MikesBikes Accounting Player's Manual

(Revision E)

smartsims
BUSINESS SIMULATIONS

Contents

CHAPTER 1

Introduction and Overview

Learning Objectives

Upon successful completion of MikesBikes Accounting you will be able to:

1. Take a holistic view of the business entity and its operating environment.
2. Draw on finance and accounting skills to provide strategic direction to an organization.
3. Use financial and market reports to inform decision-making.
4. Understand all functional areas essential to a successful business such as Human Resource Management, Production and Operations Management, Marketing and Product Development.
5. Implement finance strategy to support other functional areas of a business.
6. Review and adapt business strategy to meet the changing needs of customers and take advantage of market opportunities.
7. Use a Balanced Scorecard to measure the performance of business strategy.

What is MikesBikes Accounting?

MikesBikes Accounting is an Online Business Simulation which gives you the opportunity to put Management Accounting theory into practice. The simulation requires you to take a holistic view of the business entity and its operating environment. To not only draw on your financial and accounting knowledge, but also relate these to the other functional areas of the company.

In MikesBikes Accounting you take control of a bicycle manufacturing company which has been struggling in a competitive industry. Through collaboration and the analysis of financial and market reports, you are tasked with designing and implementing an improved cross-functional strategy.

The success of your strategy will be determined by **12 Performance Targets** which have been set by your Board of Directors.

The Balanced Scorecard

The Board of Directors have put you in charge to improve performance across all areas of the company. To measure your performance they have developed a Balanced Scorecard featuring 12 Key Performance Indicators (KPI).

Financial KPIs
1. Shareholder Value
2. Gross Margin %
3. Number of Shares
Customer KPIs
4. Wholesale Sales
5. Advertising to Wholesale Sales %
6. Warranty Rate %
Internal Process KPIs
7. Total Capacity
8. Production Utilization %
9. Breakdown %
Learning & Growth KPIs
10. Skill Index
11. Motivation Index
12. Number of Products

Your Objective: 12 KPI Targets on the Balanced Scorecard

Your Board of Directors have set a **minimum or maximum target for each KPI** on the Balanced Scorecard. Your objective is to achieve each of these targets by the end of your management.

The minimum and maximum values for each KPI are listed on the **Balanced Scorecard** menu. Example:

		Real Cool Cycles	Target	Achieved
Financial Results				
Shareholder Value (SHV)	min	$13.97	$70.00	No
Gross Margin %	min	44.5%	62.0%	No
Number of Shares	min	2,000,000	1,700,000	Yes
Customer				
Wholesale Sales	min	$14,206,536	$90,000,000	No
Advertising to WholesaleSales	max	5.6%	9.0%	Yes
Warranty Rate	max	1.30%	0.18%	No
Business Process				
Total Capacity	max	24,294	60,000	Yes
Projected Capacity (Adjusted Plant)	max	24,294	60,000	Yes
Production Utilisation%	min	63.5%	85.0%	No
Breakdown%	max	7.7%	2.5%	No
Learning and Growth				
Skill Index	min	0.54	0.75	No
Motivation Index	min	0.62	0.75	No
No. of Products	min	1	2	No

You should monitor these after each rollover to track your progress.

To achieve all 12 Performance Targets you will need to:

1. Analyze your company's current financial and market position.
2. Develop a strategy to achieve your objectives.
3. Implement your strategy through the individual decisions available through the MikesBikes interface.
4. After each rollover you should review your results through the financial and market reports.

Getting Started with MikesBikes

1. Read this Player's Manual in full.
2. Log into the Smartsims website (www.smartsims.com) using your login and password emailed to you by Smartsims. If you have not received your login details you can request these here: https://password.smartsims.com
3. Watch the MikesBikes Tutorial Videos.
4. Start MikesBikes by launching your Single-Player company.

Single-Player

The MikesBikes Single-Player is a practice phase which pits you against a single computer-controlled opponent.

You progress through the simulation at your own pace through the Rollover menu. You can also Rollback to previous decision periods to edit decisions or even Restore to start again.

Multi-Player

The Multi-Player is the competition phase where you compete against multiple opponents and can compare your performance across all students in your course/section.

There is no Rollover menu in the Multi-Player, instead rollovers are automated and occur at scheduled times set by your course instructor. You must ensure your final decisions are saved within the simulation interface prior to each scheduled rollover.

OFFLINE MODE

Offline Mode is an option for the Multi-Player which enables you to try out different decisions and strategies before a scheduled rollover is processed. Moving between decision periods in the Offline Mode is done through the Rollover menu.

Once logged into the Smartsims website (www.smartsims.com) click on the Offline Mode launch button.

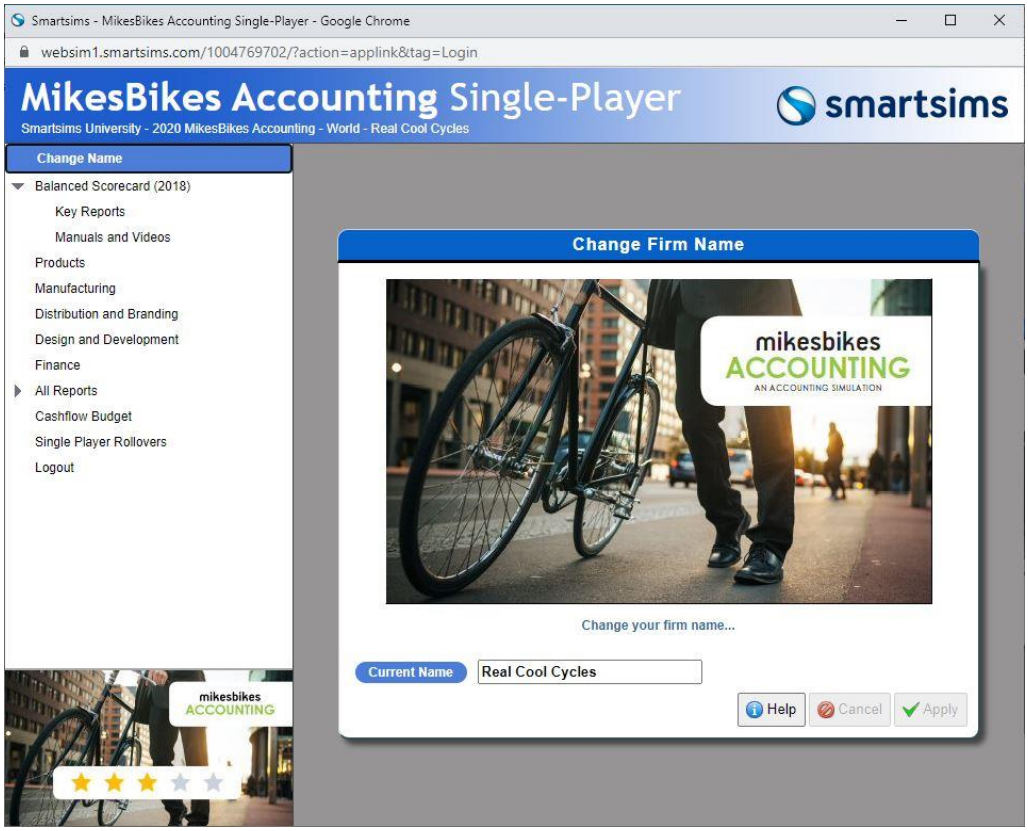
Note:

- Offline Mode is a forecast of possible results. It does not provide you with actual results as your competitor's current decisions are not included in the calculations.
- Your decisions in the Offline Mode are not automatically transferred to your Multi-Player company. You should take a copy of your decisions, close the Offline Mode, then launch your Multi-Player company to re-enter any decisions you wish to be processed for the next rollover.

Using the MikesBikes Interface

Decision Tree

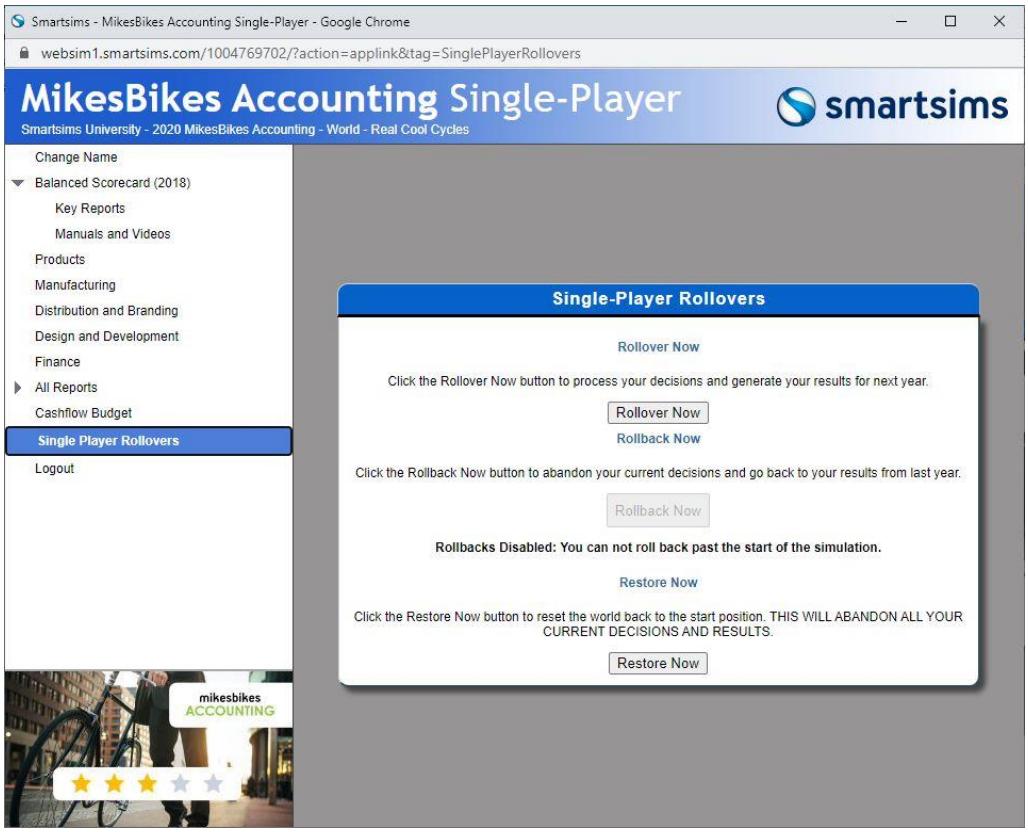
The decision tree at the left of the screen enables you to navigate the decision and report menus:



Rollover Menu

MikesBikes is a turn or period-based simulation. You make decisions for the year ahead which are processed by a Rollover. After the Rollover you can view new industry and firm results.

