

# Global Supply Chain Management Simulation

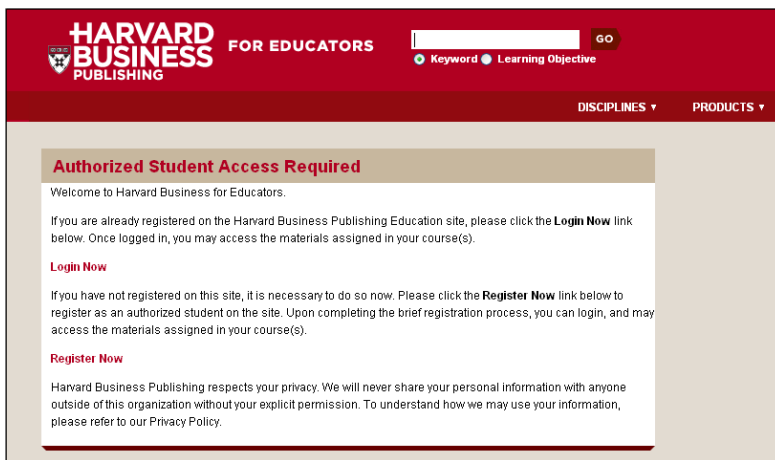
## Simulation Manual

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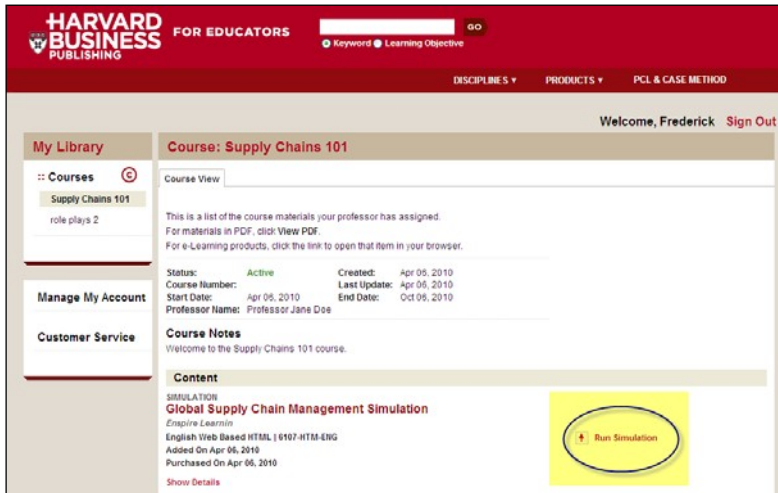
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### 1) Log-in Instructions

You should have received a course URL from either your Professor or directly from Harvard Business Publishing. Clicking on that URL will bring you to the login page for the Harvard Business Publishing website. If you already have a login, click Login Now to use it to enter the course. If you do not have a login, please click Register Now and complete the brief registration.



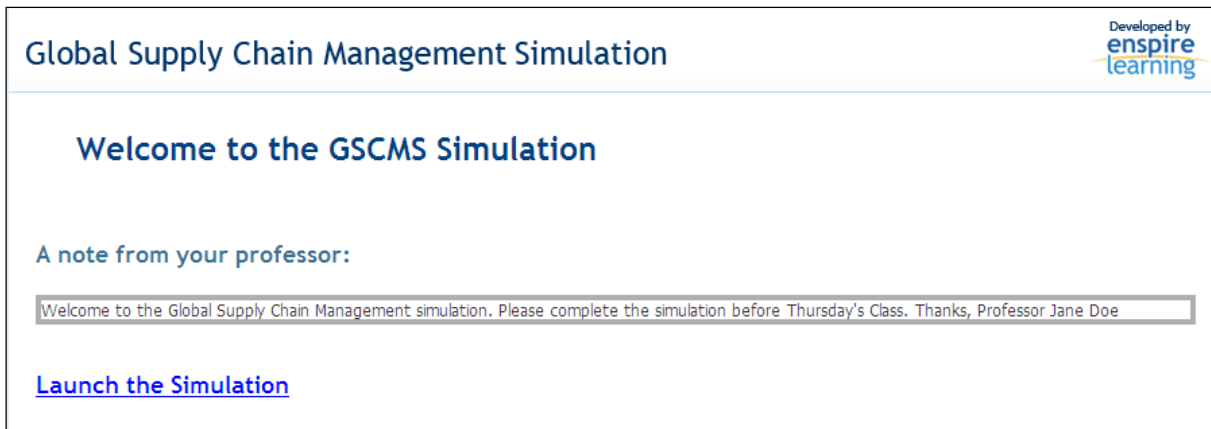
Once you have logged in, you will be presented with the course page. You'll see the Global Supply Chain Simulation listed in the Content area. Click "Run Simulation" to launch the simulation.



