

STRATSIMMARKETING

StratSimMarketing Case



Congratulations on your recent appointment to manage one of the firms in StratSim. Though your primary objective will of course be to learn, you will also be setting other goals and objectives for your firm. Those may be to become the market leader, or perhaps to maximize shareholder return, or possibly to generate the most net income over the course of the game. Selecting objectives is up to your instructor and your group. However, you will find that the firms who do best in StratSim have a market-oriented strategy and execute it better than their competitors. This is far easier to say than to achieve. That is the challenge faced by all marketing managers and executives.

The case provides background information on the industry in which you will be competing. The data that appear in this case may not match your scenario. Be sure to use the reports in the simulation for exact numbers.

Industry Overview

Your firm is one of five competitors in the StratSim environment. At the start of the simulation each firm is in a unique starting position, with three vehicles targeting different market segments. All revenues are generated through sales of cars and trucks to automobile dealers, who sell to consumers in the StratSim world. Additional revenues may be possible through business-to-business (B2B) or via licensing agreements. Industry sales in the most recent year in domestic consumer markets were 4.4 million units, and some growth is expected in the next year. An overview of the five firms and the vehicles they manufacture at the start of the simulation is provided in Exhibit 1.1 below. Note that the first letter of each vehicle matches the first letter of its manufacturer for easy identification.

Exhibit 1.1: Company Overview

Firm Name	Vehicles	Sales (000s units)	Sales (billions)	Income (billions)
(A) Amazing Cars	Alec, Alfa, Awesome	1,278	\$21.9	\$1.3
(B) Best Motor Works	Beaut, Boffo, Buzzy	374	\$11.7	\$1.2
(C) Cool Cars	Cafav, Camini, Climax	482	\$13.3	\$1.2
(D) Driven Motor Co.	Defy, Delite, Detonka	1,128	\$20.0	\$1.3
(E) Efficient Motors	Efizz, Estruck, Euro	1,099	\$21.3	\$1.3

Vehicle Attributes

While vehicle class and price may be consumers' first characterization of products, vehicles have additional attributes that can be measured and compared. In StratSim, these are size, performance, interior, styling, safety, and quality. Each attribute has a range of values based on what can feasibly be designed and built by a firm. The interior, styling, safety, and quality attributes (ISSQ) have a maximum value dependent upon the firm's technology capability in that area. Currently, the maximum values are somewhere between 3 and 8, depending on the firm and the attribute. Vehicles with higher attributes in these four dimensions are more appealing to customers, all other things being equal. Customers may find a particular attribute more important (i.e., consider it a "hot button"), depending on their needs and preferences. In evaluating vehicles, customers weigh the ISSQ attributes against the price of the product, while also considering the class, size, and engine performance of the vehicle. Exhibit 1.2 summarizes vehicle attributes and the range of values associated with each.

Exhibit 1.2: Vehicle Attribute Descriptions

Attribute	Description	Range of Values
Class	(E)conomy; (F)amily; (M)inivan; (S)ports; (L)uxury; (U)tility; (T)ruck; (A)lternative Energy Vehicle, or AEV; (D)elivery	E, F, M, S, L, U, T (Existing) A (Potential) D (B2B Only)
Price	Manufacturer's Suggested Retail Price (MSRP). Actual (retail) selling price to customer will vary from MSRP.	Generally, ranges from \$10,000–\$50,000
Size	Length and width of vehicle, which includes passenger and cargo space. Size is measured on a scale of 1–100.	1–100 (smallest to largest)
Performance	Measured by engine horsepower (HP).	50–300 HP (low to high performance)
Interior	Comfort, visibility, instrumentation, music systems, ergonomics.	1 to maximum firm capability
Styling	General curb appeal, styling, handling, finish / workmanship.	1 to maximum firm capability
Safety	Structural design, braking systems, safety features.	1 to maximum firm capability
Quality	Overall reliability, durability, consistency of products.	1 to maximum firm capability

The current vehicle attributes and manufacturer's suggested retail price (MSRP) are summarized in Exhibit 1.3, grouped by vehicle class.

Exhibit 1.3: Vehicle Attributes/Characteristics by Class and Name

Class	Vehicle	MSRP	Size	Horsepower (HP)	Interior	Styling	Safety	Quality
Economy	Alec	\$ 15,351	14	135	2	1	3	2
	Delite	\$ 11,293	5	85	1	1	1	1
Family	Alfa	\$ 24,084	28	165	2	1	3	2
	Boffo	\$ 35,003	49	200	4	3	2	2
	Cafav	\$ 31,361	49	165	4	2	2	2
	Defy	\$ 25,922	43	165	2	1	3	2
	Efizz	\$ 18,869	35	140	1	1	2	1
Luxury	Beaut	\$ 38,385	62	240	2	4	2	2
	Climax	\$ 45,997	74	240	4	2	2	2
Minivan	Camini	\$ 24,144	82	200	2	1	2	1
Sports	Buzzy	\$ 34,652	54	190	3	3	2	3
Truck	Detonka	\$ 19,572	66	185	1	1	1	1
	Estruck	\$ 21,843	75	280	1	1	1	2
Utility	Awesome	\$ 21,149	40	220	1	1	1	1
	Euro	\$ 26,528	59	200	1	3	1	1

Vehicle Classes

The industry has historically been broken into seven vehicle classes—Economy (E), Family (F), Luxury (L), Sports (S), Minivan (M), Truck (T), and Utility (U). However, two new classes offer future potential if developed and marketed well—the Alternative Energy Vehicle, or AEV (A) and Delivery (D). The AEV is a potential new breakthrough in drive technology while the Delivery is designed only for the fleet buyer (B2B). Each of these classes represents a unique configuration that requires a significant expenditure in R&D to develop. Remember that there are underlying needs met by these product classes. For example, a minivan meets the need for family transportation plus cargo room in an economical package. Exhibit 1.4 describes the vehicle classes, shows unit sales for each class, and identifies the vehicles competing in each class at the beginning of the simulation, along with their share of class sales.

See Exhibit 1.4 on the following page.

