

# Chapter 1: Installation

To install Capitalism II follow the procedures below:

Before you start you must have Windows 95 (or later) installed.

- 1) Start your computer and wait for Windows to finish loading.
- 2) Insert the Capitalism II CD-ROM in your CD-ROM drive. If you have AutoPlay you will see the installation screen. Follow the onscreen instructions and Capitalism II will be installed on your computer.

If the installation screen does not appear, it is likely that AutoPlay is disabled. Follow these procedures:

- 1) Click START on the taskbar.
- 2) Select SETTINGS, then CONTROL PANEL.
- 3) Double click ADD/REMOVE PROGRAMS.
- 4) Select INSTALL, NEXT and BROWSE.
- 5) Locate the program called SETUP on the CD-Rom and click OK.

The installation screen should now appear. Follow the on-screen instructions and Capitalism II will be installed on your computer.

# Chapter 2: Getting Started

You begin Capitalism 2 at the main menu screen. From here you have 5 options:



**Single Player Game** Play against the computer

**Multplayer Game Play** against computer and human opponents via a network or the Internet

**Hall of Fame View** the list of the best players

**Credits** View the game credits

**Exit** Exit to Windows

## Single Player Game

Select the Single Player option from the main menu to play Single Player games. You may now choose from loading a previously saved game (*LOAD*), playing a *CAMPAIGN*, or defining a *CUSTOM GAME*.

Click *LOAD* and select a previously saved game. The game will start automatically. Click *CAMPAIGN* and the following screen appears.



Select either,

Entrepreneur's Campaign to play the tutorials.

If it is your first time playing the game, you are *HIGHLY RECOMMENDED* to start with Entrepreneur's Campaign.

Or select

Capitalist's Campaign to play through specific challenges presented as individual scenarios. The scenarios are designed to be played after you have completed the Entrepreneur's Campaign, or when you are comfortable with your knowledge of Capitalism II.

When you have completed any of the available 5 scenarios, a new one will become available, until all scenarios in the campaign have been revealed.

Alternatively, if you wish to have open play, click *CUSTOM*. Here you will be able to define some of the game parameters yourself.



## Multi-Player Game

Select the Multi-Player option from the main menu to play Multi Player games. You may now choose from Play it on Ubi.com, *LOAD* a previously saved game, or *CREATE A NEW GAME*.



### Step 1: Starting a Multi-player Game *WITHOUT* Ubi.com

You should only select *CREATE A NEW GAME* or *LOAD* now if you want to start a multiplayer game playing in a local area network, via modem or cable directly, or via the Internet accessing a known *TCP/IP* address. If this is not the case with you, you should proceed to the manual section "*Step 1: Starting a Multi-player Game WITH ubi.com*" below.

If you have selected *LOAD*, you will be asked to select a game you previously saved in a multi-player game session.

Subsequently, you will shown to the following options:

**IPX Connection for Direct Play** Join a local area network game Internet

**TCP/IP Connection for Direct Play** Join a local area network or internet game Modem Connection for Direct Play Join with another player by modem

**Serial Connection for Direct Play** Join with another player linked by serial cable Left click on any of the four options and press the *CONTINUE* button.

Now proceed to the manual section, "*Step 2: Setting Up the Multi-player Game*" below.

### **Step 1: Starting a Multi-player Game *WITH* ubi.com**

Ubi.com provides a central lobby where Capitalism II players can meet each other online and find opponents to play with in a multi-player game.

When you select Play it on ubi.com, the game will attempt to launch the ubi.com application, which can be optionally installed to your computer during Capitalism II installation. If it is installed on your computer, the game will now close itself and let ubi.com guide you through the multiplayer game setup. On the other hand, if the ubi.com application is not installed on your computer, the ubi.com web page will be opened, providing you with information and instructions for downloading and installing ubi.com on your computer. Alternatively, you can install ubi.com from your Capitalism II CD by choosing, "Install ubi.com" from the game startup menu.

When you have successfully found online opponents in ubi.com, ubi.com will launch Capitalism II again with an attachment of all multiplayer setup information necessary for starting a multiplayer game. As soon as Capitalism II is launched, you will see the Multi-player Game menu. There you should select either *CREATE A NEW GAME* or *LOAD* a previously saved game. If you have selected *LOAD*, you will be asked to select a game you previously saved in a multi-player game session.

## Step 2: Setting Up the Multi-player Game

Here you will be asked to provide YOUR NAME and a SAVE GAME FILE NAME. Once you have completed these, choose CREATE to begin a new multi player game, or JOIN to take part in an existing session.

You will then be taken to the Multiplayer Game Setup screen where you can customize the new multiplayer game and chat with other players. To chat, just type in your chat message and press ENTER to send.

When you are ready, click the *READY* button and the indicator next to your name at the top of the screen will turn from red to green. When all players' indicators are green, the creator of this game (the player who selected *CREATE* instead of *JOIN* in the previous screen) can now click the *START* button to start the game.

## Chatting with Other Players

To chat with other players in a multiplayer game, either click the Chat button on the toolbar at the bottom of the screen or press the Enter key. The chat message box will be displayed at the bottom of the screen and prompt you to enter a chat message.

The message will be sent to all other players by default. There is, however, a list of buttons in different colors representing different companies controlled by other players. If you click any of them, the message will be sent to the particular player only.


# Game View

After beginning a new game, or after loading a saved game, you are presented with an isometric view of your starting city. The view can be zoomed using your keyboard + and - keys, or with a scroll-wheel equipped mouse. Move the pointing hand icon using the mouse or keyboard cursor keys to navigate around the map.

## The Toolbar

This is located at the bottom of the screen and comprises 8 sections.



 **Game Tools** – A side bar menu opens when you click on the tool bar. From top to bottom the menu displays:



**Construction.** Various types of building are available, from Retail Stores to Corporate Headquarters. See Chapter 4 for more details.

**Zoom Levels.** Three levels of zoom are available. Click on a magnifying glass to alter the zoom level from closest view (top glass) to farthest view (bottom glass).

These three icons link to **Product Summary Report**, **Corporate Summary Report** and **Finance Summary Report** respectively.

**Headquarters.** Access information regarding your corporation.

**Stock Market.**

**Game Options.** Load or Save games.

**In Game Options.** See details below.

**Game Speed.** Click anywhere on the dial to alter the speed. The game is paused when the needle is pointing to the bottom left, and running at full speed when it points to the bottom right.

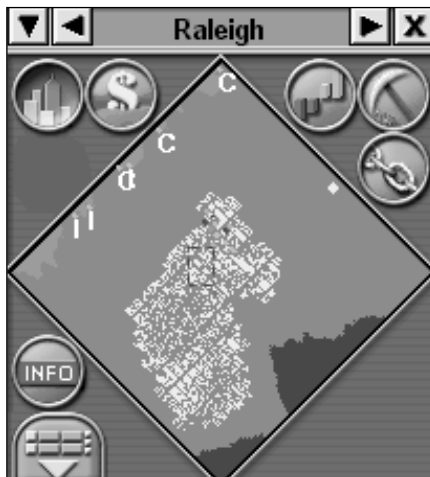
Click the **Game Tools** icon on the toolbar to close the menu.

**In Game Options.** This screen allows you to activate or deactivate game sound effects, music or the autosave feature. You may also alter the autolink (your purchasing units locate their own supplies) and internal sale features (your manufactured or farm-reared products are available for you corporation only). Select News to enter the comprehensive news section. From here you may toggle several options to control how much or how little news you are given. News items will be displayed at the bottom of the city view screen for short time. If the headline relates to the construction of a new building or the discovery of new raw materials, clicking the square to the left of the headline will reposition the city view over the source of the news.



**2. Mini Map** – Click the map icon on the toolbar and a small map appears. This provides important geographical and financial information to help you plan your strategy.

A window opens top right of the main game screen displaying the current city. Government buildings are shown in blue, whilst corporation-owned buildings are shown in the corporate color. Seaports are labeled C or I depending on the type of import handled: Consumer or Industrial goods. A flashing rectangle indicates the map location of the current isometric view on the main screen. Clicking anywhere on the Mini Map will update the main display to that location.



If you have chosen a game with several cities, they can be viewed by clicking the left/right arrows adjacent to the city name at the top of the Mini Map window. Alternatively, click the down arrow to display a list by city name and click on a city to choose it.

Within the Mini Map view are several icons. These toggle various filters that are then displayed over the city view.





**Buildings.** Default view displaying the city buildings.



**Land Values.** Light-colored regions represent higher land values than darker regions.



**Profit Loss.** Shows which firms are profitable and which are not.



**Raw Materials.** Shows the location of such items as Timber, Iron and Gold, which can be mined for use in manufacturing other goods.



**Links.** This filter displays product, firms and corporation links within the game. Use it in conjunction with the “Product/Firm” filter to track, for example, the sale of raw materials from your mine.



The INFO icon allows you to select whether or not the main view indicates what a building is used for (toy store, apartment building). If the option is turned off, the main screen will still display the buildings, including corporate insignia.



The “Product/Firm” filter allows for greater inspection by toggling the various buttons it contains. For example, by clicking the MYFIRM button you can cycle through the location of all your buildings within the current city, or multiple cities if you toggle between THIS CITY/ALL CITIES. Similarly the PRODUCTS button allows you to search for specific products, for example, to see if and where a particular product is being manufactured and sold. Use FIRM to search for specific buildings (such as Retail Stores or Factories), or try CORP. for a corporate level search. Choose from a combination of buttons to refine your search. For example, choose “Retail Store” from FIRM and “Canned Soup” from PRODUCTS to see which stores are selling soup in the city. To close the Mini Map window, click the X in the top right or click the Mini Map icon on the toolbar.



**3. World Map** – Displays the world location of the current city (and any other playable cities). Click the World Map icon on the toolbar. To close the map view, click the toolbar again, or click the X in the top right of the map window.



