

The Low Tech segment circles move on the Perceptual Map at a speed of 0.5 units per year. The High Tech segment circles move at 0.7 units per year. You must plan to move your products (or retire them) as the simulation progresses. Generally, the longer the move on the Perceptual Map, the longer it takes the R&D Department to complete the project.

Project lengths can be as short as three months or as long as three years. Project lengths will increase when the company puts two or more products into R&D at the same time. When this happens each R&D project takes longer. Assembly line automation levels also affect project lengths. R&D project costs are driven by the amount of time they take to complete. A six-month project costs $500,000; a one-year project costs $1,000,000.

Sensors will continue to produce and sell at the old performance, size and MTBF specifications up until the day the project completes, shown on the spreadsheet as the revision date. Unsold units built prior to the revision date are reworked free of charge to match the new specifications.

> If the project length takes more than a year, the revision date will be reported in the next Foundation FastTrack. However, the new performance, size and MTBF will not appear; old product attributes are reported prior to project completion.

When products are created or moved close to existing products, R&D completion times diminish. This is because your R&D Department can take advantage of existing technology. If the module is active, TQM/Sustainability investments can also decrease R&D times (see "7.1 TQM/Sustainability"). It is important to verify completion dates after all decisions have been entered. Usually you want repositioning projects to finish in less than a year. For example, consider breaking an 18-month project into two separate projects, with the first stage ending just before the end of the current year and the second ending halfway through the following year.

4.1.3 A Sensor's Age

It is possible for a product to go from an age of 4 years to 2 years. How can that be? When a product is moved on the Perceptual Map, customers perceive the repositioned product as newer and improved, but not brand new. As a compromise, customers cut the age in half. If the product's age is 4 years, on the day it is repositioned, its age becomes 2 years. Therefore, you can manage the age of a product by repositioning the product. It does not matter how far the product moves. Aging commences from the revision date.

> Changing the MTBF alone will not affect a product's age.

Age criteria vary from segment to segment. For example, if a segment prefers an age of 2 years and the product's age approaches 3 years, customers will lose interest (see Figure 3.4). Repositioning the product drops the age from 3 to 1.5 years, and customers will become interested again.

Log into the Foundation Spreadsheet and click the Decisions menu. Select Research & Development. To change a product's performance, enter a number in the New Pfmn cell; to change its size, enter a number in the New Size cell. To change the reliability rating, enter a number in the MTBF cell. As you vary the specifications, observe the effect upon the revision date, project cost, material cost and age.

> The Rehearsal Tutorial's R&D Tactics show you how to run the department. Log in at the Capsim website and go to the Dashboard for information about the Rehearsal.

4.2 Marketing

Marketing functions vary widely depending on the industry and company. In general, the department drums up interest in the company's products or services through a mix of activities. These can include advertising, public relations and good old-fashioned salesmanship.

Your Marketing Department is concerned with the remaining P's (beyond R&D's product): price, place and promotion. Your Marketing Department is also in charge of sales forecasting.

Watch a video overview at: http://capsim.com/go/v/fmrk

4.2.1 Pricing Sensors

Price was discussed in 3.1.2. To review, appeal falls to zero when prices go $10.00 above or below the expected price range. Price drives the product's contribution to profit margin. Dropping the price increases appeal but reduces profit per unit.

4.2.2 Promotion and Sales Budgets

Promotion and sales budgets affect customer awareness and accessibility. They also affect the customer survey score. See "3.2 Estimating the Customer Survey Score" for more information.

Promotion

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.

Last Year's Awareness - (33% × Last Year's Awareness) = Starting Awareness

If a product ended last year with an awareness of 50%, this year it will start with an awareness of approximately 33%. This year's promotion budget would build from a starting awareness of approximately 33%.

Starting Awareness + Additional Awareness from Figure 4.2 = New Awareness

Figure 4.2 indicates a $1,500,000 promotion budget would add 36% to the starting awareness, for a total awareness of 69% (33 + 36 = 69).

Figure 4.2 indicates a $3,000,000 budget would add just under 50% to the starting awareness, roughly 14% more than the $1,500,000 expenditure (33 + 50 = 83). This is because further expenditures tend to reach customers who already know about the product. Once your product achieves 100% awareness, you can scale back the product's promotion budget to around $1,400,000. This will maintain 100% awareness year after year.

> The FastTrack's Segment Analysis reports (pages 5-6) publish awareness percentages.

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

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.

If you have two or more products that meet a segment's fine cut criteria, the sales budget for each product contributes to that segment's accessibility. The more products you have in the segment's fine cut, the stronger your distribution channels, support systems, etc. This is because each product's sales budget contributes to the segment's accessibility.

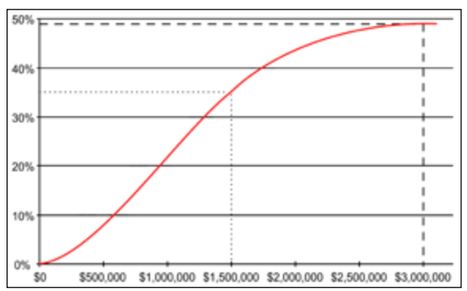


Figure 4.2 Promotion Budget: Increases in promotion budgets have diminishing returns. The first $1,500,000 buys 36% awareness; spending another $1,500,000 (for a total of $3,000,000) buys just under 50%. The second $1,500,000 buys less than 14% more awareness.

If you have one product in a segment, there is no additional benefit to spending more than $3,000,000. If you have two or more products in a segment, there is no additional benefit to spending more than a $4,500,000 split between the products, for example, two products with sales budgets of $2,250,000 each (see Figure 4.3).

> Sales budgets are less effective when products are not completely positioned in the fine cut circle, when prices rise above segment guidelines or when MTBFs fall below segment guidelines.

Achieving 100% accessibility is difficult. You must have two or more products in the segment's fine cut. Once 100% is reached, you can scale back the combined budgets to around $3,500,000 to maintain 100%.

> The FastTrack's Segment Analysis reports (pages 5-6) publish accessibility percentages.

Awareness and 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.