In the Single-Player you control rollovers. The Rollover button moves the simulation forward a year (decision period). The Rollback button takes the simulation back one year. The Restore button resets the simulation back to the start.



In the Single-Player you should try different combinations of decisions to improve results.

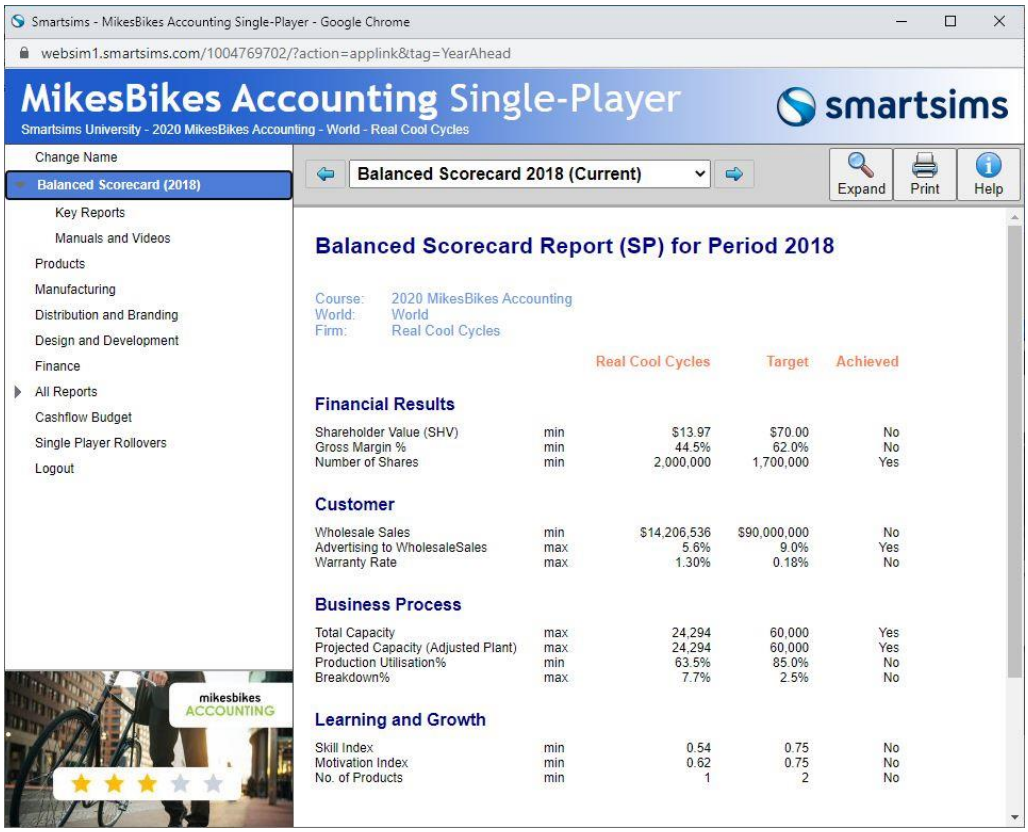
In the Multi-Player rollovers occur at scheduled dates/times as determined by your course instructor. There is not a Rollover button. It is your responsibility to have your final decisions entered prior to each rollover date/time.

Viewing your Results

The Balanced Scorecard

The balanced scorecard is a tool developed by your Board of Directors to measure the performance of your company's strategy.

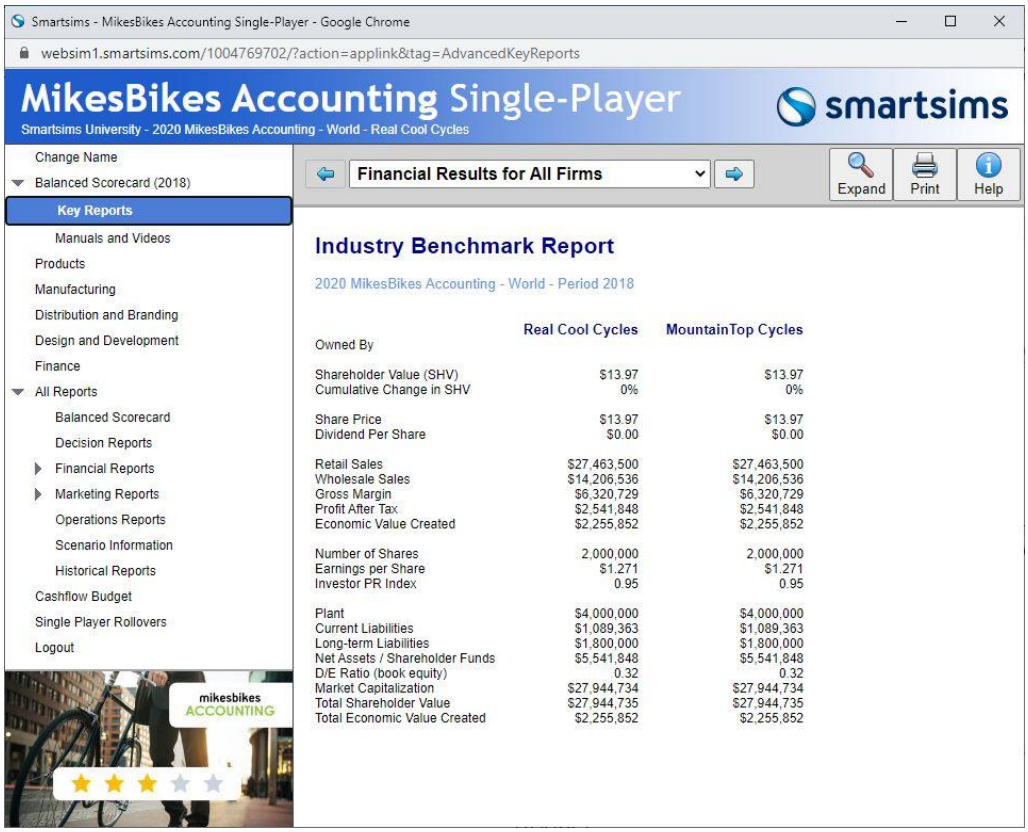
There are twelve Key Performance Indicators (KPI) grouped into four categories; Finance, Customer, Process, and Learning & Growth. Each KPI has a set objective (minimum or maximum) which reflects how successful your strategy is.



KEY REPORTS

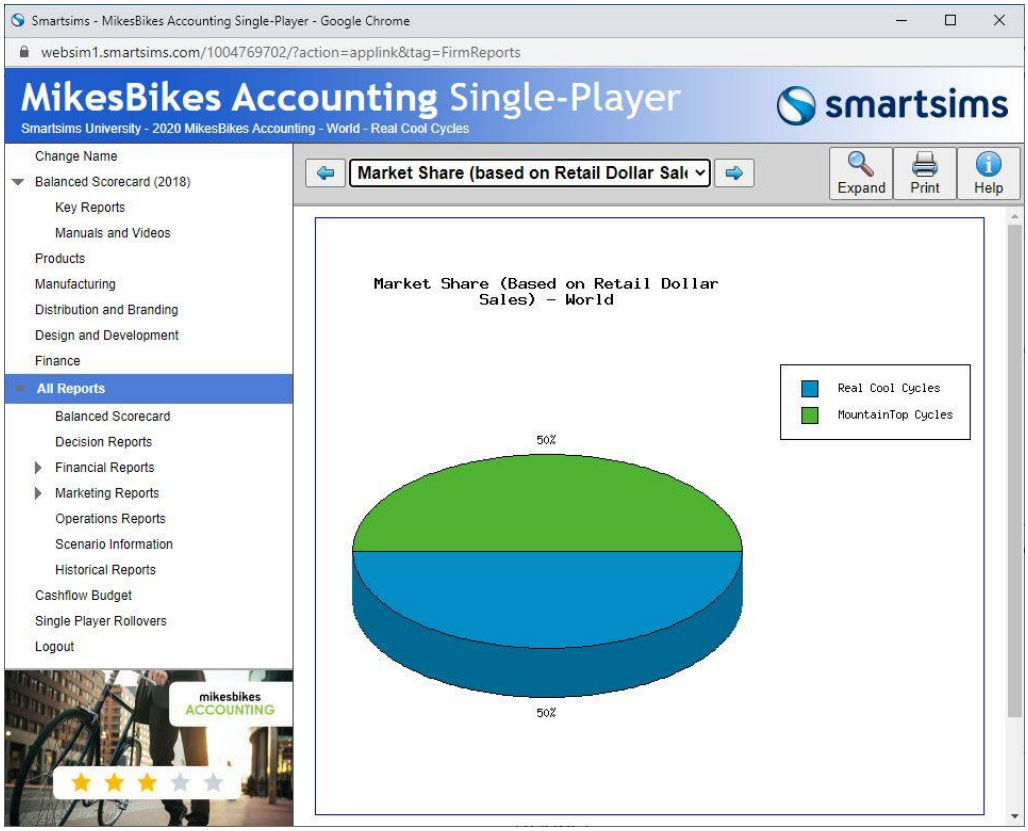
The Key Reports menu enables you to view the summary-level reports quickly. These include the:

- Industry Benchmark Report
- Market Summary
- Market Information
- Product Summary


Smartsims - MikesBikes Accounting Single-Player - Google Chrome
websim1.smartsims.com/1004769702/?action=applink&tag=AdvancedKeyReports
MikesBikes Accounting Single-Player
Smartsims University - 2020 MikesBikes Accounting - World - Real Cool Cycles
smartsims
Change Name
Balanced Scorecard (2018)
Key Reports
Manuals and Videos
Products
Manufacturing
Distribution and Branding
Design and Development
Finance
All Reports
Balanced Scorecard
Decision Reports
Financial Reports
Marketing Reports
Operations Reports
Scenario Information
Historical Reports
Cashflow Budget
Single Player Rollovers
Logout
mikesbikes ACCOUNTING
Financial Results for All Firms
Expand
Print
Help
Industry Benchmark Report
2020 MikesBikes Accounting - World - Period 2018
Owned By
Real Cool Cycles
MountainTop Cycles
Shareholder Value (SHV) $13.97 $13.97
Cumulative Change in SHV 0% 0%
Share Price $13.97 $13.97
Dividend Per Share $0.00 $0.00
Retail Sales $27,463,500 $27,463,500
Wholesale Sales $14,206,536 $14,206,536
Gross Margin $6,320,729 $6,320,729
Profit After Tax $2,541,848 $2,541,848
Economic Value Created $2,255,852 $2,255,852
Number of Shares 2,000,000 2,000,000
Earnings per Share $1.271 $1.271
Investor PR Index 0.95 0.95
Plant $4,000,000 $4,000,000
Current Liabilities $1,089,363 $1,089,363
Long-term Liabilities $1,800,000 $1,800,000
Net Assets / Shareholder Funds $5,541,848 $5,541,848
D/E Ratio (book equity) 0.32 0.32
Market Capitalization $27,944,734 $27,944,734
Total Shareholder Value $27,944,735 $27,944,735
Total Economic Value Created $2,255,852 $2,255,852

ALL REPORTS

There are a substantial number of reports available under the *All Reports* menu. These will provide additional detail to help you analyze your results.



Need Help?

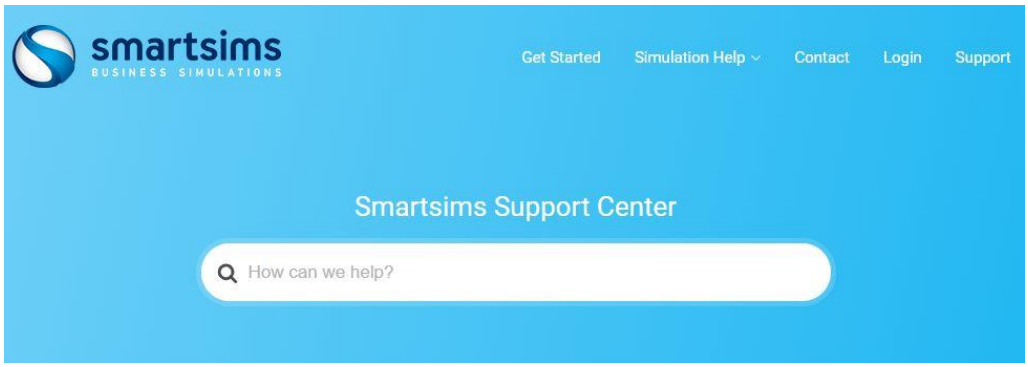
Help within the MikesBikes Interface

Every screen within the simulation features a Help button:

Clicking on this button will provide you with information specific to the screen you are viewing.

Smartsims Online Support Center

Smartsims have developed an online knowledgebase, the Smartsims Support Center, which enables you to search or browse help articles.



Smartsims Help Desk

Smartsims staff are available to provide help and answer your questions any time by emailing help@smartsims.com.

CHAPTER 2

Marketing

Analyzing the Market

The MikesBikes Accounting simulation 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 needs.

Market Segments

The bicycle industry can be separated into five market segments:

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

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 this segment has moderate underlying 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 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, often with friends or family. 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 hate having to wait to buy, even if it is the best value for money. Because this segment is quite broad, it is also typically quite large.

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 people 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 size of the Kids segment 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 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 slight growth in overseas markets although the total volume of sales is smaller than the other market segments.

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

All Reports -> Scenario Information

There are six Scenario Reports

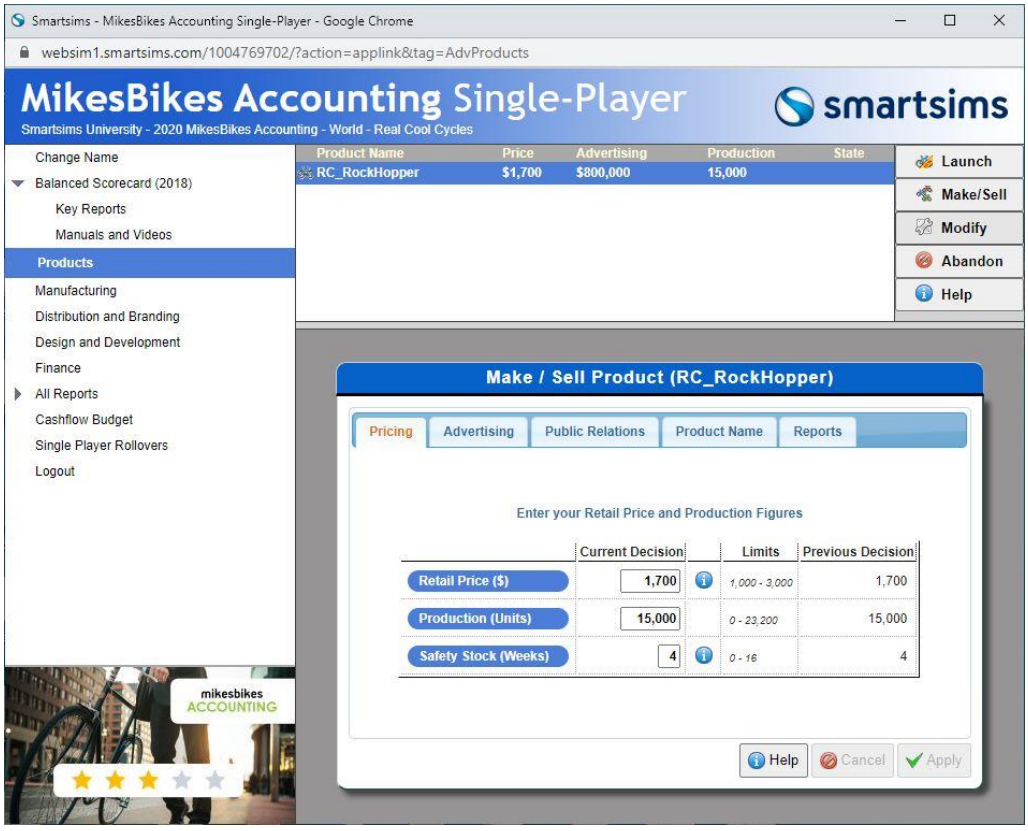
- *Market Information*
  Contains segment size and price range, segment sensitivity to price, advertising etc., media viewing habits, advertising and PR reach, shopping habits
- *Distribution Information*
  Contains shopping habits and distribution channel information

- *Operations Information*
  Contains various costs and limits relating to capacity, inventory, leadtime, and quality
- *Finance Information*
  Contains various factors and limits relating to your company finances
- *Development Information*
  Contains development costs and suggested targets for your first product development in each segment

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 MikesBikes all 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 can be modified and deleted.

New Products

New products can be used to enter new segments of the market or to attempt to dominate a current segment with multiple product offerings.

New products can be launched at any time, using the Launch Button on the Products Screen. However before you can launch a new product, you must complete a design project in the Design and Development screen. Remember that product development takes a year to complete. So if you decide to create a new design project now, then it will not be available to launch as a new product until **after** the next rollover.

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.