## 2) Preparing to Play

Once you launch the simulation you will be taken to the “Prepare” screen. Here you will either see a link to “Launch the Simulation” or a note that your Professor has not yet opened the simulation for use. You may also see a short note written by your Professor.

Additionally, you can download this Simulation Manual from the Prepare screen and you can also watch a short overview movie about the simulation.



Once you have launched the simulation you will be presented with the main simulation interface.

### 3) *How to Play The Global Supply Chain Management Simulation*

## *Challenge*

When companies provide extensive product options, it makes predicting and fulfilling customer demand highly complex.

This simulation illustrates how a few key decisions can improve the ability of a company to accurately predict and fulfill demand.

You have just been hired as the Supply Chain Manager responsible for production of two new lines of mobile phones. You will be able to make key decisions and see the impact of your decisions on the performance of your company over the span of 4 years.

## *Your Objectives*

- You are in charge of releasing two models of mobile phones:
  - Model A, a base model
  - Model B, a high-end model
- Decide which features to include and with whom to outsource the work.

## *Important Info:*

- Sales season is May through December—there is no demand before May or after December
- Demand is anticipated to be consistent over these months

You will be judged on the following criteria:

Gross Margin

Gross Margin %

Number of Votes of Confidence by Board Members

## **Introduction**

Each year you will go through four rooms: the design room, the forecasting room, the production room, and the board room. Since the period for the simulation is four years, you will visit each room four times.

At the beginning of the game, you will be asked to enter a team name that will be used to identify your group during the discussion at the end of this game.

As you play the exercise, we strongly recommend that you take notes on why you made certain decisions and what results you would expect. This will allow you to respond to questions the board members may ask about your choices.

## Design Room

### Estimated Model Demand

*Without Options, Monthly Units in thousands*

	Andrei	Aya	Lorenzo	Claire	Byron	Ruth	Consensus
Model A	63	54	64	59	64	56	63
Model B	36	18	38	28	38	22	33

### Estimated Monthly Impact of Selected options on Demand

*in thousands, impact the same for both models*

### Estimated Impact of Selected Options on Per-Unit Profit

*in US dollars*

	Price	Cost	Profit
Base Model A	\$200	\$130	\$70
Model A w/ options	\$200	\$130	\$70
Base Model B	\$240	\$150	\$90
Model B w/ options	\$240	\$150	\$90
Impact per Unit	\$0	\$0	\$0

### Estimated Demand Forecast

*with and without options, in thousands a month*

Show Model A
Show Model B

### Product Options

- Upgraded Communication  
View Discussion ▼
- Exterior Material  
View Discussion ▼
- Stylish  
View Discussion ▼
- Storage Capacity  
View Discussion ▼

*\*Please write a short statement about the strategy you employed in this room:*

At the beginning of each year, you will enter the design room. While the main design for each model has been completed, you have the duty each year to select among four options and determine the final configuration of the two models.

- Click on “Team” to get an audio-visual introduction to four of the six members of your forecasting team.
- Click on “Choose Options” to proceed into the design room.

Add up to four options to the base model. Pay attention to the estimated change in demand created by each option, its impact on profit per unit and other variables.

Each year, two of the four options remain the same from the previous year while two options are different.

- To choose an option, click on the check box next to the option. After choosing

an option(s), you will notice that the demand and profit per unit data changes. It is advisable to view the forecasters' opinions on each option, to do so click "View Discussion" directly underneath each option.

There are four sets of data that you should pay attention to. The first set, located at the top, is the "Estimated Model Demand Without Options." The numbers in this set do not change when you select options; however, the estimates do change from one year to the next.

The second set of data, located at the middle, is the "Estimated Impact of Selected Options on Demand." You are able to view estimates on the impact of the option on actual demand (not demand impact) in graphical form for both models.

