"Comprehensive Financial Model" - E-commerce Startup

1) Key Assumptions:

Parameter	Year 1	Year 2	Year 3	Year 4	Year 5	Notes
Unit Price (B2C)	50	50	55	60	65	Price per unit for B2C
Monthly Growth Rate	0.05	0.05	0.08	0.1	0.12	Expected monthly growth
Churn Rate	0.02	0.02	0.03	0.04	0.05	Customer churn per month
Marketing Spend	8000	15000	17000	20000	25000	Monthly marketing budget
Initial Customers	1000	1030	1092	1201	1297	Starting customer base
Conversion Rate	0.03	0.03	0.05	0.07	0.1	% of visitors converting
COGS per Unit	20	20	22	25	28	Cost of goods sold per unit
Shipping	5	6	7	8	8	Transportation Cost
Salaries	15000	20000	20000	20000	25000	Monthly payroll
Rent	2000	2200	2400	2600	2800	Monthly bills
Utilities	500	510	520	540	550	Monthly bills
Loan Amount	50000	77833	55852	33725	11449	Initial loan
Interest Rate	0.08	0.08	0.08	0.08	0.08	Annual interest rate
CAC	8	14.6	15.6	16.7	19.3	Customer Acquisition Cost
LTV	600	600	412.5	360	325	Lifetime Value
Contribution Margin	0.60	0.60	0.60	0.58	0.56923	Gross margin per unit
Interest Expense (Annual)	4000	6226.67	4468.18	2697.97	915.95	Annual interest cost
Next Month Customers	1030	1061	1147	1273	1388	Growth applied
No of Units sold /Year	***12360***	***12731***	***13759***	***15277***	***16653***	

2) Scenarios:

Scenario Name	Monthly Growth Rate	Churn Rate	Marketing Spend	Conversion Rate	COGS per Unit	Salaries	Notes
Base Case	5%	2%	$10,000	3%	$20	$15,000	Most likely/expected scenario
Best Case	8%	1%	$15,000	4%	$18	$16,000	Aggressive growth, lower churn
Worst Case	2%	4%	$7,000	2%	$22	$14,000	Conservative, higher churn/costs

3) B2C Revenue Projections:

Year	Units Sold	Price	Revenue
Year 1	12360	50	6,18,000
Year 2	12731	50	6,36,540

Year 3	13759	55	7,56,756
Year 4	15277	60	9,16,603
Year 5	16653	65	10,82,476

4) **COGS:**

Item	Year 1	Year 2	Year 3	Year 4	Year5
Cost per Unit	20	20	22	25	28
Shipping Cost	5	6	7	8	8
Total Cost	25	26	29	33	36
Units Sold	12360	12731	13759	15277	16653
Total COGS	3,09,000	3,31,001	3,99,017	5,04,132	5,99,525

5) **Operating Expenses:**

Expense	Year 1	Year 2	Year 3	Year 4	Year 5
Rent	24,000	26,400	28,800	31,200	33,600
Salaries	1,80,000	2,40,000	2,40,000	2,40,000	3,00,000
Utilities	6,000	6,120	6,240	6,480	6,600
Total	2,10,000	2,72,520	2,75,040	2,77,680	3,40,200

6) **Debt Schedule:**

Period	Loan Name	Opening Balance	Draws	Repayments	Interest Rate	Interest Expense	Closing Balance
Year 1	Bank Loan	50,000	50,000	22,500	0	333	77,833
Year 2	Bank Loan	77,833	-	22,500	0	519	55,852
Year 3	Bank Loan	55,852	-	22,500	0	372	33,725
Year 4	Bank Loan	33,725	-	22,500	0	225	11,449
Year 5	Bank Loan	11,449	-	11,449	0	76	77

7) Income Statement:

Year	Revenue	COGS	Gross Profit	Operating Expenses	Net Income
Year 1	6,18,000	3,09,000	3,09,000	2,10,000	99,000
Year 2	6,36,540	3,31,001	3,05,539	2,72,520	33,019
Year 3	7,56,756	3,99,017	3,57,739	2,75,040	82,699
Year 4	9,16,603	5,04,132	4,12,471	2,77,680	1,34,791
Year 5	10,82,476	5,99,525	4,82,951	3,40,200	1,42,751

8) Balance Sheet:

	Assets					Liabilities				Equity		
Year	Cash	Accounts Receivable	Inventory	Others Assets	Total	Debt	Accounts Payable	Others	Total	Common Stocks	Retained Earnings	Total
Year 1	1,26,500	-	-	-	1,26,500	77,833	-	-	77,833		99,000	99,000
Year 2	10,519	-	-	-	10,519	55,852	-	-	55,852		1,32,019	1,32,019
Year 3	60,199	-	-	-	60,199	33,725	-	-	33,725		2,14,718	2,14,718
Year 4	1,12,291	-	-	-	1,12,291	11,449	-	-	11,449		3,49,510	3,49,510
Year 5	1,31,302	-	-	-	1,31,302	77	-	-	77		4,92,261	4,92,261

9) Cash Flow Statement:

Year	Operating Cash Flow	Investing Cash Flow	Financing Cash Flow	Net Cash Flow
Year 1	99,000	-	27,500	1,26,500
Year 2	33,019	-	- 22,500	10,519
Year 3	82,699	-	- 22,500	60,199
Year 4	1,34,791	-	- 22,500	1,12,291
Year 5	1,42,751	-	- 11,449	1,31,302

10) Unit Economics:

Metric	Year 1	Year 2	Year 3	Year 4	Year 5
CAC	8	14.6	15.6	16.7	19.3
LTV	600	600	412.5	360	325
Gross Margin	0.60	0.60	0.60	0.58	0.57

11) Sensitivity Analysis:

Variable	Year 1	Year 2	Year 3	Year 4	Year 5
Unit Price	50.00	50.00	55.00	60.00	65.00
Monthly Growth Rate	0.05	0.05	0.08	0.10	0.12
Churn Rate	0.02	0.02	0.03	0.04	0.05
COGS per Unit	20.00	20.00	22.00	25.00	28.00
Monthly Customers	1,000	1,030	1,092	1,201	1,297
Conversion Rate	0.03	0.03	0.05	0.07	0.10
Market Spend	8,000	15,000	17,000	20,000	25,000
Out Put					
Net Income	99,000	33,019	82,699	1,34,791	1,42,751
Cash Balance	1,26,500	10,519	60,199	1,12,291	1,31,302
Runway months	0.31	0.03	0.12	0.18	0.18
LTV	600	600	413	360	325

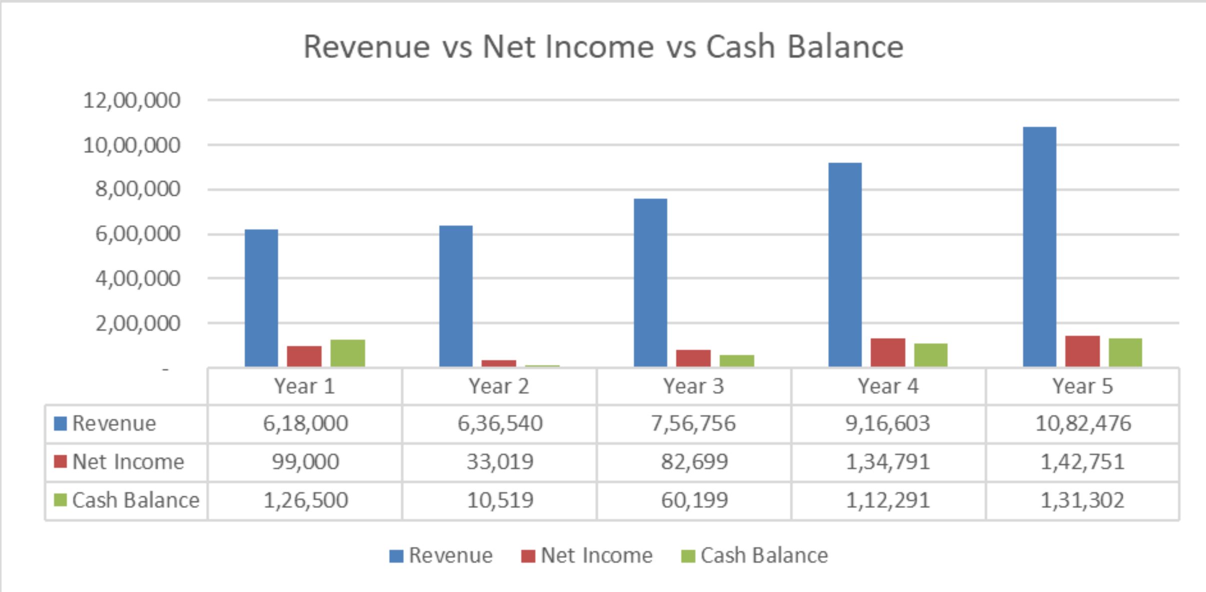
12) Cash Burn and Runway:

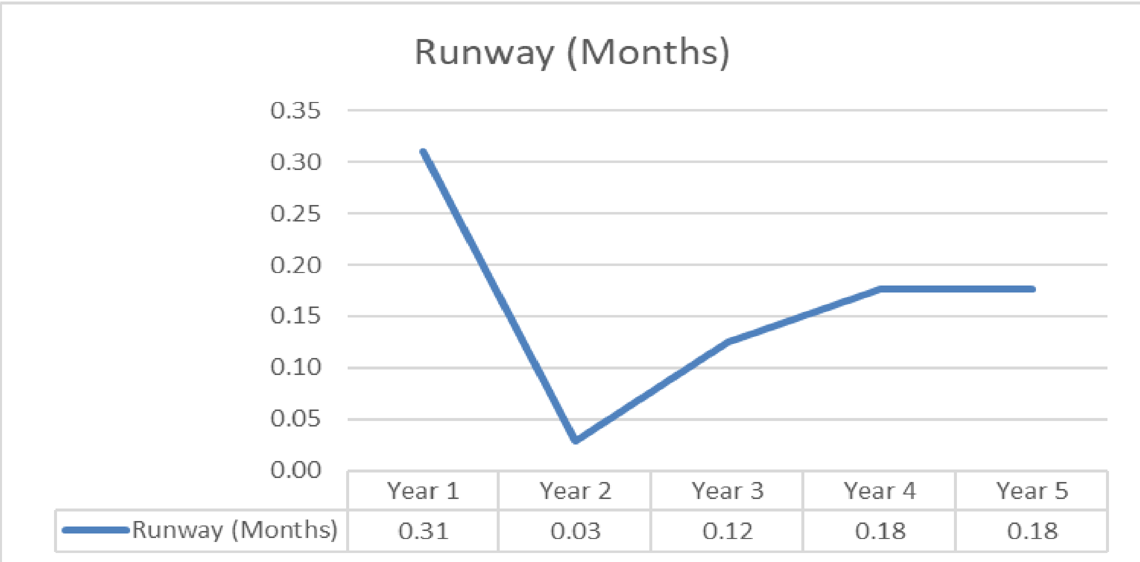
Metric	Year 1	Year 2	Year 3	Year 4	Year 5
Net Cash Balance	1,26,500	10,519	60,199	1,12,291	1,31,302
Net Burn Rate	4,08,000	3,64,020	4,81,716	6,38,923	7,42,276
Runway (Months)	0.31	0.03	0.12	0.18	0.18