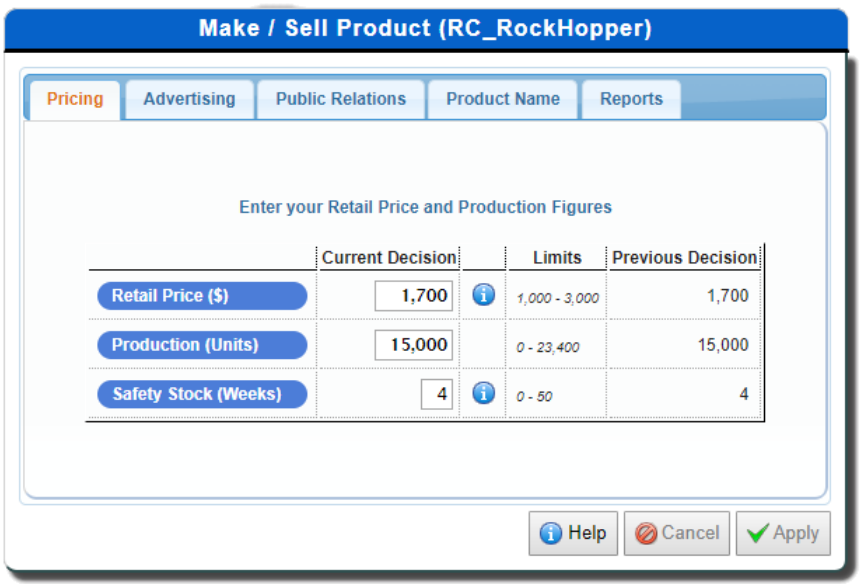
Where the firm holds obsolete stocks of finished goods for a product that has since been modified, the obsolete stocks are automatically dumped at cost.

See the Product Development Chapter for more information.

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 cost.

Price



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 set a Retail Price decision for each product. Retail Price should align with the price sensitivity of consumers in this market segment and the price of competing products.

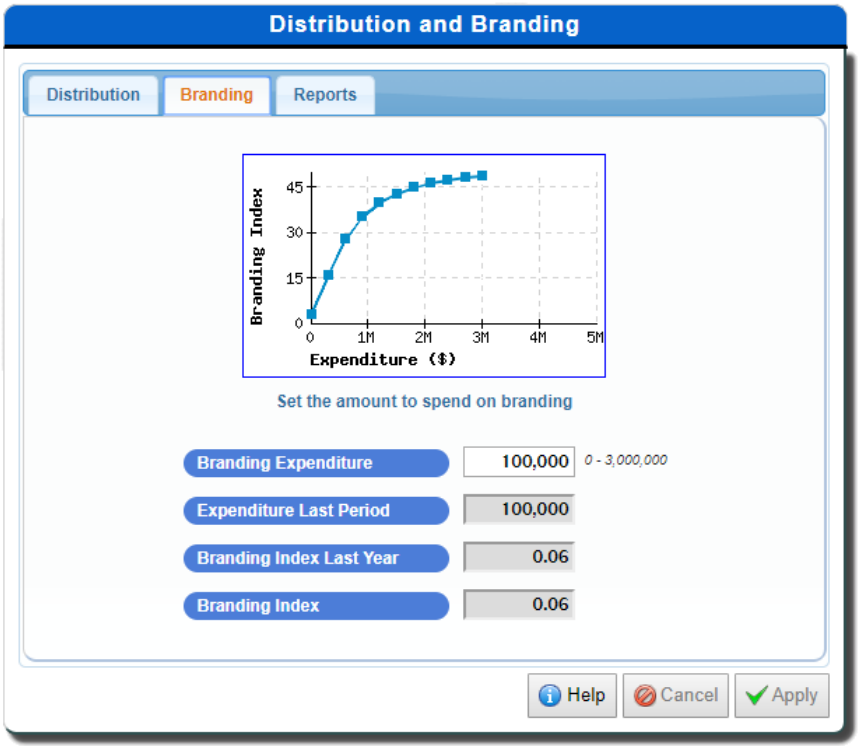
See the Operations chapter for information on the Safety Stock decision.

Promotion

In MikesBikes, 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. Note that Brand Advertising does not contribute to the effect of product public relations.



A budget can be allocated to brand advertising, as shown here. 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.

- 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:

Internet Advertising allows you to engage and reach potential customers through the devices they use for work and leisure (such as computers, smartphones, and tablets). 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, sponsored Ad Words on major search engines etc.

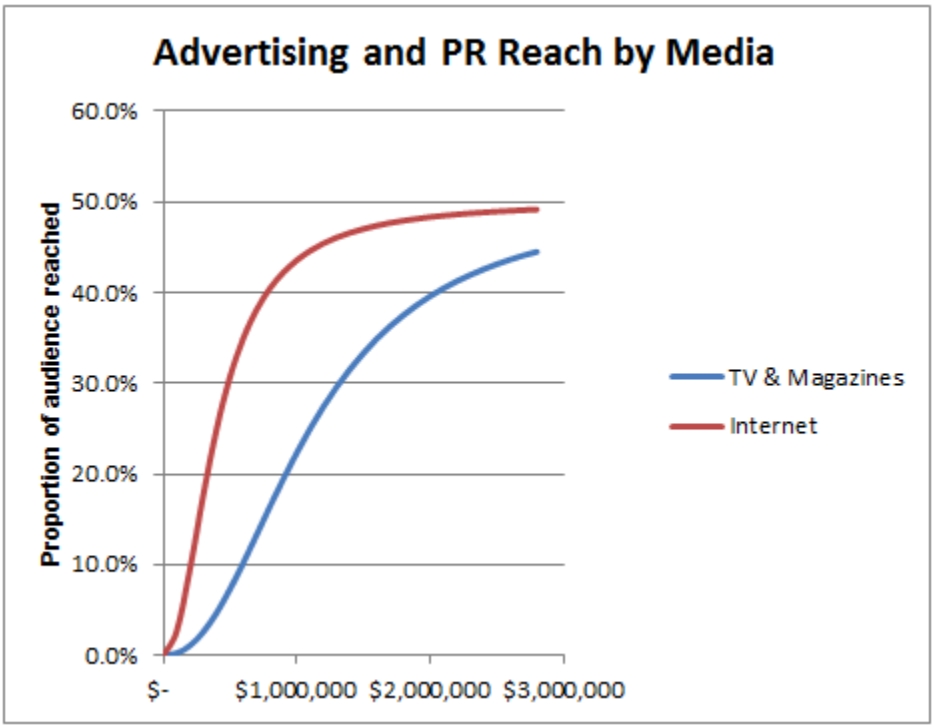
- Magazines:

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.

ADVERTISING AND PR REACH AND MEDIA VIEWING PREFERENCES

There are two key sources of information you can use to determine your optimal advertising mix for a given advertising spend; Advertising & PR Reach and Media Viewing Preferences.

- Advertising & PR Reach:



For instance, a $2m spent on TV or Magazine advertising could reach around 40% of the potential TV or Magazine audience. Whereas, a $2m spent on Internet advertising could reach around 48% of the potential Internet audience.

However, you also must consider what proportion of your target markets actually use each media channel.

- Media Viewing Habits:

Media Viewing Habits

Segment	TV	Internet	Magazines	Sensitivity to Advertising	Sensitivity to PR
Kids	70%	20%	20%	High	Low
Racers	10%	40%	60%	Low	High
Commuters	50%	20%	10%	Med	Low
Leisure	60%	30%	20%	High	Low
Adventurers	40%	30%	50%	Med	Med

Note: Because people watch/read more than one media channel, the rows can add to more than 100%

Let us look at the above example again and assume we have a $2m advertising budget to spend targeting the Adventurer market segment.

50% of the Adventurer segment read magazines. So our $2m spend would reach approximately 40% * 50% = 20% of the Adventurer segment.

But only 40% of the Adventurer segment regularly watch TV. So our $2m spend would reach approximately 40% * 40% = 16% of the Adventurer segment.

And only 30% of the Adventurer segment are reachable via Internet advertising. So our $2m spend would reach approximately 48% * 30% = 14.4% of the Adventurer segment.

So from that, you might think that your best use of your $2m product advertising budget is to spend it all on Magazines.

But maybe we can do better than that still. What happens if we spend half on Internet, and half on Magazines?

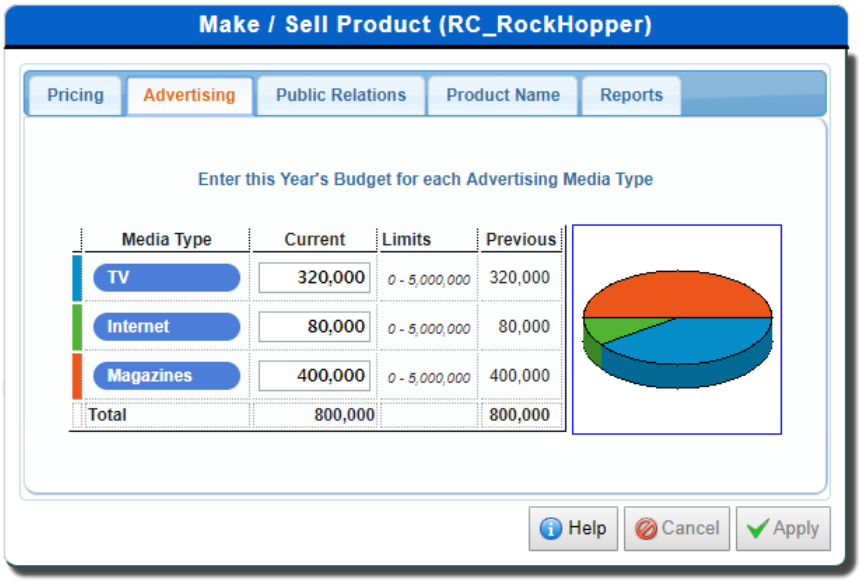
If we spent $1m on Internet we could reach approximately 43% of Internet viewers. And 30% of the Adventurer segment is reachable via Internet advertising. So we could reach approximately 43% * 30% = 12.9% of the Standard segment.

If we spend $1m on Magazines we could reach approximately 23% of Magazine viewers. And 50% of the Adventurer segment reads Magazines. So we could reach approximately 23% * 50% = 11.5% of the Adventurer segment.