**4. Information** – A comprehensive choice of reports and guides. Further details can be found in Chapters 5, 6 and 7.



**5. Back** – Return to the previous screen viewed (like a browser back button).

**6. Cash & Profit** – A live reading of your corporations' current cash and profit amounts.



**7. Profit/Loss** – A live bar chart depicting corporate profit and loss information for the previous 6 months. The length and color of each bar relates to the nature and amount of the monthly turnover. A tall, green bar indicates large profit, whilst a short red bar indicates a small loss.

**8. Date** – Shows the current game month, day and year data.

## Understanding a Firm

To build a firm, select the type of firm you want to build from the Construction menu (see above). Next, position the cursor over the location on the map where you want to build the firm. If the firm can be built in the selected location, you are informed about the total building cost, which includes the land and construction costs. If you think the cost is reasonable, click the Build button to start construction.

Some firms offer you choices of different sizes. The size of a firm affects 1) its setup and monthly operating cost, 2) its capacity – the quantity of products that it can stock, 3) its productivity – the rate it produces products, and 4) the number of employees each firm unit employs. You should build a larger firm if you anticipate a high demand for your products. On the other hand, if you are skeptical about the demand of your products, you should go for a smaller firm. The land value of an area may change over time. It rises when there is an increase in traffic volume and the number of buildings in the area.

Conversely, it falls when firms in the area are closing down and the volume of traffic decreases. Players will benefit from their real estate investments if the land values of their properties increase and this will be reflected in their corporate balance sheets.

The building will be immediately available for use. Click the building to 'enter' it. With the exception of apartment, commercial, government and media buildings, which have building specific interiors, you will see a similar screen to the one shown.



The screen represents a department store selling the retail store maximum of 4 products. The top section of the screen shows the owning corporation – double click on the logo to enter the Corporate Summary screen – and two graphs depict the firm's profit and revenue over the last 12 months. At the top right is a filter that will allow you to cycle through specific firms, products and corporations.

The next row shows photos of the products on sale. As this is an established store, all 4 slots are occupied. The lower left section contains information relating to the currently selected unit in the Layout section to the right. In the example shown a Purchasing unit is selected.

At the left are three tabs labeled "1", "2" and "3". "1" is the information view which is what you are currently viewing. Clicking the "2" tab will change the view to the exterior of the firm and clicking the "3" tab will display the interior view of the firm. The interior view gives you visual cues about the productivity of your firms and the number of customers in your stores. For instance, if the employees of one of your factories are idle, it is a clear indication of the existence of a problem in your production line and you must take action to fix it immediately.



### Layout Section

To the immediate left of the nine unit boxes is a column containing five icons. These are layout library, auto link, help, firm financial report and training, and are covered in detail below.

### Setting up a Functional Unit

There are more than a dozen different functional units in the game. Each one has a distinct function. For example, a purchasing unit is responsible for purchasing goods, whereas a sales unit sells goods and generates income for the firm.

To set up a functional unit, double-click a location inside the firm where you want to begin construction. A menu prompts you to select the type of unit you want to set up. Because the different types of units have different functions, some units require more capital and workers than other units. For example, the manufacturing unit requires many more people than the inventory unit. After you set up a unit, a box displays summary information about it in the lower left of the screen. In this area, you see a picture of the unit and a group of people representing its workers. The workers in red uniforms are novice workers and the workers in blue uniforms are experienced. For details on improving worker experience level, see Worker Experience and Unit Level below.

### **Linking Functional Units**

You can link two units together by double-clicking the link line between them. Once linked, they can communicate with each other and transfer goods. Since functional units are the essential components of a firm, if the linkages between the units are not properly established, the firm may not function as you intended. For example, linking a purchasing unit to a sales unit enables the goods purchased by the purchasing unit to move onward to the sales unit for sale. Without the linkage, both of the units will become idle and neither will contribute to the profitability of the firm.

### **Labor Cost**

For simplicity, the monthly salary of each worker in the game is set at \$2,000. This salary applies to all workers regardless of the nature of their jobs or their experience. The specific salary expenses of a firm are shown in the Financial Report. Please note that hiring individual officers, such as a Chief Technical Officer, will cost more than \$2000 a month. These hired professionals command salaries in excess of six figures.

### **Staff Training and Procurement of New Equipment**



To the left of the layout section, there is a vertical slider labeled Training. Use it to set the spending for staff training and procuring new equipment. You can see the exact amount spent on training and equipment for the entire firm in the Financial Report. Spending on staff training and installing new equipment greatly affects the efficiency of the workers as the functional unit improves. It is worthwhile for a firm to spend more on this area especially as one considers that there are long-term benefits to be gained.

## **Worker Experience and Unit Level**

If an inexperienced worker is provided with proper training, the worker eventually becomes an experienced worker. You can distinguish between a novice worker and an experienced worker by looking at the uniform color. Novice workers wear red uniforms, whereas experienced workers wear blue. When all the workers in a unit become experienced, the unit will increase one level.

The overall productivity and capacity of most units increase when their unit level is increased. All units begin at unit level 1, and certain units continue to improve until they reach the highest rating, unit level 9. The rate of improvement varies for the different unit types. Improvement largely depends on the resources you allocate to train staff and upgrade new equipment. Employees who are in units with high utilization receive more experience than employees who do not work to capacity. Workers who work to their capacity will learn faster than workers who are idle. Therefore, it is not unusual to find that the rate of improvement is faster during the growth phase of the business than when the firm has leveled off in its productivity.

The unit level decreases for most units when there is change in the product handled by that unit. For example, if a manufacturing unit, which previously manufactured sport shoes, changed its production line to manufacture jeans, its unit level would immediately decrease.



### **Auto Link**

Below the Training and Equipment slider, you can see the Auto Link button. If you enable it, all of the purchasing units in the firm with broken supplies will look for the needed supplies automatically. This feature also works with layouts pasted from the layout plan library.



### **Help**

Click the help icon to be taken to the Manager's Guide screen.



### **Layout Library**

Clicking the books icon next to the layout grid accesses the library. When you enter the library you can immediately ADD the layout you have just left. Complete the description line if you wish. You may also Delete the firm's layout with the one currently displayed in the library window. If you enter the library from either a farm or factory you will be able to use the Search filter to locate any previously stored layout plans containing the product you select.

Alternatively you may use the slider below the layout plan to search through all the stored plans. If you locate a plan you wish to use, click USE and the plan is placed within your firm. When in the farm or factory layout mode there are two further sections to assist you. These are the input and output sections. The output section lists the product outputs of the currently displayed layout plan, whilst the input section lists the products required to attain the output. A tick next to an input list item indicates that particular product is available from a local supplier.



### **Firm Financial Report**

Click this icon to display the financial report for the firm. This report, discussed in Chapter 5, details the income and expenditure of the firm (such as salaries paid, training expenses and sales revenue) by current month, previous month, year to date or lifetime of the firm.

### **Product Summary**

The main screen displays the pictures of all products currently available for sale in the firm. Each product picture has several bar and line indicators on the side. These indicators tell you how good the product is compared to the market's standard and how well the product is currently selling. An explanation of the indicator bars and lines follows.

### **Supply and Demand Lines**

There are two vertical lines to the left of the product picture. The blue one is the supply line, and the red one is the demand line. If the supply line is longer than the demand line, the supply of the product exceeds the demand. This implies that the profitability of the product might not yet be fully exploited. There is more capacity to meet demand and generate revenue than there is currently demand for the product. On the other hand, if the demand line is longer than the supply line, the firm cannot supply enough goods to meet the demand. In this situation, you should increase the supply of product as soon as possible to increase revenues.

### **Product Rating Bars**

There is a set of two vertical bars to the right of the picture. The left one, which usually consists of differently colored portions, is the overall rating bar. Each portion represents a distinct aspect of the product and their combined rating becomes the overall rating of the product. The definitions of the colors are:

- **Yellow.** The product's price attractiveness.
- **Green.** The product's quality.
- **Orange.** The product's brand.



The relative size of each bar represents the importance of that aspect to the consumer. For example, consumers of the soap shown on the left are buying this particular soap because it has a high rating for brand – the size of the orange brand bar is equivalent to the combined sizes of the yellow price and green quality bars. If the price of

the soap were lowered, the likelihood is that the yellow price bar would increase in size to represent the new price attractiveness felt by the consumer. As a consequence brand and quality would become slightly less important considerations for the consumer. The important thing to remember is that the relationship of the bar sizes is an indicator of why the consumers are purchasing that particular product, irrespective of competition or necessity. You may see a situation in which two examples of a product successfully exist in the market place even though one is inferior in brand or quality to its rival. It may be the case that the inferior product is priced so aggressively low that its only selling point is its price – it will only show a yellow bar – whilst its rival displays large bars for quality and brand. An example of this is given in **Product Information**, below.

Studying the relative sizes of the bars can help you decide a strategy; Concentrating on improving a soap's brand, for example, would initially be more beneficial than modifying price or improving quality.

### **Product Market Share**

Next to the product rating bar, there is a red bar showing the market share of the current product in the city. When the length of the bar is close to its maximum, the product is dominating the market in the city.

### **Product Brand Indicator**

Directly under the two bars, there is an indicator showing the corporate color of the product's brand owner. A gray branding indicates imported products.

### **Product Information**

When you left-click a product photo, detailed information is displayed in the lower-left section of the screen. The example below shows detailed product information. In this instance the product on sale is a bed.

The Product Information section displays:

**Selling Price.** The selling price of the product.

**Total Cost.** In a factory, this is the total cost of the raw materials used to manufacture one unit of the product, including the freight cost of the raw materials.



In a retail store, this is the purchase cost (how much the store pays the supplier) and the freight cost of the product.