Figure 4.3 Sales Budget: For budgets above $3,000,000, the dotted red line indicates there is no additional benefit for companies that have only one product in a segment; the dashed red line indicates returns for companies with two or more products in a segment. Increases in sales budgets have diminishing returns. The first $2,000,000 buys 22% accessibility. For companies with two or more products in a segment, spending $4,000,000 buys just under 35%. The second $2,000,000 buys less than 13% additional accessibility.

4.2.3 Sales Forecasting

Accurate sales forecasting is a key element to company success. Manufacturing too many units results in higher inventory carrying costs. Manufacturing too few units results in stock outs and lost sales opportunities, which can cost even more (see "10 Forecasting").

> Log into the Foundation Spreadsheet and click the Decisions menu. Select Marketing. Use this area to determine each product's Price, Promotion Budget, Sales Budget and Sales Forecast. What's the difference between the Computer Prediction and Your Sales Forecast? The Computer Prediction cannot consider what your competitors are doing. It does not know. Instead, it assumes each of your competitors will offer one mediocre product (with a customer survey score of 20) in each segment. It benchmarks how your product would do against this mediocre playing field.
>
> The Computer Prediction, expressed as units demanded, changes as you make decisions about your product. Use the Computer Prediction to evaluate the impact your decisions will have upon your product's appeal. For example, you can estimate the impact a price change will have upon demand.
>
> The Your Sales Forecast column overrides the Computer Prediction with your own prediction (see Chapter 10). Until you provide a sales forecast, the computer uses its mediocre Computer Prediction to predict your proforma financial statements. Always override the Computer Prediction with your own forecast.
>
> The remaining cells display the financial impacts of your decisions:
>
> - Gross Revenue Forecast (Price multiplied by either the Computer Prediction or, if entered, Your Sales Forecast.)
> - Variable Costs (Labor, Material and Inventory Carrying costs subtracted from the Gross Revenue Forecast.)
> - Contribution Margin Forecast (Gross Revenue Forecast minus variable costs.)
> - Less Promotion and Sales (Contribution Margin Forecast minus the product's Promotion Budget and Sales Budget.)

> The Rehearsal Tutorial's Marketing Tactics show you how to run the department. Log in at the Capsim website and go to the Dashboard for information about the Rehearsal.

4.3 Production

For manufacturers, production literally puts everything together. The department coordinates and plans manufacturing runs, making sure that products get out the door.

Watch a video overview at: http://capsim.com/go/v/fprd

In your Production Department, each product has its own assembly line. You cannot move a product from one line to another because automation levels vary and each product requires special tooling.

As it determines the number of units to produce for the upcoming year, Production needs to consider the sales forecasts developed by Marketing minus any inventory left unsold from the previous year.

4.3.1 Capacity

First-shift capacity is defined as the number of units that can be produced on an assembly line in a single year with a daily eight-hour shift. An assembly line can produce up to twice its first-shift capacity with a second shift. An assembly line with a capacity of 2,000,000 units per year could produce 4,000,000 units with a second shift. However, second-shift labor costs are 50% higher than the first shift.

Each new unit of capacity costs $6.00 for the floor space plus $4.00 multiplied by the automation rating. The Production spreadsheet will calculate the cost and display it for you. Increases in capacity require a full year to take effect– increase it this year, use it next year.

Capacity can be sold at the beginning of the year for $0.65 on the dollar value of the original investment. You can replace the capacity in later years, but you have to pay full price. If you sell capacity for less than its depreciated value, you lose money, which is reflected as a write-off on your income statement. If you sell capacity for more than its depreciated value, you make a gain on the sale. This will be reflected as a negative write-off on the income statement (see "6.3 Income Statement").

> The dollar value limit of capacity and automation purchases is largely determined by the maximum amount of capital that can be raised through stock and bond issues plus excess working capital. The decision area displays this amount.

4.3.2 Discontinuing a Sensor

If you sell all the capacity on an assembly line, Foundation interprets this as a liquidation instruction and will sell your remaining inventory for half the average cost of production. Foundation writes off the loss on your income statement. If you want to sell your inventory at full price, sell all but one unit of capacity.

4.3.3 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%.

> Labor costs increase each year because of an Annual Raise in the workers' contract.

Despite its attractiveness, two factors should be considered before raising automation:

1. Automation is expensive: At $4.00 per point of automation, raising automation from 1.0 to 10.0 costs $36.00 per unit of capacity;
2. As you raise automation, it becomes increasingly difficult for R&D to reposition products short distances on the Perceptual Map. For example, a project that moves a product 1.0 on the map takes significantly longer at an automation level of 8.0 than at 5.0 (Figure 4.4). Long moves are less affected. You can move a product a long distance at any automation level, but the project will take between 2.5 and 3.0 years to complete.

Changing Automation

For each point of change in automation, up or down, the company is charged $4.00 per unit of capacity. For example, if a line has a capacity of 1,000,000 units, the cost of changing the automation level from 5.0 to 6.0 would be $4,000,000.

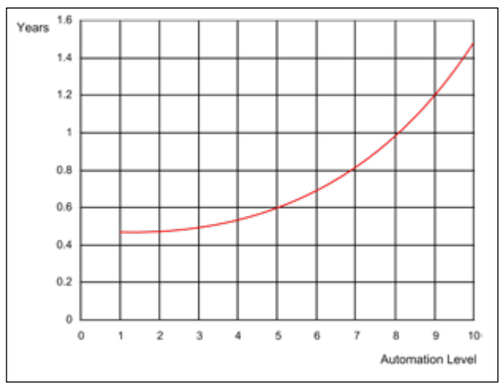


Figure 4.4 Time Required to Move a Sensor on the Perceptual Map 1.0 Unit at Automation Levels 1 Through 10

Reducing automation costs money. If you reduce automation, you will be billed for a retooling cost. The net result is you will be spending money to make your plant less efficient. While reduced automation will speed R&D redesigns, by and large, it is not wise to reduce an automation level.

