

# MikesBikes-Advanced

STRATEGIC MANAGEMENT SIMULATION



## **MikesBikes-Advanced Players Manual** (for version 6.67.5.2 and later)



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## CHAPTER 1

# Introduction and Overview

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## What is MikesBikes Advanced?

MikesBikes-Advanced (MB-A) is an Online Business Simulation that will give you the opportunity to run your own company, managing all the key functional areas of a Firm. It is used as an interactive tool to enhance the integration and learning of the basic concepts of business in a real life context: the Bicycle Manufacturing Industry. You will get hands on experience at making Price, Marketing, Operations, Product Development, and Financial Decisions.

You will take over management of an existing Bike Company and be required to analyze reports, then formulate decisions based on these. As the Managers of your MikesBikes Firm, your primary goal is to enrich its shareholders by providing a return on their investment in your company. The measurement of this total return to shareholders is known as Shareholder Value (SHV), so the success of your company is measured by the amount of Shareholder Value you can create in comparison to your competitors.

There are two versions for students: Single-Player and Multi-Player. Both versions simulate the management decisions of a company in the bicycle industry and require you to make key marketing, operations, product development and finance decisions. In both cases the goal is the same: to maximize Shareholder Value.

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## Getting Started with Mikes Bikes

- 1 Go to the Smartsims website, [www.smartsims.com](http://www.smartsims.com), and login at the top right using the login details provided to you by your Instructor. This will take you through to your Course Page. If you do not know these details you can request them through our website.

- 2 If your course requires you to make payment for use of the simulation you will be prompted to click on "I need to register" link". Follow the on-screen instructions to register and make payment (credit card or check). If payment has been made by your Institution you will be taken directly to your Course Page.
- 3 Click on the "Downloads" menu item at the left of your Course Page to access the Software download link. Once downloaded, double click on the file to launch the installer for the game. Follow the install instructions to install the Single and Multi-Player.
- 4 We recommend that you view the screenshot presentation available to you on your Course Page for more on the basics of navigating the game, making decisions, and processing decisions.
- 5 Then start by opening the Single-Player (practice) version to run through decision periods to familiarize yourself with MikesBikes. When you first open the Single-Player you will need to enter a registration key to enable the full version.
- 6 If you click your way around the various decision screens, you will see the areas in which you will be making decisions. Access the reports menu at the top of the screen, and spend some time reviewing the reporting available to you.
- 7 In the Single-Player (practice) version you can process your own decisions (rollover) at any time once you have entered decisions, this will display your results immediately. You can continue to roll forward through the years or rollback to edit decisions.

Once your Instructor has advised Smartsims that the Multi-Player simulation is ready to start, the Smartsims Support Team will email you with your personal Multi-Player login details. When you are ready to access your Multi-Player firm, double click on the Multi-Player icon and you will be prompted to enter your personal login details. Once open, you will be able to view your firm, and enter decisions. When you enter a decision, ensure that you click "Apply" before exiting the screen and this will save the decision on our servers.

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## Two Versions of MikesBikes

There are two version of MikesBikes that will be used in your course, a Single-Player and a Multi-Player version. The MikesBikes Single-Player is a practice version where your challenge is to achieve the highest shareholder value that you can within 10 years (decision periods). You will then move onto the MikesBikes Multi-Player to compete against other teams within your course. Again the main performance measure is to maximize shareholder value. The combined actions of all of the firms in the market affect the performance of the whole industry.

### MikesBikes-Advanced Single-Player

The Single-Player version allows students to become familiar with the simulation, interface, and how individual decisions have an effect over their performance.

- One competitor firm, in the form of a computer robot. This should give you a challenging competitive experience for up to 10 years (rollovers).
- You are able to roll forward into the next decision period/year, or roll back as you wish in order to test and change your decisions. When you roll forward, the software will process your decisions and take you to the next year of trading. Decisions and results can be saved to your computer for access at a later time.

## MikesBikes-Advanced Multi-Player

In the Multi-Player version, you will compete against other student teams within a 4 to 7 Firm Industry competing for the highest Shareholder Value.

- The Multi-Player requires an Internet connection to be open before logging in. Your decisions are updated immediately and saved on our servers. This allows you to login to make decisions for your firm from anywhere where you have a computer with access to the Internet.
- All members can login to view their Firm, results, reports, and make decisions at any time. However we recommend that you select one team member to enter your final decisions to avoid confusion.
- Moving from one year (decision period) to the next is done by automatic rollover on preset dates set by your Instructor. Before each of these scheduled times your team needs to have all decisions for the upcoming year entered into the Multi-Player version. At the decision deadline time the simulation will be processed (rollover) and the decisions you have saved at that point will be automatically processed.
- MikesBikes Multi-Player version can also be used in Offline Mode (File-->Play offline) for making practice decisions. You will be able to roll forward and roll back as you wish to give you an indication how your decisions may result (see full explanation below for more details on how this feature works).

### Important Note:

Multi-Player has an offline mode which allows you to try out different decision options and strategies before you commit yourself.

To download a copy of your firm's data, choose "Play offline" from the File menu. After downloading, you will be prompted to save this data on your computer.

In offline mode, your competitors use only their default decisions. So don't read too much into the results.

offline data files can be copied and emailed between team members. This helps you to share ideas, and also allows a team member who cannot use Multi-Player online (eg because of firewall proxy issues) to participate.

After using offline mode, your team's agreed decisions need to be re-entered in online mode. You may find it helpful to export or print the current decisions report(s) when in offline mode first. To re-enter your decisions, Disconnect from offline mode, Login to online mode, then re-enter all your decisions. Double-check by comparing the current decisions report(s) against the ones you exported or printed in offline mode.

## Shareholder Value (SHV) : Performance Measure of MikesBikes

As the Managers of your MikesBikes Firm, the primary goal for your company is to enrich its shareholders (owners) by providing a return on their investment in your company. The measurement of this total return to shareholders is known as Shareholder Value (SHV), so the success of your company is measured by the amount of SHV you can create in comparison to your competitors.

SHV is a measure of the current Share Price (which is the market value of one share in your company) plus the value of all past dividends paid, including interest accumulated on these past dividends. It is the value to an investor over time of owning a single share in your firm.

Earnings Per Share are calculated using your Net Earnings (Profit) minus Outstanding Shares; so to increase your SHV (and Share Price) you must focus on increasing Profit. SHV is a long-term performance measure so continued increases in profits will result in larger increases in SHV.

## Using MB-A

Welcome to the wonderful world of business simulation - business virtual reality!

### Making and Processing Decisions

When you are ready to start, go into the Main Decision Screen. Use the Functional Tabs at the bottom of the screen to make decisions in the key functional areas of your business. The decisions that you make in each of these areas will determine how well your business performs.



Once you are ready to see the results of your decisions in the Single-Player, press the Rollover Button or select Rollover in the Game Menu on your screen. Your decisions (and those of your competitor) will then be processed and the results calculated.

If you are unhappy with the results you have two choices. You may

- Roll back to make modifications to your decisions by pressing the Rollback Button.
- Choose Restore from the Game menu. This will clear all your decisions and take you back to the starting position.

You may want to roll back and roll over to try different combinations of decisions to achieve your desired share price. Once you have your results, try to see what share price you can achieve by the third rollover.

In the Multi-Player there is no rollover and rollback buttons, rollovers are pre-scheduled by your Instructor and it is your responsibility to have your final decisions entered prior to each rollover date.

## Viewing the Results

MB-A makes a substantial number of reports available to let you know the results of your decisions and to help you analyze and learn from your performance.



These reports can be accessed from the Reports Menu, as shown in the picture here. You are encouraged to flick through these reports to get a better feel for what each provides.

## Getting Help

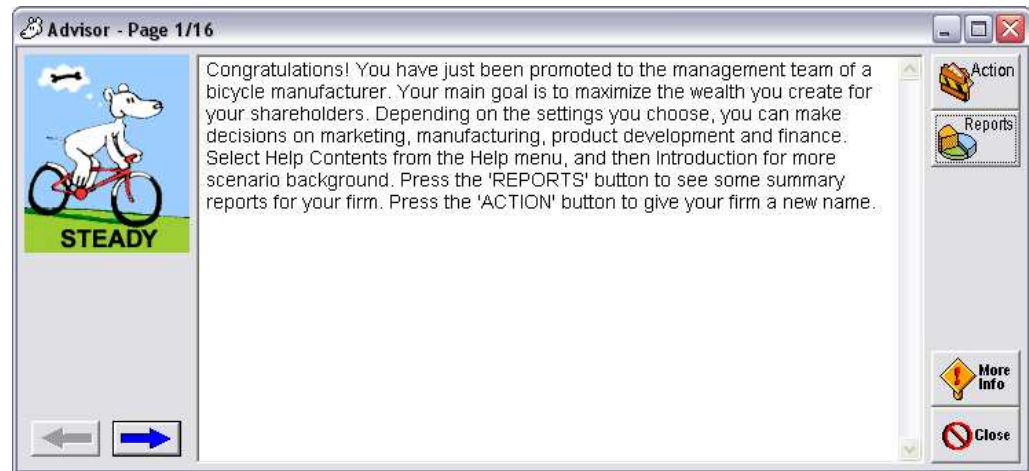
MB-A is ambitious in its objectives and is a very rich learning environment. For this reason we have designed many additional features to get you going quickly with the system and have included in the software numerous sources of help. These include:

- The Advisor (an on-line business mentor; see below)
- More Info (four levels of online help; see below)
- Online support (located in the Help menu).



## THE ADVISOR

Pressing the Advisor Button will bring up the Advisor Screen (shown below).



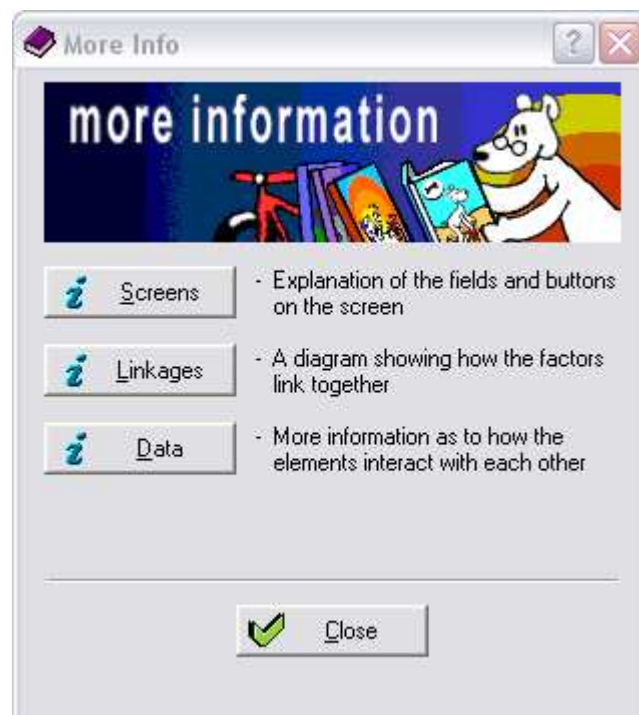
In the first period of your company's operations, it provides you with:

- A basic description of the variables of your business
- Step-by-step instructions on what decisions to make.

In subsequent periods, the Advisor is able to give you some very useful hints on how to improve your performance.

## MORE INFO

The More Info Button takes you to the More Info Screen, which is shown here. This screen allows you to get further information. The table of contents shown gives you some idea of the nature and scope of the help available. You will probably find the Screens and Data options the most useful



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## The MB-A Model

### The Management Goal

You are the new manager of an existing Bicycle Manufacturing company competing against other existing local Bicycle Manufacturing companies.

Your goal is to maximize Shareholder Value (SHV).

As part of your management brief, you will need to make many business decisions in a variety of functional areas. Your decisions apply for a whole year, so it is critical that you develop a coherent strategy, and draw up plans for the future. You are taking the reins of a going concern, and it is your job to ensure that the company continues to grow and prosper.

To make effective business decisions you will need to:

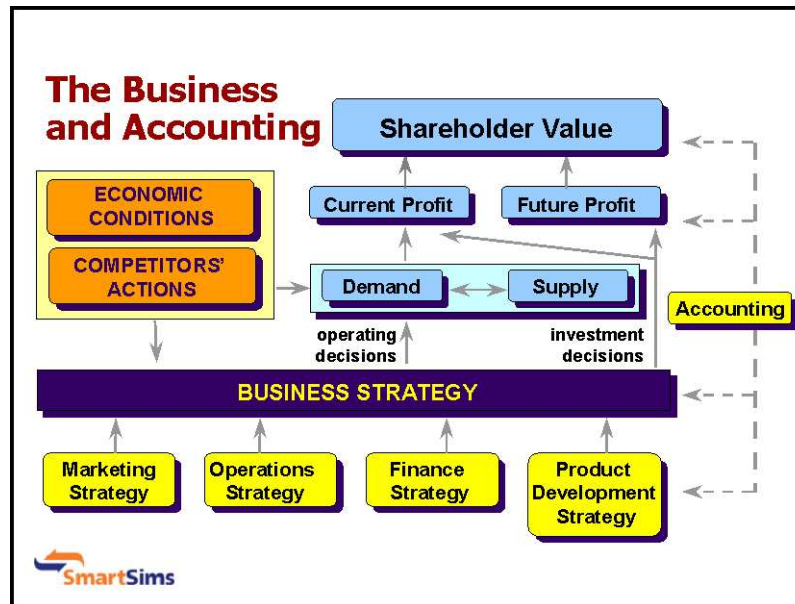
- Analyze information
- Identify alternative courses of action
- Evaluate these alternatives
- Consider the final decisions for your firm.