The third set of data, located at the bottom, is the "Estimated Impact of Selected Options on Per-unit Profit." In black numbers, to the left, you see the price, cost, and profit for the base models. In the center column you see the profit impact per unit in red numbers, which change based on the options you select. To the right you see the price, cost, and profit for the models with the options you select.

The fourth set of data is the "Estimated Demand Forecast" with and without the options selected.

- To see the graph of demand estimates for Model A, for instance, click on "View Graph for Model A." To discard the graph, click on "Hide."

Once you have made your product option selections, press the Submit button in upper right to submit and verify.

## Forecasting Room

Congratulations, the design options for the two mobile phone lines have been specified. You will now have to predict the total demand for each product line.

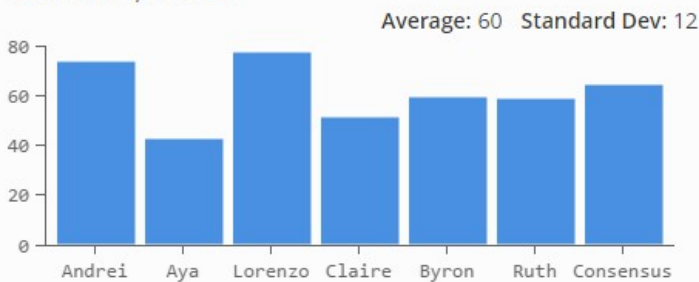
Your forecasting team members have come up with a consensus for what they believe demand will be for the mobile phone lines.

However, the board of your company is interested in your personal estimates as well.

The numbers you will forecast after entering the forecasting room will not affect your production schedule, but they will help you later as you determine where and how to source your products.

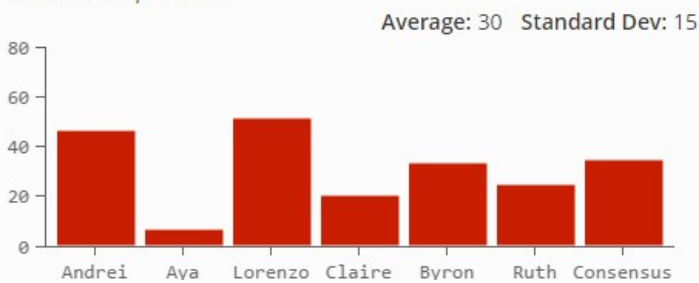
### Model A: Monthly Estimated Demand May–December

*in thousands per month*



### Model B: Monthly Estimated Demand May–December

*in thousands per month*



### Unit Data with Options as Chosen

*costs are an estimate from the lowest-cost contract manufacturer*

	Model A	Model B
Unit Price	\$230.00	\$270.00
Unit Cost	\$160.00	\$180.00
<b>Unit Profit</b>	<b>\$70.00</b>	<b>\$90.00</b>

Markdown Price*	\$144.00	\$54.00
Monthly Holding Cost	\$4.60	\$5.40

*\*at the end of the year, all models left in stock will be sold to a consolidator at this price*

### Enter Your Demand Estimates

This is your forecast for what monthly demand will be each month from May through December. There is no demand expected from January through April.

Model A  k/month

Model B  k/month

*\*Please write a short statement about the strategy you employed in this room:*

Next, you will enter the forecasting room, where you will make a prediction of what you think demand for the two cell phone lines will be for the year.

On the right of the forecasting room, you see unit price, cost, profit, markdown and holding costs for each model. In the middle are your forecasters' individual estimates of monthly demand, as well as the consensus, mean, and standard deviation for each model. You have all the information you need to make the best prediction of demand.

- Click into the box for Model A, and enter in the numerical value for your demand estimate for Model A. Repeat the process for Model B. Then click on "Submit" to proceed to the production room.
- \*Remember, demand is spread out evenly across all months from May to December.