In a mine, logging camp, or oil well, this is the cost of the consumption of the natural resource reserve. When a corporation buys land with a natural resource reserve, the reserve is treated as a corporate asset. Hence, when the reserve is being consumed, the devaluation of the asset is regarded as a cost to the company.

**New Price.** If the firm displayed belongs to your corporation, you can change the selling price of the product by setting the new selling price and then clicking the Confirm button to confirm the change of the selling price.

*NOTE: There is an upper limit on the price you can set.*

The graph shows information about the product. There are three buttons above the graph. Click one of these buttons to control the type of information displayed on the graph.

- **P button.** Shows the gross profit of the product over the past 12 months.
- **R button.** Shows the revenue of the product over the past 12 months.
- **Q button.** Shows the quantity of the product sold over the past 12 months.



## Product Ratings

The section at the lower part of the Product Detail area displays important ratings about the product. They are:

- **Brand.** The product's brand rating.
- **Quality.** The product's quality rating.
- **Price.** The product's sale price.
- **Overall.** The product's overall rating.

To the right of each rating, the average rating of similar products in the city is displayed.

The example below is taken from the Product Detail information for the bed discussed below.



The type of bed being sold has a Brand rating of 24, a Quality of 89 and a Price of \$325. These ratings result in an overall rating of 75. In

comparison, other competitors' beds for sale in the city do not have such established branding or quality but their price is lower. As a consequence the overall rating for the competitors' beds is only slightly lower at 71.

By looking at the Product Rating bars you can see the real difference between the two types of bed. The consumers purchasing the current firm's beds are more concerned by the higher quality on offer – the green portion dominates the Product Rating bar. Those consumers purchasing the competitors beds are doing so because of the lower price – the yellow portion dominates the Product Rating bar. These are local variations to the concerns normally addressed by the consumer. A bed is usually rated in equal proportions against Price, Quality and Brand (the yellow, green and orange sections of the Product Rating bar in the product photograph are of approximately equal size). Such variations arise if a product displays superior attributes, in this example a much higher quality, than other types on offer.

## Links to Other Reports

You can display the Product Detail Report for a specific product by doubleclicking the product picture.

# Firms, Units & Buildings

A firm is any building that a corporation can operate, such as a retail store or a factory. Buildings are controlled by civilians (houses, stadiums and the like) or by the city government (such as the stock market). Usually a firm is built and operated by the same corporation, but there are exceptions. Radio and TV stations, and Newspaper Publishers begin the game under the city's control. Corporations may buy these firms and subsequently sell them. Construction of a firm not only includes the cost of the actual structure, but a land value cost. The land value is determined by several factors, but the general rule is that construction on empty land will be cheaper than having to purchase occupied land.

Within each firm, specialized units may be built. Several units are common amongst different types of firms whilst some are firm specific. All units are placed within the Layout section of a firm. This is a 3 x 3 grid containing 9 slots. Each slot can accommodate one unit. Units may be linked to other units to provide functional groups. For example, if you connect a Manufacturing unit to a Sales unit you will be able to sell what you produce.

You may find you need to use the same layout in more than one firm. See Chapter 5, Reports and Guides, for information on using the Layout Library. The common units are discussed below whilst the more specialized units are discussed within the relevant firm text.

A firm may be available in different sizes, such as small, medium and large factories. The general rule is that for each increase in size there is a corresponding increase in the production capacity of the firm. However, the firm will cost more to build and maintain than a smaller version. The size of retail stores, mines, oil wells and logging camps are predetermined, but farms, factories, apartment and commercial buildings offer different sizes from which to choose.

## Common units

### Advertising Unit

Set up in	Retail store, factory, farm, mine, oil well and logging camp
Setup cost	\$5,000
Workers needed	1

An advertising unit in a firm is responsible for contacting the media (television and radio stations and newspaper publishers) and arranging advertising. The following sections describe the unit's basic operation.

### Advertising a Product

To advertise a product, do the following:

1. Link the advertising unit to a unit with a product. If you link to a sales unit, the advertising unit will advertise the product sold by the sales unit.
2. Press the Link Media Firm button to select a media firm (a television station, a radio station or a newspaper publisher) in which to advertise the product. Choose a media firm and press the Link button.
3. Set the monthly advertising expense per product by clicking on the Monthly Expense slider. A higher advertising budget means your advertisement is broadcast more frequently, which increases public awareness about your product more rapidly.

### Unit Details

When an active advertising unit is highlighted, the unit detail area shows the following information.

- **Monthly Spending Per Product.** The amount spent advertising a product each month.
- **Advertising cost (CPM).** The cost to expose 1,000 members of a target audience to an advertising message.
- **Rating Points.** This measurement indicates the portion of potential audiences that receive messages from a specific media outlet. One rating point is equivalent to one percent of the potential audience that receives messages from a specific media outlet. It is calculated by dividing the reach by the coverage.

The information shown in the advertising unit detail box is shown below:



In this example, the unit is linked to the local radio station. It can be seen that the advertising cost per thousand (CPM) for this particular station is \$2.28 and the station enjoys Rating Points of 36.23%. The greater this figure, the greater the population reach the advertising campaign has. The gray slide bar can be manipulated to change the monthly spending per product and will affect the advertising campaign, helping to raise brand awareness of your products. Setting the bar (click and hold the left mouse button and drag the red slider to set the value) all the way to the right will saturate the city with advertising. This may have a negative effect on brand loyalty if you cannot satisfy the increase in demand.

**Unit Info**

The info-box of the Advertising Unit in the layout area shows the following information:



**Ratings Point** – Explained above.

**Monthly Advertising Expense** – Explained above.

**Unit Level**

Since the function of an advertising unit is to contact media outlets and arrange advertising, the unit's experience does not affect the outcome of the advertising. Therefore, unlike most other units, the unit level of an advertising unit does not increase over time. However, your corporation may hire a Chief Marketing Officer whose expertise will improve the efficiency of your corporation's advertising units without increasing their level. See **Headquarters** later in this chapter for further guidance.

**Inventory Unit**

Set up in	Retail store, farm, factory, mine, oil well and logging camp
Setup cost	\$50,000
Workers needed	1

Inventory units provide storage for large quantities of raw materials or finished goods.

Although most firms can operate without an inventory unit, it supports smooth operations for the whole firm. The inventory unit's capacity is several times greater than other units and operating costs are several times smaller. The discussion that follows describes the Inventory Unit in detail.

### Why Retain Inventories?

There are two major operational reasons why companies retain inventories: anticipation and buffer.

#### Anticipation inventories

Anticipation inventories are held because you expect a future increase in demand. Rather than operate at peak capacity during one period and then shut down in a subsequent period, anticipation inventories can accumulate before a period of peak demand.

#### Buffer inventories

Buffer inventories protect against unexpected surges in demand. Any inventory held over and above the average demand requirement is considered buffer inventory. High buffer inventories allow companies to continue to serve customers through unexpected increases in demand.

### Unit Details

When an inventory unit is highlighted, the unit detail area shows the following information:

**Cost+Freight.** The product cost and the freight cost.

**Quality.** The product's quality rating.

**Brand.** The product's brand rating.

**Unit Level.** The experience level of the unit



**Stock.** The quantity of the product stocked in the unit. Each cargo unit can store a certain number of product units. The number of units a cargo unit can hold varies. For some expensive products, such as automobiles, one cargo holds only a few units. For lower-cost products, such as shampoo, one cargo unit holds several thousand units. The value of each cargo unit is about the same.

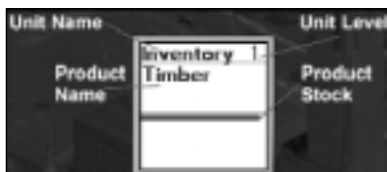
**Utilization.** The unit's level of productivity.

**Staff.** Staff number represented by the figure icon.

*NOTE: The color bar under the product picture shows the corporate color of the brand owner of the unit's products.*

### Unit Info

The info-box of the Inventory Unit in the layout area shows the following information.



**Product Name.** The name of the product in the inventory. Product Stock. Explained above.

### Unit Level

Because an inventory unit provides a place for storing goods, the unit's experience does not affect the productivity of the business. Therefore, unlike most other units, the unit level of an inventory unit does not increase over time.

### Purchasing Unit

Set up in	Retail store, farm or factory
Setup cost	\$50,000
Workers needed	2 or 4 (in medium to large firms)

A purchasing unit buys products from suppliers. These units are essential for retail stores, farms and factories. The following sections describe the basic operations and displays of the purchasing unit.

### Purchasing a Product

Once you tell the purchasing unit which product you want to purchase, it purchases the product until the supply is no longer available. To give the purchase unit an order, select the purchasing unit. Press the Link Supplier button and the supplier screen appears. Alternatively, if you do not currently have any Purchasing units in store you may click the **Add Product button** and a new Purchasing unit will be added to your store (along with a linked Sales unit).

The **Select A Supplier** screen will automatically open. Remember that the Add Product button will only be visible if there is sufficient layout space for setting up an additional pair of purchasing and sales units.



Now, select the product you want to purchase from a supplier by:

- Scrolling the main list until you see the product you want, or
- Use the filter lists, All Products, All Suppliers and All Cities, to refine your search. You may, for example select your corporation from the All Suppliers list in order to select a product that you are producing.

Please note that clicking Go To Supplier will take you to that particular factory or seaport. Click the back button on the toolbar to return to your retail store.

You can see from the picture above that each product entry carries specific details. The owning corporation's logo (if any) is displayed to the left of the product picture and the corporation name is displayed in the detail box. If the product is imported, the detail box will show 'Seaport' and a logo will be absent. Next, the city housing the supply and the distance to the supplier is given. Remember that importing from another city will carry additional freight costs. The actual freight cost of transporting the product from the supplier's location to the current firm's location is also shown. The product cost, quality, brand and overall rating are displayed, allowing you to make comparisons if several suppliers offer the same product type. Finally, the current levels of supply and demand for the product are shown. Once you have found a product you wish to purchase, left click the detail box and press the Select button to start the purchasing process.

