



Week 13:

MIS 3537: Internet and Supply Chains

Global Supply Chain Simulation

End of Class Schedule

- Today:
 - *Extra Credit Assignment Due*
 - *Global Supply Chain Simulation:*
 - *Introduction*
 - *Year One (I)*
- May 1
 - *Global Supply Chain Simulation Due*
 - **Guest Lecture: Ray Adams from SAP Americas**
 - **Student Feedback Forms (time to complete in class)**
 - **Global SC Simulation Debrief**

End of Class Schedule

- May 8: Exam 2
 - Similar in format to Exam I
 - Via Blackboard - In Class
 - Various Question formats
 - Some Questions relate to mini-case (available prior)
 - Focus on content since Exam I
 - Not Open Book – 6 pages of notes allowed (whatever format)

Global SC Sim: Learning Objectives

- Real World (*uncertain*) like simulation of Supply Chain Decisions
- Evaluate forecasting methods and interpret dynamics of a forecasting team
- Learn trade-offs of Supply Chain flexibility, cost, benefits and profitability
- Evaluate and learn from process performance measures

Grading

- Thoughtful Decision Making
- Integration of Lessons Learned from the Course
- Continual learning, Improvement over 4 year span of the simulation
- Long Term Results (Profitability)

Other

- Two (2) or Three (3) Person teams – One (1) grade
- Submission: *Deadline: Thursday May 1 5:30 pm*
 - Global SC Sim Student Record Sheet
 - Global SC Sim Table
- Goal: complete year One (1) in class Today
- Complete following years in class today or before Next Thursday
- Help:
 - e-Mail me anytime (609.206.9783)
 - Office Hours Monday 2 – 4 (e-Mail me for location)

A decorative graphic on the left side of the slide, consisting of overlapping circles and a blue dot on a textured background.

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





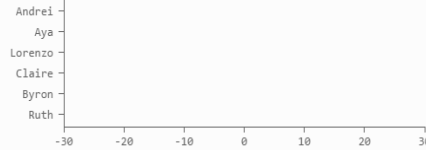
Estimated Model Demand

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

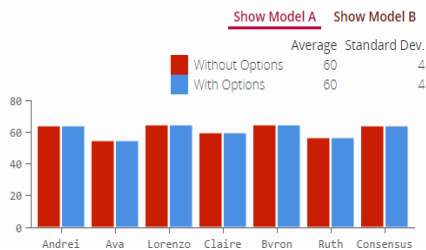
in US dollars

	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

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

Estimated Demand Forecast

with and without options, in thousands a month



Product Options

Upgraded Communication

View Discussion

Exterior Material

View Discussion

Stylish

View Discussion

Storage Capacity

View Discussion

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

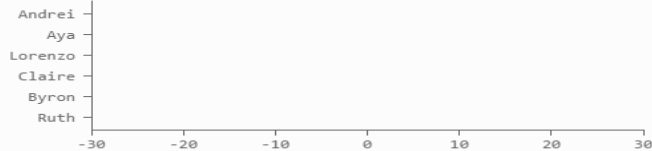
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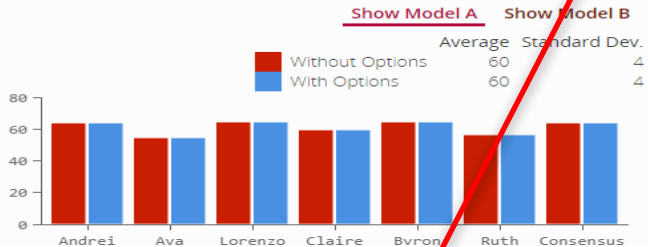
Product Options

- 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:

Estimated Demand Forecast

with and without options, in thousands a month



Design Room

Record Sheet, Year 1

As you make each decision, jot down a brief record of your reasons for the choices you made each year.

Please submit this record sheet to your instructor after completing the simulation. Thanks!

Design Room: Which options did you choose this year?

Option	Chosen?	Rationale for Selection
1. WAP	Y / N	Blah, Blah
2. Color	Y / N	Yucky Blah, Blah
3. Stylish	Y / N	~
4. Infrared	Y / N	Answer

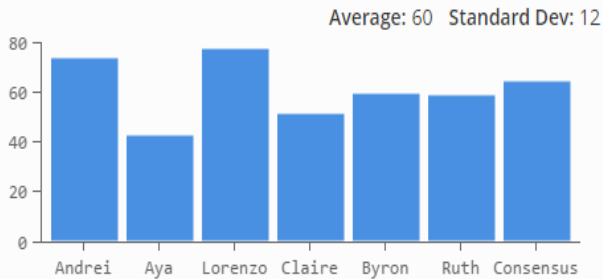
Congratulations, the design options for the two mobile phone lines have been specified. You will now have to predict the total demand for each product line.

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

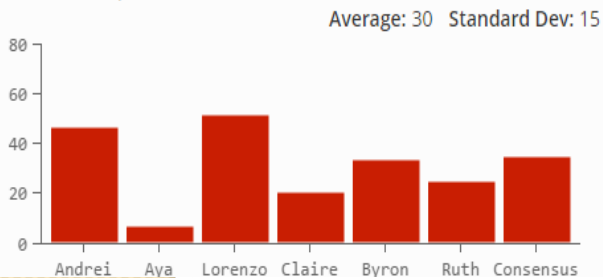
However, the board of your company is interested in your personal estimates as well.