> When considering automation and its impact on cost, it is useful to consider the production process as a series of 10 tasks. If you were planning on making a cell phone, you could complete all 10 tasks yourself. This equates to an automation level of 1, as you (the labor unit) would be doing all the work, and there would be a very low level of automation (maybe an electric screwdriver).
>
> If you bought a machine that automated the first 5 tasks, this is represented by an automation level of 5.
>
> The higher your automation level, the longer it takes to retool your plant for product upgrades. This is especially important in high tech segments, where positioning near the cutting edge of technology is critical. Automate too much and the product designs cannot keep up with the evolving market.

Changes in automation require a full year to take effect– change it this year, use it next year.

Log into the Foundation Spreadsheet and click the Decisions menu. Select Production. Use this area to enter for each product:

- A Production Schedule
- Increases in first-shift capacity (Put a positive number in Buy/Sell Capacity.)
- Decreases in first-shift capacity (Put a negative number in Buy/Sell Capacity.)
- Changes in automation level (Enter a number in New Automation Rating.)

> The Rehearsal Tutorial's Production Tactics show you how to run the department. Log in at the Capsim website and go to the Dashboard for information about the Rehearsal.

4.4 Finance

Corporate finance functions differ from company to company. Duties can include managing financial risk, determining borrowing levels or even simple check writing. In general, the department monitors the company's flow of money, the lifeblood of any business.

Watch a video overview at: http://capsim.com/go/v/fprd

Your Finance Department is primarily concerned with five issues:

1. Acquiring the capital needed to expand assets, particularly plant and equipment. Capital can be acquired through:
   - Current Debt
   - Stock Issues
   - Bond Issues (Long Term Debt)
   - Profits
2. Establishing a dividend policy that maximizes the return to shareholders.
3. Setting accounts payable policy (which can also be entered in the Production and Marketing areas) and accounts receivable policy (which can also be entered in the Marketing area).
4. Driving the financial structure of the firm and its relationship between debt and equity.
5. Selecting and monitoring performance measures that support your strategy.

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.

One of the Finance Department's fiduciary duties is to verify that sales forecasts and prices are realistic. Unrealistic prices and forecasts will predict unrealistic cash flows in the proformas. Finance can determine a range of possible outcomes for the year by changing (but not saving) Marketing's forecasts then rechecking the proformas. Lowering forecasts decreases revenue and increases inventory– worst case; raising forecasts increases revenue and decreases inventory– best case (see "10.4 Worst Case/Best Case").

> Finance can print the worst case and best case proformas, then compare them to next year's annual reports.

4.4.1 Current Debt

Your bank issues current debt in one-year notes. The Finance area in the Foundation Spreadsheet displays the amount of current debt due from the previous year. Last year's current debt is always paid off on January 1. The company can "roll" that debt by simply borrowing the same amount again. There are no brokerage fees for current debt. Interest rates are a function of your debt level. The more debt you have relative to your assets, the more risk you present to debt holders and the higher the current debt rates.

> As a general rule, companies fund short term assets like accounts receivable and inventory with current debt offered by banks.

Bankers will loan current debt up to about 75% of your accounts receivable (found on last year's balance sheet) and 50% of this year's inventory. They estimate your inventory for the upcoming year by examining last year's income statement. Bankers assume your worst case scenario will leave a three- to four-month inventory and they will loan you up to 50% of that amount. This works out to be about 15% of the combined value of last year's total direct labor and total direct material, which display on the income statement.

Bankers also realize your company is growing, so as a final step bankers increase your borrowing limit by 20% to provide you with room for expansion in inventory and accounts receivable.

4.4.2 Bonds

All bonds are 10-year notes. Your company pays a 5% brokerage fee for issuing bonds. The first three digits of the bond, the series number, reflect the interest rate. The last four digits indicate the year the bond is due. The numbers are separated by the letter S, which stands for "series." For example, a bond with the number 12.6S2017 has an interest rate of 12.6% and is due December 31, 2017.

> As a general rule, bond issues are used to fund long term investments in capacity and automation.

Bondholders will lend total amounts up to 80% of the value of your plant and equipment (the Production Department's capacity and automation). Each bond issue pays a coupon, the annual interest payment, to investors. If the face amount or principal of bond 12.6S2017 were $1,000,000, then the holder of the bond would receive a payment of $126,000 every year for ten years. The holder would also receive the $1,000,000 principal at the end of the tenth year.

When issuing new bonds, the interest rate will be 1.4% over the current debt interest rates. If your current debt interest rate is 12.1%, then the bond rate will be 13.5%.

You can buy back outstanding bonds before their due date. A 1.5% brokerage fee applies. These bonds are repurchased at their market value or street price on January 1 of the current year. The street price is determined by the amount of interest the bond pays and your credit worthiness. It is therefore different from the face amount of the bond. If you buy back bonds

with a street price that is less than its face amount, you make a gain on the repurchase. This will be reflected as a negative write-off on the income statement (see "6.3 Income Statement").

Bonds are retired in the order they were issued. The oldest bonds retire first. There are no brokerage fees for bonds that are allowed to mature to their due date.

If a bond remains on December 31 of the year it becomes due, your banker lends you current debt to pay off the bond principal. This, in effect, converts the bond to current debt. This amount is combined with any other current debt due at the beginning of the next year.

When Bonds Are Retired Early

A bond with a face amount of $10,000,000 could cost $11,000,000 to repurchase because of fluctuations in interest rates and your credit worthiness. A 1.5% brokerage fee applies. The difference between the face value and the repurchase price will reflect as a gain or loss in the income statement's fees and write-offs.

When Bonds Come Due

Assume the face amount of bond 12.6S2017 is $1,000,000. The $1,000,000 repayment is acknowledged in your reports and spreadsheets in the following manner: Your annual reports from December 31, 2017 would reflect an increase in current debt of $1,000,000 offset by a decrease in long term debt of $1,000,000. The 2017 spreadsheet will list the bond because you are making decisions on January 1, 2017, when the bond still exists. Your 2018 spreadsheet would show a $1,000,000 increase in current debt and the bond no longer appears.