Exhibit 1.4: Vehicle Classes

Vehicle Class	Description	Expected Price	Typical Size	Typical Engine	Sales (000s units)	Vehicles (with share of class)
Economy (E)	<i>Small, basic car that is inexpensive to buy and operate.</i>	<i>Under \$20,000</i>	<i>1–30</i>	<i>Under 150 hp</i>	<i>872</i>	<i>Alec (68%) Delite (32%)</i>
Family (F)	<i>Mid-sized car for reliable, safe transportation at a reasonable price.</i>	<i>\$15,000 to \$38,000</i>	<i>30–65</i>	<i>120–200 hp</i>	<i>1,457</i>	<i>Alfa (24%) Boffo (6%) Cafav (10%) Defy (33%) Efizz (27%)</i>
Luxury (L)	<i>High-end vehicle with top of the line features and performance.</i>	<i>Above \$35,000</i>	<i>45–75</i>	<i>Over 150 hp</i>	<i>273</i>	<i>Beaut (53%) Climax (47%)</i>
Sports (S)	<i>Cars emphasizing performance and style. Size and price range widely, but all are fun to drive.</i>	<i>\$14,000 to over \$35,000</i>	<i>15–60</i>	<i>Over 150 hp</i>	<i>144</i>	<i>Buzzy (100%)</i>
AEV (A)	<i>Alternative-energy-drive vehicles use new drive technology that is energy efficient and low polluting.</i>	<i>Above \$20,000</i>	<i>1–50</i>	<i>70–150 hp</i>	<i>0</i>	<i>No vehicles introduced.</i>
Minivan (M)	<i>Family-oriented vehicles with lots of passenger and storage room.</i>	<i>\$18,000 to \$35,000</i>	<i>50–100</i>	<i>120–240 hp</i>	<i>214</i>	<i>Camini (100%)</i>
Utility (U)	<i>Classified as a truck, but more passenger room and style.</i>	<i>\$17,000 to \$40,000</i>	<i>30–90</i>	<i>Over 150 hp</i>	<i>710</i>	<i>Awesome (47%) Euro (53%)</i>
Truck (T)	<i>Traditionally working vehicles, trucks are finding broader appeal as second vehicles and alternatives to sport cars.</i>	<i>\$15,000 to \$35,000</i>	<i>30–90</i>	<i>Over 150 hp</i>	<i>690</i>	<i>Detonka (53%) Estruck (47%)</i>
Delivery (D)	<i>Covered trucks specially designed for delivery companies. B2B only.</i>	<i>\$20,000 to over \$40,000</i>	<i>60–100</i>	<i>Over 190 hp</i>	<i>0</i>	<i>No vehicles introduced</i>

Consumer Segments

There are two broad approaches to analyzing the StratSim market—by vehicle class and consumer segment. Both approaches offer advantages, and both should be considered. The five consumer segments in StratSim are numbered 1 through 5, each representing a different group of consumers with shared demographics and needs. However, it is the intersection of the consumer segment and vehicle class that will be the primary basis for competition. For purposes of identification in StratSim, this intersection is called a *microsegment*. Microsegments are labeled 1–5 for consumer segments and E–U for preferred vehicle class. As an example, the 1E microsegment consists of customers who are Value Seekers (1) with a preference for an Economy (E) car.

Consumers in some microsegments have a strong preference for a particular vehicle class. For other consumers, there are two or more vehicle classes that would meet their needs. For example, in the StratSim environment, 4F customers are High Income (4) people who have a primary preference for a Family (F) car and a secondary preference for a Luxury (L) car. However, it should be noted that if the consumer finds a vehicle from another class that provides a better solution to their needs and budget, they might purchase that vehicle instead.

Exhibit 1.5 provides a description of each consumer segment, unit sales at the start of the simulation, and associated microsegments with their preferred vehicle classes.

Exhibit 1.5: Consumer Market Segments

Segment	Description	Sales (000s Units)*	Preferred Vehicle Class
(1) Value Seekers	<i>Value seekers have basic transportation needs, using their vehicle for commuting or as an all-purpose vehicle. Quality and safety are important to these price sensitive buyers.</i>	768	(1E) Economy (1T) Truck
(2) Families	<i>Families have somewhat basic transportation needs but require flexible vehicles with both people and cargo-carrying capabilities. Safety and quality are most important to these fairly price sensitive buyers.</i>	1,724	(2E) Economy/ Family (2F) Family (2M) Minivan
(3) Singles	<i>The singles market is young and tends to spend a high percentage of disposable income on their vehicles. Singles look for vehicles that are fun to drive. Styling and performance are important to this segment.</i>	865	(3S) Sports (3T) Truck / Sports (3U) Utility / Sports
(4) High Income	<i>This segment includes families, professionals, or retirees. With high disposable income, they are willing to spend more for extra features. Interior, styling, and safety are important attributes.</i>	381	(4F) Family / Luxury (4L) Luxury
(5) Enterprisers	<i>Enterprisers see their vehicle as an extension of their business and personal aspirations. They use their vehicles for business and to impress. Styling and performance are important.</i>	621	(5L) Luxury / Sports (5U) Utility

***NOTE:** Segment unit sales shown are per firm at startup. Actual sales will change over time based on underlying market conditions and competitive dynamics.