### **Stopping a Product Purchase**

After a purchase linkage is established, the Stop Purchase button appears. Press this button to stop the current purchase.

### **Changing the Current Supply**

To switch to a new supplier, press the Link button and select the product that you want to purchase. This is the fastest way to change the current supply, because the newly selected product is purchased immediately.

You will, however, incur a loss, because the stock of the old product in the purchasing unit is discarded.

To avoid this loss, stop the purchase of the current product by pressing the Stop Purchase button and wait until its stock is cleared to the sales unit or manufacturing unit. Then, link the purchasing unit to the new supplier.

### Locating the Supplier of a Purchasing Unit

You can click the “Supplier” button to display the details of the supplier. You may then click “Go to Supplier” button on the detail popup box to go to the supplier firm.

### Unit Details

When you highlight an active Purchasing Unit, the unit detail area shows the following information:

**Cost+Freight.** The cost of the product and the freight cost.

**Quality.** The quality rating of the product.

**Brand.** The overall brand rating. This is the sum of the brand awareness rating and the brand loyalty rating.



**Supply and Demand.** The supply bar is blue and indicates the product supply from the supplier. The demand bar is red and indicates the product demand from the current firm. If the supply bar is shorter than the demand bar, there is a supply shortage. Overall firm performance may be affected by the shortage and you should consider switching to a better supplier.

**Unit level.** The experience level of the unit Stock. This area shows the stock of the product in the unit. Each cargo unit can store a certain number of product units. The number of units a cargo unit can hold varies. For some expensive products, such as automobiles, one cargo holds only a few units. For lower-cost products, such as shampoo, one cargo unit holds several thousand units. The value of each cargo unit is about the same.

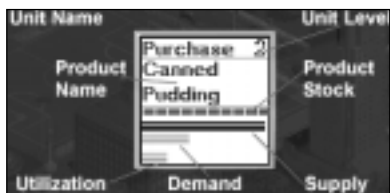


**Utilization.** The orange bar shows the unit's utilization. If this bar reaches its full length, the unit is at full capacity. No more goods can be purchased, even if there is additional supply and demand. Conversely, if the unit is underutilized, its facilities and resources are not being used effectively.

**Staff.** Staff number represented by the figure icon The color bar under the product picture indicates the brand owner's corporate color.

### Unit Info

The info-box of the Purchasing Unit in the layout area shows the following information:



**Product Name.** The product the unit is currently purchasing.

**Product Stock.** This area shows the stock of the product in the unit. Each cargo unit can store a certain number of product units. The

number of units a cargo unit can hold varies. For some expensive products, such as automobiles, one cargo holds only a few units. For lower-cost products, such as shampoo, one cargo unit holds several thousand units. The value of each cargo unit is about the same.

**Supply and Demand.** The blue bar indicates the supply of the product by supplier. The red bar indicates the demand for the product from the current firm. If the supply bar is shorter than the demand bar, there is a lack of supply. Firm performance may be affected by supply problems, so keep a close watch on your suppliers.

**Utilization.** The orange bar shows the unit's utilization. If this bar reaches its full length, the unit is at full capacity. No more goods can be manufactured, even if there is additional supply and demand. Conversely, if the unit is underutilized, its facilities and resources are not being used effectively.

### Unit Level

The productivity and capacity of a purchasing unit increases when its unit level increases. The following table shows this relationship.

Unit Level	Productivity	Capacity
1	100%	100%
2	130%	125%
3	160%	175%
4	200%	200%
5	250%	250%
6	300%	300%
7	360%	375%
8	430%	437%
9	500%	500%

### Sales Unit

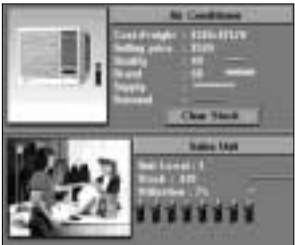
Set up in	Retail store, farm, factory, mine, oil well and logging camp
Setup cost	\$100,000
Workers needed	4 or 8 (in medium to large firms)

A sales unit is responsible for selling products to customers. Since sales units are the only units in a firm that generate income directly, you find them in almost every type of firm that produces goods. In the following section, the basic operations and displays of this unit are introduced.

### Unit Details

When you highlight an active Sales Unit, the unit detail area shows the following information:

**Cost+Freight.** The cost of the product plus the freight cost. Selling Price. The cost of the product to the customer.



**Quality.** The quality rating of the product. Brand. The overall brand rating. This is the sum of the brand awareness rating and the brand loyalty rating.

**Supply and Demand.** The blue bar indicates the supply of the product from the current firm. The red bar indicates the demand for the product from the buyers. If the supply bar is shorter than the demand bar, there is a lack of supply. Firm performance may be affected by supply problems so keep a close watch on your suppliers.

**Unit level.** The experience level of the unit.

**Stock.** This area shows the stock of the product in the unit. Each cargo unit can store a certain number of product units. The number of units a cargo unit can hold varies. For some expensive products, such as automobiles, one cargo holds only a few units. For lower-cost products, such as shampoo, one cargo unit holds several thousand units. The value of each cargo unit is about the same.

**Utilization.** The orange bar shows the unit's utilization. If this bar reaches its full length, the unit is at full capacity. No more goods can be manufactured, even if there is additional supply and demand. Conversely, if the unit is underutilized, its facilities and resources are not being used effectively. This could contribute to low profitability of the firm.

**Staff.** Staff number represented by the figure icon

*NOTE: The color bar under the product picture represents the corporate color of the product's brand owner.*

**Unit Info**

The info-box of the Sales Unit in the layout area shows the following information:



**Product Name.** The product the unit is currently selling.

**Product Stock.** Explained above.

**Supply and Demand.** Explained above.

**Utilization.** Explained above.

### Unit Level

The productivity and capacity of a sales unit increases when its unit level increases. The following table shows this relationship.

Unit Level	Productivity	Capacity
1	100%	100%
2	130%	125%
3	160%	175%
4	200%	200%
5	250%	250%
6	300%	300%
7	360%	375%
8	430%	437%
9	500%	500%

### Bottleneck Diagnosis

Because sales units are the only units in a firm that generate sales revenue directly, inspecting them frequently and removing any bottlenecks usually increases the profitability of the whole firm. Refer to the following table to identify common bottlenecks:

Supply and Demand Utilization	Bottleneck
Supply < demand, utilization = 100	Capacity is peak
Supply > demand, utilization = 100	Capacity is peak
Supply < demand, utilization < 100	Insufficient supply
Supply > demand, utilization < 100	Low demand

Here are some suggested solutions:

**Capacity is peak.** When the capacity of the sales unit is at its peak, you can resolve this bottleneck in two ways. The first way is to set up an additional sales unit to share the workload. However, due to the limitations of layout space, you cannot do so in every case. The second way is to increase the spending on training and new equipment, which lets the unit improve its unit level and productivity faster.

**Insufficient Supply.** Sometimes, the cause of the problem is not obvious. It can be caused by a shortage in the product supply, capacity limitation of a purchasing or manufacturing unit, or improper linkage of units, which affects the scheduling among functional units. To increase the supply, trace the chain of supply, examine all linked units carefully, and remove any bottlenecks you find.

**Low Demand.** There are many ways to increase demand, but all have costs. For a department store, increasing the frequency of the advertising can be an adequate short-term decision. The real driving forces of demand are price, quality, and brand; however, you should also allocate more of your budget to research and development and plan strategically to decrease the cost of your products. A long-term strategy will win out over a short-term one, if you plan ahead.

## Firms

### Retail Stores

To choose an appropriate location for a retail store, you must consider the following factors.

- **Strength of competitors in the city.** First, you should know which products you plan to sell. It is wise to build your retail store in a city section with comparatively weak competitors.
- **Population of the city.** The population of the city directly affects the total demand for the goods your retail store offers.
- **Land cost.** The land cost can vary greatly. Land in urban areas is always much more expensive than in rural areas. Similarly, land near the center of the city is more expensive than land farther away from the city center. Despite these costs, it makes sense to build a retail store near the city because this ensures a larger flow of customers.
- **Transportation cost of goods from suppliers.** You have to estimate the cost of transporting goods from the suppliers to your retail store. For goods with a high ratio of weight to value, try to open your retail store in a section of the city not too far away from the suppliers. Otherwise, the cost of transportation could severely affect your firm's profitability.

- **Availability of building site near the city center.** Finally, the availability of a building site near the city center is an important criterion. The flow of customers reaches its maximum in the city center and decreases toward the city border. If your competitors already occupy most spaces in the city center, you will have to set up your retail store in a less advantageous location and you will be at a disadvantage from the very start.

You can set up the following units in a retail store:

- Purchasing Unit
- Inventory Unit
- Private Labeling
- Sales Unit
- Advertising Unit

Purchase units and sale units are typically the most common in retail stores. With one unit of each type, you can form a simple purchasing-sales team.

You can also set up:

- An inventory unit to stock goods and provide the retail store with merchandise when a fluctuation of supply or demand might otherwise leave the store without sufficient stock.
- An advertising unit to arrange advertising of your products on TV and Radio stations or local newspapers.
- A private labeling unit to convert products made under another brand to your own brand. The private labeling unit is detailed below.

The following table depicts the retail stores types available to build if you have chosen 'many' in the game settings. If you chose 'one' store type you will only be able to build Discount Megastores. Each store has a setup cost (for construction) and a monthly operations charge.