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
Unit Profit	\$70.00	\$90.00

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:*



Forecasting Room

Predict the demand of the two phone models for each year

***Remember, demand is spread out evenly across all months from May to December.**

Forecasting Room

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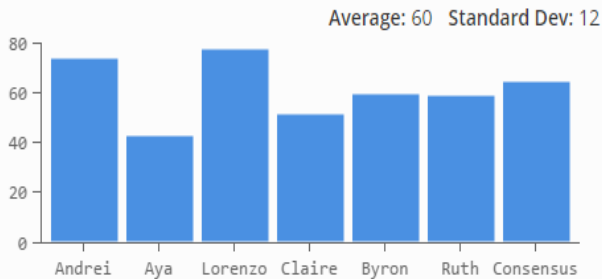
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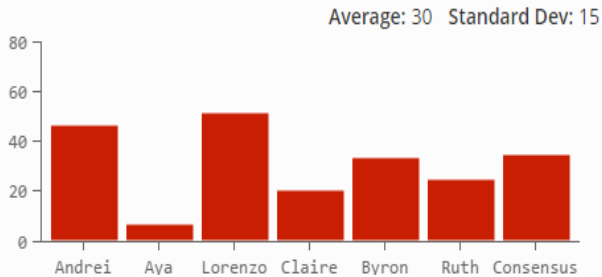
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Model A k/month

Model B k/month

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

Forecast Room: What was your forecast for each model, and how did you derive that forecast?

Model	Est.	Rationale for Forecast
Model A		Guess Blah, Blah
Model B		Guess B, Blah, Blah

Yearly Planning

Actual Demand | Projections

in thousands per month

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Model A												
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
Model 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

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																																							
PRODUCTION HISTORY <i>in thousands per month</i>																																													
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A	0	0	0	0	0	0	0	0	0	0	0	0																																	
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<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																																							
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A	0	0	0	0	0	0	0	0	0	0	0	0																																	
B	0	0	0	0	0	0	0	0	0	0	0	0																																	
<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																																							
PRODUCTION HISTORY <i>in thousands per month</i>																																													
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A	0	0	0	0	0	0	0	0	0	0	0	0																																	
B	0	0	0	0	0	0	0	0	0	0	0	0																																	

Production Room

- 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 as the months progress, but this will require a significant payment to your suppliers

Yearly Planning

Actual Demand | Projections
in thousands per month

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Model A												
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
Model 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

Production Room

Suppliers

SUPPLIER UNITS / MONTH BEGIN PRODUCTION

FarFarAway A k B k Select A Month

PRODUCTION HISTORY in thousands per month

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
A	0	0	0	0	0	0	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0	0	0	0	0

A \$160 B \$180 4 mo 60k

SUPPLIER UNITS / MONTH BEGIN PRODUCTION

FarAway A k B k Select A Month

PRODUCTION HISTORY in thousands per month

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
A	0	0	0	0	0	0	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0	0	0	0	0

A \$160 B \$180 3 mo 60k

SUPPLIER UNITS / MONTH BEGIN PRODUCTION

PrettyClose A k B k Select A Month

PRODUCTION HISTORY in thousands per month

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
A	0	0	0	0	0	0	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0	0	0	0	0

A \$170 B \$190 0 mo 35k

SUPPLIER UNITS / MONTH BEGIN PRODUCTION

VeryClose A k B k Select A Month

PRODUCTION HISTORY in thousands per month

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
A	0	0	0	0	0	0	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0	0	0	0	0

A \$170 B \$190 0 mo 40k \$2m

How did you allocate production for the two models between your suppliers, and when did you issue a production change order this year? If so, why? If not, why not?

Supplier	Model A Production	Model B Production	Month Production Started	Changes
1. FarFarAway	40	20	January	Blah, Blah
2. FarAway				
3. PrettyClose	20	10	May	Blah, Blah
4. VeryClose				

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

Board Room

- Review your financial performance
- See how well your strategic choices have played out over the year based on Board Member feedback.

Board Review

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Mia
Chair Of The Board



Carla



Ankit



Matheo



Adele

Board Review

Board Room Results: Did you receive a vote from the board member? What was your annual net profit?

Annual Net Profit:	\$ 34,100
--------------------	-----------

Board Member	Vote?	Comments?
Betty	Y / N	Wrong Reasons??
Doug	Y / N	Forecasting difference???
Meryl	Y / N	Production Planning???
Paul	Y / N	Production Allocation???
Yvonne	Y / N	Overproduce???

Other comments:

Financial Results

☰ Introduction

YEAR 3

✎ Design Room

📊 Forecasting Room

🏭 Production Room

👤 Boardroom

★ Scorecard

Year 1

Profit: \$1,560,000

Votes:

Year 2

Profit: \$20,899,200

Votes: ★★★★★

Year 3

Profit: \$4,462,360

Votes: ★★

📅 Decision History

📄 Board Room Results: Did you receive a vote from the board member? What was your annual net profit?

Annual Net Profit: \$ 34,100

Board Member	Vote?	Comments?
Betty	Y / N	Wrong Reasons??
Doug	Y / N	Forecasting difference???
Meryl	Y / N	Production Planning???
Paul	Y / N	Production Allocation???
Yvonne	Y / N	Overproduce???

Other comments:

Continue On

☰ Introduction

YEAR 3

✎ Design Room

📊 Forecasting Room

🏭 Production Room

👤 Boardroom

★ Scorecard

Year 1

Profit: \$1,560,000

Votes:

Year 2

Profit: \$20,899,200

Votes: ★★★★★

Year 3

Profit: \$4,462,360

Votes: ★★

📅 Decision History

- When the board meeting ends, return to the Design Room to start the next year
- You will repeat the cycle of design, forecasting, production, and board evaluation for four years
- Remember that you can track your progress using the scorecard on the left-hand side of the screen
- You can refer to previous decisions you made by clicking on the Decision History section.

- Questions!