So together, our $2m budget spent half on Internet and half on Magazine advertising would reach approximately 24.4% of the Adventurer segment. This is obviously a better use of our advertising budget than the first three options.

Note: You should read the Market Segment Scenario Info report under All Reports->Scenario Information for more detailed information on the preferences of the market segments.

Specific product-related media advertising are budgeted for each product on the Product Decision Screen.

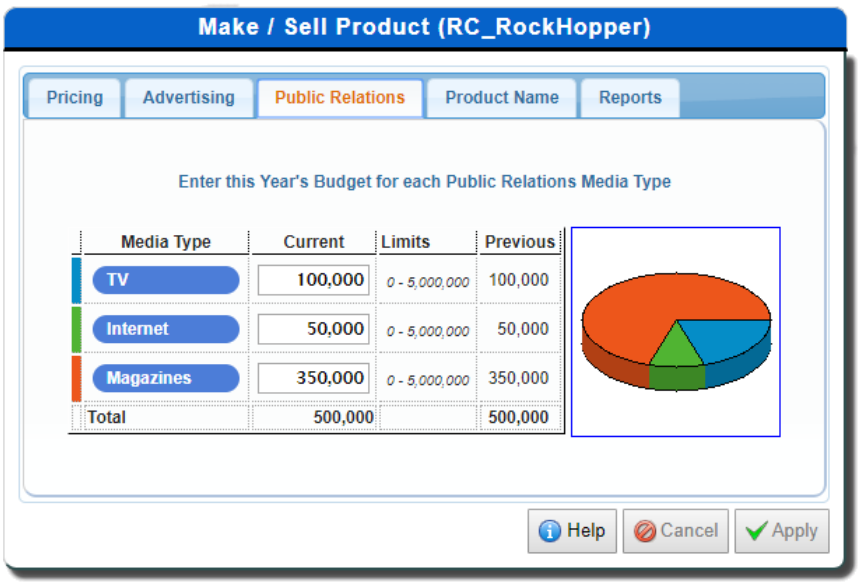


Advertising activity affects the awareness levels of the product. Awareness takes time to build and will decline over time as consumers "forget". Advertising experts estimate that an investment of around $2m is required to achieve initial awareness levels of 25%-50%. Less is required to maintain these levels.

In deciding the level of investment in advertising, it is important to remember that certain segments are more responsive to advertising than others.

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.



See the Media Viewing Habits Table and Advertising Reach curves above for an indication of which media to use. Some segments are more sensitive to this kind of product promotion than others.

Distribution (Place)

Distribution 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 of stores 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 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.

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.

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 can 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. As they buy for a purpose, they will also tend to pay more than those segments which are less specific in their requirements.

Summary

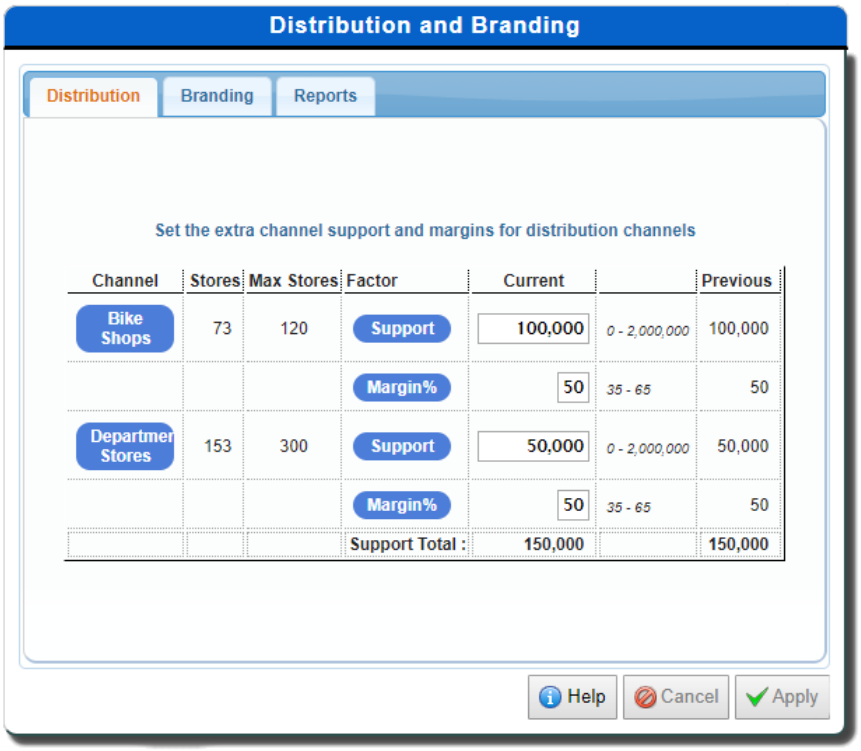
Distribution costs include the salaries of head office marketing staff, and any extra support that you allocate to the distribution channels. Estimates of the shopping habits of the different segments in the different distribution channels are also given for you to use in deciding on a distribution strategy.

See: All Reports -> Scenario Information -> Distribution Information.

This will give you specific distribution channel and consumer shopping habit information.

Making The Distribution Decision

The Distribution Decision Screen is shown here. This is where you enter your decisions about distributing your products for the coming year. Here you decide the importance of the different channels.



You must specify what margin and what extra support you are going to offer the retailers in each channel.

Retail margin is the margin the retailers keep. For example, if your bike has a Retail Price of $1000 and your Retail Margin is 40%, then you retain $600 as the Wholesale Price.

Extra support is a dollar figure which goes toward special promotions and discounts, point of sale displays, and extra sales staff training on your products.

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.

DISTRIBUTION, RETAIL MARGIN, AND CONSUMER SHOPPING HABITS

Your challenge is to decide how to set price and distributor retail margins to influence your distribution coverage in a way that results in either increased market share or increased profit.

Your distributors look at how much total retail margin they make from stocking all your products and based on this they decide how many stores will stock your products. This then translates into a Distribution Index which ranges from 0 to 1 (higher is better). In general, as your distributors make more money from selling your products, then more stores will stock them and your Distribution Index will increase.

Simple example of Distributor behavior

For instance, if you sold 10,000 bikes at $1000 with a 50% retail margin, then your distributors would make 10,000 * 50% * $1000 = $5m

But perhaps by dropping your price to $900, and your retail margin to 45% you can now sell 12,000 units. Your distributors would then make 12,000 * 45% * $900 = $4.86m

In this case, your Distribution Index would fall slightly as your distributors made less retail margin in total. This may not be an issue in the Commuter market, but it may disadvantage you in the other market segments. And of course, it also depends on your competitor actions. If your competitors have much higher distribution indexes than you, then you will lose more market share.

As you can see, sales volume is also an important component of distribution. So it may be beneficial to keep retail margins slightly higher whilst building initial market share for new products. And it may be possible to gradually reduce margins once you have established products with high sales volumes without adversely affecting your Distribution Index.

Think Strategically - Assess the needs of your Target Markets

Note: See the Distribution Information report under All Reports->Scenario Information for the Shopping Habits of each market segment.

In the MikesBikes Multi-Player, there are five different market segments each with different preferences, sensitivities, price ranges, volume, and shopping habits. In general you should have a consistent strategy to meet the needs of these markets. So for instance if your strategy is to be a low cost, high volume manufacturer then it may make sense to target the Kids, Commuters, and Leisure segments. In this case, part of your high volume strategy might be to increase your margins by gradually reducing your retail margin to distributors as your sales volume climbs.

However, what if you wanted to serve both the Racer Segment and the Commuter segment? From looking at the Retail Distribution Channel Scenario Info report we can see that 85% of Racers shop at Bike Shops, and none at Department Stores. But 60% of Commuters shop at Department Stores, and none at Bike Shops. So in this case we could still keep our Retail Margins higher for bike shops to support our primary distributors in the Racer segment whilst gradually reducing margins to Department Stores and Sports Stores.

Alternatively, your strategy could be as a niche manufacturer of high quality bikes for the Racer and Adventurer segments. In this case you might choose to keep your prices and retail margins higher and use distribution as a strategic advantage to increase your market share.

These are the types of distribution related trade-offs that you have to consider in MikesBikes when setting price, retail margin, and deciding which market segments to target and how you wish to compete within those segments. The key thing is that your distribution decisions should always support your overall strategy rather than being viewed in isolation.

CHAPTER 3

Operations

Current Operational Position

You currently make one type of bike for the Adventurer market. You have around 80 staff and the capacity to manufacture about 16,000 bikes annually.