Bond Ratings

Each year your company is given a credit rating that ranges from AAA (best) to D (worst). In Foundation, ratings are evaluated by comparing current debt interest rates with the prime rate. If your company has no debt at all, your company is awarded an AAA bond rating. As your debt-to-assets ratio increases, your current debt interest rates increase. Your bond rating slips one category for each additional 0.5% in current debt interest. For example, if the prime rate is 10% and your current debt interest rate is 10.5%, then you would be given an AA bond rating instead of an AAA rating.

4.4.3 Stock

Stock issue transactions take place at the current market price. Your company pays a 5% brokerage fee for issuing stock. New stock issues are limited to 20% of your company's outstanding shares in that year.

> As a general rule, stock issues are used to fund long term investments in capacity and automation.

Stock price is driven by book value, the last two years' earnings per share (EPS) and the last two years' annual dividend.

Book value is equity divided by shares outstanding. Equity equals the common stock and retained earnings values listed on the balance sheet. Shares outstanding is the number of shares that have been issued. For example, if equity is $50,000,000 and there are 2,000,000 shares outstanding, book value is $25.00 per share.

EPS is calculated by dividing net profit by shares outstanding.

The dividend is the amount of money paid per share to stockholders each year. Stockholders do not respond to dividends beyond the EPS; they consider them unsustainable. For example, if your EPS is $1.50 per share and your dividend is $2.00 per share, stockholders would ignore anything above $1.50 per share as a driver of stock price. In general, dividends have little effect upon stock price. However, Foundation is unlike the real world in one important aspect– there are no external investment opportunities. If you cannot use profits to grow the company, idle assets will accumulate. Foundation is designed such that in later rounds your company is likely to become a cash cow, spinning off excess cash. How you manage that spin-off is an important consideration in the endgame, and dividends are an important tool at your disposal.

You can retire stock. The amount cannot exceed the lesser of either:

- 5% of your outstanding shares, listed on page 2 of last year's FastTrack; or
- Your total equity listed on page 3 of last year's FastTrack.

You are charged a 1.5% brokerage fee to retire stock.

4.4.4 Emergency Loans

Financial transactions are carried on throughout the year directly from your cash account. If you manage your cash position poorly and run out of cash, the simulation will give you an emergency loan to cover the shortfall. The loan comes from a gentleman named Big Al, who arrives at your door with a checkbook and a smile. Big Al lends you the exact amount of your shortfall. You pay one year's worth of current debt interest on the loan and Big Al adds a 7.5% penalty fee on top to make it worth his while.

For example, suppose the current debt interest rate is 10% and you are short $10,000,000 on December 31. You pay one year's worth of interest on the $10,000,000 ($1,000,000) plus an additional 7.5% or $750,000 penalty.

You do not need to do anything special to repay an emergency loan. However, you need to decide what to do with the current debt (pay it off, re-borrow it, etc.). The interest penalty only applies to the year in which the emergency loan is taken, not to future years.

Emergency loans are combined with any current debt from last year. The total amount displays in the Due This Year cell under Current Debt.

Emergency loans depress stock prices, even when you are profitable. Stockholders take a dim view of your performance when they witness a liquidity crisis.

> Emergency loans are often encountered when last year's sales forecasts were higher than actual sales or when the Finance Department failed to raise funds needed for expenditures like capacity and automation purchases.

4.4.5 Credit Policy

Your company determines the number of days between transactions and payments. For example, your company could give customers 30 days to pay their bills (accounts receivable) while holding up payment to suppliers for 60 days (accounts payable).

Shortening A/R (accounts receivable) lag from 30 to 15 days in effect recovers a loan made to customers. Similarly, extending the A/P (accounts payable) lag from 30 to 45 days extracts a loan from your suppliers.

The accounts receivable lag impacts the customer survey score. At 90 days there is no reduction to the base score. At 60 days the score is reduced 0.7%. At 30 days the score is reduced 7%. Offering no credit terms (0 days) reduces the score by 40%.

The accounts payable lag has implications for production. Suppliers become concerned as the lag grows and they start to withhold material for production. At 30 days, they withhold 1%. At 60 days, they withhold 8%. At 90 days, they withhold 26%. At 120 days, they withhold 63%. At 140 days, they withhold all material. Withholding material creates shortages on the assembly line. As a result, workers stand idle and per-unit labor costs rise.

Log into the Foundation Spreadsheet and click the Decisions menu. Select Finance. Use this area to raise money:

- Current Debt (These are one-year loans.)
- Long Term Debt (These are 10-year bonds.)
- Issue Stock

As resources permit, companies can:

- Retire Stock
- Retire Bonds
- Issue a Dividend

Finance also establishes Accounts Receivable (A/R) and Accounts Payable (A/P) policies.

> The Rehearsal Tutorial's Finance Tactics show you how to run the department. Log in at the Capsim website and go to the Dashboard for information about the Rehearsal.

5 The Foundation FastTrack

Customer purchases and sensor company financial results are reported in an industry newsletter called the Foundation FastTrack.

Watch a video overview at: http://capsim.com/go/v/fft

The FastTrack is available from two locations:

- On the website, log into your simulation then click the Reports link; and
- From the Foundation Spreadsheet, click the Reports menu.

The FastTrack displays "Last Year's Results." The FastTrack available at the start of Round 1 displays last year's results for Round 0, when all companies have equal standing. The FastTrack available at the start of Round 2 will display the results for Round 1.

Successful companies will study the FastTrack to understand the marketplace and find opportunities. As the simulation progresses and strategies are implemented, company results will begin to vary.

5.1 Front Page

Use the first page of the FastTrack to see a snapshot of last year's results. Be sure to compare your company's sales, profits and cumulative profits with your competitors'.

5.2 Stock & Bond Summaries

The Stock and Bond Summaries (page 2) report stock prices and bond ratings for all companies. The page also reports the prime interest rate for the upcoming year.

5.3 Financial Summary

The Financial Summary (page 3) surveys each company's cash flow, balance sheet and income statements. This will give you an idea of your competitors' financial health. In-depth financial reports for your company are also available (see Chapter 6).

5.4 Production Analysis

The Production Analysis (page 4) reports detailed information about each product in the market, including sales and inventory levels, price, material and labor costs. Are you or your competitors building excess inventory? Excess inventory puts pressure on profits (see Chapter 10).