Ultimately your success will be determined by how well you promote your company as a stable, efficient, and enterprising bicycle manufacturer.

### The Underlying Model

Business is typically highly cross-functional. Marketing, product development, operations, finance, human resources and information technology functions all interact regularly. All are important if the company is to work towards a common goal. MB-A describes many of these functions. This section provides a brief overview of the model that we use to determine how the many different business decisions interact to affect the outcome for the MB-A businesses.

The following high-level diagram indicates the main internal and external business relationships, which affect your business. This is the underlying model on which MB-A is based. The sections that follow provide more detail on these relationships.



## SHAREHOLDER VALUE

Maximizing shareholder value is assumed to be the ultimate goal for your business. To some degree your firm can control shareholder value itself, as the decisions that it makes will affect its current and future profits. However, shareholder value is also affected by some variables, which are outside a firm's control, such as competitor actions and general economic conditions. These affect a firm's strategy also, as it seeks to improve its performance in the broader context of its competitive business environment.

## STRATEGY

The most directly controllable determinant of a firm's long-term profitability is its strategy. Strategy results in two types of decisions:

- Operating decisions that are concerned with achieving the best short-term performance from existing markets.
- Investment decisions which relate to maximizing future profits by investing in new opportunities.

## FUNCTIONAL STRATEGIES

Traditionally, an organization has been broken into a number of functions. While the names in a specific organization may vary, the generic functions are usually:

- Marketing
- Product development
- Operations
- Finance
- Human resources
- Information technology

A number of organizational techniques (such as Just-In-Time and Total Quality Management) have been developed to encourage all these functions to work together. One test of a well-run organization is to see whether the decisions taken within the individual functions support the overall strategy of the business. In MB-A it is assumed that the collective action of these functions is the strategy.

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## **An Overview of the Industry**

In this section we give an overview of the business situation for MB-A at the beginning of the game.

### **History**

MB-A models a bicycle industry in a western capitalist economy with a population of approximately 15 million people. Consumers in this market have high discretionary income, and will freely buy any bicycle that suits their individual needs.

There are five segments within this market: the low cost Kids Bike, Commuter Bike, and Leisure Bike segments; the mid-range Mountain Bike segment; and the high cost Road Bike segment. Importers were originally supply their products within all segments, but in order to protect local manufacturers the government has regulated the market and restricted the importation of bicycles and bicycle components from foreign countries. This now leaves all five segments available to the local manufacturers, including your own. Due to the very competitive nature of the previous free market economy, all local manufacturers were only able to produce a single product in the Mountain Bike segment. As such at this stage the other four segments do not have any products servicing them.

Note: Within the Single-Player there are only two segments in the market: the low cost Leisure segment and the higher cost Adventurer segment.

## Current Financial Position

Your company has been operating for one year at a profit. Both your firm and Mike's have identical Profit and Loss Statements, Balance Sheets and Cash Flow Statements.

A summary of your current financial performance below shows that you have revenues of around \$13.6 million and costs of approximately \$10.6 million.

### Income Statement Are we making money?

<b>REVENUE</b>		<b>\$13.6m</b>
Less: Cost of Goods Sold (direct cost)	\$7.8m	
<b>GROSS MARGIN</b>		<b>\$5.8m</b>
Less: Admin and Finance Expenses (indirect cost including depreciation)	\$2.8m	
Plus: Other Income	\$0.1m	
<b>NET INCOME BEFORE TAX</b>		<b>\$3.1m</b>
Taxation	\$1.0m	
<b>NET INCOME AFTER TAX</b>		<b>\$2.1m</b>

A summary of your current financial position below shows that your net worth (equity) is \$5.1 million.

### Simplified Balance Sheet How much is the business worth?

<b>Equity = Assets - Liabilities = \$5.1m</b>	
<b>TOTAL EQUITY</b> (share issues + retained profits)	<b>\$5.1m</b>
These funds are represented by:	
<b>ASSETS</b> (cash, inventory/stock, (debtors), plant)	<b>\$7.9m</b>
<b>LIABILITIES</b> (overdraft, (creditors), long-term debt)	<b>\$2.8m</b>

The cash flow statement below shows that you currently have \$6 million cash on hand

## Simplified Cash Flow

### Can the business pay its bills?

<b>Operation Cash Flows</b>	<b>\$2.5m</b>
- Cash flows from your operations	
<b>Investment Cash Flows</b>	<b>\$0m</b>
- Cash flows from sales and purchases of major assets	
<b>Finance Cash Flows</b>	<b>\$0m</b>
- Cash flows related to how the firm is financed by debt & equity	
<b>Net Change in Cash</b>	<b>\$2.5m</b>
<b>Starting Cash</b>	<b>\$3.5m</b>
<b>Ending Cash</b>	<b>\$6.0m</b>

## A Summary Of The Decision Screens

These screens are described in more detail in the chapter that deals with the particular topic. The summary below is for convenience only.

### The Main Decision Screen

The Main Decision Screen is displayed below.



You will see:

- The name of your company, which you can change in the first period, using the Rename Button;
- The period for which you are making decisions;
- Results from the previous period (presented in the format of the Balanced Scorecard);
- Four main types of functional decision. These appear on the relevant tabs to the bottom left of the screen: Marketing, Operations, Finance, and Product Development. Each tab leads to a corresponding Functional Decision Screen. These functional decision screens are explained in detail below.

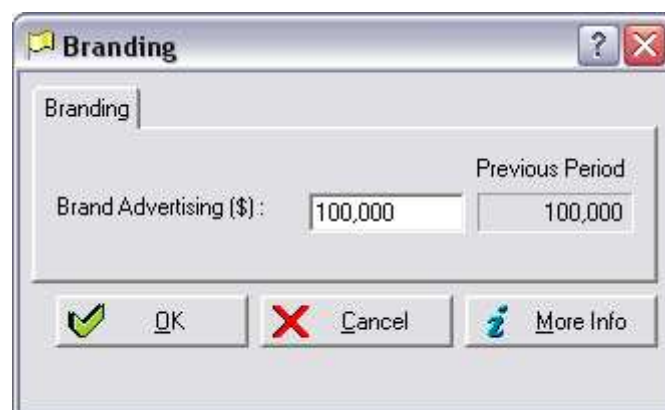
## THE MARKET DECISION SCREENS

The Market Decision Screens are where you enter your decisions about marketing each of your firm's products for the coming year. Here you set marketing and production levels, and can launch, modify or abandon products.

The Products Decision Screen shown below is where you to set the selling price and levels of advertising, product public relations, target production and target finished goods stock for a particular product.



The Branding Screen is where you enter the sum of money that you decide to put towards promoting your product.



The Distribution Decision Screen is where you enter your decisions about distributing your products for the coming year. The Distribution Allocation Screen within this screen is where you make decisions about your relationships with stores in a particular distribution channel. You must specify what margin and what extra support (in terms of special promotions and discounts) you are going to offer the retailers in this channel. You will want to consider the shopping habits of the market segments you are targeting.



The number of stores in this channel that decide to stock your products will depend on the retail price, retailer's margin, history of unit sales volume, and extra support offered. Each store will stock all of your firm's products.



## THE OPERATIONS DECISION SCREENS

The Manufacturing Decisions Screen shown below allows you to focus on products and manufacturing processes. Two aspects of the manufacturing process are emphasized: responsiveness and quality. Changes made to either of these areas apply for all the firm's products.

Responsiveness refers to the ability of the firm to produce its product to serve customer demand in a timely manner. Capacity (workforce and plant) decisions will affect the quantity of a product you are able to produce, while process decisions (eg, on set-up and batch size) will affect production lead-time.

The decisions, which you make on quality, will affect the internal and external failure rates, (eg, the number of defective products produced, and the number of defective products that reach the final customer).

Average Salary and Training Hours will have a significant impact on the average skill level of your production staff.

Preventative Maintenance, Quality Systems Technology and Supplier Relations will affect the number of defects resulting from machinery. These factors together will determine the total number of defective products that will be produced.

The Inspection Decision sets the proportion of finished bikes that will be inspected for defects before leaving the factory to be sold.

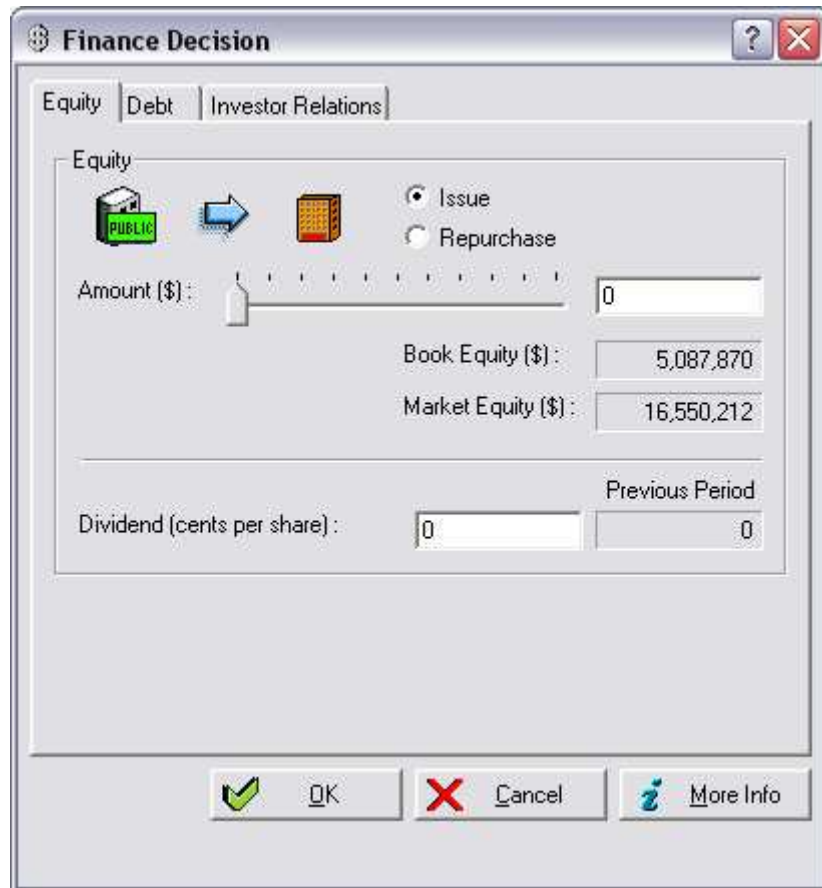
The screenshot shows a dialog box titled "Manufacturing Decision" with a "Quality" tab selected. The dialog is divided into three main sections: Workforce, Plant, and Process. The Workforce section has a "Current Workforce" of 80 employees, with radio buttons for "Increase by" (selected) and "Decrease by", and an "Amount" of 0. The Plant section has a "Current Plant Size" of 25,000 SCU, with radio buttons for "Purchase" (selected) and "Sell", and an "Amount" of 0. A note below the Plant section states "Must be purchased in multiples of 10." The Process section contains a table comparing current values to "Previous Period" values.

		Previous Period
Batch Size (units) :	200	200
Setup Time Reduction (\$) :	20,000	20,000
Supplier Relations (\$) :	30,000	30,000
Raw Materials Inventory (weeks) :	1	1

At the bottom of the dialog are three buttons: "OK" (with a green checkmark icon), "Cancel" (with a red X icon), and "More Info" (with an information icon).

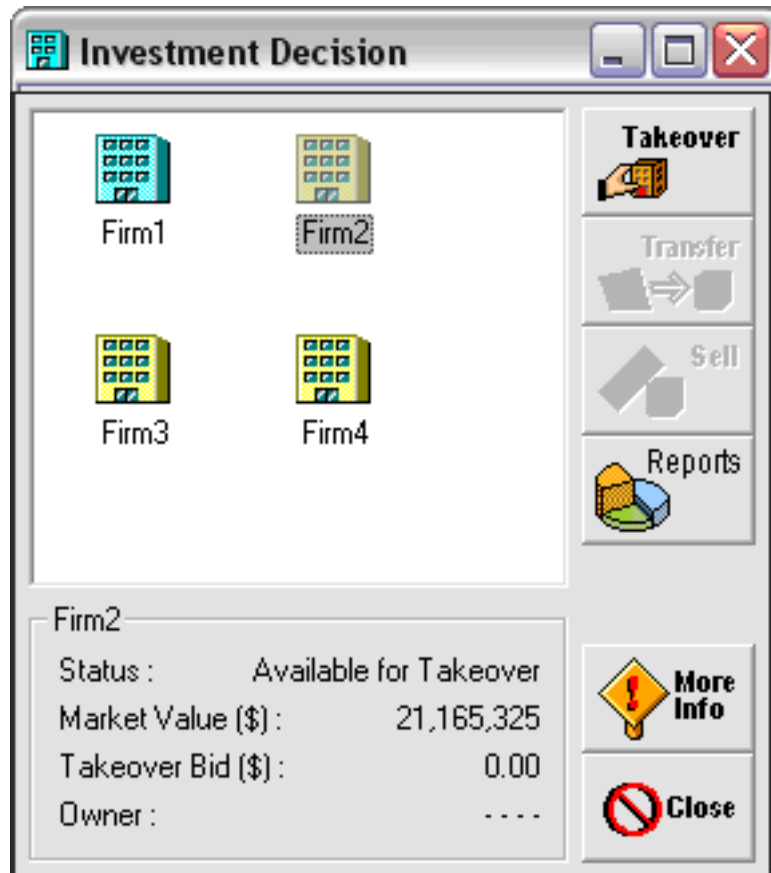
## THE FINANCE DECISION SCREENS

The Equity and Debt Tabs on the Finance Decision Screen shown next allow you to manage the cash your firm has available to it. You can pay dividends to your shareholders, raise or repay long-term debt, and issue or repurchase equity (ie, shares in your firm).