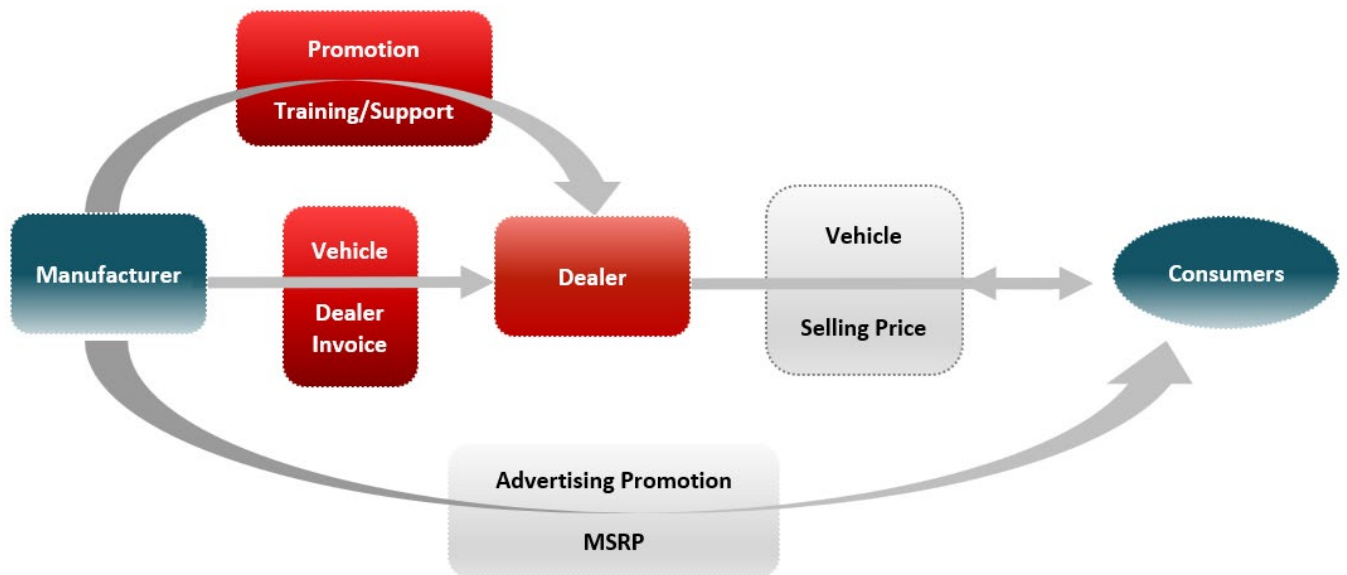
Market research has also identified several new microsegments where customers' needs are not satisfied by the current vehicles. Customers in the new microsegments may be looking for a new vehicle class, such as an AEV, or a significantly different configuration of an existing vehicle class. If a firm introduces such a vehicle that "excites" these customers, the new microsegment may "pop," creating new demand in the marketplace. As a rule, in StratSim, at most one new microsegment can "pop" each period. Additional new customer opportunities may be identified as the simulation progresses. *It is important to understand that there are no guarantees with introducing products into new markets and StratSim reflects this risk: Introducing a vehicle targeting a new microsegment does not guarantee that it will "pop."*

Consumer Purchase Process

The vehicle a consumer will ultimately purchase reflects a complex decision-making process. Consumers typically begin by looking for a specific class of vehicle in the right price range, though they may consider a couple of different vehicle classes. Hypothetically, a family (2) buyer might consider both a minivan and a family class sedan in the \$25,000-\$30,000 price range. When consumers find a vehicle of the right type, they will then take a close look at the attributes of the vehicle. Of course, the overall appeal of the vehicle is weighed against the price the customer will ultimately pay. This trade-off between price and appeal is what creates value in the mind of the buyer. Each consumer has different needs and places different importance on each need. Some attributes may be very important to the consumer ("hot buttons") while others are less important. In some cases, consumers may want more of an attribute, while in other cases, they may have a particular ideal in mind. Their decision will also be impacted by their knowledge of the vehicle (awareness), ability to find a local dealership for sales and service, the experience at the dealership, and special promotional offers and activities. Note that the dealership sets the final purchase price for the consumer.

The diagram in Exhibit 1.6 illustrates the consumer purchase process for vehicles in StratSim.

Exhibit 1.6: Vehicle Purchase Process (Consumer Market)



B2B Purchase Process (Optional Feature)

Unlike the consumer market, where automakers are selling to individuals and small organizations through their captive dealership network, the business-to-business (B2B) or corporate fleet buyer purchases in large quantities directly from the manufacturer. Examples of B2B customers are rental fleets such as Hertz, Avis, Enterprise, Sixt, and Europcar; parcel carriers such as DHL, UPS, FedEx, and DPD; and other large entities such as national and local governments or large multinational companies. In StratSim, these three customer types comprise the three B2B segments and are briefly described in the table below.

Exhibit 1.7: B2B Segments

Segment	Description
(6) Rental Fleets	The B2B Rental Fleet market is composed of rental vehicle companies operating in all regions of the country. Most contracts are nationally recognized rental car companies that provide vehicles to traveling businesspeople or vacationers, typically for less than one week.
(7) Parcel Carriers	The Parcel Carrier fleet market is composed of national delivery companies that provide coast-to-coast pickup and delivery of packages, such as UPS and FedEx. Most parcel carrier companies service their own vehicles, resulting in lower distribution coverage minimums, but are concerned with the cost of purchasing, owning, and maintaining the vehicles. In addition, parcel fleets typically require a custom-built vehicle of the delivery class.
(8) Other Fleets	The Other Fleets segment is composed of other B2B customers such as government agencies and large corporations. Most of these other fleet contracts represent smaller orders and require high levels of dealership support, as they typically are not servicing their own vehicles beyond basics.

B2B customers may be satisfied with the same models as individuals, although with a different purchase process and use/needs. For example, rental car companies, some government agencies, and large companies could be happy with ordering an existing product line. In other situations, the customer may have unique needs that would require a customized platform. In this situation, manufacturers would be required to design a specialized vehicle for the customer. For example, parcel carriers require a delivery class vehicle with unique load and configuration specifications.

B2B buyers also have a significantly different purchase process than individuals. First, these buyers will only purchase a specific vehicle class and have requirements that must be met for a manufacturer to qualify for a contract. These include meeting or being less than a maximum price, meeting or exceeding dealer coverage requirements to provide an adequate service network, being within a particular range for size and performance, and meeting or exceeding ISSQ attributes (interior, styling, safety, and quality). Second, their purchase is direct from a manufacturer rather than through a dealership, so while they may require a low price, the dealership will not receive a margin on B2B sales. Finally, one manufacturer will be selected as a

preferred supplier and receive a contract for twice as many vehicles. Preferred supplier status goes to the company which meets the required specifications at the lowest price.

Firm Decisions

Each period in StratSim, firms make many individual decisions that should add up to a coherent strategy. Your team will need to invest in technology capabilities, upgrade existing vehicles and/or develop new products, allocate corporate and product marketing expenditures, support and potentially grow your dealership network, and set overall manufacturing capacity as well as production volume for each vehicle. Finally, you'll need to make sure you have the resources to implement all these decisions. This section describes in more detail each of the decision areas.

Technology

Each firm in the StratSim world has technological capabilities that parallel the vehicle attributes of interior, styling, safety, and quality (ISSQ). To keep measurement relatively straightforward, these are rated from 1 to the current maximum (where 1 equals a poor rating on that attribute). All firms in the industry start with different initial technology ISSQ capabilities. Firms can expand their capabilities up to current industry technology limits through investments in technology capabilities. These investments provide two advantages—first, the ability to develop cars with enhanced features (i.e., higher ISSQ); and second, lowering the cost to develop a similar set of characteristics. For example, a firm with technology ISSQ capabilities of 8/7/7/8 would be able to produce a 4/4/4/4 car at a lower unit cost than a firm with a technology profile of 6/6/5/6. The current technology profiles with the maximum limitations at the start are displayed below.