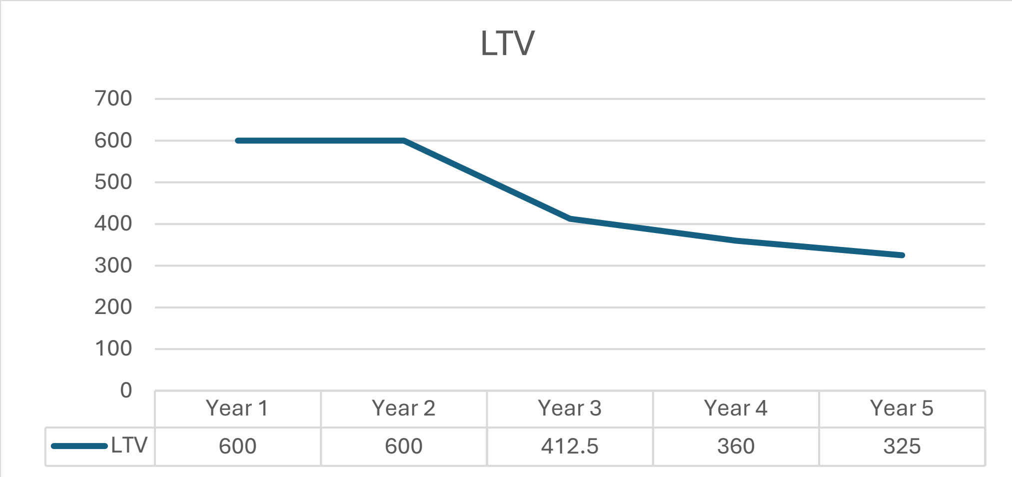
13) Interactive Dashboard:

	Year 1	Year 2	Year 3	Year 4	Year 5
Revenue	6,18,000	6,36,540	7,56,756	9,16,603	10,82,476
Net Income	99,000	33,019	82,699	1,34,791	1,42,751
Cash Balance	1,26,500	10,519	60,199	1,12,291	1,31,302
Runway (Months)	0.31	0.03	0.12	0.18	0.18
LTV	600	600	412.5	360	325
CAC	8	14.6	15.6	16.7	19.3

Units Sold	12,360	12,731	13,759	15,277	16,653



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700
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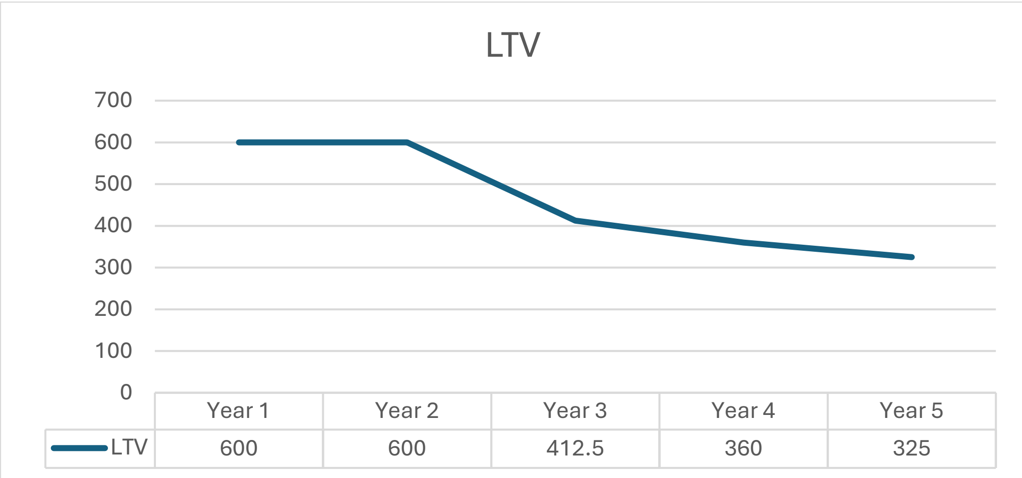
300
200
100
0
Year 1 Year 2 Year 3 Year 4 Year 5
LTV 600 600 412.5 360 325