Using the Investor Relations Screen you can decide how much to spend on Investor Relations (ie, on "courting" your investors).

The Investment Decision Screen below is where you launch takeover bids for other firms, transfer capital to and from firms you own, and sell your investment in a firm back to the share market at large.



## THE PRODUCT DEVELOPMENT DECISION SCREENS

The Develop Tab brings up the Design Decision Screen shown below. This is where you enter your decisions about product design and development for your firm for the upcoming year.



The New Design Project Screen is where you enter the specifications for a product development project. At the end of the year when this project is complete, you can use it to launch a new product or to modify an existing product. Click on the New Button on the Design Decision Screen to bring up this screen.



Attributes are the desired characteristics of the bike in terms of style/design and technical specs. You will be trying to produce a bike whose attributes match as closely as possible those desired by your target market.

Target Prime Cost is the direct cost of producing a bike (ie, direct materials and direct labor). It excludes overheads. It costs money to develop new ways to manufacture a new bike in a cost-effective manner. This decision sets a target to aim towards.

Expenditure Next Period is the amount you plan to spend on this project in the coming period. If you spend too little you may end up with a bike that is far from what you asked for!

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## Measurement and Strategic Control

### The Balanced Scorecard

The Main Decision Screen shows a selection of measures that can be used under a Balanced Scorecard approach. The principle is to start with a few simple measures and add other measures later.

In this case, the measures used are already indicating potential problems in a few key areas of your business. For example, they show that you have no new product designs underway and are making a minimal investment in training.

The screenshot shows the 'Decisions' software interface. At the top left, there is a logo with a bicycle and the word 'Decisions'. Below the logo is a 'Rename' button and a 'More Info' button. The main area displays 'RESULTS FOR PERIOD 2008' with four panels: Financial Results, Internal Results, Customer Satisfaction, and Innovation & Learning. At the bottom, there are navigation tabs for Market, Operations, Finance, and Development, and three main functional areas: Products, Distribution, and Branding.

Financial Results		Internal Results	
Shareholder Value (\$):	<b>10.58</b>	Capacity (scu) :	22,577
Profit (\$) :	2,144,997	Prodn Utilization (%) :	67.3
Cash (\$) :	6,259,756	No. Products :	1

Customer Satisfaction		Innovation & Learning	
Sales (\$) :	14,052,800	Training Time (%) :	2.3
Warranty Rate (%) :	1.4	No. D&D Projects :	0

Navigation: Market | Operations | Finance | Development

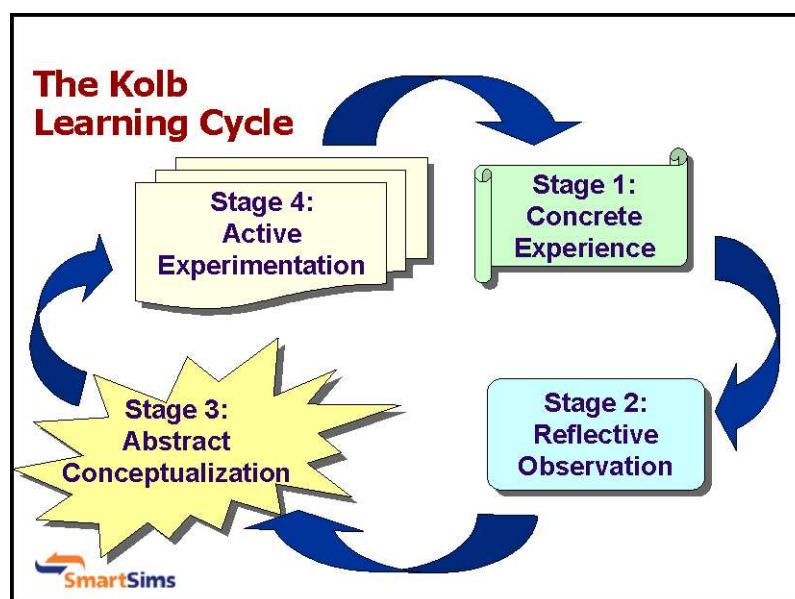
Functional Areas: Products | Distribution | Branding

## Other Reports

There are a substantial number of reports available in the simulation to let you know the results of your decisions and to help you to analyze and learn from your performance. You can access these reports from the Reports Menu or the Reports Button. The reports provide a wide variety of graphical as well as textual information relating to the previous period. It is up to you to take a look at the reports that you think may be relevant.



## The Decision Making Cycle



In MB-A you are managing a bicycle manufacturer. As the emphasis is on taking a strategic approach the decisions, which the simulation requires you to make apply for a whole year, rather than for a few days or weeks at a time. In MB-A there are four steps to a simulated year. These are summarized in the Kolb Learning Cycle diagram shown above.

Analyze Concrete Data	The first step is to look at the available data for the previous year to understand what is available.
Reflect	This second step requires that you consider the reasons and the implications for the data and results that you are getting.
Learn and Change	This step requires you to learn from the results and to make changes in how you will operate in the future.
Make New Decisions	The fourth step requires that you make your new decisions for the following year and process the decisions by clicking the Roll-over Button, thus completing the cycle.

## Other Features For Single-Player

This section outlines some of the other features of the MB-A environment. Many of these are found in the Preferences Section on the File Menu displayed below. To change one of these features, simply select the appropriate option.



### DIFFICULTY LEVEL

You may choose from three difficulty levels when playing MB-A. These correspond to the intelligence of your competitor. Steady Mike is the easiest level. If you are successful against Steady Mike over several periods, then consider switching to Sharp Mike then Advanced Mike.

The Multi-Player pits your team against other teams.



## **MODEL TYPE**

This option allows you to choose the combination of marketing, operations, finance and product development decisions that you make at any one time. Freezing a decision area will "turn that decision off" and allow you to concentrate on the decisions that you have selected. Simply make your selection by pulling the sliders to the required positions in the Model Selection Screen.

The Multi-Player only allows instructors to adjust the model.

## **BENCHMARK AGAINST COMPETITORS' REPORTS**

This mode allows you to see Mike's results and decisions alongside your own. It is provided to help you learn by comparing your performance with what Mike is doing.

The Multi-Player does not allow you to see information about your competitors you wouldn't be able to see in the real world.

## CHAPTER 2

# Marketing

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## Analyzing The Market

### Market Segments In MB-A

The Perceptual Map Report illustrated below shows the levels of Style/Design and Technical Specs which each of the market segments desire. You will find this report on the drop down Reports Menu. The circles indicate the acceptable ranges of Style/Design and Technical Specs. The Perceptual Map Report shows also how well your products (and unused product designs) match these requirements. By selecting a different firm you can see this information for its products too.

The segment centers are the best points on the map to aim for. These are "ideal" positions, which satisfy the entire segment. You could of course move away from these center points, and produce a product that exceeds the style and technical specifications of the segment. You could sell it at the same price as one that met exactly the needs of that segment. However, the "better" product would not sell as well as one exactly meeting the segment needs, because it is not what the customer wants. Unnecessary features can be annoying for someone who wants a simple bike. Extra style and design attributes can reduce a bike's performance and functionality for someone who uses the bike for a specific purpose.

It is important to note that demand for a product is determined by many factors in addition to the product's attributes. These include pricing, quality, advertising, and distribution. In most cases these other factors are more significant than the closeness of a product to the center of the circle on its perceptual map. The best way to find market summary data is to consult the scenario reports (Reports->Scenario Information). There are several reports containing relevant information which you should check yearly, as the scenario figures change from year to year.

Following extensive international research into the types of people who purchase bikes, we have concluded that the potential bike market can be broken into five key segments. The segments have been given the names:

- Adventurers (both Single-Player and Multi-Player)
- Commuters (Multi-Player only)
- Kids (Multi-Player only)
- Leisure (both Single-Player and Multi-Player)
- Racers (Multi-Player only)

Note that only RockHopper bikes are currently serving the Adventurer segment. Adventurer customers desire trendy, high-specification, high quality mountain bikes and put them to reasonably demanding use. They are prepared to pay retail prices ranging from \$1000 to \$3,000.

On the other hand, Leisure customers purchase bikes for relaxed Sunday afternoon bike rides. They want a lower spec, stylish bike with a realistic retail price range from \$100 to \$700. No bikes suitable for the Leisure segment are being sold at the start of the game.

### **THE ADVENTURERS SEGMENT**

The young suburban bicycle purchaser who wishes to buy a mountain bike broadly typifies the Adventurer segment. An Adventurer is typically a young person, focused on fitness and the outdoors. He or she wants a bike that will go anywhere and everywhere, and then come back. Often the Adventurer will forego luxury features in favor of a sturdy, high performance bike. The evidence is that the use of bikes for fun adventures and blood-pumping action is very popular and in fact this segment is experiencing strong growth. The people who buy these bikes tend to be prepared to pay more for the right bike because they have a specific purpose for it and do not want to be held back with slow equipment or to have to stop for repairs.

### **THE COMMUTERS SEGMENT (MULTI-PLAYER ONLY)**

The Commuter segment has appeared in the past decade in several overseas economies. Growing environmental concern worldwide has meant that more people are viewing their bike primarily as a means of transport. Bike users include university students who battle early morning rush-hour traffic to get to 7:30am lectures, factory workers who ride to work each day because they feel better getting some exercise before work, and business woman who ride into the CBD each morning because they can't get a car park and see their bikes as an environmentally responsible option. All these people see their bikes essentially as packhorses. They don't need to look fashionable or do anything too exciting - they just have to get them from A to B. Thus Commuters place a great deal of emphasis on reliability and comfort. Price is of more concern than performance or of buying a well-known brand.

### **THE KIDS SEGMENT (MULTI-PLAYER ONLY)**

The potential Kids segment for bikes is understandably large. Children see bikes as a means of freedom. Many teenagers require a certain amount of mobility, but are unable to get a driver's license. The advantage of the Kids segment is that an average youth will go through 2.1 bikes between the ages of 4 and 15 years. The primary requirements of such purchasers are usually seen through their parents' eyes - the bike has to be simple and durable (so that it can take the knocks), but also relatively inexpensive, while having the best image on the block. Overseas, the Kids market segment is typically the biggest with a strong growth rate.

## THE LEISURE SEGMENT

The Leisure segment is made up of people who own a bike, but use it only once or twice a month. Their bike is seen primarily as a means of relaxation, or leisure, and they go for a Sunday ride every now and then, usually with others (often in family groups). The Leisure segment therefore requires less in terms of high tech components and accessories, with "leisurites" preferring more comfort and style. Purchasers who buy bikes for leisure purposes are not very fussy, but they like to be able to buy a bike when they go out shopping, so long as they've seen the bike on TV before. Consumers in the leisure segment abhor having to wait to buy, even if it is the best value for money. Because this segment is quite broad, it is also typically very large - accounting for 50% of new bike sales units overseas.

## THE RACERS SEGMENT (MULTI-PLAYER ONLY)

Those who view cycling primarily as a competitive activity dominate the Racer segment (as its name suggests). The typical Racer owns at least two bikes and trains at least three times a week. The range of Racers is great, from the Saturday morning school team to the Olympic Squad. However, we can generalize that the Racer wants a bike that performs - both on the track and on the road. It must be light, fast, and technically at the leading edge. Racers are not as sensitive to price as the other segments and some will pay up to \$5,000 retail for the "right" bike. Racers also know what they want. They seldom take the advice of a sales assistant and are generally not influenced by advertising when making their purchase. They are also prepared to wait longer for delivery than most. The segment has good growth in overseas markets although it always tends to be small at around 5% of the market.

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## Scenario Information / Reports

The Scenario Reports give you detailed information about the preferences and shopping habits of each market segment, and all the costs associated with the scenario. You are encouraged to print these reports for future reference.

You access the Scenario Reports from the Reports Menu

Reports -> Scenario Information

There are five Scenario Reports

- Market Segment Scenario Info
- Retail Distribution Channel Scenario Info
- Operations Scenario Info
- Finance Scenario Info
- Product Development Scenario Info

Note: This Players Manual is used for several different scenarios, and there are slight differences between Single-Player and Multi-Player. If you see a difference between the manual and a Scenario Report then assume the value from the Scenario Report is the correct one. You are encouraged to print these reports for future reference.

## Developing the Marketing Mix

The next step is to determine the tactics for achieving the desired position in each of the segments. This involves considering the appropriate marketing mix - loosely called the "four Ps" (product, price, place, and promotion). More recently the importance of relationships (often called People and the "fifth P") has been introduced.

### Product



In MB-A, all of the decisions involving your products are made within the Products Screen shown above. Here you can determine Price, Marketing, Sales Forecasts, when and how new bike products will be launched, and existing products modified and deleted.

### NEW PRODUCTS

New products can be launched at any time, using the Launch Button on the Products Screen. There must be a design project available to select to launch a new product, this is completed through the Design and Development screen and takes a year to be completed then available for release. Products are based on the physical characteristics of a successful Design Project. New products can be used to enter new segments of the market or to attempt to dominate a current segment.

### PRODUCT MODIFICATION

Existing products can be modified using the Modify Button on the Products Screen. Modifications can be made for a number of reasons:

- To adapt the product to the changing needs of a segment
- To improve an existing well known product so that it appeals to new market segments

- To re-engineer processes - retaining the product's same physical characteristics but simplifying production requirements and lowering costs.