Exhibit 1.8: Technology Capabilities of Firms

	<i>Interior</i>	<i>Styling</i>	<i>Safety</i>	<i>Quality</i>
Maximum:	9	11	9	11
(A) Amazing Cars	5	5	4	6
(B) Best Motor Works	7	8	5	8
(C) Cool Cars	6	7	5	7
(D) Driven Motor Co.	4	5	5	6
(E) Efficient Motors	3	5	3	5

Note that having the capability to build a vehicle with certain attributes is not the same as designing a vehicle with those specifications. Increasing the firm's technology capabilities does not automatically increase the attributes of individual vehicles. To enhance or create new vehicles using the increased firm technology capabilities requires starting new development projects, either to upgrade existing vehicles or develop new ones.

As is the case with the automobile industry, product development in StratSim is expensive, time consuming, and risky. However, the reward of having the leading vehicle within a product class is often well worth the investment, and falling behind other vehicles in terms of styling, performance, and appeal is dangerous. Additionally, new products are needed to take advantage of opportunities in the market. For every development project, there is also an overall cost for the development process, an estimated unit cost, and time to complete.

Product Development

Each firm has a limited number of product development centers, affecting its ability to work on multiple development projects (upgrades and new products) concurrently. All firms start with two centers. Funding new centers increases your ability to develop more products at the same time. This investment corresponds to hiring more product development engineers and expanding R&D facilities, allowing your firm to work on more new vehicles or upgrades at the same time. It takes one year for a new center to be built and come online.

Developing a *new vehicle* starts with a *concept* created by development engineers based on your specifications. You can create as many concepts as you want, and there is no cost until you decide to move the concept into a development center ("build"). New vehicles in a class in which you already have experience take two years to develop, while a new class takes three. *Concept tests* are an opportunity for your firm to get early feedback on your potential product before the costly development cycle begins. Spending some time up front with customers can save resources down the road.

Upgrades are changes to an existing vehicle to better suit customer needs. Changes can be made to the ISSQ characteristics as well as the size and horsepower. The modifications can be major or minor. Minor changes can be completed for the next period, while major changes are ready in two periods. When an upgraded vehicle is put into production, any existing inventory will be sold in markets outside the StratSim simulation at a loss. Note that while a minor upgrade can be deployed quickly, any inventory will be written off immediately. The extra period required for a major upgrade gives you time to get excess inventory under control before it is written off. On the other hand, much-needed product enhancements are delayed.

All projects have an estimated unit cost based on 100,000 units of production ("base cost"), which depends on the vehicle class and attributes. If actual production is less than 100,000 units, actual unit costs will be higher than the estimate. If actual production is greater than 100,000 units, actual unit costs will be lower than the estimated base cost. In general, unit costs decrease with greater production volumes due to scale and experience effects. You can also initiate a cost reduction upgrade to reduce the base cost of a vehicle. A cost reduction upgrade makes changes to the vehicle engineering and manufacturing process to lower unit costs without affecting the ISSQ, size, or HP attributes.

An overview of the product development paths is illustrated in Exhibit 1.9.

Exhibit 1.9: Product Development Timelines

	Current Period	Period + 1	Period + 2	Period + 3
Cost Reduction \$100-\$200 Million in current year	Put in Dev. Center (no changes to specs allowed)	IN MARKET Retooling. Results impacted. (vehicle costs reduced, no impact on sales)		
Minor Upgrade \$100-\$300 Million in current year	Put in Dev. Center Tweak Specs* Adjust Marketing Mix Adjust Production (Inventory disposed)	IN MARKET Results impacted. (Including sales, retooling, inventory write-off)		
Major Upgrade \$250-\$750 Million Spread over 2 Yrs.	Put in Dev. Center Modify Specs† Build Add'l Capacity	Project in Dev. Center Tweak Specs* Adjust Marketing Mix Adjust Production (Inventory disposed)	IN MARKET Results impacted. (Including sales, retooling, inventory write-off)	
New Product (Existing class) \$250-\$1,500 Mill. Spread over 2 Yrs.	Create Concept Put in Dev. Center Name Product Build Add'l Capacity	Project in Dev. Center Tweak Specs* Set Marketing Mix Set Production	IN MARKET Results impacted. (Including sales, retooling)	
New Product (New class) \$500-\$2,500 Mill. Spread over 3 Yrs.	Create Concept Put in Dev. Center Name Product	Project in Dev. Center Tweak Specs* Build Add'l Capacity	Project in Dev. Center Tweak Specs* Set Marketing Mix Set Production	IN MARKET Results impacted. (Including sales, retooling)

* Max change for each of the interior, styling, safety, and quality attributes (ISSQ) is 1; HP is 5; and size is 2.

† In the first period of a major upgrade, you're allowed a max change of 2 for ISSQ, 20 for HP, and 10 for size.

Licensing (Optional Configuration)

Depending on the simulation configuration, you may have the opportunity to license vehicles from other firms. In this situation there are no development costs, and vehicles are purchased at a fixed unit price plus an optional annual fee. For example, Firm A might license a luxury vehicle from firm C based on the specifications of the Climax. The product will be marketed under a new name starting with "A," such as Ant.

Licensing a platform from another firm is something worth considering if a manufacturer lacks experience in a vehicle class or has limited technological or development capabilities. Often licensing is a short-term measure until R&D can design a vehicle internally. However, a firm cannot license more than two vehicles from other firms at any given time. Firms that have strong

product development capabilities and low-cost production but weak distribution may find licensing vehicles to other firms a profitable option. Licensing is unlikely to occur unless both parties gain materially from the exchange.

Consumer Marketing

In StratSim you will make marketing decisions for the corporation as a whole and for each individual product. To make your marketing effective, you must first identify the kind of company you want to be, then use advertising, promotion, and pricing decisions to support your chosen corporate positioning and to align your products with your strategy.

Corporate advertising budgets are set on a regional basis. These funds are spent on generating a corporate identity in support of the dealer network in the regions. A public relations budget is also set to support publicity events for the firm as well as corporate and investor relations. Finally, direct marketing can be used to generate interest in target segments.