Other relevant summary information is given in the table below:

Flexibility of production	+/- 20% of decision
Benchmark average annual wage	$25,000
Hire cost	$4,000
Fire cost	$4,000
Cost of new plant	$16,000 per 100 SCU*
Current effective factory capacity	22,500 SCU
Unit SCU inspection costs	$500/SCU
Annual warehouse cost per SCU raw materials	$93/SCU
Annual warehouse cost per unit finished goods	$100/unit
Warranty cost as a percent of wholesale selling price	100%
Training materials and instructors cost	$30/worker/hour

*SCU = standard capacity unit

(see All Reports -> Scenario Information -> Operations Information)

(see All Reports -> Operations Reports -> Manufacturing Responsiveness report)

(see All Reports -> Operations Reports -> Manufacturing Quality report)

Operations Decisions

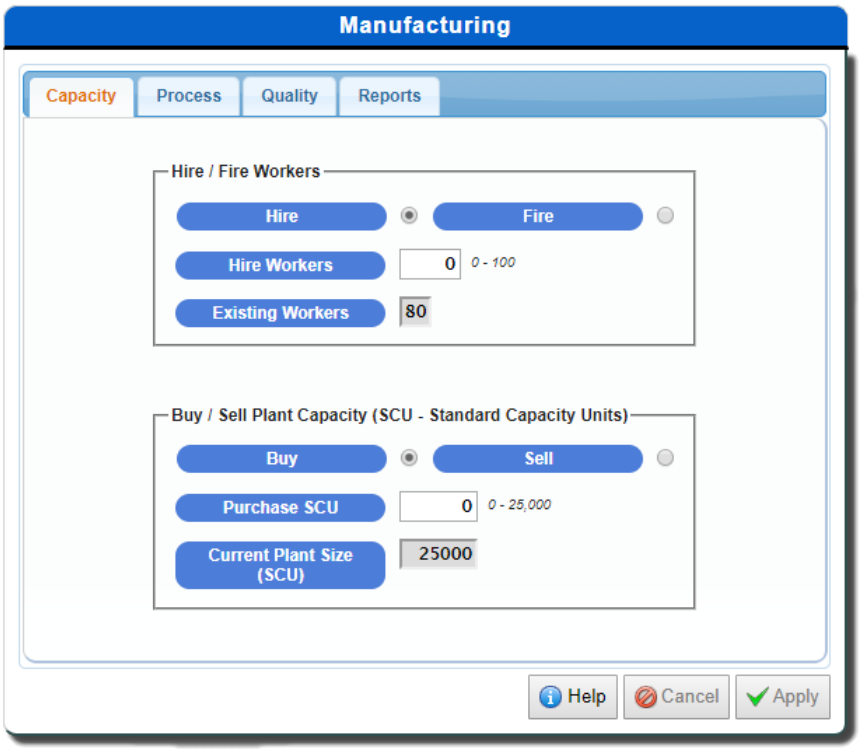
The Manufacturing Decision Screen is where you enter your decisions about the money you are going to spend on manufacturing process-related costs. MikesBikes models two components of operations explicitly - responsiveness and quality. Changes made to these areas apply for all the firm's products.

Responsiveness

The Responsiveness Screen, shown below, is broken into two parts: capacity and process. The first relates to the amount of plant and workers 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.



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 80%-85% is very good.

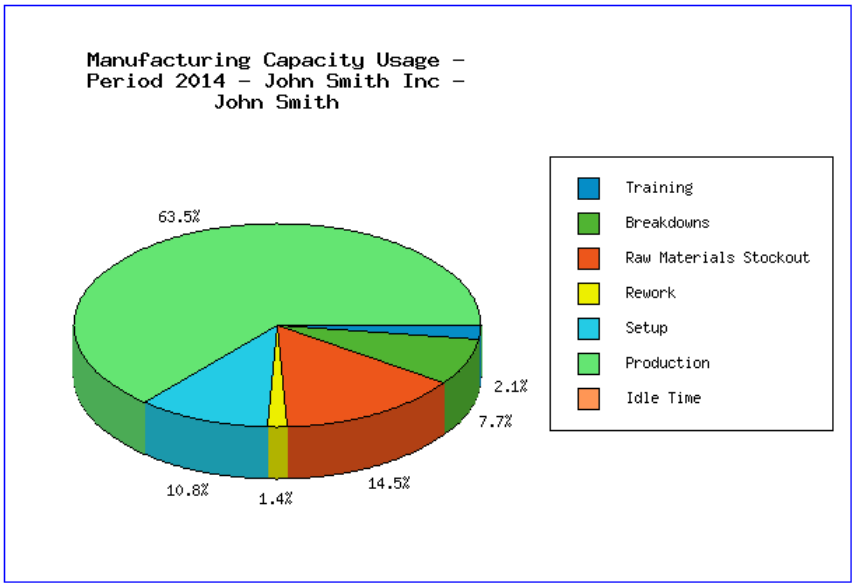
(See All Reports->Operations Reports -> Manufacturing Responsiveness Report for further detail.)

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 may require additional capital. A share issue and/or an increase in long-term debt may be required.

Capacity may be lost to:

- 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 - 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.

(See All Reports->Operations Reports -> Manufacturing Responsiveness Report for 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

(Note: See Reports -> Product Development Project Results and Reports -> Products, Sales, Margin, Production for more detailed information on the exact SCU requirements for each product)

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

(see All Reports -> Operations Reports -> Manufacturing Responsiveness report)

(see All Reports -> Operations Reports -> Manufacturing Quality report)

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 then your office staff requirements will increase and you will have fewer staff available for your factory workforce.

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 receive on average twice this amount. In MikesBikes, 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.

MANAGING YOUR WORKFORCE - THE RELATIONSHIP BETWEEN EMPLOYEE MOTIVATION, TRAINING, STAFF TURNOVER, QUALITY, AND WORKER CAPACITY

You need to think carefully about the relationship between your overall strategy and how employee motivation and employee skill levels relate to that, especially if your strategy is to be a low cost, high volume manufacturer.

In general, well trained and motivated workers are more productive than poorly trained workers so you need to employ fewer workers to achieve a given level of worker capacity. In general if your workers are well trained and motivated you need fewer Administration staff.

Well trained workers are a significant factor in improving your internal quality.

Workers are more motivated when they are paid more and when they are well trained. They are less motivated when you fire other workers as their feeling of job security decreases.

Poorly motivated and poorly trained workers can contribute to significant staff turnover (sometimes as high as 40% to 50% per year). That gets expensive because each worker than is replaced costs $4000 to replace. Also, each new worker arrives with a minimum level of training, so your average employee skill level is reduced which lowers your internal quality.

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.

TOTAL CAPACITY: WORKERS AND PLANT CAPACITY COMBINED

In MikesBikes, as in real life, your factory is most effective when the capacity of your workers is well matched to the capacity of your plant.

Total Capacity SCU = sqrt (Factory Workforce Capacity SCU * Plant Capacity SCU)

This equation allows you to emphasize one form of capacity over another depending on how each approach fits with your strategic plan. For instance, you can employ more workers immediately whereas you have to wait 12 months for new Plant to become available.

Just be aware that if your Factory Workforce Capacity and Plant Capacity get too far out of balance then together they will not be working to their full potential. So check your Manufacturing Responsiveness report when deciding whether to employ more workers or to purchase more Plant.

(see All Reports -> Operations Reports -> Manufacturing Responsiveness report)

Example 1

Factory Workforce Capacity = 25,000 SCU and Plant Capacity = 25,000 SCU

Total Capacity = sqrt (25,000 * 25,000) = 25,000 SCU

Example 2

Factory Workforce Capacity = 35,000 SCU and Plant Capacity = 15,000 SCU

Total Capacity = sqrt (35,000 * 15,000) = 22,912 SCU

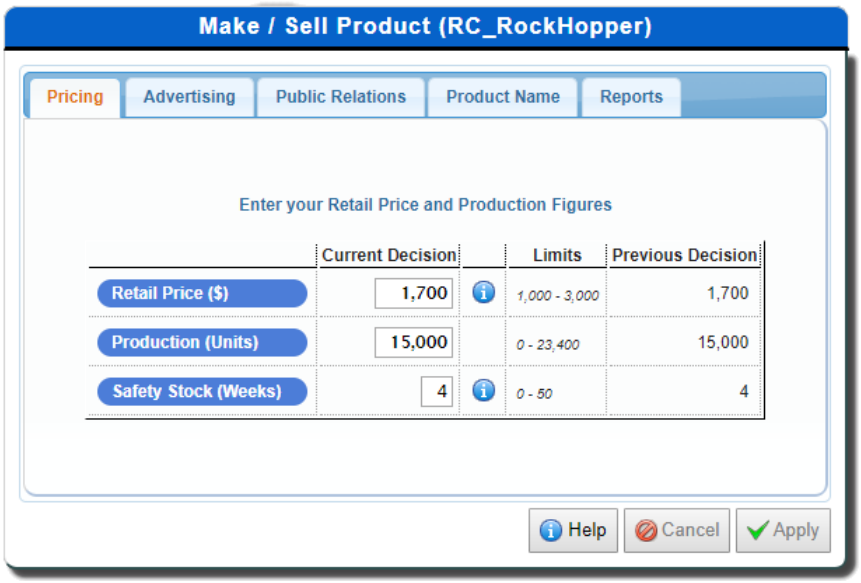
Example 3

Factory Workforce Capacity = 40,000 SCU and Plant Capacity = 10,000 SCU

Total Capacity = sqrt (40,000 * 10,000) = 20,000 SCU

PRODUCTION VOLUME IN MIKESBIKES

The Product screen allow you to set Production:



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

Target Annual Production = Sales Forecast - Beginning Finished Goods + 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 20% up or down on the planned figure.

Safety Stock

In addition to setting a target production level for each product, the firm needs to set a target finished goods inventory level, known as Safety Stock. This 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.

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.

PRODUCTION FLEXIBILITY

To check, see *All Reports -> Scenario Information -> Operations Information*. If your scenario has Production Flexibility activated, you will see a +/- 20% next to "Production Volumes flex according to demand". A figure here of zero indicates no Production Flexibility.

If activated, this means that your production figures become a target, and your factory can adjust production up or down by up to 20% to try to meet actual demand (assuming sufficient spare capacity). This reduces the impact of poor production planning decisions and reduces the likelihood that your Firm will become bankrupt.

For example: If you planned to produce 20,000 units of a bike then actual production could flex between 18,000 and 22,000 units to meet actual demand (again, provided you don't hit any capacity constraints).

View the Products - Sales, Margin, Production report to compare Planned vs Actual production.