LTV
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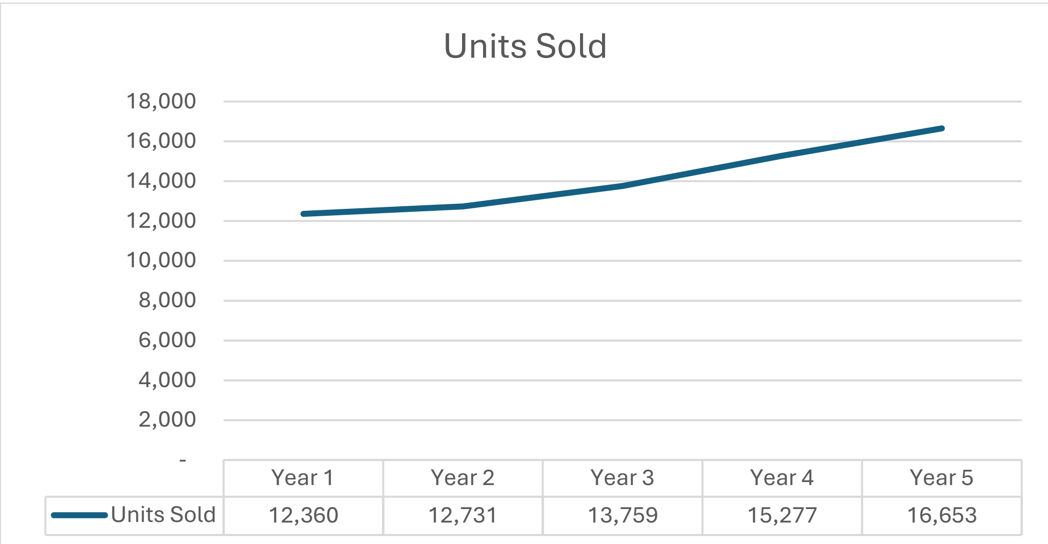
Year 1 Year 2 Year 3 Year 4 Year 5
LTV 600 600 412.5 360 325


Units Sold
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
Year 1 Year 2 Year 3 Year 4 Year 5
Units Sold 12,360 12,731 13,759 15,277 16,653

Developing a "Financial Model" based on given Synergies:

Rough Notes from Mr. Joe Convo

Target revenue synergies:

Roughly 5-10% target revenue

Target cost synergies (child)

Back office—op model cost synergies 10-25% target cost

Increased supplier negotiating power (via volume discount):

-Fuel cost is 5-8% of the target cost.

-Maintenance 10-12% target cost.

-Software/licenses: 10-20% target cost.

-Aircraft lease: 6-8% target cost.

Client data (target):

Revenue FY21	***$100m***
Aircraft lease	***$20m***
Fuel	***$25m***
Maintenance	***$10m***
Software	***$5m***
G&A (back office)	***$10m***
Other cost	***$25m***
EBIT	***$5m***

Developing a "Financial Model" based on given Synergies:

Airline synergy analysis
15 June 2022

Key	
	Assumptions
	Calculations

Output: Synergies	Source	Conservative ($)	Midpoint ($)	Aggressive ($M)
Revenue	*Calculation*	$5.0	$7.5	$10.0
Cost: Back office	*Calculation*	$1.0	$1.8	$2.5
Cost: Fuel discount	*Calculation*	$1.3	$1.6	$2.0
Cost: Maintenance	*Calculation*	$1.0	$1.1	$1.2
Cost: Software/Licenses	*Calculation*	$0.5	$0.8	$1.0
Cost: Aircraft lease	*Calculation*	$1.2	$1.4	$1.6
Cost: Other	*Calculation*	$0.0	$0.0	$0.0
Total synergies	***Calculation***	**$10.0**	**$14.1**	**$18.3**
EBIT post synergies	***Calculation***	**$15.0**	**$19.1**	**$23.3**