Product advertising creates vehicle awareness and shapes consumers' perceptions of products. In the StratSim world, managers are responsible for setting an advertising budget and an advertising theme. Most of the budget is spent on media buys, with the remainder on creative input and theme. The theme emphasizes one of the primary characteristics of the vehicle—performance, interior, styling, safety, or quality. Product managers attempt to match the advertising theme with the "hot buttons" of their target customer.

Promotional budgets are set at the product level and include incentive programs and general promotional activities. The purpose of special incentive programs is to improve sales during slower periods of demand. Examples of incentives include consumer rebates, below-market financing, and dealer-oriented sales incentives. Examples of general promotional activities include funds for brochures, advertising in support of incentive programs, mailings, trade shows, and motivational contests.

Vehicle pricing is complex and requires careful attention to detail. Depending on the context, price can have several meanings. The manufacturer sets the vehicle *MSRP* (Manufacturer's Suggested Retail Price). This is the price that is posted in the window of the vehicle but is rarely the price that the customer pays. *Average retail price* is the average of all the actual prices that customers pay. This price includes dealer mark-ups, promotional discounts, negotiation with the salespeople, etc. The *dealer invoice* is what the dealer pays for the vehicle and is the monetary value your firm receives as revenues. Finally, the *manufacturing cost* for the vehicle is the cost associated with production of the vehicle. The dealer invoice less the unit manufacturing cost is the per unit *margin* the manufacturer receives for each sale.

Choosing the best marketing mix for a vehicle is a difficult task. Test markets allow marketers to try different combinations of price, advertising, and promotion to estimate potential effects on sales and profitability. In StratSim, test markets can be used with vehicles that have existing sales. A test market experiment is created in a particular city where levels of price, advertising, and

promotion are adjusted from your national levels and the change in the sales in that market is measured. By extrapolating this change to national levels, a marketing manager can make better judgments on how much to adjust the marketing mix variables for the coming year.

B2B Marketing (Optional Configuration)

Depending on the simulation configuration, you may have the opportunity to pursue contracts for selling large numbers of vehicles to fleet buyers (B2B).

To compete in the B2B market, the first step is to purchase marketing research on the contracts. The research report will tell you the class of vehicle, number of units, maximum price, vehicle attributes, and minimum dealer coverage required by the buyer. This analysis will provide the information to know if a contract is possible or worthwhile to pursue. The next step is to hire salespeople to establish a relationship with the B2B buyers. Salespeople are hired automatically when contracts are targeted.

One period after hiring sales force to pursue a contract, you will receive the opportunity to bid on the contract. If your bid meets all the requirements, you will receive a contract for the guaranteed number of units. If your bid price is the lowest of all qualified competitors for the period, the contract will be for double the guaranteed number of units.

Distribution

While the purpose of advertising and promotion is to generate interest, create an image, and communicate information about the vehicle, it is the automobile dealership that makes the sale and provides follow-up services. In StratSim, each firm has a captive dealership distribution structure organized on a regional basis. Each period, firms must decide how many dealerships to open or close in each region as well as allocate funds for training and support. You may grow or shrink your dealership network by up to 10% of the total dealers in a single period. Below is a table of the dealership network for each firm at the start of the simulation.

Exhibit 1.10: Dealerships by Region

<i>Firm</i>	<i>Number of Dealers</i>				
	<i>North</i>	<i>South</i>	<i>East</i>	<i>West</i>	<i>Total</i>
A	120	120	120	120	480
B	65	75	65	75	280
C	80	95	85	90	350
D	70	100	110	120	400
E	100	130	70	80	380

The number of dealerships in a region is an important part of strategy. There are two measures in StratSim to guide your distribution strategy: dealer coverage and dealer ratings. Dealer coverage equals the number of dealers divided by the number of sales territories in a region. Thus, 100% coverage means you have a dealership in every sales territory. Having too few dealerships can leave smaller cities and towns uncovered. Having too many dealerships may spread sales too thinly across dealerships and lead to overly competitive pricing within the region and/or low new vehicle and service revenues for a dealer. Management often looks to sales and gross profit per dealer in addition to coverage as indicators of the proper balance. Dealer ratings provide insight into the success of dealerships. A strong dealer gross is expected to translate into a successful dealership, but training, support, and service revenues all contribute as well. Remember, the profitability and success of a dealership depends to a large extent on the popularity of a manufacturer's vehicles. It is a partnership where both parties must contribute to the success of the other.

Manufacturing

Having good products, effective marketing, and a strong dealership network are all essential to create demand for your products, but you must also produce enough vehicles to meet that demand. In the short term, managers must decide how to use plant capacity to produce the best mix of vehicles. Longer term, the firm may need to increase or decrease capacity to meet demand for new and/or upgraded vehicles or to adjust for competitive and marketing conditions.

Capacity for each firm is fixed for a given year. However, changes of up to 50% of your current capacity may be initiated at any time. While a decrease will affect the next year's results, *an increase in capacity takes one year to take effect*. Thus, if you build additional capacity this year, next year you will be able to set production levels based on the new plant capacity. It is important to coordinate capacity increases with the launch of new products. When necessary, firms may choose to set production levels above capacity in the short run by running extra shifts and paying overtime, resulting in over-capacity charges.

Firms must decide on production volume for each product on the market. When the production level on a line is increased from the previous period, the capacity now associated with that product is upgraded and retooled. Retooling costs are also incurred when production volume is dedicated to a new product line. One benefit of retooling is that plant maintenance costs are typically reduced.

Firms may choose to use the flexible production option that increases or decreases production by up to 10% from the firm's target production value, depending on demand. If production volume is insufficient for demand, consumers who are unable to purchase a vehicle at the end of the period postpone their purchase decision until the beginning of the next year, purchase an alternative brand, or buy a used vehicle.

Inventory levels should be considered when deciding on production schedules for the coming year. Too little inventory can result in lost sales, and too much increases costs and puts downward

pressure on dealer margins. A reasonable target for inventory is 30 to 60 days. If a product is being redesigned or discontinued, the current inventory will be sold in markets outside the StratSim simulation at 85-90% of cost (a loss of 10-15%), so it is especially important to manage inventory levels when upgrading a vehicle.

Plant capacity expansion costs and retooling investments are recorded as assets on the plant and equipment line of the balance sheet. The plant assets are depreciated over ten years, and the expense is included in the cost of manufacturing products each period. Cumulative depreciation is shown below plant and equipment on the balance sheet.