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. However, small batch sizes increase complexity and require more production administration staff. For example, the Accounts Department can process a small number of large batches relatively easily.

Keep in mind that processing a larger number of smaller batches requires more effort. So from a human resources viewpoint, smaller batch sizes require more administration staff. This will reduce your factory workforce in the MikesBikes environment unless you hire more staff. Note that this effect can be offset somewhat by having better trained and motivated workers.

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. With the present batch sizes and number of products, each firm is losing about 11% of capacity on set-ups.

SUPPLIER RELATIONS

Companies 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 will require a significant investment to improve supplier relations, but once improved it will require a lower level to maintain this improvement as the level of accumulated supplier relations deteriorates over time.

(see All Reports -> Operations Reports -> Manufacturing Quality report)

RAW MATERIALS INVENTORY

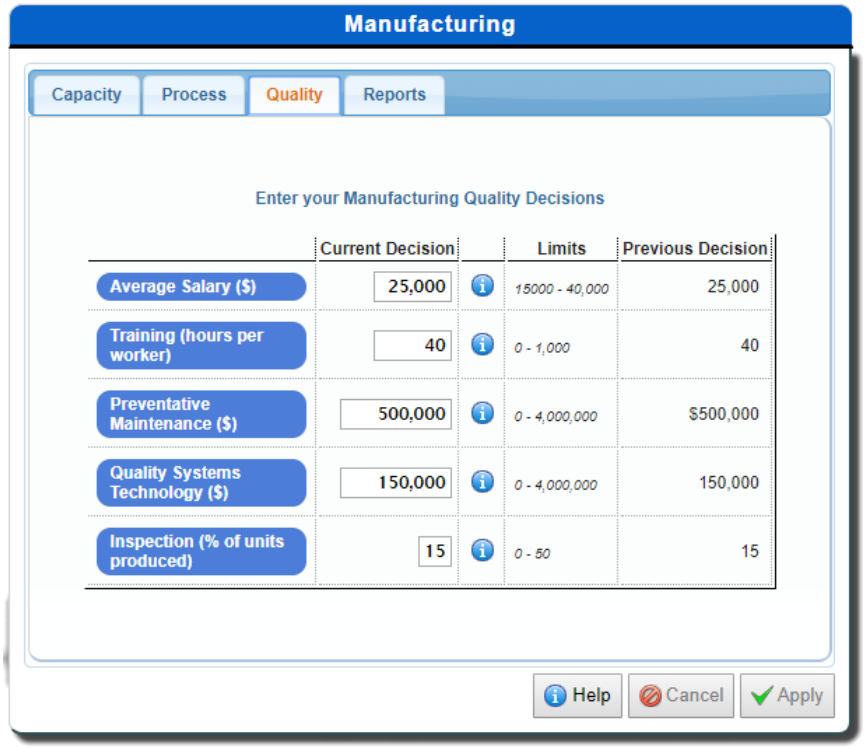
You must decide on the average level of raw material inventories that you want to hold. This level is expressed in weeks. It is based on weeks of production and may vary with the level of production. Raw materials inventories provide a buffer to protect against unreliable suppliers and to ensure there are sufficient materials to cover late deliveries.

You should view the Manufacturing Responsiveness Report and if you are losing significant amount of capacity to Raw Materials Stockout, then consider increasing your Raw Materials Inventory.

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 ($93 / SCU in Multi-Player).

As your Supplier Relations Index increases, your supply of Raw Materials improves and you can afford to hold lower stocks of Raw Materials Inventory.

Quality



Decisions in this area determine the quality of the products produced.

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. You will need to increase that to 100 hours or more to significantly improve your workers to improve their skills, knowledge and effectiveness. 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.

Preventative maintenance reduces the likelihood of plant breakdown and losses in capacity caused by these delays. Adequate maintenance also serves to maintain the resale value of plant. Finally, ensuring the plant is producing within tolerances contributes towards the reduction of defects and improves your internal quality.

The Manufacturing Responsiveness Report shows if you are losing a significant amount of time to breakdowns. If so, consider increasing Preventative Maintenance expenditure.

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, but it is starting to lose a significant proportion of its potential is lost due to breakdowns.

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.

(see All Reports -> Operations Reports -> Manufacturing Quality report)

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 $500 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.

INTERNAL VS EXTERNAL QUALITY

The above quality and HR decisions affect the internal and external failure rates, (ie. 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 and motivation level of your production staff.

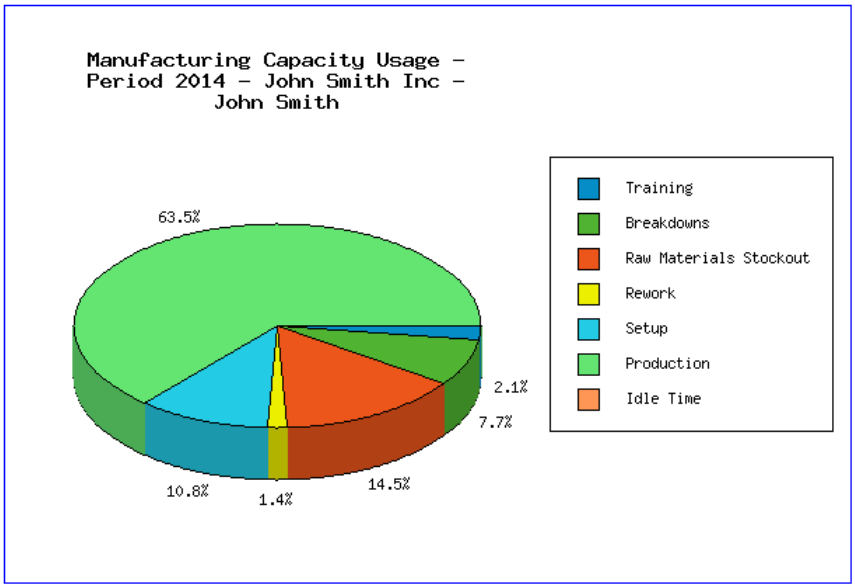
Preventative Maintenance, Quality Systems Technology and Supplier Relations will affect the number of defects resulting from machinery.

All of the above factors together will determine the total number of defective products that will be produced. This is your internal defect rate, and is often referred to as 'Quality at the Source'.

The Inspection Decision sets the proportion of finished bikes that will be inspected for defects before leaving the factory to be sold. This affects your external defect rate, or the proportion of faulty products that you ship to customers. This is what determines your Quality Index.

So from this you can see there are two ways of ensuring high quality - Quality at the Source vs a high inspection rate. Depending on your strategy, both approaches are viable. However be aware that having a high inspection rate can be very expensive as your production volume climbs.

Ongoing Strategic Control



For any period, the capacity usage chart presented above reflects how capacity was 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 utilize capacity more efficiently and reduce wastage and idle time.

(also see All Reports -> Operations Reports -> Manufacturing Responsiveness report)

(also see All Reports -> Operations Reports -> Manufacturing Quality report)

Just-In-Time Manufacturing (JIT)

Just-In-Time Manufacturing is a philosophy that attempts to reduce all types of waste. While the original emphasis was on inventory, it later evolved to include all types of waste and especially time.

JIT Manufacturing may become more important as your product range and delivery volumes increase.

For instance, a traditional approach to efficiently using production capacity might be to increase batch sizes, and compensate for longer production lead times and poor supplier relations with increased stocks of finished goods and raw materials.

A JIT approach to reducing waste might see you focus on investing in setup time reduction and using much smaller batch sizes. You could invest in supplier relations to ensure that your raw materials arrive quickly and without faults. You may then be able to reduce your inventory of finished goods and raw materials whilst still maintaining short delivery times.

Like any management technique though, you need to decide how JIT fits with your long term strategy. If you are only producing a couple of bikes for markets that tolerate longer delivery cycles, then you may be better off with a traditional approach to maximizing production utilization.

Total Quality Management (TQM)

Total Quality Management (TQM) was first pioneered by W. Edwards Deming. The basic idea is that if enough time and effort is expended on training and supplier relations, there is no need for final inspection since there is inspection at the source or quality at the source.

Traditional methods of quality control involve sampling or inspecting a proportion of your completed product for faults before it leaves the factory. This can be time consuming and expensive as the inspected items are often damaged or destroyed in the process.

By investing in training of your workers, quality systems, and supplier relations to improve your raw materials you are likely to build fewer faulty products.

Like any management technique though, you need to carefully evaluate how TQM concepts fit with your long term strategy. Depending on the needs of your markets it may be more effective to rely on higher inspection rates to keep the external defect rate at an acceptable level rather than investing heavily in quality.