The Production Analysis also reports product revision dates. Does a competitor have a product with a revision date in the year after the year of the report? This indicates a long repositioning project that will possibly put that product into the other segment.

> If a revision date has yet to conclude, the FastTrack will report the product's current performance, size and MTBF. The new coordinates and MTBF will not be revealed until after the completion of the project.

Check your competitors' automation, capacity and plant utilization. Increases in automation reduce labor costs, and this could indicate competitors might drop prices for those products. Did a competitor reduce capacity? Selling capacity reduces assets. Running the remaining capacity at 150% to 200% can improve Return on Assets (ROA).

The Production Analysis will report the release date (but not the coordinates) of a new product if:

- Production capacity is purchased; and/or
- A promotion budget is entered; and/or
- A sales budget is entered.

> Are your competitors investing in capacity and automation? The Production Analysis reports capacity and automation ratings for the upcoming round. The Financial Summary reports the cost of plant improvements for all companies.

5.5 Segment Analysis Reports

The Segment Analysis reports (pages 5 - 6) review both market segments in detail (Figure 5.1).

The Statistics box in the upper-left corner reports Total Industry Unit Demand, Actual Industry Unit Sales, Segment Percent of Total Industry and Next Year's Growth Rate. The Customer Buying Criteria box ranks the customer criteria within each segment:

- Ideal Position: The preferred product location, also called the ideal spot, as of December 31 of the previous year– ideal spots drift with the segments, moving a little each month;
- Price: Price preferences stay the same year after year;
- Age: Age preferences stay the same year after year; and
- Reliability: MTBF requirements stay the same year after year.

> Are your products meeting your buyers' expectations?

The Perceptual Map shows the position of each product in the segment as of December 31 of the previous year.

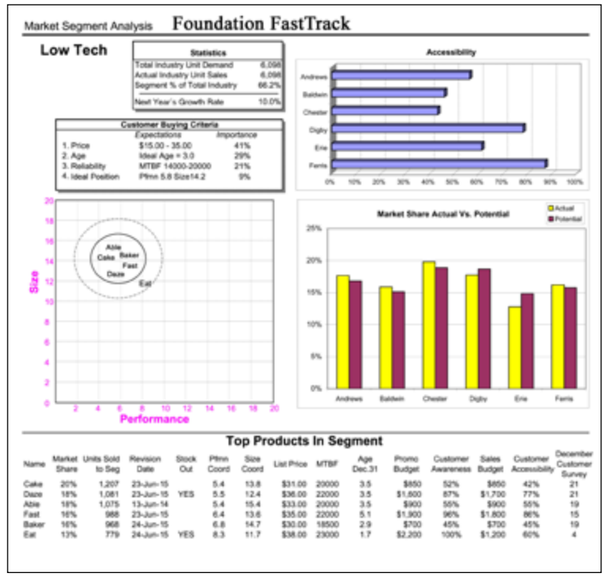


Figure 5.1 Market Segment Analysis: Segment Statistics and Buying Criteria display in the upper-left corner of each segment analysis. Accessibility and Market Share Actual vs. Potential Charts display to the upper right. Customer Awareness Percentages and December Customer Survey Scores display on the lower part of the page.

5.5.1 Accessibility, Market Share and Top Products in Segment

The Accessibility Chart rates each company's level of accessibility. Accessibility is determined by the Marketing Department's sales budget– the higher the budget, the higher the accessibility. Accessibility is measured by percentage; 100% means every customer can easily interact with your company– sales, customer support, etc.

The Market Share Actual vs. Potential Chart displays two bars per company. The actual bar reports the market percentage each company attained in the segment. The potential bar indicates what the company deserved to sell in the segment. If the potential bar is higher than the actual, the company under produced and missed sales opportunities. If the potential is lower than the actual, the company picked up sales because other companies under produced and stocked out (ran out of inventory).

The Top Products in Segment area reports, in order of total sales:

- Market Share
- Units Sold to Segment
- Revision Date
- Stock Out (This tells you whether the product ran out of inventory.)
- Performance and Size coordinates
- Price
- MTBF
- The product's Age on December 31
- Promotion and sales budgets
- Awareness
- Accessibility
- December Customer Survey Score

5.5.2 Awareness and the December Customer Survey Score

Customer Awareness is determined by the Marketing Department's promotion budget– the higher the budget, the higher the awareness. Awareness is measured by percentage; 100% means every customer knew about your product.

The December Customer Survey Score indicates how customers in the segment perceived the products. The survey evaluates the product against the buying criteria.

Product ages and distances from ideal spots change throughout the year, therefore scores change month to month.

If a repositioning project concludes late in the year, the survey score for December could be significantly higher than the scores for the previous months.

> Use the Customer Survey Score as a quick comparison tool when conducting a competitive analysis. Perfect scores are almost impossible. Scores of 50 or above are considered good.

5.6 Market Share Report

The Market Share Report (page 7) details sales volume in both segments, reporting each product's actual and potential sales. Did your company under produce? If the actual percentage for your product is less than the potential, you missed sales opportunities. If your actual is greater than your potential, your competitors under produced and you picked up sales that otherwise would have gone to them.

5.7 Perceptual Map

The Perceptual Map (page 8) displays both segments and every product in the industry.

> Are your products competitively positioned?

5.8 Other Reports

The HR/TQM/Sustainability Report displays investments and results when the optional TQM/Sustainability and/or Human Resources modules are activated (see Chapter 7).

If simulation plug-ins are scheduled, the results will also display. For example, the Ethics Plug-in Report shows the impacts of each company's decisions (see Chapter 8).

6 Proformas and Annual Reports

Proformas and annual reports include:

- Balance Sheet
- Cash Flow Statement
- Income Statement

Proformas are projections of results for the upcoming year. Annual reports are the results from the previous year. The proformas allow you to assess the projected financial outcomes of your company decisions entered in the Foundation Spreadsheet.

> To access proformas, click the Proformas menu in the Foundation Spreadsheet. To access the annual reports, click the Reports menu in the Foundation Spreadsheet or, on the website, log into your simulation and then click the Reports link.