Financing

Financial management in StratSim is important. In addition to choosing among investments in technology, manufacturing, and product development, firms must also manage margins, expenses, cash flow, and investor expectations.

A firm running low on cash for operations has three options in StratSim: sell stock, issue bonds, or draw on a revolving line of credit. Selling stock has the benefit of not creating an interest expense or additional obligations. However, the drawback is dilution of the shares of stock that may lower the share price at the time of issuance. In StratSim, you specify the amount of capital to raise, and the appropriate number of shares will be sold at the current stock price to reach your goal. Stock sales are recorded at a par value of \$1 per share, with any amount above that going to additional paid in capital on the balance sheet.

The second option for raising capital is to sell 10-year bonds, callable after three years. The interest rate on the bonds will reflect current interest rates and the credit rating for the company. AAA rated bonds offer the lowest investment risk and therefore the lowest interest rate. The interest rate is fixed for the life of the bonds and interest is paid out automatically each period, with the principal coming due at maturity (after the simulation is over). When bonds are sold, the issue amount is added to long-term debt on the balance sheet. After three years, the bonds can be called. Only one bond issue can be called in a period, the entire issue must be paid off at once, and there is a one-year interest penalty for calling the bonds.

StratSim firms must maintain a minimum amount of cash on hand to sustain operations, about 1% of revenue. If there are not sufficient funds, a loan is issued, adding to short-term debt on the balance sheet. The interest rate on the line of credit tends to be higher than the rate on bonds and will vary with changes in the prime rate and company credit rating. Interest due each period is paid automatically, but it is up to the finance manager to schedule repayment of the principal.

A firm with a surplus of cash has several options. In addition to investing the cash in expanding the company, it can be used to purchase a one-year certificate of deposit, retire debt by calling bonds, or distribute dividends to shareholders. If management thinks the firm's stock is undervalued, it may also be possible to repurchase stock with the extra cash. If stock repurchase is permitted, the firm is limited to 20% of the current market value of the company.

Financial Reports

Financial statements track company results and help you understand the financial impacts of your decisions. Shareholders and lenders use a firm's financial statements to evaluate its performance in setting a stock price and bond rating. In StratSim, firms have access to the income statement and balance sheet of all their competitors, allowing them to compare their own results against other firms in the industry. A summary of the financial condition of all the firms in the industry at the beginning of the simulation is provided in Exhibit 1.11.

Exhibit 1.11: Financial Summary

	<i>Firm A</i>	<i>Firm B</i>	<i>Firm C</i>	<i>Firm D</i>	<i>Firm E</i>
Val Mkt Share	24.8%	13.2%	15.1%	22.7%	24.1%
Unit Share	29.3%	8.6%	11.1%	25.9%	25.2%
Preference	19.3%	27.0%	20.3%	15.1%	18.3%
Sales	\$21,886	\$11,675	\$13,310	\$20,041	\$21,280
COGS	\$16,857	\$7,756	\$9,404	\$14,925	\$16,254
Marketing	\$378	\$379	\$376	\$377	\$384
R&D	\$1,029	\$1,001	\$820	\$1,223	\$1,182
G&A	\$897	\$464	\$528	\$807	\$790
Other	\$1,468	\$862	\$971	\$1,409	\$1,373
Income	\$1,258	\$1,213	\$1,211	\$1,301	\$1,297
Stock Price	\$48.72	\$44.69	\$45.83	\$47.49	\$48.06
Mkt Value	\$17,783	\$10,726	\$11,687	\$15,909	\$17,302
Total Debt	\$10,539	\$3,489	\$4,903	\$9,444	\$8,991
Note: Dollar amounts (except stock price) are in millions.					

The *Income Statement* summarizes revenues and expenses for the company. Revenues in StratSim consist of vehicle sales to dealers and direct sales to businesses. All costs directly attributable to the production of the vehicles sold are shown under cost of goods sold (COGS). This includes both the variable cost of materials and labor, as well as the fixed costs of the plant. The *Cost of Goods Sold* detail shows how COGS is calculated. Subtracting COGS from revenue yields the gross margin on vehicles sold. Low gross margins are a sign that products are priced too low, or production costs are too high.

Some expenses, such as marketing, research and development, and general and administrative expenses are not directly attributable to production. Marketing expenses include corporate advertising, product advertising and promotion, and sales force expenses. Research and development expenses are the costs associated with product development and technology capabilities improvements. General and administrative expenses include overhead from sales and the dealership network. Dealership training and the cost of changes in the number of

dealerships are the result of your decisions, but most G&A expenses are not under your direct control. Income from operations is calculated by subtracting these indirect expenses from the gross margin. Income from operations is a good measure of the health of the company's core business. If the gross margin is healthy but operating profit is low, that may be due to ineffective marketing, heavy investment in R&D, or rapid expansion of the dealer network.

Interest income and expense as well as extraordinary items are applied to operating income to calculate income before tax. A high interest expense relative to income from operations could be a sign that a firm is having trouble managing its debt. Finally, taxes are deducted, leaving net income. Net income, less any dividends paid, is added to retained earnings on the balance sheet each period. If net income is negative, retained earnings will be reduced. There is no provision for tax loss carry-forward in StratSim.

The *Balance Sheet* provides a snapshot of the firm's assets, liabilities, and equity. In StratSim, assets include cash, receivables, inventory, and plant and equipment less depreciation. The firm must always keep enough cash on hand to pay current expenses, about 1% of revenues. Receivables are the unpaid invoices owed by dealers. Dealers who are struggling will be slower to pay, resulting in higher receivables as a percentage of revenue. Rising inventory may indicate changes in demand or a competitive environment, while inventory that is too low could result in lost sales. Plant and equipment is the total investment in production facilities through expanded capacity and line retooling; depreciation on the balance sheet represents the cumulative plant depreciation expense shown on the income statement.

Liabilities consist of accounts payable, short-term debt, and long-term debt. Accounts payable is the amount owed to suppliers and payroll taxes collected but not yet paid to the government. Short-term debt in StratSim is the balance on the revolving line of credit, while long-term debt is the total of bonds issued.

Equity consists of the original value of stock at par, any additional paid in capital, and retained earnings. Stock is sold at \$1 par value per share. Your firm's initial shares of stock outstanding were all sold at par value. If stock is issued at a higher price, then the amount over par is shown in a separate line item as additional paid in capital. Retained earnings show the cumulative net income from the income statement, less any dividends distributed. Dividends may not be distributed if you have negative retained earnings.