CHAPTER 4

Product Development

The Product Development Decision

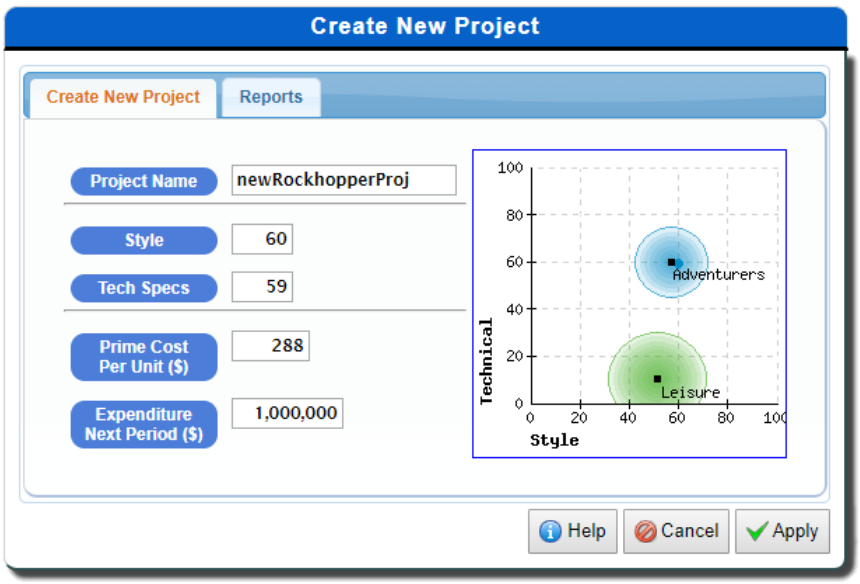
In the MikesBikes environment you may choose to undertake product development projects in the coming year to develop designs for new products or modifications for existing ones. The results of these product development projects are available in the year following implementation (i.e. you cannot use them until after the next rollover).

TYPES OF PRODUCT DEVELOPMENT PROJECTS

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

- New products.
- Product modification.
- Value engineering (reduction of product prime cost while maintaining current physical characteristics).

Developing a New Product



The Design and Develop Screen is where you enter your decisions about product design and development for your firm for the coming year. Product Development is organized into separate design projects.

Each design project has:

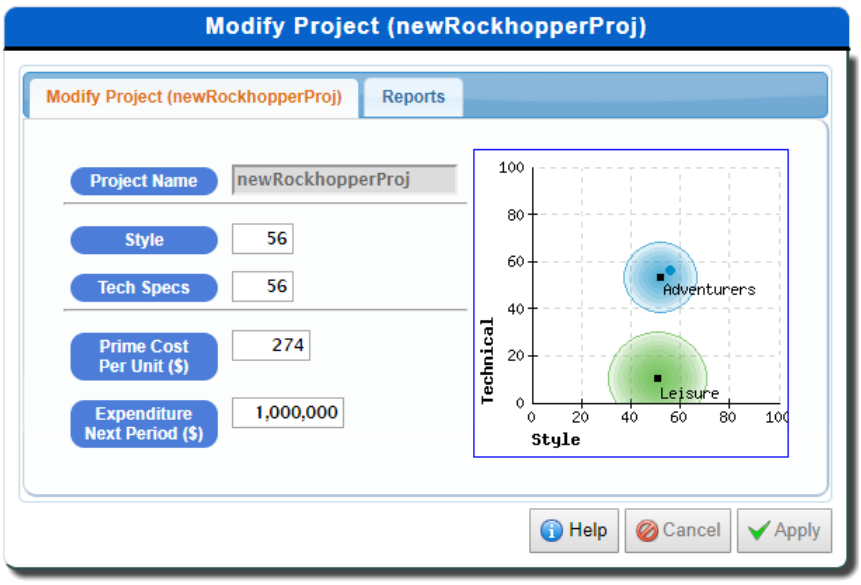
- A project name
- A set of target product attributes
- A prime cost

- 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).

Determining The Target Attribute Values



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.

(see All Reports -> Scenario Information -> Development Information for an estimate of the cost of launching your first product into each market segment and the ideal style/design and tech specs for each segment)

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. Whereas, 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 MikesBikes 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.

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

It may be financially prudent to spread development costs over a couple of years. For instance in your first year you might spend just enough to create a successful new product with the desired style and tech specs and an average cost. Then in subsequent years you can focus on reducing the prime cost of the product.

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 All Reports -> Scenario Information -> Development Information)

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 (if available) to test Product Development success rate. Your project should exceed 90% success (as shown in Reports -> Product Development Project Results) before you try to use a project with a new or existing 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 x $1,000) + (50 x $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

Shareholder Value (SHV)

Shareholder Value (SHV) is the value of owning a single share in your company. To increase SHV you will need to:

- Maximize net profit.
- Minimize shareholder investment.
- Minimize risk.

Shareholder Value (SHV) is defined as follows:

SHV = Share Price (SP) + Accumulated Dividend Payments (ADD)

Where:

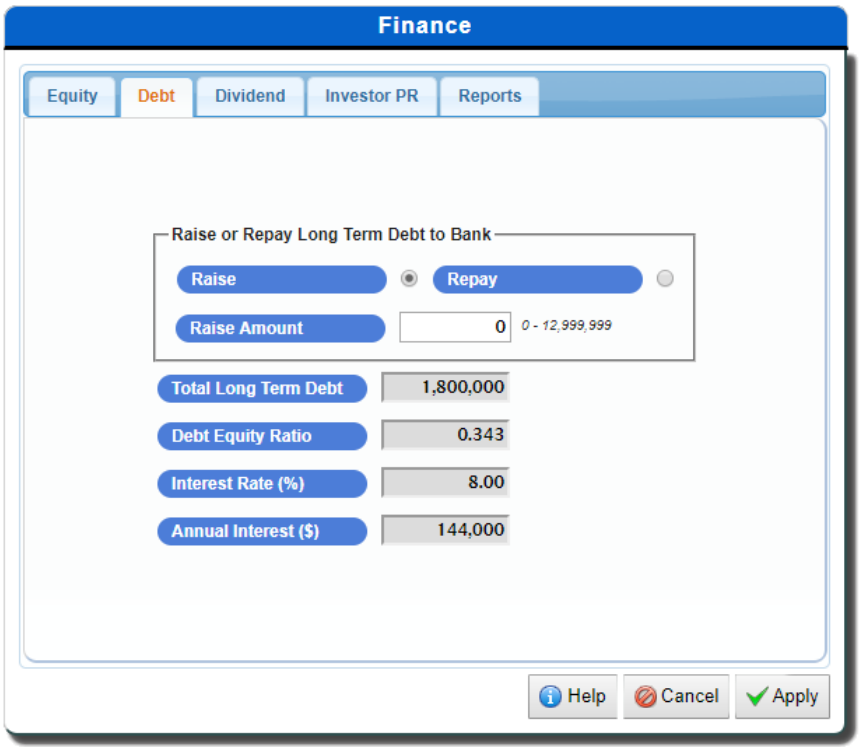
SP = function {Earnings per share, Debt/Equity ratio}

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, SP 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". 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



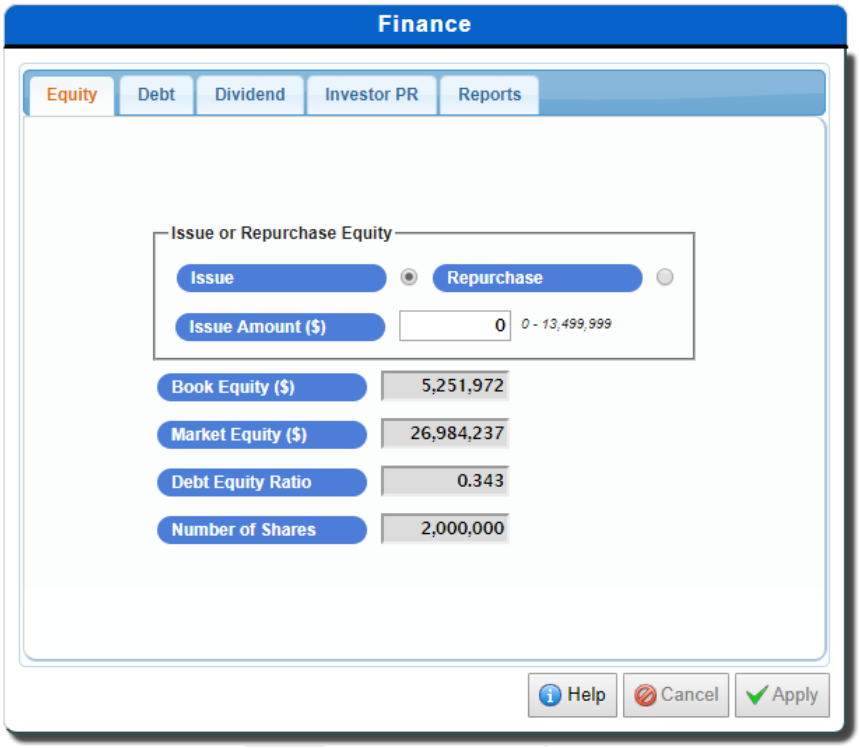
In MikesBikes the firm may choose to raise Long Term Debt.

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 MikesBikes 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.

Raising/Repurchasing Equity

As an alternative to raising debt, a firm may choose to issue shares to raise finance. This can dilute ownership and make it more difficult to achieve a high SHV 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.



In MikesBikes, 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 MikesBikes, company tax is 30% 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.

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 Investor PR index essentially acts as a multiplier on your company's share price. So for a very simple example, if your Investor PR index is 1.1, then your Share price will be 10% higher than if your Investor PR index is 1.0 (assuming no other changes). In practice, by spending on Investor PR you will reduce your profit, which will be a drag on your share price, so the effect isn't quite as simple as that.

In general, the larger your company, the more you need to spend to get a higher PR index. The maximum PR index possible is around 1.2, and you have to spend more and more to raise your index the closer you get to that limit.

So your best guide to how much to spend on Investor PR is to look at your current Investor PR index and spend, then decide how much more you are willing to spend on it to try to boost it. Keep in mind that if you spend too much on Investor Relations you may depress your Share Price by reducing your profit and earnings per share. And also decide whether or not there is another better use for the money spent on Investor Relations such as on Product Development.

(see All Reports -> Financial Reports -> Industry Benchmark Report to see the Investor PR Index for you and your competitors)