<b>Retail Store Type</b>	<b>Setup Cost</b>	<b>Monthly Cost</b>
Discount Megastore	\$1,800,000	\$180,000
Department Store	\$1,000,000	\$100,000
Supermarket	\$1,000,000	\$100,000
Convenience Store	\$500,000	\$50,000
Drug Store	\$500,000	\$50,000
Apparel Store	\$500,000	\$50,000
Automobile Outlet	\$1,000,000	\$100,000
Hardware Store	\$1,000,000	\$100,000
Footwear Store	\$500,000	\$50,000
Jewelry & Watch Store	\$500,000	\$50,000
Leather Store	\$500,000	\$50,000
Computer Store	\$500,000	\$50,000
Cosmetic Store	\$500,000	\$50,000
Furniture Store	\$1,000,000	\$100,000
Sports Store	\$500,000	\$50,000
Toy Store	\$500,000	\$50,000

Some stores are specialty stores and can only sell certain items. For example, a furniture store can only sell beds, chairs and sofas. Because it specializes, specialty stores will enjoy greater demand for its products than, say, an adjacent department store that may also stock the same goods. The main disadvantage of the specialist store is that if demand decreases or supply is interrupted, it is difficult or impossible to stock substitute goods. Whereas the potential range of goods available to a department store cushions the impact of any down turn in trade by allowing the firm to switch to alternate goods.

#### **Private labelling unit**

Set up in	Department store or factory
Setup cost	\$100,000
Workers needed	6

A private labeling unit converts products of other brands to your own brand by labeling the product with your own corporate insignia. If you are tired of manufacturing products yourself, you can label products of a less popular brand with your own brand. This saves you the trouble of managing production lines and lets you concentrate on marketing.

**When to Private Label Products**

Private labeling is a reasonable choice if your corporation is pursuing a corporate or range brand strategy. In this case, the private-labeled goods can be sheltered under the retailer's brand and receive the immediate benefit of a well-established brand.

Although it seems that private labeling could put additional brand value into a product effortlessly, this tactic should be used with extreme caution. If the quality of the private-labeled product is inferior to those of the existing products in the brand family, it will damage the entire brand. Furthermore, since external suppliers manufacture the products, it is very difficult to assure that their quality will always meet your corporation's quality standard.

**Private Labeling Products**

Any products directed into the private-labeling unit are relabeled immediately. Usually linking a private labeling unit between a purchasing unit and a sale unit is the easiest way to label the products from another corporation. In this arrangement of units, the purchased goods from another company are labeled with your brand and resold as if you had produced them yourself.

**Unit Details**

When you highlight an active Private Labeling Unit, the unit detail area shows the following information:



**Brand Awareness.** The brand awareness rating of the privatelabeled goods.

**Brand Loyalty.** The brand loyalty rating of the private-labeled goods.

**Brand Rating.** The overall brand rating. This is the sum of the brand awareness rating and the brand loyalty rating.



**Unit level.** The experience level of the unit

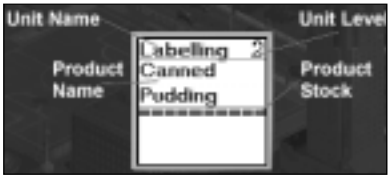
**Stock.** The quantity of the product stocked in the unit.

**Utilization.** The unit's level of productivity.

**Staff.** Staff number represented by the figure icon.

**Unit Info**

The info-box of the Private Labeling Unit in the layout area shows the following information.



**Product Name.** The product being processed.

**Product Stock.** This area shows the stock of the product in the unit. Each cargo unit can store a certain number of product units. The

number of units a cargo unit can hold varies. For some expensive products, such as automobiles, one cargo holds only a few units. For lower-cost products, such as shampoo, one cargo unit holds several thousand units. The value of each cargo unit is about the same.

**Unit Level**

The productivity and capacity of a private-labeling unit increases when its unit level increases. The table below shows this relationship.

Unit Level	Productivity	Capacity
1	100%	100%
2	130%	125%
3	160%	175%
4	200%	200%
5	250%	250%
6	300%	300%
7	360%	375%
8	430%	437%
9	500%	500%

## Factory

Factory Size	Setup Cost	Monthly Cost
Small	\$750,000	\$50,000
Medium	\$1,500,000	\$100,000
Large	\$2,500,000	\$180,000

The types of units in a factory include:

- Purchasing Unit
- Advertising Unit
- Sales Unit
- Private Labeling Unit
- Inventory Unit
- Manufacturing

## Unit

Set up	in Factory
Setup cost	\$300,000
Workers needed	6, 12 or 24 for small, medium and large factories

## Manufacturing Unit

### Manufacturing a Product

A manufacturing unit is very flexible. It can manufacture any product, if supplied with the appropriate raw materials. For example, if cotton enters a manufacturing unit, the unit automatically produces textiles. If wheat is the input, flour is produced.

If you want your factory to manufacture a specific product, you must know what its raw materials are. The Manufacturer's Guide contains the raw material information for each product you can produce. You can refer to the Manufacturer's Guide anytime by selecting it from the information screen. (Press the info icon on the tool bar and choose Manufacturers Guide.)

Once you know which raw materials you need, you need to locate a supply of each of the required raw materials. Generally, this is easiest by using the Supply Filter (see Purchasing Units above) or by using the Mini Map filter. Link the purchasing units to a manufacturing unit to start production. After the necessary connections are established, you see the products being manufactured. If you can produce more than one product from the specified raw materials, you see a Set Production button in the unit details area. Select this to determine which item to produce.

## Quality of Manufactured Goods

The quality of manufactured goods depends on two factors:

- Raw materials quality
- Factory's production technology

For some products, such as the computer CPU, quality is determined mainly by the production technology. For other products, such as furniture, quality is affected more by the quality of the raw materials. The importance of these two factors varies from product to product.

The quality rating is calculated from these two factors. The example below shows how to calculate the quality rating. First, the information we need to know concerning the factory and the raw material follows:

- The unit is manufacturing textiles, using cotton as the raw material.
- The quality rating of the cotton is 71.
- The factory's production technology level for textiles is 30.
- The top production technology level in the world is 100.

The quality of the textile is 50% affected by the quality of the raw material and 50% affected by the production technology.

If you highlighted this manufacturing unit in layout mode, you would see the following information:

Textiles	
Product Quality	: 50 / 100
Production Quality	: 15 / 50
Raw Material Quality	: 35 / 50
Production Tech	: 30
<div>Upgrade Tech.      Set Production</div>	

- Product Quality: 50/100. The quality rating of the current product is 50 and the maximum quality rating a product can have is 100.
- Production Quality: 15/50. The quality of textiles is 50% affected by the production technology and the production technology contributes 15 rating points to textiles' overall quality. These rating points are calculated by multiplying the importance of technology to the product's quality by factory technology divided by the top technology in the world, or, in this case,  $50 \times 30/100 = 15$ .

- Raw Materials Quality: 35/50. The quality of textiles is 50% affected by the quality of the raw materials and the quality of cotton contributes 35 rating points to textiles' overall quality ( $71 \times 50\% = 35$ ).
- Production Technology: 30. A high production level does not guarantee a high quality rating. You obtain a high quality rating only if your factory's technology level is close to or the same as the world's top technology level.

The top technology level of every product starts at 100. When a product with a higher technology level enters the market, the top technology level is updated accordingly. So launching a new product with an unprecedented technology level into the market can cause existing products to become inferior.

You can improve production technology by conducting research. Improving Product Quality Product quality is determined by the quality of raw materials and the production technology. You cannot always control the quality of the raw materials, because you often purchase raw materials from external suppliers. A better way to improve the product quality is to improve the production technology. You can accomplish this with research and development (R&D) projects in your R&D units.

If your corporation successfully completes an R&D project on a specific product, the production technology of that product improves. Then, you can upgrade your manufacturing units so that they benefit from the improved technology. To upgrade a manufacturing unit, highlight it and select the Upgrade Tech button in the unit detail area. A message asks for your confirmation. If you agree to proceed, the new production technology is applied to the unit and the quality of the manufactured products rises.

If the unit's level is higher than level one, a message informs you that upgrading production technology will decrease the unit's level by one level. The unit's level is downgraded because installing new production equipment and applying new production techniques means most workers' experience becomes obsolete. While they go through a new learning process, their productivity drops.

## Unit Details

When you highlight an active manufacturing unit, the unit detail area shows the following information:



- **Product Quality.** The quality of the manufactured product. It is the sum of the production quality rating and the raw material quality rating.

- **Production Quality.** The quality rating of the production.

- **Raw Materials Quality.** The quality rating of the raw materials.

- **Production Tech.** The production technology level, which affects the production quality.

- **Unit Level.** The experience level of the unit.

- **Stock.** This area shows the stock of the product in the unit. Each cargo unit can store a certain number of product units. The number of units a cargo unit can hold varies. For some expensive products, such as automobiles, one cargo holds only a few units. For lower-cost products, such as shampoo, one cargo unit holds several thousand units. The value of each cargo unit is about the same.

- **Utilization.** The orange bar shows the unit's utilization. If this bar reaches its full length, the unit is at full capacity. No more goods can be purchased, even if there is additional supply and demand. Conversely, if the unit is underutilized, its facilities and resources are not being used effectively. This could contribute to low profitability of the firm.

- **Staff.** Staff number is represented by the figure icon. The colored bar under the product picture shows the brand owner's corporate color. Because the current factory must be the manufacturer and brand owner of the manufactured products, the color displayed is always the corporate color of the factory.



### Unit Info

The info-box of the Manufacturing Unit in the layout area shows the following information:

**Product Name.** The product the unit is currently manufacturing.

**Product Stock.** Explained above.

**Raw Material Stock.** Explained above.

**Utilization.** Explained above.

### Unit Level

The productivity and capacity of a manufacturing unit increase when its unit level increases. The following table shows this relationship.