> The proforma reports are only as accurate as the marketing sales forecasts. If you enter a forecast that is unrealistically high, the proformas will take that forecast and project unrealistic revenue (see "10 Forecasting" for more information).

6.1 Balance Sheet

The balance sheet lists the dollar value of what the company owns (assets), what it owes to creditors (liabilities) and the amount contributed by investors (equity). Assets always equal liabilities and equity.

Assets = Liabilities + Equity

Assets are divided into two categories, current and fixed. Current assets are those that can be quickly converted, generally in less than a year. These include inventory, accounts receivable and cash. Fixed assets are those that cannot be easily converted. In the simulation, fixed assets are limited to the value of the plant and equipment (see "4.3.1 Capacity" and "4.3.3 Automation").

Liabilities include accounts payable, current debt and long term debt. In the simulation, current debt is comprised of one-year bank notes; long term debt is comprised of 10-year bond issues. Equity is divided into common stock and retained earnings.

> Retained earnings are a portion of shareholders' equity. They are not an asset.

Common stock represents the money received from the sale of shares; retained earnings is the portion of profits that was not distributed back to shareholders as dividends, but was instead reinvested in the company.

Depreciation is an accounting principle that allows companies to reduce the value of their fixed assets. Each year some of the value is "used up." Depreciation decreases the firm's tax liability by reducing net profits while providing a more accurate picture of the company's plant and equipment value.

Depreciation is expensed, product by product, on the income statement. Total depreciation for the period is reflected as a gain on the cash flow statement. On the balance sheet, accumulated depreciation is subtracted from the value of the plant and equipment. The simulation uses a straight line depreciation method calculated over fifteen years.

6.2 Cash Flow Statement

The cash flow statement indicates the movement of cash through the organization, including operating, investing and financing activities. The annual report's cash flow statement shows the change in the amount of cash from the previous year. The proforma cash flow statement indicates the expected change at the end of the upcoming year.

6.3 Income Statement

Your company can use the income statement to diagnose problems on a product-by-product basis. Sales for each product are reported in dollars (not the number of products). Subtracting variable costs from sales determines the contribution margin. Inventory carrying costs are driven by the number of products in the warehouse. If your company has $0 inventory carrying costs, you stocked out of the product and most likely missed sales opportunities. If your company has excessive inventory, your carrying costs will be high. Sound sales forecasts matched to reasonable production schedules will result in modest inventory carrying costs.

Period costs are depreciation added to sales, general and administrative (SG&A) costs, which include R&D, promotion, sales and administration expenses. Period costs are subtracted from the contribution margin to determine the net margin. The net margin for all products is totaled then subtracted from other expenses, which in the simulation include fees, write-offs and, if the module is enabled, TQM/Sustainability costs. This determines earnings before interest and taxes, or EBIT. Finally, interest, taxes and profit sharing costs are subtracted to determine net profit.

Once your decisions are final, you can print your proforma income statement (click the printer icon). When the simulation advances to the next year, you can compare the results to your proforma projections.

7 Additional Modules

Some simulations use additional modules. If a module is scheduled, the simulation Dashboard will tell you the round it is set to begin and provide a link to the documentation.

The HR (Human Resources) and TQM (Total Quality Management)/ Sustainability modules described below are frequently enabled. HR and TQM decisions are used by the Balanced Scorecard, which is one of the simulation assessment methods (see Chapter 11).

7.1 TQM/Sustainability

TQM (Total Quality Management)/Sustainability initiatives 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.

The sustainability-oriented initiatives, UNEP Green Programs and GEMI TQEM Sustainability Initiatives, can lower labor and material costs. UNEP Green Programs also improve customer perceptions about your company, which leads to increased sales. The remaining initiatives can also increase efficiency and lower costs.

Your company should determine which initiatives best serve its purposes. If you plan to keep 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 Tech segment, which has high material costs, you might consider initiatives that reduce material costs.

To maximize the effect, companies should find complementary initiatives and invest in each of them. For example, to reduce material costs, companies could consider investing in both CPI Systems and GEMI TQEM Sustainability Initiatives.

7.2 HR (Human Resources)

When the Human Resources Module is activated, three areas must be addressed:

1. Complement: The number of workers in the workforce. Needed Complement is the number of workers required to fill the production schedule without overtime.
2. Caliber: The talent of the workforce. If you are willing to spend the money, you can recruit a higher caliber of worker. This results in higher productivity and lower turnover. Companies set a Recruiting Spend budget of up to an additional $5,000 per worker. If you spend nothing extra, the recruitment cost per worker remains at $1,000 and you get an average person off the street. The more you spend, the higher the caliber of the worker.
3. Training: The amount of time workers spend in training each year. Training leads to higher productivity and lower turnover, but takes people off the job while they are in the classroom. Each training hour costs $20.00 per worker.

Assuming you have sufficient workers (Complement), investments in Recruiting and Training raise your Productivity Index, which in turn lowers your per unit labor costs.

If a module is scheduled, the simulation Dashboard will display a link to the documentation.

8 Plug-ins

Some simulations use plug-in modules. Plug-ins have a more general impact on your company.

For example, your response to a dilemma posed by the Ethics Plug-in could have a negative impact on your corporate profits. Or your answer to an Accounting Plug-in might help your company avoid a major financial headache.

8.1 Making Decisions

Your task is to find ways to ensure compliance, minimize exposure and return value to all stakeholders. Group discussion and consensus is imperative. If you do not reach a consensus (that is, if there is no clear majority), the system will default to a "do nothing" answer.

In the following round, the impacts of your decision will appear in the Foundation FastTrack. The plug-in area will offer a more detailed explanation of the events and the reasoning behind the impacts.

The simulation Dashboard will tell you if a plug-in is scheduled. If it is, the Dashboard will display a link to the decision-making area and documentation.

9 Situation Analysis

The Situation Analysis provides a comprehensive view of the strengths, weaknesses, opportunities and threats facing your company. It will help you understand current market conditions and how the industry will evolve over the next several years.

