Global Supply Chain Management Simulation

Sohini Chintala (34124841)

	Year 1	Year 2	Year 3	Year 4
Design Room Options	Stylish	Stylish	Audio Quality	Audio Quality
Forecasting Room Estimates	Storage Capacity			
Model A	58k	54k	69k	62k
Model B	28k	30k	22k	29k
Profit	46,673,500	41,003,180	46,677,500	48,293,880
			A A A	
Votes	***	***	***	XXXX

Suppliers were chosen based on the cost the firm incurs. Also, the capacity and lead time were taken into consideration while choosing the suppliers.

Flexibility was an important consideration while creating the supply chain. Also, the demand for both the models were increasing and decreasing irrespective of the forecasting demand, hence, there was a lot of inventory as well as underproduction in several months. However, a production plan was built based on probabilistic demand forecast, weighing the relative importance of process performance measures.

With more than one product models, it makes predicting and fulfilling demand highly complex.

Problems Faced:

- Mounting inventories
- Stockouts due to increased demand of hot selling items
- Frequent markdowns
- Sudden increase or decrease in demand.

Solutions:

- Predicting demand more accurately
- Using production capacities and selecting suppliers wisely
- Forecasting demand as per the past year demand
- Also, stockout, holding, and markdown costs need to be checked.

Year 1:

Design Room Options:

- Stylish (Profitable, and low difference)
- Storage Capacity (Profitable, and low difference)

Forecasting Room Estimates:

Model A: 58k (Selected the estimate with mean and variance of the forecast)

Model B: 28k (Selected the estimate with mean and variance of the forecast)

Production Room:

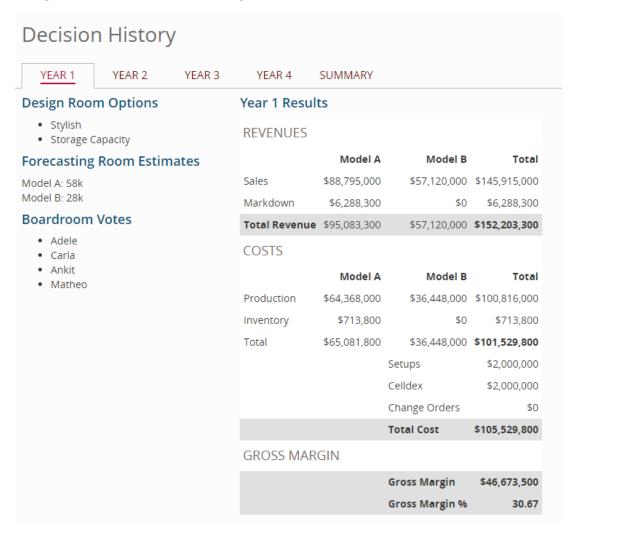
	Model A	Model B	Production Month Started
FarFarAway	48	10	January
FarAway			
PrettyClose	10	18	May
VeryClose			

There should have been a production change based on Celldex market research forecast but I didn't change the order of model A or B as the change in order is costing around 2,000,000.

Boardroom Votes: (Four Stars)

Adele, Carla, Ankit, Matheo - (Agreed with reasoning in feature selection and production numbers)

Mia did not agree with choice of suppliers and production capacity. She felt I could have included a change in the order for model A owing to the demand forecast.



Year 2:

Design Room Options:

• Stylish (Profitable, high margin, and low difference in opinion)

Forecasting Room Estimates:

Model A: 54k (Selected the estimate with first year data to forecast)

Model B: 30k (Selected the estimate with first year data to forecast)

Production Room:

	Model A	Model B	Production Month Started
FarFarAway	44	12	January
FarAway			
PrettyClose	10	18	May
VeryClose			

Did not consider Celldex forecast.

Boardroom Votes: (Four Stars)

Adele, Carla, Ankit, Matheo - (Agreed with reasoning in feature selection, production levels, and supplier selection)

Mia was unhappy with sourcing and production strategy.

YEAR 1 YEAR 2 YEAR	AR 3	YEAR 4	SUMMARY		
Design Room Options	,	Year 2 Resul	ts		
Stylish Forecasting Room Estimates		REVENUES			
Model A: 54k			Model A	Model B	Tota
Model B: 30k		Sales	\$91,584,000	\$46,116,000	\$137,700,000
Boardroom Votes		Markdown	\$0	\$2,616,300	\$2,616,300
• Adele		Total Revenue	\$91,584,000	\$48,732,300	\$140,316,300
Carla Ankit		COSTS			
• Matheo			Model A	Model B	Tota
		Production	\$58,256,000	\$38,160,000	\$96,416,000
		Inventory	\$0	\$897,120	\$897,120
		Total	\$58,256,000	\$39,057,120	\$97,313,120
				Setups	\$2,000,000
				Celldex	\$(
				Change Orders	\$(
				Total Cost	\$99,313,120
		GROSS MAR	GIN		
				Gross Margin	\$41,003,180
				Gross Margin %	29.22