Unit Level	Productivity	Capacity
1	100%	100%
2	130%	125%
3	160%	175%
4	200%	200%
5	250%	250%
6	300%	300%
7	360%	375%
8	430%	437%
9	500%	500%

### Bottleneck Diagnosis

Here are some suggestions to eliminate some common bottlenecks:

#### Inconsistent supply of raw materials

Setting up an inventory unit and linking it between the purchasing unit and manufacturing unit usually improves this situation. In addition, an inventory unit is useful for raw materials that have seasonal supply fluctuations (for example, wool and crops).

### Insufficient supply of raw materials

Try to find a supplier that can provide raw materials of comparable quality and price more consistently. If you cannot find a better supplier or you anticipate a surge in demand for your manufactured goods, consider backward integration – setting up a firm yourself to supply the lacking raw materials.

### Peak Manufacturing Capacity

The most common way to remove this bottleneck is to increase the budget for training and new equipment. This accelerates the process of upgrading the unit level, which gives the unit more capacity and higher productivity. If the demand keeps increasing and this increase is likely to be sustained, you could set up more manufacturing units or a new factory to meet the increasing demand.

### Bottleneck at the output unit

If finished goods from a manufacturing unit cannot be moved out of the manufacturing unit, production is suspended inside the unit. In this case, the bottleneck is at the output unit. Removing it restores the smooth flow of finished goods out of the manufacturing unit. To move more goods out of your manufacturing unit, you can increase the number of sales units or the demand for your manufactured products through increased distribution or advertising, depending on the nature of the surplus in supply.

To help you better understand the basic function of each type of unit in a factory an example follows. The example at left shows the layout of a factory manufacturing socks:

The purchase unit buys the raw material, wool. Next, the raw material is moved to the manufacturing unit and stored there. Once the manufacturing unit has the full amount of the required raw material, it starts manufacturing socks. The finished goods move to the sales unit and are ready for sale.



After operating the factory for a few months, you may find that the supply of wool is inconsistent, because of seasonal fluctuation of the wool supply. To solve this problem, set up an inventory unit between the wool purchasing unit and the manufacturing unit (shown below right without the Sales units).

The inventory unit is a buffer; it stores wool when the available supply exceeds the company's ability to process it into socks. When the wool supply diminishes, supplies of wool are taken from the inventory unit so that the factory can continue to operate.

The inventory unit helps the company's profitability by keeping the factory running year-round and not only during the wool-shearing season. We now have a constant supply of raw materials and need a constant demand for the finished product to make the factory profitable. To stimulate demand for socks, you can advertise the product widely in the city using television and radio broadcasts or newspaper advertisements.



**Use inventory units to control seasonal supply**

To advertise the socks, you must first set up an advertising unit in the factory. Link the advertising unit to either the manufacturing unit or the sales unit to identify the product that you want to advertise. Click the advertising unit. Select the Link Media Firm button and choose a television station, radio or a newspaper publisher in which to advertise your product. Once the advertising campaign starts, brand awareness and the sales of your product will increase.

A private labeling unit can convert products of other brands to your own brand. If you are tired of manufacturing products yourself, an alternative to production is to label products of a less popular brand with your own brand. This saves you the trouble of managing production lines and lets you concentrate on marketing.



## Research & Development (R&D)

Setup Cost	Monthly Cost
\$1,500,000	\$100,000

Your products need good quality to compete successfully. The most effective way to improve your products' quality is to invest in the research and development (R&D) for new technologies, which produces better products. R&D centers are very expensive to set up and maintain. Companies that are struggling financially may not want to set them up right away. You should not, however, put off their construction too long, because the quality improvements from R&D will lead to increased sales and profits. Investment in research and development anticipates that you will need to develop better-quality products to stay ahead of your competition.

Setting up an R&D center is simple compared to other firms, because you just set up an R&D unit. You can use several strategies in R&D.

### Starting an R&D project

You can set up a maximum of nine R&D units in an R&D center. They can work independently as nine separate teams or be linked to increase performance. An R&D team consists of one to nine units. After you have linked as many units as you wish into a team, highlight the team leader unit. This will be the unit that is connected to all the other units within the team. Then click the R&D technology button and select the product you wish to research and set the duration of the research project. The R&D team will begin researching the project immediately.

### Technology Advancement

The technological advancement you can achieve with an R&D project is determined by the following:

- Duration of the project
- R&D team size
- Unit levels (experience) of the team
- Top product technology level

### Duration of an R&D project

The duration of the R&D plan determines the amount of technological advancement that will be accomplished when the R&D plan is complete. Technology is represented by the technology level. The following table shows the relationship between expected technology gain and R&D duration.

*NOTE: The table excludes other determining factors. These other factors are discussed in the following sections.*

R&D Duration	Technology Gain
6 months	1
1 year	3
2 years	7
3 years	11
5 years	20
10 years	50

### R&D team size

An R&D team can have one to nine R&D units. A larger team can achieve more technological advancement than a smaller team. However, an R&D team with two R&D units is not 100% more productive than a single-unit R&D – it is only 70% more productive. This is because in any research, one or a few core scientists are in charge of the most difficult part of the research. Adding more staff and resources can improve productivity in all but the key research areas. Larger teams also lack the flexibility of smaller teams and suffer from decreased efficiency.

The following table shows the relationship between the size of the R&D team and technological gain. If you are still unclear about the concept, consider this example: If a single-unit R&D team can gain 20 technology levels after five years of research, then a three-unit R&D team can gain 48 (20 x 240%) technology levels after five years of research.

Number of R&D Units	Effect on linked together Tech Gain	Marginal Increase
1	100%	
2	170%	70%
3	240%	70%
4	295%	55%
5	350%	55%
6	390%	40%
7	430%	40%
8	455%	25%
9	480%	25%

### Unit levels of the R&D team

Each increase of the unit level boosts the effect of the R&D plan by 20%, because more experienced scientists usually achieve better results.

### Top Product Technology Level

If you are conducting research on a product for which a competitor already has a higher level of technology, which is being put to practical use in their product, the research time on that technology is shortened. You need less time to gain this knowledge because of the diffusion of technology and the use of special technology-acquisition techniques such as reverse engineering.

### Application of Technology to Production

When a research period is complete, you can apply the results (the improved production technology) to your manufacturing units. Click the Apply Tech button to display the manufacturing units eligible for a technology upgrade and you are provided with the following options:

- Yes. You proceed, the new production technology is applied to the unit, and the quality of the manufactured products rises.
- If the unit's level is higher than level one, a message informs you that upgrading production technology will decrease the unit's level. The unit's level is downgraded because installing new production equipment and applying new production techniques means most workers' experience becomes obsolete. While they go through a new learning process, their productivity drops. The number of levels that will be decreased is based on the difference between the new technology and the existing technology.

- No. Do not apply the technology to this manufacturing unit.
- All. Apply the technology to all eligible manufacturing units immediately without asking you one by one.
- Go. Go to the manufacturing unit so you can examine the unit in detail before applying to the technology.
- Quit. Cancel the action and quit the menu.

### Researching and Developing New Products

There are new products that you can only produce after you have put in the right research efforts. To research and develop a new product, click the R&D new product button.

### Unit Details

When you highlight an active R&D unit, the unit detail area shows the following information:

- **R&D Duration.** The duration of the R&D plan.
- **Progress.** The progress of the current R&D.
- **Original Tech.** The original technology level.
- **Target Tech.** The target technology level.



## Unit Info

The info-box of an R&D Unit in the layout area below shows the following information:



**Product Name.** The product currently being researched.

**R&D Duration.** The duration of the R&D plan.

**R&D Progress.** The progress of the current R&D plan.

## Purchasing Technology from other corporations

You may also attempt to purchase technology from your competitors - at a price of course. For more details please see the section on Headquarters.

## Farm

Farm Size	Setup Cost	Monthly Cost
Medium	\$1,000,000	\$100,000
Large	\$1,800,000	\$180,000
Small	\$750,000	\$50,000

On a farm you can set up the following business function units specific to farms:

- Crop growing unit
- Livestock raising unit
- Livestock processing unit

And the following common units,

- Inventory unit
- Sales unit
- Advertising unit

On a farm, you grow crops and raise livestock. To grow crops, set up one crop growing unit and one sales unit and link them together. Next, select a crop type for the crop growing unit. After sowing, growing, and harvesting, the unit moves the crops to the sales unit.

To raise livestock in a farm, set up a livestock raising unit, a livestock processing unit and a sales unit to sell the livestock products. Select the livestock you want to raise in the livestock raising unit and the livestock product in the livestock processing unit. The units start operations immediately.

*NOTE: Do not set the game speed to frozen during this process, because it prevents the livestock processing unit from obtaining information from the livestock raising unit, which means you won't see the appropriate choices when selecting the livestock product.*

**Crop Growing Unit**

Set up in	Farm
Setup cost	\$100,000
Workers needed	16

Crop growing units in farms grow and harvest crops. Once you tell a crop growing unit which crop to grow, it takes care of the growing and harvesting process and stores the harvested crops in its barn.

**Growing a Crop**

To grow a crop, press the Grow Crop button in the unit detail area. You see a menu where you select the crop you want to grow. The menu shows the sowing month and harvesting month. Consider the sowing month of the crop and the growing season. If you try to start a crop after its sowing season, the unit will just wait until the sowing season next year. Remember that the crop will not be available until the end of the harvest month.

## Unit Details

When you highlight an active crop growing unit, the unit detail area shows the following about the crop:

- **Quality.** The quality rating.
- **Growth Days.** The number of days since the crop was planted.
- **Status.** Whether the crop is growing, being harvested, awaiting the season.



## Unit Info-box

The info-box of the Crop Growing Unit in the layout area shows the following information:

**Crop Name.** The crop that the unit is currently planting.



**Crop in Barn.** When crops are harvested, they are stored in barns. Crops in barns are represented by boxes in the unit info-box. Each box represents a certain quantity of crops. You can see more boxes appear as crops are harvested and disappear as crops are sold.