Input: Assumptions	Source	Conservative (%)	Midpoint (%)	Aggressive (%)
Revenue synergy (%)	*Joe*	5.0%	7.5%	10.0%
Cost synergy: Back office	*Joe*	10.0%	17.5%	25.0%
Cost synergy: Fuel discount	*Joe*	5.0%	6.5%	8.0%
Cost synergy: Maintenance	*Joe*	10.0%	11.0%	12.0%
Cost synergy: Software/License	*Joe*	10.0%	15.0%	20.0%
Cost synergy: Aircraft lease	*Joe*	6.0%	7.0%	8.0%
Cost synergy: Other	*NA*	0.0%	0.0%	0.0%

Input: Client data	Source	Value (FY21, $M
Revenue	*Client*	$100
Cost: Aircraft lease	*Client*	$20
Cost: Fuel	*Client*	$25
Cost: Maintenance	*Client*	$10
Cost: Software	*Client*	$3
Cost: Licenses	*Client*	$2
Cost: G&A (back office	*Client*	$10
Cost: Other	*Client*	$25
EBIT	***Client***	**$5**

SMALL BUSINESS CASH FLOW PROJECTION

Innovative Speakers

Starting date			1	2	3	4	5	6	7	8	9	10		
Cashflow minimum	$583.60		$ 842	$ (233)	$ 922	$ 715	$ 245	$ 932	$ 626	$ 503	$ 567	$ 267		
Margin	16.64%	0.014779472	22%	18%	21%	21%	18%	20%	19%	21%	18%	21%		
End period cash balance	$8,740.50		$ 13,233	$ 9,986	$ 12,103	$ 12,664	$ 9,635	$ 11,736	$ 10,943	$ 12,535	$ 10,199	$ 12,469		
Return rate	10%													
Annual sales growth rate	20%													
Unit price	$89													
Advertising budget	$2,000.00	$2,000.00	$2,000.00	$2,000.00	$2,000.00	$2,000.00	$2,000.00	$2,000.00	$2,000.00	$2,000.00	$2,000.00	$2,000.00	$2,000.00	

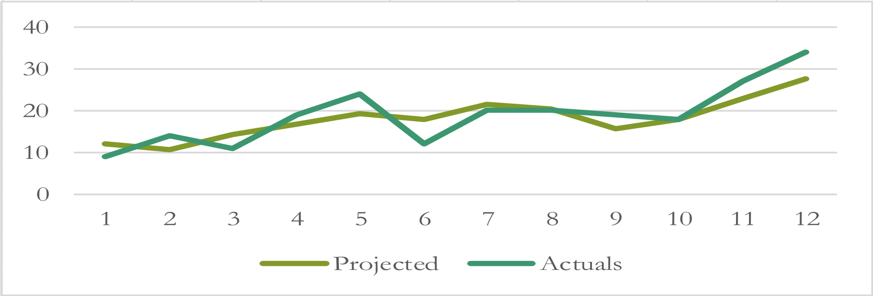
SALES FORECAST		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Prior year speaker sales		60	56	60	52	38	53	47	57	47	54	43	41	
Projected sales		59	51	66	53	59	61	55	52	44	44	50	58	

CASHFLOW PROJECTION	Beginning	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Cash on hand (beginning of month)	50	50	584	1,144	2,639	3,324	4,382	5,566	6,375	6,998	7,122	7,246	7,744	
Cash on hand (end of month)	50	584	1,144	2,639	3,324	4,382	5,566	6,375	6,998	7,122	7,246	7,744	8,741	
CASH RECEIPTS														
Cash sales		5,251	4,539	5,874	4,717	5,251	5,429	4,895	4,628	3,916	3,916	4,450	5,162	58,028
Returns and allowances		525	0	0	0	0	0	0	0	0	0	0	0	525
TOTAL CASH RECEIPTS		4,726	4,539	5,874	4,717	5,251	5,429	4,895	4,628	3,916	3,916	4,450	5,162	58,553
Total cash available	50	4,776	5,123	7,018	7,356	8,575	9,811	10,461	11,003	10,914	11,038	11,696	12,906	
CASH PAID OUT														
Advertising		2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	24,000
Contract labor		600	600	600	600	600	600	600	600	600	600	600	600	7,200
Materials and supplies (in COGS)		1,575	1,362	1,762	1,415	1,575	1,629	1,469	1,388	1,175	1,175	1,335	1,549	17,408
SUBTOTAL		4,197	3,984	4,384	4,037	4,197	4,251	4,091	4,010	3,797	3,797	3,957	4,171	48,872
TOTAL CASH PAID OUT		4,192	3,979	4,379	4,032	4,192	4,246	4,086	4,005	3,792	3,792	3,952	4,166	48,812
Cash on hand (end of month)	50	584	1,144	2,639	3,324	4,382	5,566	6,375	6,998	7,122	7,246	7,744	8,741	