Year 3:

Design Room Options:

• Audio Quality (Profitable and low difference in opinion)

Forecasting Room Estimates:

Model A: 69k (Selected the estimate with second year data to forecast)

Model B: 22k (Selected the estimate with second year data to forecast)

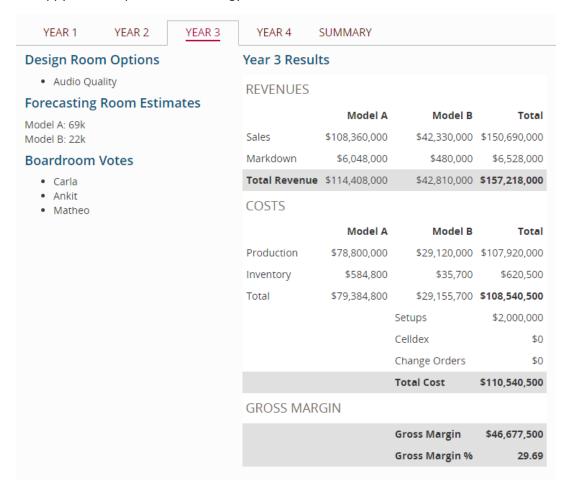
Production Room:

	Model A	Model B	Production Month Started
FarFarAway	50	10	January
FarAway			
PrettyClose	19	12	May
VeryClose			

Boardroom Votes: (Three Stars)

Carla, Ankit, Matheo - (Agreed with reasoning in feature selection and production numbers)

Adele did not agree with production levels (Overproduction and underproduction), and Mia was unhappy with the production strategy.



Year 4:

Design Room Options:

• Audio Quality (Profitable and low difference in opinion)

Forecasting Room Estimates:

Model A: 62k (Selected the estimate with third year data to forecast)

Model B: 29k (Selected the estimate with third year data to forecast)

Production Room:

	Model A	Model B	Production Month Started
FarFarAway	50	10	January
FarAway			
PrettyClose	12	19	May
VeryClose			

Boardroom Votes: (Four Stars)

Adele, Carla, Ankit, Matheo - (Agreed with reasoning in feature selection, production levels, and supplier selection)

Mia did not agree with sourcing and production strategy.

YEAR 1 YEAR 2 YEAR 3	YEAR 4	SUMMARY		
sign Room Options	Year 4 Resul	ts		
Audio Quality	REVENUES			
ecasting Room Estimates		Model A	Model B	Total
el B: 29k	Sales	\$92,008,000	\$58,464,000	\$150,472,000
ardroom Votes	Markdown	\$7,644,600	\$0	\$7,644,600
Adele	Total Revenue	\$99,652,600	\$58,464,000	\$158,116,600
CarlaAnkitMatheo	COSTS			
		Model A	Model B	Total
	Production	\$68,912,000	\$37,944,000	\$106,856,000
	Inventory	\$966,720	\$0	\$966,720
	Total	\$69,878,720	\$37,944,000	\$107,822,720
			Setups	\$2,000,000
			Celldex	\$0
			Change Orders	\$0
			Total Cost	\$109,822,720
	GROSS MAR	GIN		
			Gross Margin	\$48,293,880
			Gross Margin %	30.54

Summary by Year

Year 1			
	Model A	Model B	Total
Revenue	\$95,083,300	\$57,120,000	\$152,203,300
Costs	\$65,081,800	\$36,448,000	\$101,529,800
Administrative Costs			\$4,000,000
		Gross Margin	\$46,673,500
		Gross Margin %	30.67
Year 2			
	Model A	Model B	Total
Revenue	\$91,584,000	\$48,732,300	\$140,316,300
Costs	\$58,256,000	\$39,057,120	\$97,313,120
Administrative Costs			\$2,000,000
		Gross Margin	\$41,003,180
		Gross Margin %	29.22
Year 3			
	Model A	Model B	Total
Revenue	\$114,408,000	\$42,810,000	\$157,218,000
Costs	\$79,384,800	\$29,155,700	\$108,540,500
Administrative Costs			\$2,000,000
		Gross Margin	\$46,677,500
		Gross Margin %	29.69
Year 4			
	Model A	Model B	Total
Revenue	\$99,652,600	\$58,464,000	\$158,116,600
Costs	\$69,878,720	\$37,944,000	\$107,822,720
Administrative Costs			\$2,000,000
		Gross Margin	\$48,293,880
		Gross Margin %	30.54

CUMULATIVE TOTALS	5		
	Model A	Model B	Total
Revenue	\$400,727,900	\$207,126,300	\$607,854,200
Costs	\$272,601,320	\$142,604,820	\$415,206,140
Administrative Costs			\$10,000,000
		Gross Margin	\$182,648,060
		Gross Margin %	30.05