Modification allows for all the awareness of an existing product to be retained and transferred to a new (improved) design.

Where the firm holds obsolete stocks of finished goods for a product that has since been modified, the obsolete stocks are automatically dumped at prime cost (material plus labor costs). I

## PRODUCT DELETION

Products can be abandoned at any time if they prove no longer consistent with a firm's strategy. Use the Abandon Button on the Products Screen. Where the firm holds inventories of finished goods for deleted products these are dumped at prime cost.

## Price

The screenshot shows the 'RC\_RockHopper' window with the 'Price/Production' tab selected. The interface is divided into 'Marketing' and 'Production' sections. In the Marketing section, 'Retail Price (\$)' is set to 1,700 (matching the 'Previous Period' value), 'Advertising Expenditure (\$)' is 800,000, and 'PR Expenditure (\$)' is 500,000. In the Production section, 'Planned Production (units)' is set to 15,000 (matching the 'Previous Period' value) and 'Planned Safety Stock (weeks)' is set to 4. The window includes 'OK', 'Cancel', and 'More Info' buttons at the bottom.

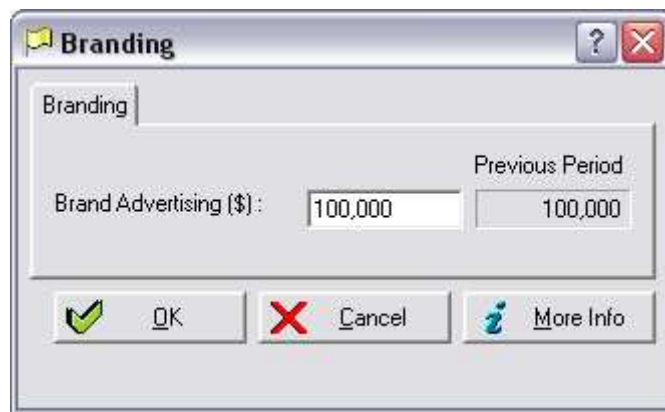
Pricing is made on the Products Screen for each individual product. Click on the Make/Sell Button to bring up the screen shown here. You must make a price decision for each product. The Price decision is of high priority and should align with your overall strategy, taking into account the price sensitivity of consumers in your target segments and the price of competing products.

## Promotion

In MB-A, brand awareness, product awareness and the influence of product public relations (PR) depend on current budget and the carry-over effect from previous periods. The effectiveness of product advertising and PR depends on choosing media that match the target market's media consumption habits. Brand advertising increases the effectiveness of product advertising and results in increased product awareness.

### BRAND ADVERTISING

Only one brand is permitted (the name of your Firm, e.g. Real Cool Cycles). Brand advertising contributes to the effect of any other product advertising that is carried out. The branding budget determines the effectiveness of the advertising. In the next period, consumers "forget" the advertising to some extent, but any new brand advertising adds cumulatively to what is left.



A budget can be allocated to brand advertising, as shown here. Use the Branding Button under the Marketing Tab on the Main Decision Screen. The resulting brand awareness applies to all the firm's products.

### PRODUCT ADVERTISING

Analyzing the MikesBikes market has revealed that there are three media choices for advertising bikes - TV, Internet and Magazines.

Historically all Firms have concentrated their Adventurer bike advertising on Television but recent market research has shown consumers can also be reached on the other two mediums, Magazines and the Internet. These will also be crucial to increase sales in the other market segments. A brief description of each medium is given below:

- Television:

Television is the most effective method of reaching a large audience. This is reflected in the fact that virtually every household has a television and that over 85% of all people watch television at least once a day. Adult bike riders tend to lead physically active lives, which lead them to have less time for television watching than the younger consumer. TV advertising is expensive, and a substantial budget is required to get effective results.

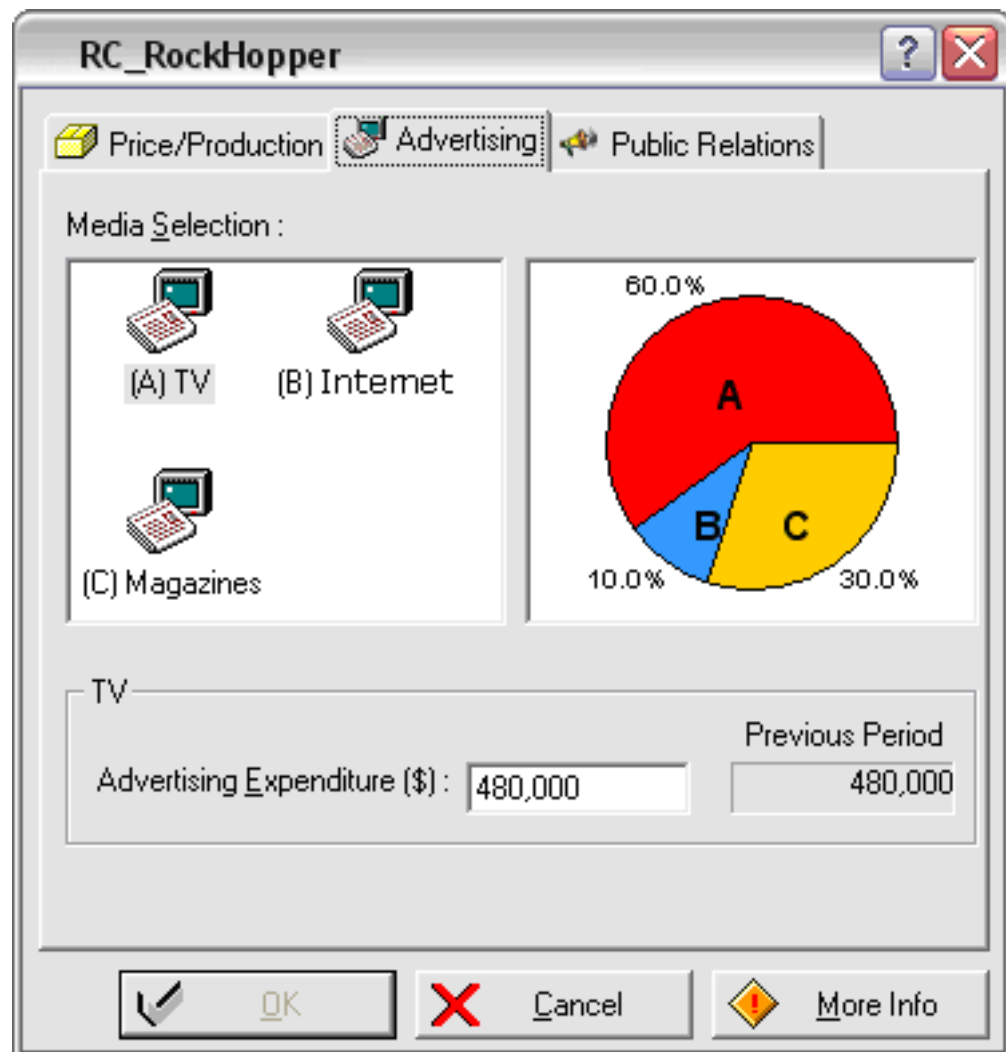
- Internet:

The Internet can reach a relatively large mass audience with a single exposure and at a relatively low cost. It is important to note that the viewing of Internet advertisements is from predominantly a younger to middle aged audience. Internet advertising involves developing your company's website, pay per click advertising on popular bike review sites, and Sponsored Ad Words on major search engines etc.

- Magazines:

Magazines can reach a national market at relatively low cost per reader. In the MikesBikes market there are a variety of magazines catering to bike consumers ranging from specialist racing bike magazine through general outdoor adventure magazines to very general leisure magazines. Younger consumers are less interested in these magazines, but the adult age groups can be reached very effectively through magazine advertising.

Specific product-related media advertising are budgeted for each product on the Product Decision Screen. You will find this under the Marketing Tab on the Main Decision Screen.





Advertising activity affects the awareness levels of the product. It should be remembered that awareness takes time to build and will decline over time as consumers "forget". Advertising experts estimate that an investment of around \$2m is required to achieve initial awareness levels of 25%-50%. Less is required to maintain these levels. In deciding the level of investment in advertising, it is important to remember that certain segments are more responsive to advertising than others. The investment includes money spent on advertising research to develop advertising messages.

## PRODUCT PUBLIC RELATIONS

Product public relations related to the bike market include product reviews and press releases. The idea is that consumers will give more weight to news and independent reviews than advertisements. The Adventurers are more sensitive to this kind of product promotion. See the Media Reach Table above for an indication of which media to use.

The screenshot shows the 'RC\_RockHopper' application window with the 'Public Relations' tab selected. The 'Media Selection' section contains three options: (A) TV, (B) Internet, and (C) Magazines, each with a megaphone icon. A pie chart to the right shows the distribution: 80.0% for (A) TV, 15.0% for (B) Internet, and 5.0% for (C) Magazines. Below the pie chart, the 'TV' section is expanded, showing 'Advertising Expenditure (\$)' set to 400,000, with a 'Previous Period' of 400,000. The bottom of the window features 'OK', 'Cancel', and 'More Info' buttons.

Specific product-related public relations are budgeted for each product on the Product Decision Screen. You will find this under the Marketing Tab on the Main Decision Screen.

Product PR works in a similar way to product media advertising. However each market segment's sensitivity to advertising may be different from its sensitivity to PR.

## Place (Distribution)

Distribution (place) relates to the ability of the firm to make products accessible to its target segments. This is achieved through distribution channels - in this case through retail outlets.

The number of stores in the channel that decide to stock your products will depend on the retail price, margin, unit sales history, and extra support offered. You must specify what margin and what extra support (e.g. in terms of special promotions and discounts) you are going to offer the retailers in each channel. Note that the retailer margin decision refers to the percentage of the retail price that the retailer keeps. So a percentage of 60% means that they keep 60% of the sales revenue and give you the remaining 40%.

Maintaining existing distributors and acquiring new ones requires considerable resources. Extra Support costs are required to enable product training of retailers and providing promotional literature. Distribution costs vary based on the number that currently stock your products.

Vendors of bikes can be broken into three categories: Bike Shops, Sports Stores and Department Stores (Note: Sports Stores are only available in Multi-Player). A brief description of each channel is given below.

### **BIKE SHOPS**

The bike shop (often called "the bike boutique") is a specialty store dedicated to bikes and bike-related products. Store assistants are trained bike specialists, able to tailor specific bikes to specific customers. People unsure of which bike to buy will usually go to a bike shop, especially if the bike is required for a specific purpose. Bike shops stock an extensive range of different models, catering to all types of purchasers. Bike shops generally stock bikes in the mid to high price range and bikes they stock in common with the department stores are often priced slightly higher than in the department stores. They are thus perceived as the quality bike vendor (at the cost of being perceived as the most expensive bike vendor). Bike shops rely on their higher margin to gain a profit, so are less likely to discount their stock. Their customers tend to be less price sensitive than those of department stores.

### **SPORTS STORES (MULTI-PLAYER ONLY)**

Sports stores stock a wide range of sporting equipment, including bikes that have been designed for active, outdoors people. The staff at these stores do not know much about the bikes' technical aspects, but they are knowledgeable about the purpose for which the bikes will be used. They tend to sell bikes at a higher price than department stores because they have lower turnover and are able to offer extra advice that their customers are prepared to pay for. Consumers who buy from these stores generally know what they are looking for in a bike, or at least the purpose for which they will use the bike. However they are less particular than Racers. They may still buy bikes close to what they want if the bike best suited to their needs is unavailable, especially if it is a well-known brand. Because they buy for a purpose they will also tend to pay more than those segments, which are less specific in their requirements.

## DEPARTMENT STORES

Department stores stock a wide range of goods - from consumer durables (such as refrigerators and televisions) to apparel and kitchenware. They often specialize in budget or exclusive items. Department stores appeal to people wanting to complete their weekly shopping in one store. The typical shopper at a department store is out with his or her family on Saturday or Sunday afternoon. Often they do not have a definite purchase in mind, but in walking around may see something that appeals.

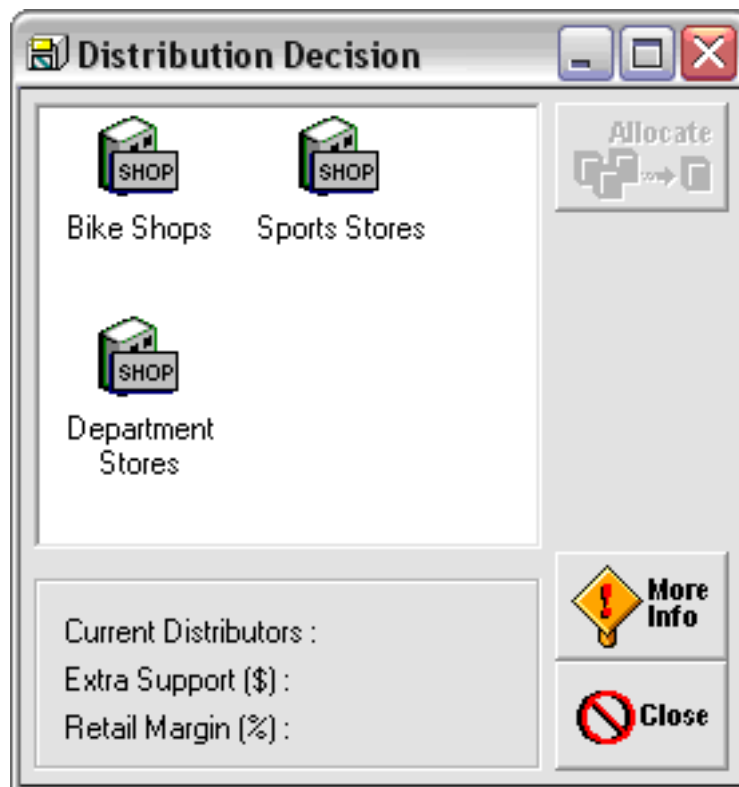
## SUMMARY

Distribution costs include the salaries of head office marketing staff, and any extra support that you allocate to the distribution channels. Estimates of the shopping habits of the different segments in the different distribution channels are also given for you to use in deciding on a distribution strategy.