SMALL BUSINESS CASH FLOW PROJECTION - MONTHLY FORECAST

Innovative Speakers

Starting date	
Cashflow minimum	($164.97)
Margin	15.22%
End period cash balance	$2,959.77



Return rate	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Sales growth rate prior year	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Unit price	$89	$89	$89	$89	$89	$89	$89	$89	$89	$89	$89	$89	$89
Advertising budget	$200.00	$200	$200	$200	$200	$200	$200	$200	$200	$400	$400	$400	$400

SALES FORECAST		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Prior year speaker sales		10	9	12	14	16	15	18	17	13	15	19	23
Projected sales		12	11	14	17	19	18	22	20	16	18	23	28
Actual sales		9	14	11	19	24	12	20	20	19	18	27	34
Cumulative prior years sales		10	19	31	45	61	76	94	111	124	139	158	181
Cumulative projected sales		12	23	37	54	73	91	113	133	149	167	190	217
Cumulative actual sales		9	23	34	53	77	89	109	129	148	166	193	227

CASHFLOW PROJECTION	Beginning	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Cash on hand (beginning of month)	50	50	-20	-165	-86	143	521	824	1,351	1,804	1,758	1,861	2,261	
Cash on hand (end of month)	50	-20	-165	-86	143	521	824	1,351	1,804	1,758	1,861	2,261	2,960	
CASH RECEIPTS														
Cash sales		1,068	961	1,282	1,495	1,709	1,602	1,922	1,816	1,388	1,602	2,029	2,456	19,331
Returns and allowances		1	1	1	1	1	1	1	1	1	1	3	4	18
TOTAL CASH RECEIPTS		1,067	961	1,281	1,494	1,708	1,601	1,921	1,814	1,387	1,601	2,026	2,452	19,349
Total cash available	50	1,117	940	1,116	1,408	1,850	2,122	2,745	3,166	3,192	3,359	3,887	4,714	
CASH PAID OUT														
Advertising		200	200	200	200	200	200	200	200	400	400	400	400	3,200
Contract labor		600	600	600	600	600	600	600	600	600	600	600	600	7,200
Materials and supplies (in COGS)		320	288	384	449	513	481	577	545	417	481	609	737	5,799
SUBTOTAL		1,142	1,110	1,206	1,271	1,335	1,303	1,399	1,367	1,439	1,503	1,631	1,759	16,463
TOTAL CASH PAID OUT		1,137	1,105	1,201	1,266	1,330	1,298	1,394	1,362	1,434	1,498	1,626	1,754	16,403
Cash on hand (end of month)	50	-20	-165	-86	143	521	824	1,351	1,804	1,758	1,861	2,261	2,960	

Epsilon Delta Capital
Modeling Risk and Realities

Product Group	Govt Bonds	Muni. Bonds	Corp. Bonds	Consumer Loans	Total Expected Return (in $ millions)
Expected Return, %	1.5	3.0	4.5	8.0	6.23
Quality Score	5.0	3.0	2.0	1.0	

Minimum Quality Score	2.50
Minimum Investment Amount ($ millions)	20.00
Maximum Investment Fraction	0.50
Minimum Fraction of Government Bonds	0.25

					Total Invested		
Investment Amount ($ millions)	31.88	20.00	20.00	53.13	125.00	=	125.00
Investment Fractions, %	0.26	0.16	0.16	0.43			