**Growth Progress.** The crop's growth progress. When this bar reaches its maximum length, the crop is ready to be harvested.

## Unit Level

### Unit Level Productivity Capacity

The capacity of a crop growing unit improves as its unit level increases. The following table shows the relationship.

1	100%	100%
2	130%	125%
3	160%	175%
4	200%	200%
5	250%	250%
6	300%	300%
7	360%	375%
8	430%	437%
9	500%	500%

## Livestock Raising Unit

Set up in	Farm
Setup cost	\$100,000
Workers needed	16

## Raising Livestock

To order a unit to raise livestock, press the Raise Livestock button in the unit detail area. Select the livestock you want to raise in the menu. The menu also shows which products you can make from each type of livestock. After you select a product, the livestock raising unit purchases livestock for breeding and begins the breeding-raising cycle.

## Livestock Quality

The level of the functional unit determines the quality of the livestock products. A higher unit level indicates that the unit has more advanced equipment and the workers are more experienced. Livestock raised in these conditions are healthier and of better quality.

## Unit Details

When an active Livestock Raising Unit is highlighted, the unit detail area shows the following information:





**Quality.** The quality of the livestock in the unit.

**Baby Qty & Adult Qty.** These two rows of boxes represent the quantity of baby and adult livestock in the unit. Baby livestock mature and become adult livestock. Different types of livestock have different growth rates. From fastest to slowest, the livestock growth rates are chickens, sheep, pigs, and cattle.

### Unit Info

The info-box of the Livestock Raising Unit in the layout area shows the following information:



**Livestock Name.** The livestock the unit is currently rearing.

**Baby & Adult Livestock.** These two rows represent the baby and adult livestock in the unit.

### Unit Level

The productivity and capacity of a livestock raising unit improves when its unit level increases. The following table shows this relationship.

Unit Level	Productivity	Capacity
1	100%	100%
2	120%	120%
3	140%	140%
4	160%	160%
5	180%	180%
6	200%	200%
7	220%	220%
8	240%	240%
9	260%	260%

### Livestock Processing Unit

Set up in	Farm
Setup cost	\$100,000
Workers needed	16

Livestock grow up in a livestock raising unit. They are then sent to the livestock processing unit, which can process the livestock into several useful products.

### Processing Livestock

First, link the livestock processing unit to a livestock raising unit. Once the linkage is established, a Select Product button appears. Click it to display a menu where you can select the livestock product you want to produce. After you select one, the unit starts functioning and you see the livestock products appearing as a row of boxes.

If the livestock supply from the linked raising unit is less than the demand of the processing unit, more livestock in the raising unit are killed to meet the demand, resulting in an immediate increase in product output but decreases in the overall output over the long run.

### Livestock Quality Product

The quality of the livestock and the level of the functional unit processing the livestock determine the livestock product quality. This reflects the fact that experienced workers and modernized facilities produce higher-quality products.

### Unit Details

When you highlight an active Livestock Processing Unit, the unit detail area shows the following information:

- **Quality.** The quality of the livestock product in the unit.



### Unit Info

The info-box of the Livestock Processing Unit in the layout area shows the following information .



**Product Name.** The livestock being produced.

**Product Stock.** This area shows the product stock in the unit. Each box represents one cargo of the product. Each cargo can store a number of units of product and this number varies from cargo to cargo.

**Livestock Supply and Process Capacity.** The black bar is the livestock supply. The green bar is the process capacity. If the livestock supply bar is shorter than the process capacity bar the unit is under used and can process more livestock. Link additional input units to exploit the capacity.

Conversely, if the livestock supply bar is longer than the process capacity bar the unit has reached its full capacity and cannot process all livestock sent to it. Set up a new Livestock Processing unit to reduce the workload of the current unit. Alternatively, increase the training budget for a long term increase in productivity.

### Unit Level

The productivity and capacity of a livestock processing unit increases when its unit level increases. The following table shows this relationship.

Unit Level	Productivity	Capacity
1	100%	100%
2	130%	125%
3	160%	175%
4	200%	200%
5	250%	250%
6	300%	300%
7	360%	375%
8	430%	437%
9	500%	500%

## Mine, Oil Well and Logging Camps

Firm	Setup Cost	Monthly Cost
Mine	\$5,000,000	\$300,000
Oil Well	\$5,000,000	\$300,000
Logging	Camp \$1,500,000	\$100,000

These three firms all produce raw materials, but each one specializes in different types of raw materials. The following section shows how to set them up.

### Producing Raw Materials

First, locate a site with deposits of the natural resource you are interested in. If you have trouble finding that resource, click the Resource Map button within the mini map to get a view of all the natural resource reserves. Remember that the resource you require may not be available in the city you are viewing, or indeed in any other city in a multi-city game. Next, build an appropriate firm at the location you have chosen as follows:

- For timber, build a logging camp.
- For oil, build an oil well.
- For other resources, such as aluminum and silica, build a mine.

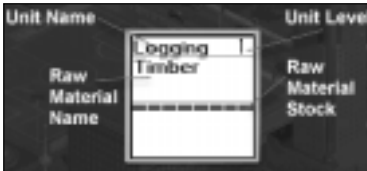
As you know, a firm will not start operating until the appropriate units are properly set up inside it. First, set up the unit responsible for the production of raw materials. Each raw material firm requires a different type of unit to obtain the raw material, as shown below:

- Logging camp – logging unit
- Mine – mining unit
- Oil well – oil-extracting unit

Once this unit is set up, it starts to produce raw materials. To sell them, add a sales unit and link the two units. You now have a raw-materials firm.

### Unit Info - Logging Unit

The info-box of the Logging Unit in the layout area shows the following information.



**Raw Material Name.** The raw material currently being produced.

**Raw Material Stock.** The stock of raw material in the unit. Each box represents a cargo of material, the quantity of which varies depending on the raw material.

### Unit Info - Mining Unit

The info-box of the Mining Unit in the layout area shows the following information:



**Raw Material Name.** The raw material currently being produced.

**Raw Material Stock.** The stock of raw material in the unit. Each box represents a cargo of material, the quantity of which varies depending on the raw material.

### Unit Info - Oil Well Unit

The info-box of the Oil Well Unit in the layout area shows the following information:



**Raw Material Name.** The raw material currently being produced.

**Raw Material Stock.** The stock of raw material in the unit. Each box represents a cargo of material, the quantity of which varies depending on the raw material.

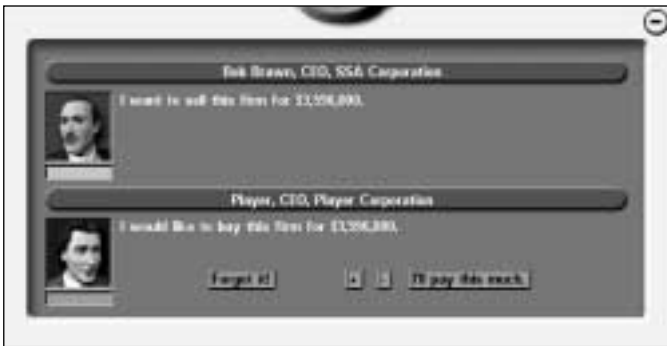
## Selling & Buying Firms

You may decide to sell or buy a firm, or another corporation may offer to buy a firm from you. To sell a firm follow the procedure outlined below:

### Putting a firm on the market

Open the firm you wish to sell and click the 'Offer to Sell Firm' button in the top right of the screen. A 'For Sale' sign will now be shown next to the firm in the main city view. You will have to wait until an offer arrives.

### Receiving an Offer to Purchase



Other corporations may offer to buy a firm from you. When you do receive an offer, the negotiation window will pop up. From there, you may select the 'Go' button to be taken to the firm. If you wish to delay the potential sale click the to close the negotiation window - a flashing cross, appears at the bottom right hand screen. Click this to return to the negotiation window.

You may choose to ignore the offer by clicking 'Forget It!', or you may accept the offer at the suggested price. If you wish to negotiate a better deal, use the



spinners to adjust the price and press 'Confirm'. The corporation will consider the new price before rejecting or agreeing to it.

### Placing an Offer to Buy a Firm

You may decide to offer to buy a firm belonging to another corporation. If you do, open the desired firm and click the 'Buy Firm' button. The asking price will be displayed and you may modify the price (using the +- spinners) or accept the price. If you decide not to purchase click the 'Forget It!' button to exit.

### Looking for Firms to Buy

You can get a list of firms currently on sale by opening the Firm Summary Report and select the “Firm for sale” filter option. From there, you may click the “Buy” button to offer to buy the firm.

### Apartment Buildings

Setup Cost	Monthly Cost
\$5,000,000 to \$10,000,000	\$100,000 to \$200,000

As well as building and running factories and stores, your corporation may also invest in real estate. Various sized apartment buildings may be constructed and offered to the city's populace to live in where you set the rent level. Generally, lower rents will attract more tenants but higher rents may increase profits. Once you have built an apartment building, left click its image in the main city view and the Apartment Information window opens. From this window you may alter the rent charged to tenants by using the +- spinners.

You can also review the profit and occupancy graphs for the previous 12 months. Land and building costs are shown along with an estimated market value should you wish to sell or demolish the building. The annual return of investment is also displayed – this is updated every year.



Apartment Information window



If you decide to sell the building click the Put this apartment on sale button and wait for offers from other corporations.

You may, of course, purchase an apartment building from another corporation. Look out for a For Sale sign on the side of the building. Left click the “Buy this apartment” button to open the negotiation window. Enter your price, and if it is accepted you will become the new owner of the building.