See: Reports -> Scenario Information -> Retail Distribution Channel Scenario Info. This will give you specific distribution channel and consumer shopping habit information. We advise you to check back on and print this report each year, as the scenario data fluctuates after each rollover.

## MAKING THE DISTRIBUTION DECISION

The Distribution Decision Screen is shown here. You will find it by pushing the Distribution Button, which you will find under the Marketing Tab on the Main Decision Screen. This is where you enter your decisions about distributing your products for the coming year. Here you decide the importance of the different channels.



To make decisions for a particular channel, click on either the Bike Shops or Department Stores Icon (In the Multi-Player you will have Sports Stores also). A summary of decisions for the selected distribution channel appears towards the bottom of the screen. Then click the Allocate Button and enter your decision in the dialogue box that appears.

You must specify what margin and what extra support (e.g., in terms of special promotions and discounts) you are going to offer the retailers in each channel. This is the margin the retailers keep - so don't increase it too much!

The number of stores in each channel that decide to stock your products will depend on the retail price, margin, unit sales history, and extra support offered.

## CHAPTER 3

# Operations

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## Current Operational Position

You currently make one type of bike for the Adventurer market. You have 80 staff and the capacity to manufacture about 15,500 bikes annually.

Other relevant summary information is given in the table below.

Flexibility of production	+/- 50% of decision
Benchmark average annual wage	\$22,000
Hire cost	\$4,000
Fire cost	\$4,000
Cost of new plant	\$16,000 per 100 SCU*
Maximum potential capacity per person	625 SCU per worker
Current theoretical factory capacity	25,000 SCU
Current effective capacity	22,500 SCU
Unit SCU inspection costs	\$500/unitSCU
Annual warehouse cost per unit raw materials	\$93/unitSCU
Annual warehouse cost per unit finished goods	\$100/unitSCU
Warranty cost as a percent of selling cost	100%
Training materials and instructors cost	\$30/worker/hour
Annual wear-out rate on plant	Approximately 15%

\*SCU = standard capacity unit

(see Reports -> Scenario Information -> Operations Scenario Info report)

## Operations Decisions

The Manufacturing Decision Screen is where you enter your decisions about the money you are going to spend on manufacturing process-related costs. You will find this screen under the Operations Tab on the Main Decision Screen. MB-A models two components of operations explicitly - responsiveness and quality. Changes made to these areas apply for all the firm's products.

## Responsiveness

The Responsiveness Screen, shown below, is broken into two parts: capacity and process. The first relates to the amount of plant that you will use, the second to the processes that you will use.

### Capacity

On the Manufacturing Decision Screen itself you can change the size of the workforce and the amount of plant used by your firm. The shaded boxes labeled "current" tell you the current level of your workforce and plant. Determining capacity and utilizing it efficiently is an important part of managing production as it affects the potential production and has a large effect on total cost.

**Manufacturing Decision**

Responsiveness | Quality

**Workforce**

Current Workforce : 80 employees

Increase by  
 Decrease by

Amount : 0

**Plant**

Current Plant Size : 25,000 SCU

Purchase  
 Sell

Amount : 0

Must be purchased in multiples of 10.

**Process**

		Previous Period
Batch Size (units) :	200	200
Setup Time Reduction (\$) :	20,000	20,000
Supplier Relations (\$) :	30,000	30,000
Raw Materials Inventory (weeks) :	1	1

OK Cancel More Info

Plant (machine) capacity and the number and effectiveness of the workers determine overall factory capacity. However, effective capacity will prove to be less than this because of various wastage factors. Decisions regarding manufacturing process will determine the level of the various wastage factors. A factory efficiency of about 70%-80% is very good.

Your factory is potentially operational for 8 hours a day, 5 days a week and 50 weeks a year. There is no shift work or overtime. Besides working on your factory efficiency, the only way to alter your factory capacity is to change the size and effectiveness of your workforce and the amount of plant you have. Workforce size can be changed very quickly, but a change in plant size takes a year to effect. Funding a large investment in plant will require additional capital. A share issue and/or an increase in long-term debt may be required.

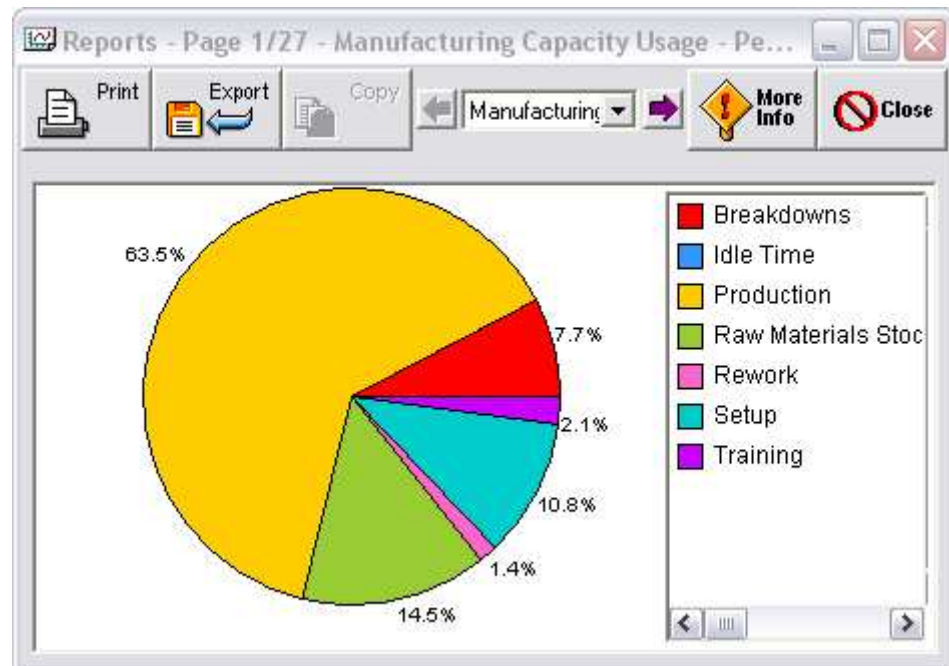
Capacity may be lost to:

Wastage:

- Rework - time spent reworking units instead of producing units.
- Breakdowns - line stoppages because of plant breakdowns.
- Raw Material Stock Outs - line stoppages due to unavailability or poor quality of raw materials.
- Set-ups - stoppages due to having to perform machine set-ups.

Training:

- Training - time lost because of worker involvement in training or improvement groups.



The Manufacturing Capacity Usage Report above shows the way capacity was used in the previous period. The Responsiveness Report under the Operations section of the Reports Menu gives further detail.

## STANDARD CAPACITY UNITS

The factory capacity required to produce the target volumes of products can be determined using standard capacity units (SCU). This is a standard production term used to represent a unit of work on a product. Each product requires a certain number of SCU to produce, and typical products are in the range of 0.1 to 2 SCU per bike depending on the product specifications and the degree of cost reduction incorporated in the design. The rule is that for each \$300 of product prime cost, a product requires 1 SCU to produce. For example, your existing Adventurer Bike has a product prime cost of \$275, therefore it requires 0.92 SCU for every unit produced in a given period. The example in the following table demonstrates how overall capacity requirements can be determined with this information.



	Product 1	Product 2	Total
Desired production in units	20,000	10,000	
SCU per unit	0.92	2	
Required capacity in SCU	18,400	20,000	
Required capacity for 2 products (SCU)			38,400
Plus wastage estimate (SCU)			10,000
Overall required factory capacity (SCU)			48,400

Worker and plant capacity can be used in a variety of combinations to produce the same amount of factory capacity. The optimum level of capital and labor intensity will depend on a number of factors.

## WORKFORCE

You can increase or decrease the size of your workforce each period. A portion of your workforce is automatically assigned to the office staff roles of administration, production administration and sales. The rest of your workforce is available as factory workers. This means that you need to monitor your factory workforce capacity carefully and increase or decrease it as necessary. For example, if your sales volume increases or your batch size falls and you decide to increase your office staff accordingly, you will have fewer staff available for your factory workforce.

If an equal level of plant capacity is available, factory workers can contribute a maximum of 625 SCU of capacity each per period, depending on their skill and motivation levels. This capacity affects the overall factory capacity of the firm. However at the start of the first period all of the factory and office staff will be able to produce roughly half (370 SCU) of their potential maximum capacity.

The average annual factory worker wage cost is \$25,000. Administration, production administration and sales staff receives on average twice this amount. In MB-A, the salaries and training programs of your factory and office staff are linked. Specifically, office staff are automatically paid twice the salary that you set for your factory workers and the same level of training applies to all staff. As a result, worker effectiveness is always the same for your entire workforce: you cannot pay or train the office staff more than the factory staff or vice versa.

It costs \$4,000 to hire a new person and \$4,000 to make one redundant.

## PLANT

Plant can be purchased or sold each period in multiples of 10 SCU. Each 10 SCU of plant costs \$1,600 to buy, and any new plant takes one period to be commissioned and become productive. Plant is depreciated in the annual accounts using the diminishing value method, at a rate of 20% per annum.

Plant can be sold at the end of any period. However the selling price will depend on the age of the plant and how well it has been maintained. Your decisions in the Preventative Maintenance Field will affect this. If there is any difference between the actual selling price of plant and its book value then that will be reported in the accounts as either a loss or gain on sale.

## PRODUCTION VOLUME IN MB-A

The Product Screen allows product-specific decisions to be made. The Modify, Launch and Abandon features are explained in the Marketing Chapter.

## MARKETING AND PRODUCTION

The Make/Sell Screen is where you set the selling price, and levels of advertising, target production and target finished goods stock for a particular product.

## PRICING

You need to decide how you will price each product. This is the retail price paid by the final consumer. The distribution channel keeps a certain percentage of this price and passes the remainder on to you. This is described more fully in the Marketing Chapter.

The screenshot shows the 'RC\_RockHopper' window with the 'Price/Production' tab selected. The window is divided into two main sections: 'Marketing' and 'Production'. In the 'Marketing' section, there is a slider for 'Retail Price (\$)' set at 1,700, with a 'Previous Period' value of 1,700. Below this are text boxes for 'Advertising Expenditure (\$)' at 800,000 and 'PR Expenditure (\$)' at 500,000. In the 'Production' section, there is a slider for 'Planned Production (units)' set at 15,000, with a 'Previous Period' value of 15,000. Below this is a text box for 'Planned Safety Stock (weeks)' set at 4. At the bottom of the window are buttons for 'OK', 'Cancel', and 'More Info'.

## ADVERTISING

You must determine how much you want to spend on advertising each product. This is described more fully in the Marketing Chapter.

## PRODUCTION VOLUME

For each product you must set a target level of production for the year. The following formula provides one means of considering this:

$$\text{Target Annual Production} = \text{Sales Forecast} - \text{Beginning Finished Goods} + \text{Desired Ending Finished Good}$$

The target level of production is only a desired level of production. Actual production levels during the year may vary slightly from this depending on:

- Capacity constraints - if insufficient capacity is available due to a lack of workers/plant or wastage such as breakdowns or reworks then actual production may be less than target production.
- Variations in demand - if demand is substantially greater than forecast then the factory may increase production slightly to take advantage of this. Similarly if demand proves to be unexpectedly low, the factory may be able to reduce production to avoid stockpiling excessive quantities of finished goods. The maximum production flexibility is a variation of 50% up or down on the planned figure.

### **TARGET FINISHED GOODS INVENTORY**

In addition to setting a target production level for each product, the firm needs to set a target finished goods inventory level. This inventory level is measured in "weeks of demand". The actual holding in units will vary depending on the levels of actual demand. This is similar to the production decision, in that it indicates only a desired level of finished goods. Actual finished goods inventories may vary depending on demand for the product and actual production levels. For example if demand outstrips production then a firm may be left with no stock in its finished goods warehouses despite desiring to hold a month's worth of inventory.

The planned safety stock level indicates how much stock you would like to keep to cope with fluctuations in demand.

The target finished goods inventory decision is important. These goods are held in warehouses throughout the country and can be used to reduce the delivery time to distributors significantly. However, there is a warehousing cost of around \$100 per SCU of finished goods inventory. If there is no finished goods inventory then delivery time depends on the factory lead-time. For this reason, firms with long lead-times may choose to hold large finished goods inventories to improve their delivery responsiveness.

Advantages in delivery time must also be traded off against the cost of warehousing goods and the implicit cost of financing them.

## **Process**

Decisions on the operations process are also made on the Responsiveness Screen. You will find this screen by clicking on the Manufacturing Decision Screen under the Operations Tab on the Main Decision Screen.

## **BATCH SIZE**

Batch size reflects the average batch size used in the factory. Larger batch sizes will proportionately reduce the number of set-ups and hence increase available capacity. However this comes at the cost of increasing factory lead-time and potentially delivery times. The other main effect of batch size is on the number of administration and production administration staff. Large batch sizes make production scheduling relatively simple but small batch sizes increase complexity and require more production administration staff. Batch sizes also affect the number of administration staff required. For example, the Accounts Department can process a small number of large batches relatively easily. However, processing a larger number of smaller batches requires more effort. So from a human resources viewpoint, smaller batch sizes require more administration staff. Remember that this will reduce your factory workforce in the MB-A environment unless you hire more staff.