Watch a video overview at: http://capsim.com/go/v/fsa

The Situation Analysis is divided into five activities:

- Perceptual Map
- Demand Analysis
- Capacity Analysis
- Margin Analysis
- Consumer Report

The first part of the Perceptual Map activity illustrates "Segment Drift," which occurs each year as customers demand smaller, faster products. The second part illustrates the "ideal spot" position within each segment. This position changes every year. The Perceptual Map activity will help you decide where to place your new or revised products.

The Demand Analysis will help you anticipate the yearly upswing in demand. At the beginning of the simulation, the growth rate for each segment is different. While the growth rates can change as the simulation progresses, the beginning rates will help you anticipate how many products will be demanded in future years.

The Demand Analysis is an external measure that looks at how many units the market will want.

The Capacity Analysis is an internal measure that determines how many units you and your competitors can produce. Comparing this number to the results of the Demand Analysis will give you an idea of how much production capacity you will need. The Capacity Analysis also allows you to anticipate the cost of adding capacity and the cost of increasing automation.

The Margin Analysis will show you how to calculate the contribution margin, which measures how much money is left over from your sales income once all direct costs like labor and material have been deducted. The Margin Analysis also helps you investigate your margin potential: If you could cut your costs to the minimum and raise prices to the maximum, how much could you improve your margins?

The Consumer Report asks you to think as if you were a customer. It will give you an idea of how they perceive your product line.

The Situation Analysis can be done as a group or you can assign parts to individuals and have them report back to the rest of the company.

A link to the Situation Analysis can be found on the simulation Dashboard.

A downloadable "pen and paper" version of the Situation Analysis is also available.

10 Forecasting

Forecasting requires a little math and a little logic. For example, does your forecast predict your product will acquire half a segment's sales when there are four or five products in the segment? Unless your product's positioning, age and MTBF are significantly superior to the other products and your price is at the low end of the range, it is not likely that you will acquire half the sales. Does your forecast predict you will take only one tenth of the sales when there are four or five products in the segment? Unless your product's positioning, age and MTBF are significantly inferior and your price is at the high end of the range or above, chances are you can sell more.

Watch a video overview at: http://capsim.com/go/v/ffrc

Forecasts are used by the proformas to calculate financial projections (see Chapter 6). If you enter a forecast that is unrealistically high, the proformas will take that forecast and project unrealistic revenue.

If you do not enter values in the Your Sales Forecast cells, the proformas will use the Computer Predictions to project financial results.

10.1 Basic Forecasting Method

Last year's sales can be a good starting point for this year's forecasts. For example, if the segment growth rate for the upcoming year is 10%, you can say, "All things being equal, we can expect to sell 10% more units this year than last year."

Assume next year's Low Tech growth rate is 10% and your Low Tech product sold 1,000,000 units last year without stocking out (running out of inventory):

1,000,000 × 0.1 = 100,000

Adding 100,000 to last year's sales of 1,000,000 units gives you a starting forecast for the upcoming year of 1,100,000 units.

The statistic boxes on the Segment Analysis reports (pages 5 - 6 of the FastTrack) publish last year's Industry Unit Demand and the Growth Rate for the upcoming year. Multiplying last year's demand by the Growth Rate then adding the result to last year's demand will determine this year's demand.

If your product stocked out, calculate what it could have sold by multiplying the segment demand by the potential sales percentage reported on page 7 of the FastTrack, the Market Share Report. Next, multiply that by the segment growth rate.

Is this number valid? It is highly unlikely that the market in the upcoming year will be identical to the previous year. Prices will adjust, revision projects will complete– the playing field will change. Still, this number can be a good beginning as you assess your product offer and speculate what your competitors will offer.

Keep in mind the possibility that your products sold because competitors who otherwise would have made sales under produced and stocked out. Page 7 of the FastTrack displays actual and potential sales as a percentage for each product. If your actual sales far exceeded your potential because your competitors under produced, you cannot count on them making the same mistake again.

Any new products about to come to market must have a plant. Plant purchases are reported on the Production Analysis (FastTrack, page 4).

10.2 Qualitative Assessment

Compare your product to others competing within the segment and decide whether it is better or worse than the competition. Start with the FastTrack Perceptual Map (page 8). It shows where products are currently placed. The Revision Dates at the bottom of the page reveal the timing of any future repositionings. Continue the comparison using the FastTrack's Segment Analysis pages. These report each product's:

- Age– does the product satisfy customer age demands?
- MTBF– is reliability near the top of the range?
- Price– will price trends continue or will new automation (displayed on page 4 of the FastTrack) facilitate a price reduction?
- Awareness and Accessibility– are these percentages leading, keeping pace with or falling behind other products?

All these elements contribute to the monthly customer survey.

10.2.1 December Customer Survey Score

Will your product be better or worse than average? As an estimate, look at the December customer survey score in the lower part of each Segment Analysis. The Customer survey drives demand each month. For example, if there are four products in December scoring 32, 28, 22 and 14 (for a total of 96), then the top product's December demand would be 32/96 or 33%.

Top Product in Segment's Score / Sum of All Scores =
32 / (32 +28 +22 + 14) = 32 / 96 = 33%

What monthly customer survey scores will your product have during the year? The score will change from month to month because the segments drift, your product ages and it might be revised. Each monthly score is driven by how well your product satisfies the segment buying criteria, plus its awareness and accessibility levels. If the TQM/Sustainability module is on, some initiatives could increase the score. (See "How Is the Customer Survey Score Calculated?" in the Online Guide's FAQ|Reports section for more information on assessing your product.)

Consider whether or not the top products in the segment can meet customer demand. On the Production Analysis, examine the top products' capacities. Can they manufacture sufficient units? If not, you could have an opportunity to exploit.

10.3 Forecasts, Proformas and the December 31 Cash Position

On the proforma income statement, sales revenue for each product is based on its price multiplied by the lesser of either:

- The Your Sales Forecast entry (or, if none is entered, the Computer Prediction); or
- The total number of units available for sale (that is, the Production Schedule added to Inventory).

When a forecast is less than the total number of units available for sale, the proforma income statement will display an inventory carrying cost. When a forecast is equal to or greater than the number of units available, which predicts every unit will be sold, the carrying cost will be zero.