Potential occupancy levels depend on the following factors:

- **Economic climate of the city** – The better the economic climate, the higher the occupancy rate.
- **Spending level of the city** – The higher the spending level, the higher the occupancy rate.
- **Land value of the building** – The higher the land value, the higher the occupancy rate.
- **The rent** – The lower the rent, the higher the occupancy rate.

### Commercial Buildings

Setup Cost	Monthly Cost
\$10,000,000 to \$18,000,000	\$200,000 to \$360,000

A commercial building is similar to an apartment building except that its tenants are companies requiring office space. For more detail regarding rents and the sale of the building, see ‘Apartment Buildings’ above.

### Headquarters

Setup Cost	Monthly Cost
\$3,000,000	\$100,000



You may build several offices within your headquarters building and hire personnel to occupy key roles within your corporation. When you build and first open your headquarters (by left clicking the building) you will see nine empty office units. Double click on any of the units and select a department or office from the drop down list. The Apartment For Sale available choices are discussed below. Please note there are no links between units and your headquarters and that each department or office need only be represented once. Multiple units of the same type will not increase the effect or efficiency of that unit.



### HQ Unit Types Financial Department

This department allows you to set the share dividend pay out ratio (see Chapter 6 for more information). The unit is not available if the stock market has been disabled in the game set up menu.

### Human Resource Department

This unit can be used to instigate corporate wide training and incentive programs. The unit details the total number of corporate employees, average employee level and average training expenditure per firm. Click the Organize an Extensive Training Program button and use the +- spinners to modify the cost per employee. The more you spend training employees, the faster they gain level experience and become more proficient in their tasks. Be warned that conducting training exercises too frequently may not be effective.

## Public Relations Department

This unit should only be employed if your corporation is using a Corporate Brand strategy as it has no effect for Unique or Range brand strategy. Move the slider to alter the amount the department spends per month on increasing corporate brand awareness and brand loyalty. You are shown the current brand awareness and loyalty ratings. Increasing expenditure also helps to lessen the effects of negative brand loyalty.

## Investor Relations Department

This unit is employed to help improve your corporation's stock attractiveness with investors with the aim of improving stock performance. Move the slider to alter the amount the department spends per month on attracting investors. Chief Executive Officer Office This unit displays CEO information. Since you are the CEO of your company, you will see your portrait displayed on the screen. You may give a salary to yourself by setting the Chief Executive Officer's Annual Salary using the slider below your portrait. The maximum amount of salary you can give to yourself is tied to the company's annual profit in the last year. The higher the profit your company achieved, the higher the salary you may receive.

You may offer to acquire a technology from another corporation by clicking the "Offer to Acquire a Technology" button. For details, please see Chief Technical Officer Office below.

Clicking the Detail button will take you to the Person Report in the Information Center.

## Chief Operating Officer Office



Once this unit is built you may hire a COO to run any of your corporations' retail stores, factories or farms. The available candidates have attributes, strengths and weaknesses that may enable you to delegate control of corporate interests to them. For example, you may discover a candidate is skilled in manufacturing techniques and decide to hire that individual to run your corporations' factories.

To hire a candidate, click the Look for Candidates button. You are taken to the Person Report in the Information Center. You choose a person whom you want to hire and click Hire Chief Operating Officer button. For details, please see Chapter 8 Personnel Management.

**Chief Marketing Officer Office**

This unit enables you to hire someone to look after the marketing interests of your corporation. The marketing expertise of your CMO will influence any advertising units you have in your firms by increasing their efficiency. The unit level, however, will remain at 1. Your CMO is hired using the same process as COO.

**Chief Technical Officer Office**

This unit enables you to hire someone to look after the research and development interests of your corporation. Once hired, they will control all of your R&D firms, determining research project focus and timescales. Your CTO is hired using the same process as COO. Furthermore, your CTO office provides the opportunity for your corporation to pay for the acquisition of technology from rival corporations. Open the CTO office and select the Offer to Acquire a Technology button. A list of all products for which you do not currently hold the highest technology rating appears. The list displays your technology rating and that of rival corporations. Highlight the Product for which you wish to acquire the technology and, if applicable, the corporation from which you wish to make the acquisition. Now decide how much you are willing to pay for the technology. If your rival accepts your offer, the technology advance will be immediately available. Don't forget to upgrade the manufacturing units of any factories already making use of the technology.

**Mansion**

Setup Cost
\$20,000 to \$60,000 depending on size

As a player you may purchase a mansion as a show of personal, rather than corporate, success and wealth. Whilst a mansion does not cost anything after the initial construction costs, it does not earn anything other than its sale price if you decide to sell it or reclaim the land upon which it stands. A mansion is purchased like any other building (by using the Game Tools, Construction menu) but the cost of land and construction is borne by the player and not the corporation. You may purchase as many mansions as your personal wealth allows.

To sell your mansion, left click on it in the main city view. You have two options: Put the mansion on sale for another player to purchase or demolish the mansion and sell the land on which it stood.

The sale of your mansion and the purchase of another player's mansion are similar to apartment and commercial buildings – see Apartment Buildings or Selling and Buying Firms above for more information.

**Radio Station, Television Station and Newspaper Publisher**

Each city starts with some radio stations, television stations or newspaper publishers. New television stations or newspaper publishers may appear over time. You cannot set up television stations or newspaper publishers, but you can purchase and sell them. The purpose of the firm is to allow corporations to advertise their products. The procedures for arranging advertising are described in Chapter 7 Marketing, but this next section focuses on the information provided about a media firm.

**Firm Details**

Highlight a radio station, television station or a newspaper publisher to display information about the firm. A new screen is displayed showing the details of the selected firm.



The pie chart in the lower left of the area shows the share of each advertiser during the past month. The colors indicate which corporation purchased which portion. The graph to the right shows the market share of the media firm over the past 12 months.

Various useful figures about the media firm are displayed:

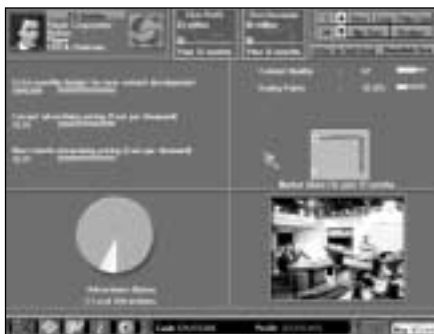
**Content Quality.** The quality of the media's content. A rating ranges from 0 to 100.

**Rating Points.** This measurement indicates the portion of potential audiences that receive messages from a specific media outlet. One rating point is equivalent to one percent of the potential audience that receives messages from a specific media outlet. It is calculated by dividing the reach by the coverage.

**Advertising Cost (Cost Per Thousand).** The cost to expose 1,000 people to an advertising message.

### To purchase a media firm

Select the firm and click the Buy Firm button. A screen is displayed in which the current owner states the sale price. Below this you can decide to raise or lower the price using the +- spinners, or cancel the deal.



If you have enough cash and you decide to purchase the firm you will be able to set the following:

**Extra monthly budget for new content development.** The higher this budget is, the better the content of the media will become. This is an investment that you should make to improve the quality of your media firm's content, which will in turn increase the rating points and incomes.

**Next month advertising pricing (Cost per thousand).** By adjusting the advertising pricing you will affect the willingness of potential clients to buy advertising from your firm. The adjusted advertising price will become effective next month. A high rating points will enable you to charge a higher advertising cost, but it should not be set too high that it becomes uncompetitive.

## **Buildings**

The following buildings are government owned and operated. They cannot be purchased, but offer services to your corporation.

### **Bank**

The Bank can be used for arranging or repaying corporate loans.

### **Information Center**

Clicking on the building simply takes you to the Information Center screen.

### **Investment Bank**

The Investment Bank is used to issue new shares.

### **Stock Market**

Clicking the Stock Market building takes you to the stock market section within the Information Center.

# Appendix: Shortcut Keys

**O** - Option menu  
**S** - Save game menu  
**L** - Load game menu  
**N** - Set newspaper display options  
**F** - Firm summary report  
**C** - Corporation summary report  
**P** - Product summary report  
**G** - Goal report  
**H** - Headquarter  
**I** - Information center  
**0** - 5 game speed  
**E** - Event tracker  
**Space** - Activate/deactivate tool bar  
**M** - Activate/deactivate mini-map window  
**W** - Activate/deactivate world map window  
**F1** - Manufacturer's guide  
**F2** - Farmer's guide  
**F3** - Manager's guide  
**F4** - Stock market  
**F5** - Financial action  
**,** - Farthest zoom  
**.** - Medium zoom  
**/** - Closest zoom  
**[** - Previous city  
**]** - Next city  
**PgUp** - Previous firm  
**PgDn** - Next firm  
**Arrow keys** - Scroll the city map  
**ESC** - Exit the current screen

# Technical Support

## On-line Support Options

Ubi Soft offers several on-line support options for their software products. One of these is our website at:

**<http://www.ubisoft.co.uk/support/>**

If you have a specific problem that is not addressed on our site, you can send your question to us via e-mail at:

**[techsupport@ubisoft.co.uk](mailto:techsupport@ubisoft.co.uk)**

Please be as specific as you can be about the problem you are experiencing.

Also include in the body of your e-mail: the name of the manufacturer of your computer system; the brand and speed of the processor; how much RAM you have, the version number of Windows you are using (if you aren't sure, rightclick on the My Computer icon on your desktop and select 'Properties'), and the manufacturer name and model number of your video card, modem, and sound card.

## Other Support Options

You can also contact Ubi Soft Customer Support by phone and fax. When you call, please have all of the above mentioned information ready.

## Technical Support:

0870 739 7670 - National Rate Call - Open from 8 a.m. - 11 pm

## Hintline:

0906 906 0200 - Premium Rate Call - open from 8am-11pm

Lines are open 7 days a week

## Hours:

Monday through Friday 8.00am – 11.00pm GMT

## Mailing Address:

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