## **REDUCING SET-UP TIME**

You can also spend money to reduce your set-up time. Such expenditure would allow you to analyze set-up procedures, develop and document new operating procedures and modify plant to facilitate quicker changeovers.

Any investment, which you make in reducing set-up time, will enable you to increase effective capacity (provided batch size remains constant).

We assume that there is a baseline standard time needed to complete the set-up of all the machines required to make a batch of bikes. By investing in set-up time reduction you can reduce this time. Over the last 5 years set-up times have been reduced by 5%, and with the present batch sizes and number of products, each firm is losing about 10% of capacity on set-ups.

## **SUPPLIER RELATIONS**

Firms can also choose to direct resources into improving supplier relations. Such expenditure could be directed at negotiating single source contracts, providing suppliers with demand forecasts and educating suppliers in Just-In-Time and Total Quality Management techniques. It may also extend to paying incentives to suppliers who provide quality products, consulting suppliers when designing new products and paying increased transport costs to enable more frequent deliveries.

The benefits of investing in supplier relations include reducing line stoppages due to reduced unavailability and/or inadequate quality of materials. Current relationships with suppliers are only about half as good as they could be. It requires around \$30,000 per period to maintain supplier relations at this existing level. If they are not maintained, the level of supplier relations tends to deteriorate with time.

## **RAW MATERIALS INVENTORY**

You must decide on the average level of raw material inventories that you want to hold. This level is expressed in weeks. It is based on weeks of production, and may vary with the level of production. Raw materials inventories provide a buffer to protect against unreliable suppliers and to ensure there are sufficient materials to cover late deliveries. It is estimated that an average of four weeks raw material inventory will be enough to ensure that the factory loses only 10% of its time due to unavailability of key raw materials.

However, firms incur a warehousing and implicit financing cost when they hold raw material inventories. There is an annual holding cost of \$47 per SCU of raw materials inventory. (One unit of raw materials is required for every \$300 of prime cost in a product. Another way of looking at this is that one unit of materials is needed for each SCU.

## Quality

Quality	Previous Period
Average Salary (\$):	25,000
Training (hours per worker):	40
Preventative Maintenance (\$):	500,000
Quality Systems Technology (\$):	150,000
Inspection (% of units produced):	15

Decisions in this area determine the quality of the products produced. The gray Previous Period Boxes show the values that were used in the previous decision-making period, and they will be the default options for this period.

### AVERAGE SALARY

The average salary level you set will affect not only your bottom line but also worker motivation and effectiveness. Factory workers are paid (on average) the rate you select. Administration staff are paid (on average) twice this rate. For comparison purposes, the average industry salary is \$25,000 per year.

## **TRAINING**

You must decide how much time each worker spends on training. For factory workers this training includes specific on-the-job skills training, cross-training to enable them to operate in different areas of the plant, and external training in areas such as quality methods, teamwork and supervisory skills. For administration staff this training includes computer skills, stress management and team development.

Training has a number of significant impacts. In the short term, it will decrease capacity directly since it takes factory workers away from the factory for a time. However, training will increase the skill level of these workers and through the increased effectiveness of improvement groups may actually increase the level of overall capacity in the longer term. In addition, the application of quality methods may reduce the number of defects produced. Training will make office staff more efficient. The result will be that you will need fewer staff for a given level of sales or batch size.

For every worker-hour of training specified in the decision, \$30 will be spent on outside trainers and training materials.

If employees spend about 40 hours in the year on training this will equate to 2% of their time (since the total working time is 40 hours per week times 50 weeks per year). In this case, you will incur a cost of \$1,200 per year per employee for external trainers and training materials. In this industry this amount of training will be sufficient for your workers to improve their skills, knowledge and effectiveness slightly. They are currently working at around half of their potential.

The effect of staff turnover should also be considered when making training decisions. New workers usually have lower skill levels than existing employees.

## **PREVENTATIVE MAINTENANCE**

You should decide on the total amount to spend on preventative maintenance. This is an aggregate amount and so should be varied when a firm changes its plant capacity.

Expenditure on preventative maintenance may have a number of effects. Preventative maintenance reduces the likelihood of plant breakdown and losses in capacity caused by these delays. Adequate maintenance may also serve to maintain the resale value of plant. Finally, ensuring the plant is producing within tolerances contributes towards the reduction of defects.

Currently your firm has 25,000 SCU of plant. If it were new it would be worth \$4 million. However it is now a few years old and its book value is already only \$1.6 million. The plant has been reasonably well maintained, and only 5% of its potential is lost due to breakdowns. Investment of about \$600,000 per year in preventative maintenance will keep its operational level (and hence resale value) constant at its current level.

## **QUALITY SYSTEMS TECHNOLOGY**

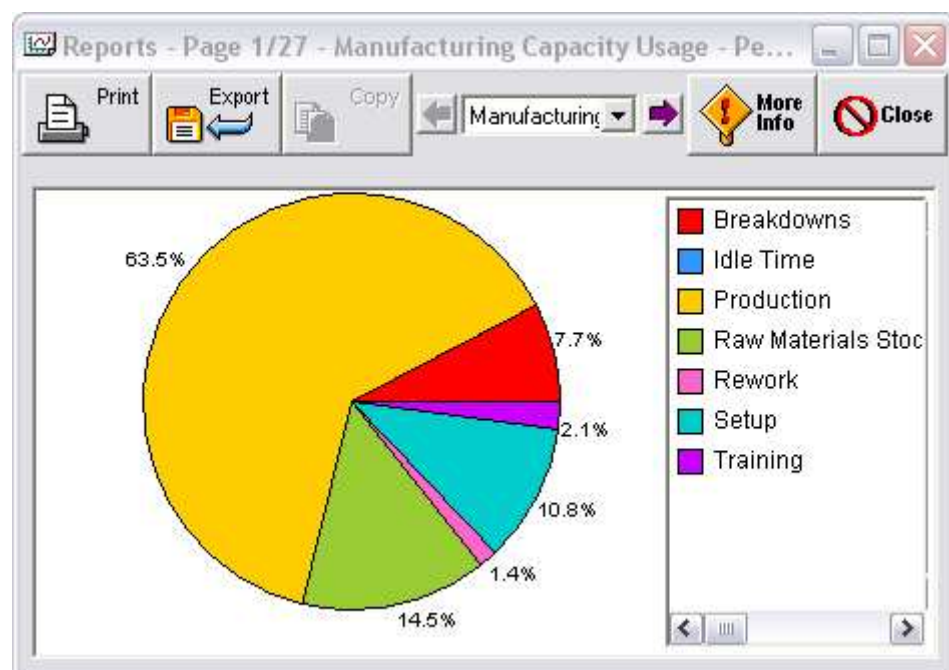
"Quality systems" refer collectively to the processes that ensure that the firm achieves quality "at source" (i.e. in the factory). They involve installing equipment to monitor the manufacturing processes and to pinpoint problems before they occur.

## INSPECTION

Firms need to decide what proportion of their final production they wish to inspect. Sampling techniques eliminate the need for 100% inspection. You can identify about half of defective finished products by sampling only around 10% of those products. However, note that the Adventurer segment is quite sensitive to product quality. Before reducing inspection here, make sure that the underlying product quality is adequate.

The cost of inspection is \$400 per SCU for every unit inspected. This is small in comparison with the cost of servicing warranty claims. It is estimated that the average warranty claim costs at least the wholesale price of the bike concerned.

## Ongoing Strategic Control



For any period, the capacity usage chart presented above reflects how theoretical capacity was actually used. This is a useful tool for understanding the firm's productive capability.

By looking at the various measures on this chart, an organization is able to monitor its operations. It may use its various decisions on set-ups, batch size, quality, training, salary, workforce size, machine capacity, maintenance, supplier relations and production of the different products to improve its capacity profile.

## CHAPTER 4

# Product Development

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## The Product Development Decision

In the MB-A environment you may choose to undertake product development projects in the coming year to develop designs for new products or modifications for existing ones. The results of these product development projects are available in the year following implementation.

### TYPES OF PRODUCT DEVELOPMENT PROJECTS

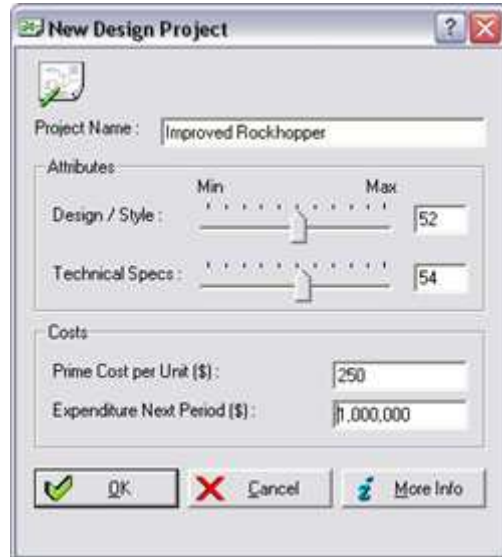
The projects that you undertake may be any combination of the three types described below:

- New products - development of a new product, often for a new market segment.
- Product modification - modification of an existing product to better satisfy the market.
- Value engineering projects - reduction of product prime cost (and required standard capacity units) while maintaining current physical characteristics.



---

## Developing a New Product



The screenshot shows a dialog box titled "New Design Project". It contains the following fields and controls:

- Project Name:** Improved Rockhopper
- Attributes:**
  - Design / Style:** A slider control with a value of 52.
  - Technical Specs:** A slider control with a value of 54.
- Costs:**
  - Prime Cost per Unit (\$):** 250
  - Expenditure Next Period (\$):** 1,000,000
- Buttons:** OK, Cancel, and More Info.

The Design and Develop Screen is where you enter your decisions about product design and development for your firm for the coming year. You will find this screen by clicking on the Develop Tab on the Main Decision Screen. Product Development is organized into separate design projects.

Each design project has:

- A project name
- A set of target product attributes
- A prime cost
- A project budget

### PROJECT NAME

Each new project requires a new name. We suggest that you use similar names for successive projects (e.g. Cruiser1, Cruiser2, etc).

## DETERMINING THE TARGET ATTRIBUTE VALUES

The screenshot shows a dialog box titled "Edit Design Project - Cruiser". It contains the following fields and controls:

- Project Name:** A text box containing the word "Cruiser".
- Attributes:** A section with two sliders. The first slider, labeled "Design / Style", has a value of 60. The second slider, labeled "Technical Specs", has a value of 30. Both sliders have "Min" and "Max" labels at their ends.
- Costs:** A section with two text boxes. The first is labeled "Prime Cost per Unit (\$)" and contains the value "1". The second is labeled "Expenditure Next Period (\$)" and contains the value "1,000,000".
- Buttons:** At the bottom, there are three buttons: "OK" (with a green checkmark icon), "Cancel" (with a red X icon), and "More Info" (with a blue question mark icon).

To help you decide on the desired levels for the attributes, you may wish to consult the Market Research Reports, available from the Reports Menu. These reports list the ideal values desired by the different market segments and provide information about all products. You should enter the target attribute values into the screen shot shown above.

## TARGET PRIME COST

"Prime cost" refers to the direct labor and raw material cost of making one unit of the product (i.e. each bike). It does NOT include the very significant overhead costs required to run the factory and market the products. As a rule of thumb, to cover these overheads and allow for a profit margin, the wholesale price for a product will need to be two to three times higher than the prime cost! This means that the retail price will have to be four to six times higher than the prime cost!

In the Target Prime Cost Field enter the prime cost you would like to achieve for a product based on this new design. Note that product prime cost is highly dependent on the desired technical specifications (since this takes a lot of work), but depends very little on the style/design attribute. For example your existing Adventurer Bike has a product prime cost of \$275, where as the product prime cost for the less technically complex Leisure bike is approximately \$60.

## TOTAL PROJECT DEVELOPMENT COST

In the Expenditure Next Period Field enter the budget that you wish to allocate to cover the total costs of designing the required product. Note that an estimated expenditure of \$500,000-\$1,000,000 is required to develop a bike design for another market segment. The minimum realistic expenditure (and the minimum allowed in the MB-A environment) for any project is \$100,000. Depending on how greatly the attribute values differ from existing designs and how tightly you restrict prime cost, project expenditures may range as high as \$5 million.

Costs can be broken down into a one-time development costs for technical specs and design/style. It may be financially prudent to spread development costs over a couple of years.

Note that this budget is always spent constructively. For example, if your project has achieved its product specifications then MB-A will put the remaining budget towards further reducing unit prime costs.

## ESTIMATED COSTS AND TIME FRAMES

Time to get a new design and development project completed	1 period
Cost per unit of change in Technical Specs	\$20,000
Cost per unit of change in Style/Design	\$1,000
Product (prime) cost for each unit of Technical Specs	\$4.50-\$5.00
Product (prime) cost for each unit of Style/Design	10-15c
Minimum realistic project expenditure	\$100,000

(see Reports -> Scenario Information -> Product Development Scenario Info)

## TECHNICAL SUCCESS OR FAILURE

Projects may not always meet the attributes that you specify. However, the Product Development Team will always provide a design that is adequate for you to use to modify or launch a product. The degree of success of the project will depend on several factors: the similarity of the product to other products, the feasibility of the design in terms of attributes and product prime cost, and the total amount spent on the project. At the end of the project the resulting design may be:

- Used to launch a new product
- Used to modify an existing product
- Used as the starting point for further development (this will require a new project)
- Saved for later use

You may run more than one new product development project each year (if you can afford it!)