The *Cash Flow* statement shows the sources and uses of the firm's cash. The changes in the amount of cash in the firm are calculated based on income from operations adjusted for depreciation, inventory, payables, and receivables; investment activities such as capacity increases, plant retooling, and CD investments; and financing activities such as stock or bonds issued, changes in loan balance, or dividend payments. A healthy company will have positive cash flow generated by core operations. It is, however, possible for a healthy company to have a negative cash flow due to large current investments necessary to sustain future growth.

The reports discussed so far give an overview of the results for the entire company. The *Product Contribution* report allows managers to identify which products are contributing toward the

success of the company, and which products might need improvement in development or marketing. When calculating product contribution, only revenues generated by the product and direct variable costs, along with product advertising and promotion, are considered. The report is very helpful in prioritizing development projects and identifying the effectiveness of marketing for specific products.

Industry Reports and Tools

StratSim provides multiple reports with information on the market environment and the competition. Market reports include general news in the industry, market shares by vehicle, regional analysis, and sales by consumer segment. Competitive reports are available on the products in the market, technology capabilities of competitors, spending on marketing, dealer networks, manufacturing capacity and utilization, and a summary of the financial results for each firm. Analyzing data on the market, customers, and competitors will help managers make better decisions.

There are also several research tools available in StratSim to help you convert data into knowledge and to improve your ability to make good decisions. Some tools will help you with product design, others will help you with resource allocation, and others may offer competitive insights not available from public secondary sources. The exact tools that will be available to your team will depend on the configuration of your game. New tools may also be introduced as the game is advanced, so be aware of changes in availability. Most of these tools will cost money to use, just as ordering and designing market research studies would in the real world. Spend some time learning when and where these tools will be of the most value to you.

Important! Since everyone on your team is sharing the same decision set, when there are a limited number of studies that can be run, this total is for your ENTIRE team, not just you as an individual. Be sure to coordinate purchase of research studies. Once someone on your team purchases a study or tool, your entire team will have access to the results of that research.

Next Steps

The task of the management team is to maintain long-term profitability in the context of an increasingly competitive and changing environment. Customer needs and tastes will evolve. Competitors will be battling for market share and entering new product classes and markets. Technologies and cost structures will change over time based on the impact of investments.

Every simulated year, each firm will perform a situation analysis, identify problems and opportunities, and generate alternative options for decisions. Finally, based on careful consideration, persuasive presentation of competing ideas, and probably some arm-twisting, your team will come to a consensus as to which set of decisions is best and implement them.

Once your firm has a thorough understanding of the StratSim world, one of the first tasks should be to define a strategy. A successful firm will likely have a strategy that is well thought-out and consistently executed. Creating a sound strategy is the most important process your firm will undertake because your strategy is the framework for all decision-making and firm organization. The strategy should be a long-term vision for your firm that every member of your team can reference when making decisions and analyzing data. Strategy is defining segments served and creating a sustainable competitive advantage. It is your road map. It is where and how your firm chooses to compete. It is essential.

Enjoy your tenure as a management team in the StratSim world. It should be an exciting and challenging learning experience. Good luck and have fun!

Summary of Decisions

Each period your firm will need to make many decisions. The table below provides a summary of these decisions to help you track them.

<i>Decision Category</i>	<i>Firm Decision</i>	<i>Product Decision</i>
Technology	➤ Technology Investment • Interior • Styling • Safety • Quality	(none)
Product Development	➤ New Development Center	➤ Vehicle Upgrade • Major • Minor • Cost Reduction ➤ New Vehicle • Create Concept • Move to Development
Licensing (Optional)	(none)	➤ Licensee Extended Offer • Vehicle Name • Partner • Unit Price & Overall Fee • Vehicle attributes ➤ Licensor Received Offer • Accept with a Vehicle or Not
Consumer Marketing	➤ Corporate Advertising • By Region • Themes ➤ Social Media ➤ Direct Marketing • Budget • Target Segments	➤ Pricing • MSRP • Dealer Discount ➤ Advertising • Budget • Theme ➤ Promotion ➤ Sales Forecast ➤ Remove from market?
B2B Marketing (Optional)	➤ Target Contract(s)	➤ Contract Bid
Distribution	➤ Dealer Openings / Closings • By Region ➤ Training and Support	(none)
Manufacturing	➤ Capacity Change	➤ Schedule Production ➤ Flexible Product On / Off
Finance	➤ Purchase CD ➤ Issue Stock ➤ Distribute Dividends ➤ Short-term Loan Repayment ➤ Issue Bonds / Call Bonds	(none)

Product Class Examples

The following pages provide a sample picture of a vehicle in each product class in StratSim as well as a brief description of some of the features one can expect to find in each class. Please note that the specifications and examples are approximate and meant as a general guide to distinguishing product classes—base your decisions on the information in the simulation reports.

Economy



Economy vehicles typically are small, low priced cars with less powerful engines. Price in the early periods is under \$20,000. Engine horsepower is likely to be under 150. Most economy vehicles will have a hatchback and sedan model option, and some may also offer a small wagon. An economy car can usually seat 4 adults, though probably not comfortably. A child may be able squeeze in the middle of the back seat in a pinch. Legroom and storage space are minimal. In StratSim, this corresponds to a size of approximately 1–30.

Features on an economy car are also likely to be basic in order to keep the costs down. Some consumers are willing to pay more for these features, but one should be careful not to provide too many, driving up costs and eroding profitability. It is difficult to make significant money in the economy segment, though production volumes are significant. Also, for many consumers, an economy vehicle is their first car purchase, and therefore is an important part of your vehicle line-up.

Examples of economy vehicles are the Honda Civic, Nissan Sentra, Hyundai Elantra, Kia Forte, Volkswagen Golf, Toyota Corolla, Toyota Yaris, Fiat Panda, Peugeot 208, and Renault Clio.

Family

Family vehicles are mid-sized, medium priced cars with mid-range engines. Price in the early periods is between \$15,000–\$38,000. Engine horsepower is likely to be 120–200. Most family vehicles will have several different model offerings, and most will have four doors. A family car can usually seat 5 adults, though those in the back seat may be a bit cramped. Legroom and storage space are reasonable. In StratSim, this corresponds to a size of approximately 30–65.