Risk Score Requirement	2.50	=>	2.50
Fraction Allocated to Government Bonds	0.44	=>	0.25

Hudson Readers.xlsx
Modeling Risk and Realities

Net Sales Increase (in $ per $ spent on advertising)

Product/Market	India	China
Standard	0.05	0.04
Enhanced	0.02	0.03

Total Net Sales Increase (in $ millions)

7.38

Spending Amounts (in $ millions)

Product/Market	India	China
Standard	67.66	17.97
Enhanced	0.00	109.38

Constraints

Total Spending Budget	195.00	<=	195.00
Sales Increase in India	3.38	=>	3.00
Sales Increase in China	4.00	=>	4.00
Sales Increase for Enhanced Version	3.28	=>	3.28

Two Stocks_Solved.xlsx

Modeling Risk and Realities

Scenario	Return on Stock A	Return on Stock B	Probability	Squared Deviations A	Squared Deviations B	Product of RA and RB	Portfolio Profit ($)	SD of Port. Profit
1	-0.00024	0.0482	0.05	0.0000137731	0.0022310592	-0.0000117815	1186.62	814526.50
2	0.01760	-0.0047	0.05	0.0001998587	0.0000318647	-0.0000824002	1203.27	844861.03
3	-0.02114	0.0003	0.05	0.0006056745	0.0000003845	-0.0000072740	-1577.18	3464385.19
4	-0.01178	0.0022	0.05	0.0002325261	0.0000015362	-0.0000259623	-828.56	1238043.84
5	-0.01515	0.0022	0.05	0.0003466407	0.0000015012	-0.0000331716	-1081.63	1865248.59
6	-0.00353	-0.0115	0.05	0.0000489674	0.0001559713	0.0000406927	-552.94	700646.68
7	-0.01772	0.0462	0.05	0.0004487537	0.0020453696	-0.0008183473	-174.03	209893.68
8	-0.02345	0.0191	0.05	0.0007243817	0.0003273600	-0.0004468447	-1282.14	2453133.21
9	0.03562	-0.0168	0.05	0.0010338333	0.0003169133	-0.0005997692	2250.55	3866903.50
10	0.03108	0.0251	0.05	0.0007626450	0.0005848239	0.0007816463	2959.89	7159800.82
11	0.01557	0.0278	0.05	0.0001464176	0.0007227699	0.0004335196	1863.74	2495240.18
12	0.00073	0.0067	0.05	0.0000074903	0.0000325633	0.0000048690	221.51	3919.11
13	-0.02188	0.0274	0.05	0.0006425522	0.0006987427	-0.0005995151	-956.19	1538350.00
14	0.02063	0.0176	0.05	0.0002946233	0.0002782728	0.0003640530	1988.49	2904919.43
15	0.03044	-0.0122	0.05	0.0007277304	0.0001720851	-0.0003700080	1979.39	2873984.30
16	0.01276	-0.0277	0.05	0.0000864187	0.0008239807	-0.0003540563	263.70	416.74
17	0.01214	-0.0634	0.05	0.0000751443	0.0041484683	-0.0007699217	-675.96	921737.31
18	0.00138	0.0100	0.05	0.0000043403	0.0000811555	0.0000137967	353.08	4756.32
19	-0.00507	-0.0379	0.05	0.0000728018	0.0015097084	0.0001919409	-1327.19	2596300.47
20	0.01134	-0.0393	0.05	0.0000619872	0.0016219018	-0.0004457599	-132.22	173331.97

Expected R	0.0034668	0.0009641
Variance R	0.000326828	0.000789322
St. Dev. R	0.018078	0.028095

Expected Portfolio Prof	284.11		
Variance of Port. Profit	1806519.94		
St. Dev. Of Port. Profit (	1344.07	<=	1500

Expected Product of RA and RB	-0.0001367147
Correlation between RA and RB	-0.2757516325

Invested in Stock A ($)	Invested in Stock B ($)	Total Investment		
75000.00	25000.00	100000.00	=	100000.00