Note: We recommend that you use the Offline Mode to test Product Development success rate, you will need to exceed 90% success to be able to launch the project into a product.

## TIME LAGS IN DESIGN AND PRODUCTION

As all design projects take a year to complete, even if the targets are not fully met, you will need to plan for any product launch/modification in advance!

Before a new product can be launched you must complete a Product Development Project in the previous period. Plant capacity will probably have to be altered as well. As there are lead-times in purchasing and installing new capacity, you will have to make the decision to alter capacity in the period before it is required.

You will need to go through a similar process if you wish to modify an existing product. However, the advantage in this case is that the modified product will be able to trade on the awareness that the existing product already has in the market.

## REPORTS

At the end of the year the Product Development Team will report back on the success of the project, using the Product Development Projects Report on the Reports Menu. You should check this report before you go ahead and use the new product design!

## INVESTMENT REQUIRED TO ACHIEVE ATTRIBUTES - EXAMPLE

How difficult it is for the product development team to achieve a design with your target attribute levels is obviously dependent on how different the new product is to be from existing ones. To estimate the investment you will have to make to achieve these new attributes, take your closest existing product and calculate the required change in Style/Design and Technical Specs.

For example, using the data in the table below, if our only existing product has attributes (Style 50, Tech 60) and we want to develop a Leisure bike (Style 50, Tech 10), then the required change for Style/Design is 0 and for Technical Specs is 50.

Assume that the product development department has been able to give precise estimates of the per unit development costs. These are \$1,000 for Style/Design and \$20,000 for Technical Specs. So, in this case, the total development cost for this specification is calculated to be  $(0 \times \$1,000) + (50 \times \$20,000) = \$1,000,000$ .

Target Segment	Style/Design	Technical Specs	Target Prime Cost	Investment
Adventurers	50	60	\$250	\$0.25m
Commuters	25	10	\$50	\$1m
Kids	75	10	\$60	\$1m
Leisure	50	10	\$55	\$1m
Racers	20	85	\$400	\$0.5m

## CHAPTER 5

**Finance****IN THIS CHAPTER**

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**Shareholder Value**

The essence of shareholder value added is to create wealth for shareholders. In MB-A you will be evaluated on the cumulative change in shareholder value that your firm generates. Being evaluated on shareholder wealth is significantly different from being assessed on net profit. To ensure that you are truly creating wealth for your shareholders, you should aim to:

- Maximize net profit
- Minimize shareholder investment
- Minimize risk

Shareholder Value (SHV) is defined here as follows:

$$\text{SHV} = \text{Market Share Price (MSP)} + \text{Accumulated Dividend Payments (ADD)}$$

Where:

$$\text{MSP} = \text{function \{Earnings per share, Debt/Equity ratio\}}$$

ADD = the accumulated value of all dividends paid by the firm to date, assuming an average compounding rate of return of alternative investments of 10%

While the firm determines the dividend payment, MSP in this simulation is determined by two components:

- The first contributor to share price valuation in this simulation is "Earnings per Share (EPS)". This refers to the net profit of a firm after tax, divided by the number of shares currently issued.
- The second contributing factor relates to the "Debt to Equity ratio" statistic. In essence, this refers to the proportion of a firm's total assets that can be 'claimed' by shareholders and debtors. This is included in the share price valuation to account for the fact that the higher the relative debt of a firm the less likely that it will be able to meet its obligations (higher risk).

## Raising/Repaying Debt

With the exception (perhaps) of retaining profits, raising debt is often the easiest way for a firm to get additional funds. However, there is an effective limit on how much a firm can raise, due to the burden of high fixed interest charges, which will increase with increasing debt levels.

In MB-A, the firm may choose to raise finance using debt instruments such as debentures, notes, or mortgages. Interest will be charged on these long-term debts based on the level of risk of the firm. This risk is determined by the firm's debt/equity ratio. The higher this ratio the higher the risk, and the more interest the firm will pay. The lowest rate in the MB-A environment is 8%. This rate increases to 20% or more when the debt/equity ratio rises above 2. The financial markets will not allow you to raise debt beyond a debt/equity ratio of 3.

If your firm spends more money than it receives and goes into overdraft then the interest rate applied is 3% higher than the rate you pay on long-term debt. The maximum overdraft facility available is set at 25% of the book value of equity. Firms, which exceed this overdraft limit, are placed under statutory management and must pay additional legal fees. An alternative available to companies owned by a parent firm is to request debt financing from their parent. The interest payable is negotiable (within certain limits!)

The Debt Tab in the Finance Decision Screen shown below contains the tools you need to manage your debt.

**Finance Decision**

Equity | **Debt** | Investor Relations

Long Term Debt

Raise - Increase long term debt  
 Repay - Decrease long term debt

Amount (\$): 0

Current Debt (\$): 1,800,000

Owed to Owners

Raise - Increase owed to owners  
 Repay - Decrease owed to owners

Amount (\$): 0

Current Owed (\$): 0

Interest to Owners (\$): 0

Previous Period: 0

OK Cancel More Info

## Raising/Repurchasing Equity

As an alternative to raising debt, a firm may choose to issue shares to raise finance. This can, depending on the regulations, dilute ownership and make the company more vulnerable to takeovers if it fails to achieve the results it anticipates. On the other hand, if the firm has excess cash and no profitable uses for it, it may consider repurchasing some of its shares. This will reduce the number of shares among which the firm's future profits must be distributed.

Share price is fundamental to this decision and too much financial theory. As described above, earnings per share, the required rate of return and the expected growth rate of the organization's earnings and the economy influence share price over time. The required rate of return is dependent on the risk of the firm and industry.

The screenshot shows a dialog box titled "Finance Decision" with three tabs: "Equity", "Debt", and "Investor Relations". The "Equity" tab is selected. Inside the dialog, there are three icons: a green "PUBLIC" icon, a blue arrow icon, and a red "X" icon. Below these icons are two radio buttons: "Issue" (which is selected) and "Repurchase". Underneath the radio buttons is a slider for "Amount (\$)" with a value of 0. To the right of the slider are two text boxes: "Book Equity (\$)" with the value 5,087,870 and "Market Equity (\$)" with the value 16,550,212. At the bottom of the dialog, there is a "Dividend (cents per share)" field with a value of 0 and a "Previous Period" field with a value of 0. The dialog has three buttons at the bottom: "OK", "Cancel", and "More Info".

In MB-A, issues and repurchases of shares occur at current market prices, and incur underwriting and merchant banking fees. There is a 5% issue premium on equity repurchased, and a 5% issue discount on equity raised. This effectively means that the cost of repurchasing or issuing equity is 5% of the value of the repurchase/issue. These costs are automatically added or deducted from the dollar figure you specify in your decision.

In MB-A, firms pay company tax of 33% on profits. Dividend imputation means that there is no effective tax on dividends. Tax credits on losses are carried forward until the next year of profit.

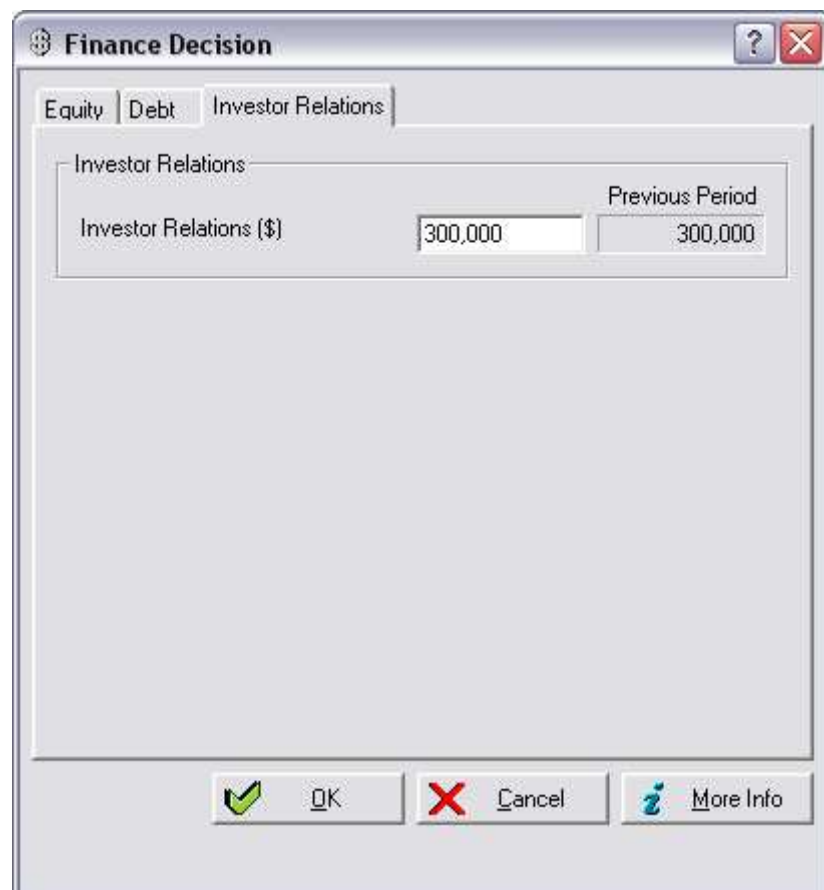
The Equity Tab in the Finance Decision Screen shown here contains the tools you need to manage your equity.

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## Investor Relations

More than a mathematical analysis of risks and returns determines the value of a share. It is also affected by how much the investment community knows and understands about the company concerned, and their perceptions of the quality of the firm's management.

Hence to ensure that their shares are fairly valued, firms need to make every effort to ensure that investors and their advisors have recent frequent clear information about the firm's situation and plans. The larger and more complex the firm, the more effort is required.



The screenshot shows a software window titled "Finance Decision" with three tabs: "Equity", "Debt", and "Investor Relations". The "Investor Relations" tab is active. Inside the window, there is a section titled "Investor Relations" containing two input fields. The first field is labeled "Investor Relations (\$)" and contains the value "300,000". The second field is labeled "Previous Period" and also contains the value "300,000". At the bottom of the window, there are three buttons: "OK" (with a green checkmark icon), "Cancel" (with a red X icon), and "More Info" (with an information icon).

The Investor Relations Tab on the Finance Decision Screen contains the tools you need to manage your equity.



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## Corporate Takeovers

An important part of a strategy may be to purchase another company (or to sell a subsidiary). MB-A allows you to play out a takeover. This option is always available in the Single-Player, but must be activated by your instructor in the Multi-Player.

The Investment Decision Screen shown next allows you to take over and sell other companies and to transfer capital backwards and forwards between your company and the companies you own.

To open this screen, press the Investments Button under the Finance Tab on the Main Decision Screen.



## PURCHASING A FIRM

The minimum realistic takeover bid is shown on the Takeover Screen below right. You can access this screen by pressing the Takeover Button on the Investment Decision Screen.

The screenshot shows a dialog box titled "Bid for MountainTop Cycles". It contains the following fields and buttons:

- Minimum Realistic Bid (\$): 23,170,297
- Profit Last Period (\$): 2,087,870
- Your Bid (\$): 23,000,000
- Buttons: Confirm Bid (with a green checkmark icon), Withdraw Bid (with a grey checkmark icon), Cancel (with a red X icon), and More Info (with an information icon).

You must pay at least a 40% premium over current market capitalization to achieve a successful takeover. This means that a takeover bid will usually require a significant amount of cash. You will need to evaluate this investment carefully. Remember that there may also be competing bids from other firms, so you may wish to go higher than the realistic minimum. All other things being equal, the highest bidder wins! To change a bid you must first withdraw it, and then re-bid.

Here we limit shareholdings in other firms to 100 percent takeovers of publicly listed firms. That is, if you take over a firm you must purchase all its shares from the share market at large (at a premium on the previous period's ending share price). You may hold the shares for a period of time (receiving dividends and performing various capital transfers), and sell them back to the share market at large at the current price if you wish.

Note: Antitrust provisions exist in MB-A Multi-Player, this will deny any takeover bid that would cause the total Market Share to exceed 50% (you can view the Market Share report for this information). Partial shareholdings and selling shareholdings directly to other firms are excluded. We also exclude mutual shareholdings and circular ownership.

In MB-A Single-Player there are no antitrust provisions.

## CONTROLLING THE OWNED COMPANY'S FINANCES

If you take over a firm, you become responsible for all its finance decisions. To do this effectively you may need to discuss their plans with them and agree on what finance they require. To make this a successful investment you will need to ensure that you are receiving (or will receive in the future) an appropriate return on your investment either in the form of dividends or increasing value of shares.

In the Multi-Player the firm you have taken over still has control of all non-finance decisions, so your acquisition can be seen as a merger, or a hostile takeover depending on how you deal with your new subsidiary.

### **SELLING YOUR SHAREHOLDING**

You may sell your entire shareholding back to the share market at large. This process takes a year, during which you may not play any part in the company's affairs. You will receive the share price at the end of that year, but any loans you have made to the company will be written off as bad debts.

The Equity Transfer Screen is where you decide whether to increase or decrease your equity holding in the owned firm, and set the amount they will pay you as a dividend. You will find this screen by clicking on the Transfer Button on the Investment Decision Screen.

Increase or decrease your equity holding in the owned firm by purchasing shares from a share issue or selling shares back as a share buy-back. Enter the value of the shares you wish to purchase or sell back.

Set the dividend per share the company will pay you. Pressing the Calculate Button will show you the total value of the dividend you will receive.