## Production Room

*Yearly Planning*

**Actual Demand | Projections**  
*in thousands per month*

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>Model A</b>												
Product Receipt	0	0	0	0	0	0	0	0	0	0	0	0
Actual / Est. Demand	0	0	0	0	36	36	36	36	36	36	36	36
Actual / Est. Inventory	0	0	0	0	-36	-36	-36	-36	-36	-36	-36	-36
<b>Model B</b>												
Product Receipt	0	0	0	0	0	0	0	0	0	0	0	0
Actual / Est. Demand	0	0	0	0	36	36	36	36	36	36	36	36
Actual / Est. Inventory	0	0	0	0	-36	-36	-36	-36	-36	-36	-36	-36

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**Suppliers**

SUPPLIER	UNITS / MONTH	BEGIN PRODUCTION	UNIT COST	LEAD TIME	CAPACITY	SETUP COSTS
<input type="checkbox"/> FarFarAway	A <input type="text"/> k B <input type="text"/> k	Select A Month ▼	A \$160 B \$180	4 mo	60k	\$1m
<input type="checkbox"/> FarAway	A <input type="text"/> k B <input type="text"/> k	Select A Month ▼	A \$160 B \$180	3 mo	60k	\$2m
<input type="checkbox"/> PrettyClose	A <input type="text"/> k B <input type="text"/> k	Select A Month ▼	A \$170 B \$190	0 mo	35k	\$1m
<input type="checkbox"/> VeryClose	A <input type="text"/> k B <input type="text"/> k	Select A Month ▼	A \$170 B \$190	0 mo	40k	\$2m

Next, you will enter the production room. Of the four rooms of the simulation, this one is most important.

- Click on “Talk to Procurement” to view an audio-visual presentation by your procurement manager, Casey. He will give you important information on unit production costs, lead-time, setup costs, and production capacity for

each of four suppliers, as well as advice on how to determine the best combination of suppliers.

- Click on “Choose Suppliers” to proceed.

You see your potential suppliers organized into four rows; the rows are subdivided into 12 months. To the right of each supplier row is information on lead-time, capacity, setup costs, and unit production costs. First, you decide what suppliers you want to use. You can spread your production over any combination of four suppliers.

- Click on the check box next to the supplier’s name. Once chosen, you will need to supply additional parameters to the procurement department. Enter in the numerical value of how many Model A units you want produced through that supplier / month in the ‘A’. Repeat the same process for Model B. Pay attention to the capacity.

Second, you decide in what month to start production.

- Click on the month you want to start production. Keep in mind that the demand for your products does not start until May. Pay attention to the lead-time.
- Repeat the process if you want to add more suppliers. Once you have determined the right combination of suppliers, click on “Advance One Month” at the very bottom of the room. Your procurement officer will make a final check with you.

After choosing suppliers you will advance month by month and observe the accuracy of your forecasts. You will be able to change your production schedule, but this will require a significant payment to your suppliers.

- Click on “Advance One Month” to proceed to the next month.

As you progress in the production room month-by-month, you notice demand changes. Pop-up windows appear as you continue to click “Advance One Month” to present you with an opportunity to hold a tradeshow conference and with news headlines indicating the direction demand will take for the following months.

- To close an event pop up window, continue to click “Next” until the window disappears.

You can respond to changes in demand and inventory by changing the production orders with your suppliers. To do so, click on the “Issue Change Order” button at the bottom of the production room. Note: every change will create an additional cost.

- In December, click on “Advance One Month” to proceed to the board room.

## Board Room

### Board Review

Your company's board will now discuss your performance. Each board member has a particular area of interest and will give you some advice in that area.

It pays to listen to your board members, as they will give valuable advice and look for improvements each year.



Good evening, my name is Mia, Chair of the Board. The purpose of this meeting is to review your performance.

Mia

Next >



Mia  
*Chair Of The Board*



Carla



Ankit



Matheo



Adele

At the end of each year, you enter the boardroom. But first review your financial performance / results. Then, see how well your strategic choices have played out over the year based on Board Member feedback. Board votes are not added until you walk through the boardroom and hear what each member has to say.

- Click on “Enter Board Room” to proceed to the audio-visual presentation by the board members.

There are five members of the board, and each member evaluates your work based on some aspect of your performance. Some members ask you questions, and each board member decides whether to give you a vote of confidence for your performance. Only your initial answer to a board member’s question will be recorded in the results shown to your instructor.

- After having gone through the boardroom presentation, click on “Continue” at the bottom of the middle panel to proceed to Year 2, where you start again in the design room. For direction in the design room, refer to the information under the design room heading near the top of this document.

You are manager for a span of four years. At the end of the fourth year, the board gives you a final vote, based on what you have learned during the four years.