The simulation charges a 12% inventory carrying cost.

On the proforma balance sheet, under current assets, inventory reflects the dollar value of all unsold units. Cash reflects the amount left after all company payments are subtracted from the sum of:

- Total sales revenue reported on the proforma income statement; and
- Stock, current debt and long term debt entries in the Finance area.

The proforma balance sheet's cash position also displays as the Finance spreadsheet's December 31 Cash Position. Therefore, unrealistically high forecasts or prices will create cash predictions that are not likely to come true.

10.4 Worst Case/Best Case

If you wish, you can enter sales forecasts and production schedules that develop worst case/best case scenarios. Here is an example:

You generate a pessimistic forecast of 1,200,000 for your Low Tech product, which predicts in the worst case monthly sales of 100,000 units. As a matter of policy, your management team might decide that manufacturing an additional three months' worth of inventory, or 300,000 units, is an acceptable risk when compared to the potential reward of making extra sales.

In the Marketing spreadsheet, enter the worst case forecast of 1,200 in the Your Sales Forecast cell. In the Production spreadsheet, enter the best case of 1,500 in the Production Schedule cell (if inventory remains from the previous year, be sure to subtract that from the 1,500). At the end of the year, in the worst case you will have sold 1,200,000 units and have 300,000 units in inventory. In the best case you will have sold 1,500,000 units and have zero inventory.

The spread between the positions will show up as inventory on your proforma balance sheet. Your proforma income statement will also reflect the worst case for sales. In the Finance area, if the December 31 Cash Position is negative, adjust current debt, long term debt and stock issue entries until the December 31 Cash Position becomes positive. This will help ensure against an emergency loan.

To see your best case, return to the Marketing spreadsheet and enter 1,500 in the Your Sales Forecast cell then review the December 31 Cash Position. The actual results should lie somewhere between the worst and best cases.

Log into the Foundation Spreadsheet and select Marketing under the Decisions menu. The Computer Prediction assumes your competition has mediocre products and therefore is not reliable. The Your Sales Forecast column allows you to enter forecasts of your own.

11 Balanced Scorecard

Your simulation might include a tool called the Balanced Scorecard, which measures performance across four categories:

- Financial– includes profitability, leverage and stock price;
- Internal Business Process– ranks (among other measures) contribution margin, plant utilization and days of working capital;
- Customer– examines the company's product line, including how well it satisfies buying criteria and awareness/ accessibility levels; and
- Learning and Growth– evaluates employee productivity.

The Internal Business Process and Customer perspectives can cross-check performance. Under Internal Business Process, a low score for Contribution Margin could indicate the company is unprofitable– the company should look at its costs and pricing. Under the Customer perspective, a poor Buying Criteria score suggests the company should consider R&D projects to improve the product line or price adjustments.

The Foundation Spreadsheet projects Balanced Scorecard results for the upcoming year (see the Proformas menu). Scores from previous years are available on the website; log into your simulation then click the Reports link.

12 Six Basic Strategies

These six basic strategies can be the starting point for your own custom strategy.

Broad Cost Leader

A Broad Cost Leader strategy maintains a presence in both segments. The company will gain a competitive advantage by keeping R&D, production and material costs to a minimum, enabling the company to compete on the basis of price, which will be below average. Automation levels will be increased to improve margins and to offset second shift/overtime costs.

Mission Statement
Low-priced products for the industry: Our brands offer solid value. Our primary stakeholders are bondholders, customers, stockholders and management.

Broad Differentiator

A Broad Differentiator strategy maintains a presence in both segments. The company will gain a competitive advantage by distinguishing products with an excellent design, high awareness and easy accessibility. The company will develop an R&D competency that keeps designs fresh and exciting. Products keep pace with the market, offering improved size and performance. Prices will be above average. Capacity will be expanded as higher demand is generated.

Mission Statement
Premium products for the industry: Our brands withstand the test of time. Our primary stakeholders are customers, stockholders, management and employees.

Niche Cost Leader (Low Technology)

A Niche Cost Leader Strategy concentrates on the Low Tech segment. The company will gain a competitive advantage by keeping R&D, production and material costs to a minimum, enabling the company to compete on the basis of price, which will be below average. Automation levels will be increased to improve margins and to offset second shift/overtime costs.

Mission Statement
Reliable products for low technology customers: Our brands offer value. Our primary stakeholders are bondholders, stockholders, customers and management.

Niche Differentiator (High Technology)

A Niche Differentiator strategy focuses on High Tech. The company will gain a competitive advantage by distinguishing its products with an excellent design, high awareness, easy accessibility and new products. The company will develop an R&D competency that keeps designs fresh and exciting. Products will keep pace with the market, offering improved size and performance. The company will price above average and will expand capacity as it generates higher demand.

Mission Statement
Premium products for technology oriented customers: Our brands define the cutting edge. Our primary stakeholders are customers, stockholders, management and employees.

Cost Leader with Product Lifecycle Focus

A Cost Leader with a Product Lifecycle Focus gains a competitive advantage by keeping R&D, production and material costs to a minimum, enabling it to compete on the basis of price. The Product Lifecycle Focus will allow the company to reap sales for many years for each new product introduced into the High Tech segment. Products will then mature into Low Tech products.

Mission Statement
Reliable products for mainstream customers: Our brands offer value. Our primary stakeholders are bondholders, stockholders, customers and management.

Differentiator with Product Lifecycle Focus

A Differentiator with a Product Lifecycle Focus strategy distinguishes its products with excellent design, high awareness and easy accessibility. The company will develop an R&D competency that keeps designs fresh and exciting as they change in appeal from High Tech to Low Tech. Products will keep pace with the market, offering improved size and performance. The company will price above average and will expand capacity as it generates higher demand.

Mission Statement
Premium products for mainstream customers: Our brands withstand the test of time. Our primary stakeholders are customers, stockholders, management and employees.

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Support Tickets

If you need assistance, please submit a support ticket. Login at capsim.com, click Foundation, then in the left menu, select Help > Support. If you have problems registering, send an email to support@capsim.com