## CHAPTER 6

# Drafting A Strategy

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### Drafting a Strategy

To be successful in MB-A, it is important to draw up and pursue a coherent strategy. Each of the functional strategies that contribute to this strategy should be internally consistent, consistent with one another and consistent with the overall strategy. The table below illustrates a possible 5-year strategy for MB-A. It is not a model answer! There are many ways of doing well in MB-A.

Topic	Issues to cover	Example Actions (Not intended as a model answer!)	Measure
Vision and Overall Strategy	1-2 sentences that capture where you want to take this company	Become a market leader in producing quality bicycles that are moderately priced while taking advantage of a relatively untapped Leisure market segment.	Market share = 60%+ Share price \$50 by third roll over
Marketing Strategy	Which segments did you target? What media did you use? How much did you spend? Which channels did you target? How much margin did you give?	Focus on improving market share through increased brand awareness and more effective advertising & magazines; Improve relationships with bike shop distributors; Move towards positioning the core product as a reasonably high priced product while not pushing it out of the price range of our target market.	Market share 50% Selling price \$2,600

Operations Strategy	<p>What capacity did you reach?</p> <p>What delivery performance did you achieve?</p> <p>What quality did you achieve?</p> <p>What was your maintenance plan?</p> <p>What was your training plan?</p>	<p>Steadily increase capacity to produce more units of the core product (Adv) and to prepare to launch a product in the Leisure segment. This can be achieved through purchasing plant and increasing staff numbers;</p> <p>Increase batch size to reduce set-up costs and increase efficiency;</p> <p>Focus on quality to reduce re-work through improving supplier relations and commitment to TQM;</p> <p>Focus on eliminating idle time to increase productivity;</p> <p>Eliminate maintenance costs and downtime through commitment to preventative maintenance.</p>	<p>Capacity 40,000 SCU</p> <p>Warranty rate 0.5%</p> <p>Reduce idle time to 5%</p> <p>Reduce breakdown time to 5%</p>
Finance Strategy	<p>How much equity did you raise?</p> <p>How much debt?</p> <p>What was your dividend strategy?</p>	<p>Repay long-term debt;</p> <p>Pay out a dividend to shareholders.</p>	<p>Debt/Equity ratio below 0.2</p> <p>20c dividend per dollar payout in year 4</p>
Product Development Strategy	<p>What products did you develop?</p> <p>Attributes</p> <p>Prime cost</p> <p>Development cost</p>	<p>Introduce a new product to take advantage of the untapped Leisure market segment. This would be a low cost, low specification bike.</p>	<p>Cost \$100</p>
Budget	<p>Revenues</p> <p>Costs</p> <p>Profits</p>	<p>See Income Statement under Reports in MB-A.</p>	<p>Profit of \$20m by 2012</p>

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Result	Shareholder Value Share price Market share Net assets	Shareholder value has increased from \$8.85 at start to \$50.07 after third roll over;  This increase was greater than budgeted and can be attributed to the strategy outlined above.	Target shareholder value added \$40
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# Appendix A - Additional Help

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## Further Help

The section below will give you some useful tips on how to do well in MB-A. At this point some of these tips may be more detailed than you need, but we include them here for your reference.

## Hints And Tips

### PURCHASING NEW PLANT

It takes one period to build or acquire new plant. By comparison, new workers can be hired immediately. Remembering this will prevent staffing errors and minimize idle time. It is also important to realize that future capacity requirements must be anticipated a period in advance.

### OPERATIONS DECISIONS

Remember to make sure your operational strategy supports your overall strategy. Do you want to produce a few high quality bikes for the racer segment? If so, you're going to have to invest heavily in training, inspection, and other internal systems. Or do you want to produce a large volume of low cost bikes? In this case, you may find flexibility of delivery is more important to your market than quality. Use the data available to you in the reports and via the More Info Button.

### PRICING

If your firm is making large losses, check your retail prices. If your price is too low, you may be selling a lot of bikes, but you simply won't be covering your costs. You can check this by looking at COGM & Gross Margin under Financial Reports. If your price is too high relative to your competitors and/or the segment's desires then you will not be selling many bikes. In this case your fixed costs may be causing you problems.

## **PRIME COST**

Prime cost does not include distribution, marketing, or administration costs. As a rule of thumb these will often add up to at least \$100 per SCU. To avoid losing money, make sure you think about prime cost and these variable costs when you are calculating a price for your product. Also bear in mind the retailer's margin. One firm discovered the importance of prime cost after they launched a bike design with a prime cost of \$110,000 and lost \$12 million on sales of just 30 Bikes!

You can modify a design to reduce its prime cost. Just research the style and tech specs of a design you already have, enter a reduced prime cost and spend \$0.5 million to 1.0 million on the project. There is a limit to how far you can reduce the prime cost. As a rough guide you can get it down to about 55-60% of its design prime cost of \$5 per tech spec and \$0.15 per style spec. For example you can get the prime cost of a \$300 Adventurer bike down to about \$170-180.

## **MARKETING DECISIONS**

You should be thinking strategically about the game. The more you think and plan, the more you will get out of it (in terms of both success and learning). Make sure that you ask the following questions when you formulate your marketing strategy:

- Do we have a clear idea of what markets we are targeting and why?
- What is our point of differentiation/competitive advantage? Cost? Quality? Flexibility?
- What is most important to the markets we want to move into?

## **OPERATIONS**

The biggest problem here tends to be failing to match capacity to consumer demand. If capacity is too low, you miss out on sales. If it is too high you have idle capacity and your unit overheads rise. Remember that inspecting products costs real money. Keep track of the costs of inspection versus the quality benefit gained.

## **DISTRIBUTION**

Boosting your distribution by increasing your retailer margin is a good idea, unless you go too far. For information about suggested levels of availability, customer shopping habits, and effective retailer margins click on More Info on the Distribution Decision Screen. Don't forget that the distribution model is competitive. This means that, if your proportion of distributors is falling and you are still giving them the same support you have always given them, this is often because your competitor is spending more money on distribution than you.

## **RESEARCH & DEVELOPMENT**

Failed R&D projects can be a costly mistake. Make sure that you put sufficient but not excessive funding into this area. Click on the More Info Button in the Research and Development Screen to get all the data you need. Good summary information is available in this manual, or by clicking on Data in the More Info Screen and then Product Summary Data.



## **PLANT MAINTENANCE COST**

Maintenance Cost effectiveness is based on the number of dollars you spend per SCU of plant. If you have significantly increased your plant size, make sure that you have increased your maintenance spending proportionately. If you have not done this, the rate of machinery breakdowns is going to rise. The other advantage of a well-maintained plant is that you will get a higher price if you ever need to sell any excess capacity.

## **SENSITIVITY TO PRICE**

A few firms have been caught out using the Market Segment Summary. For the Adventurer segment sensitivity to price is low. This means that increasing price results in a smaller than proportional decrease in demand. However, you can only take advantage of this situation for so long. If you sell above the suggested price range of \$1,500-\$2,500 for Adventurers or if you get more than about \$500 above the average price for your market as a whole, then you will struggle to sell many bikes.

## **MEDIA WATCHING HABITS**

A few firms have neglected the Media Watching Habits Table and their businesses have suffered as a result. The Media Watching Habits Table gives you an indication of how you should split your advertising between TV, Internet, and Magazines.

# **Frequently Asked Questions**

## **WHAT IS THE DIFFERENCE BETWEEN FACTORY CAPACITY AND THE NUMBER OF BIKES I CAN PRODUCE?**

Factory capacity has two components - the amount of plant, and the capacity of the workers. This latter component depends in turn on the number of workers and their level of training. Factory capacity is measured in SCU. The number of bikes that can be produced will depend on available capacity and the complexity of the bikes produced. Your initial Adventurer Bike has 1 SCU of complexity. (Note that the SCU required to produce one bike is determined by its prime cost divided by \$300.) This means that if you have 10,000 SCU of available capacity you can make 10,000 of your original Adventurer bikes. Remember that some of your total capacity will be taken up with rework, setups, breakdowns, training, and raw material stock outs. Have a look at your Manufacturing Capacity Usage Chart and your Operations Report to figure out how much available capacity you have.

## **WHY DIDN'T WE SELL ANY OF THIS PRODUCT?**

Usually this is because the product attributes (style, technical specifications) are out of range for the target segment. Have a look at the Perceptual Map Report. The concentric circles represent the 'radius of influence' of each market segment. The center of each circle matches the consumer's wishes perfectly. The further from the center your product lies, the less 'ideal' it is to that segment. As a result, you will sell fewer units. If your product falls outside the radius of influence for a segment then consumers will not buy any of that product at all.

## **WHY DID MY PRODUCT DEVELOPMENT PROJECT FAIL?**

Failed product development projects can be a costly mistake. In real life would you commit to a product development project without checking that it was sufficiently well funded to succeed and that it would be able to provide an acceptable return on that investment? No? Well, if you want to win, you shouldn't do this here either. Good summary information is available in this manual. Alternatively, you can click on the More Info Button on the Product Development Screen, and then on Data and Product Summary Data to get all the data you need

Also, be careful that the specifications you request for your new product actually fall close to the ideal point of the segment you are targeting. Look under Reports for Perceptual Map of Market Segments to check this. Products outside the radius of influence (ie, outside the circles) will not sell at all.

Be careful to check the results of product development projects (from the Reports Menu). If you have not spent enough money, or if you ran out of cash and the model scaled back your spending, then your project may not have reached the design goals you set.

## **WHY DO I HAVE THE MOST SALES, BUT THE LEAST PROFIT?**

Check that you are not giving away all the retail sales revenue to the distributors in retailer margin. Be very careful about raising the distribution margin above 60%. Prime cost does not include distribution, marketing, and administration costs, which as a rule of thumb can often come to at least \$100 per SCU. You need to think about prime cost and these variable costs when calculating a price for your product. Otherwise you may be losing money.

## **MY PRODUCTION EFFICIENCY IS LOW.**

Check your:

- Raw material stock outs - increase raw material stocks or improve your relationships with your suppliers;
- Set-up time - increase batch sizes or spend more on reducing set-up times;
- Rework time - improve skill levels, machine maintenance, and supplier relations;
- Breakdowns - increase preventative maintenance on machines;
- Idle time - increase product demand and production levels or reduce factory capacity.

## **MY SHARE PRICE IS LOW (AND MY SHAREHOLDERS ARE UNHAPPY!)**

Check your:

- Profitability and Earnings per share;
- Financial risk as measured by debt/equity ratio.

## **I'M RUNNING OUT OF CASH.**

You can either increase long-term debt or issue more shares to raise capital. A hint here is that the Cash Flow Budget (see the Reports Menu) is real-time and reflects all of your decisions as you make them during each rollover period.

**HOW DO I ROLLOVER OR SUBMIT MY MULTI-PLAYER DECISIONS?**

When you are entering in decisions in the Multi-Player you are entering them in live on our servers. You can change your decisions right up until the deadline your instructor has given you. There is no need to upload decisions at the deadline. Once you are happy with your decisions, and have double-checked them, simply wait until just after your deadline to log back into your game and view your results.

**CAN OUR TEAM MEET VIRTUALLY OR DO WE HAVE TO USE THE SAME COMPUTER?**

With the Multi-Player teams do not need to be in the same physical room to view and make decisions together. Each team member needs to have Internet access and to have downloaded the software. With the Multi-Player each team member is able to log into the game from different locations and view the same information. By using instant messaging or the message board feature in MB-A, teams are able to work together in this virtual world.

**DOES EVERY MEMBER OF MY MULTI-PLAYER TEAM NEED TO REGISTER?**

Yes. Each team member must register for MB-A individually. This is the most equitable way to ensure that regardless of team size, all students pay the same price.

**I HAVE READ THROUGH THE MANUAL AND I STILL CAN'T FIND THE ANSWER TO MY QUESTION?**

SmartSims offers online assistance for technical issues. Please visit our website [www.smartsims.com](http://www.smartsims.com) or use the link in the Help menu of the game. We reply to all enquiries within 24 hours.

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## Scenario Information / Reports

The Scenario Reports give you detailed information about the preferences and shopping habits of each market segment, and all the costs associated with the scenario. You are encouraged to print these reports for future reference.

You access the Scenario Reports from the Reports Menu

Reports -> Scenario Information

There are five Scenario Reports

- Market Segment Scenario Info
- Retail Distribution Channel Scenario Info
- Operations Scenario Info
- Finance Scenario Info
- Product Development Scenario Info

Note: This Players Manual is used for several different scenarios, and there are slight differences between Single-Player and Multi-Player. If you see a difference between the manual and a Scenario Report then assume the value from the Scenario Report is the correct one. You are encouraged to print these reports for future reference.

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## Offline Mode for Multi-Player

The Multi-Player has an offline mode that allows you to rollback a copy of the game to see how the outcome would be different if your decisions were changed. You can take an offline copy at any time. With this copy, you have all the decisions made to date, and then you have the ability to rollback to change your own decisions and see the impact a different decision would have had. Also you can do what if analysis for the future. You can make decisions for the current period and see how they would work if your competitors didn't make any changes. This is a useful tool that you should consider utilizing if your instructor allows it in your course.

You access the offline mode by going to the File menu, then selecting Play Offline and follow the onscreen prompts. You will be asked to name your copy of the game database. Once the copy is saved you will be logged out of your online game, & will be asked to log into your offline game. You can now play the Multi-Player as though it were the Single-Player. Remember you must enter your final decisions in the Multi-Player game prior to your decision deadline given to you by your Instructor.



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