Features on a family car are likely to focus on safety and flexible storage. Customers who are in search of a family vehicle want a reliable, safe means of transportation for their families at a reasonable cost. This vehicle is likely to be their primary mode of transportation and should hold up well under the normal wear and tear of everyday family life. Volumes for this class are significant, so it is important to create a vehicle with wide appeal. Price and promotional deals have a significant impact on buyers of these vehicles.

Examples of family vehicles are the Toyota Camry, Honda Accord, Nissan Altima, Nissan Sylphy, Skoda Octavia, and Volkswagen Lávda.

Luxury



Luxury vehicles are high priced cars with top of the line features and performance. Price is typically in excess of \$35,000. Engine horsepower is likely to be over 150. Luxury vehicles come in a wide array of models including sedans, coupes, and even wagons. A luxury car can usually seat 5 adults comfortably. Legroom and storage space are ample. In StratSim, this corresponds to a size of approximately 45–70.

Features on a luxury car are normally numerous. Interior, styling, safety, and quality are all likely to be quite high. Customers who are in search of a luxury vehicle want the best and are willing to pay for it. Though volumes in this class are less, per vehicle profit margins are high. These vehicles are also often the "flagship" brand for the company and help create showroom traffic.

Examples of luxury vehicles include various vehicles manufactured by Lexus, BMW, Porsche, Acura, Mercedes-Benz, and Audi.

Sports

Sports vehicles emphasize performance and come in a range of prices and sizes. Typically they appeal to the young and the young at heart. An economy sports car might be priced as low as \$14,000, whereas a high-end sports car may well be in excess of \$35,000. Engine horsepower is likely to be over 150. Sports cars normally are coupes or hatchbacks. Some sports cars have only two front seats while others may have small back seats for additional cramped seating. Legroom in the front is reasonable, but there is typically little storage space. In StratSim, this corresponds to a size of approximately 15–60.



Features on sports cars usually are related to styling and performance. Customers who are in search of a sports car want to be noticed and are willing to spend a good chunk of their disposable income to that end. Though volumes in this class are less, per vehicle profit margins are pretty good. These vehicles are also often high awareness brands for the company and help create showroom traffic.

Examples of sports cars are the Ford Mustang, Dodge Challenger, Chevy Camaro, Chevy Corvette, Hyundai Veloster, and Porsche 911.

Alternative Energy Vehicle (AEV)



Alternative Energy Vehicles (AEVs) have more to do with the technology used to power the vehicle than the style and size of the vehicle. AEVs encompass a wide range of technologies that might be used to power the vehicle including electricity only (rechargeable batteries), fuel cell, hydrogen, solar, or some combination of these. Though the technology is more expensive and somewhat untested, it does lead to significantly improved energy efficiency and lower pollution. Power and/or range still remain a challenge. Expected prices are from \$20,000 and up. Engine horsepower is likely to be 70–150, and size in StratSim ranges from 0–50 depending upon the application.

Examples of AEVs are the Tesla 3, Tesla Y, Wuling HongGuang Mini EV, Chevy Bolt, Nissan Leaf, Renault Zoe, and Hyundai Kona.

Minivan

Minivans are family oriented vehicles that have lots of passenger and storage room, but drive more like a car than a truck. These are perfect for families who need more space than a family vehicle can offer. Price is typically between \$18,000–\$35,000. Engine horsepower is likely to be 120–240. Most minivans will have several different model offerings, which mainly vary seating capacity and cargo area. A minivan can usually seat 7 adults, possibly more depending on the seating configuration. Legroom and storage space are excellent. In StratSim, this corresponds to a size of approximately 50–100.



Like family vehicles, features on a minivan are likely to focus on safety and flexible storage. Customers who are in search of a family vehicle want a reliable, safe means of transportation for their families at a reasonable cost. This vehicle is likely to be their primary mode of transportation and should hold up well under the normal wear and tear of everyday family life. Price and promotional deals have a significant impact on buyers of these vehicles.

Examples of minivans include the Dodge Grand Caravan, Chrysler Pacifica, Honda Odyssey, Toyota Sienna, and Wuling Hongguang.

Utility

Combine the attributes of a truck, minivan, and sports car, and you get a utility vehicle. Utility vehicles offer a little bit of fun and utility for those who need more passenger room than a truck, but don't want to have the minivan "family" image. Price starts at around \$17,000 for small utility vehicles, but fully loaded large ones will sell for over \$40,000. Engine horsepower is likely to exceed 150. Legroom and storage space are excellent on larger models, which can also seat 5 adults. In StratSim, sizes of utility vehicles range from 30–90.



Features on utility vehicles usually are related to styling and performance. Many of the high-end models come with leather seats and other amenities normally found in luxury cars. Most customers prefer the 4-wheel drive models.

Examples of utility vehicles include the Toyota RAV4, Honda CR-V, Nissan Rogue, Ford Explorer, Ford Escape, Jeep Cherokee, Jeep Wrangler, Chevy Equinox, Subaru Forester, Subaru Outback, Peugeot 2008, and Haval H6.

Truck

At one time, trucks were reserved for farmers and handymen, but no more. Truck sales have taken off in recent years thanks to their broadening appeal as an alternative to sports cars and a great second vehicle. Truck prices start at around \$12,000 for small ones, but fully loaded larger trucks will sell for \$25,000 or more. Engine horsepower also has a wide range depending on the size of the truck. Leg and headroom is ample, and most trucks seat 2 or 3, though some new models are adding back seats. In StratSim, sizes of trucks correspond to a range of approximately 30–90.



Features on trucks usually relate to styling and performance. Four-wheel drive models are very popular as well. Truck buyers are quite brand-loyal.

Examples of trucks include the Ford F-Series, Chevy Silverado, Ram Pickup, and Toyota Tacoma.

Delivery (Business-to-Business Model Only)



Delivery vehicles are covered trucks specially designed for national delivery companies that provide coast-to-coast pickup and delivery of packages, such as UPS and FedEx. They typically focus on providing ample space for storage and enough horsepower and torque to power a full load of shipments. Delivery prices start at around \$20,000 for smaller vehicles, but ones with more capacity and features will sell for \$40,000 or more. Engine horsepower also has a wide range depending on the size of the delivery vehicle. In StratSim, sizes of delivery vehicles correspond to a range of approximately 60–100.

Examples of delivery vehicles include the Ford Transit 350, Mercedes Sprinter, and custom platforms.