

Table 1. Inputs for the High-Level Analysis for Brand X

High Level Analyzer

Description	Baseline: Brand X (25s CT)		
Assembly Equipment(SP:350K, PP:1500K, RO:180K, T:900K, BH:170K)	\$1,700,000.00		
Floor Space and Utilities (sq m) - Cost (per sq m/month)	3682.4	\$0.83	
Components (per unit)	\$75.00		
Stencil - squeegee - lifetime (cost each, uses)	\$600.00	\$200.00	1000000
Solder Paste (\$/g) - number of grams	\$0.1000	5	
PCB (\$ per unit)	\$15.00		
Workers (number, rate per hour)	7	\$28.00	
Selling Price (\$) - Gross Margin (%) (enter '0' for item not used)	\$110.00	0	
Hours per shift - Shifts per day - Days per week	10	2	6
Cycle time (seconds)	25		
Downtime (%) - Setup (hours per week) - Maintenance (hours per week)	8	10	12.5
Workers Supported (number, rate per hour)	26	\$42.00	
I/O	950		
Yield first pass (%) - Yield first pass ppm/I/O (N if not used) - Percent Reworkable	97	N	100
Unit RW Materials Cost - Minutes/RW - RW Labor (\$/hr)	\$0.50	20	\$30.00
Years Equipment Depreciation - Interest Rate (%)	5	9	
Length of Simulation (weeks) - Number of Boards (enter '0' for item not used)	52	0	

Table 2. Output Costs for Brand X

Cost	\$ Per Board	%	Total \$
Components	\$ 75.00	72.194	\$ 49,362,750.00
Labor	\$ 12.21	11.755	\$ 8,037,120.00
PCB	\$ 15.00	14.439	\$ 9,872,550.00
Consumables	\$ 0.50	0.482	\$ 329,611.54
Machine Cost	\$ 0.80	0.769	\$ 525,475.61
Rework	\$ 0.32	0.303	\$ 207,323.55
Floorspace, Utilities	\$ 0.06	0.058	\$ 39,842.25
Total	\$ 103.89	100.000	\$ 68,334,830.70

Selling Price (\$)	\$ 110.00
Gross Profit (\$)	\$ 4,024,027.05

Table 3. Inputs for Brand Y

High Level Analyzer

Description	Case 1: MPM (+\$30K, -2s CT)		
Assembly Equipment(SP:350K, PP:1500K, RO:180K, T:900K, BH:170K)	\$1,730,000.00		
Floor Space and Utilities (sq m) - Cost (per sq m/month)	3682.4	\$0.83	
Components (per unit)	\$75.00		
Stencil - squeegee - lifetime (cost each, uses)	\$600.00	\$200.00	1000000
Solder Paste (\$/g) - number of grams	\$0.1000	5	
PCB (\$ per unit)	\$15.00		
Workers (number, rate per hour)	7	\$28.00	
Selling Price (\$) - Gross Margin (%) (enter '0' for item not used)	\$110.00	0	
Hours per shift - Shifts per day - Days per week	10	2	6
Cycle time (seconds)	23		
Downtime (%) - Setup (hours per week) - Maintenance (hours per week)	8	10	12.5
Workers Supported (number, rate per hour)	26	\$42.00	
I/O	950		
Yield first pass (%) - Yield first pass ppm/I/O (N if not used) - Percent Reworkable	97	N	100
Unit RW Materials Cost - Minutes/RW - RW Labor (\$/hr)	\$0.50	20	\$30.00
Years Equipment Depreciation - Interest Rate (%)	5	9	
Length of Simulation (weeks) - Number of Boards (enter '0' for item not used)	52	0	

Table 4. Case 1 Run Comparison

Simple Run Comparison	Unit Cost	Unit Profit	# Units	Time (wks)	Total Profit	Δ to Baseline
Baseline: Brand X (25s CT)	\$103.89	\$6.11	658170	52	\$4,024,027.05	
Case 1: MPM (+\$30K, -2s CT)	\$102.85	\$7.15	715402	52	\$5,112,704.17	\$1,088,677.12

Table 5. Case 2 Run Comparison

Simple Run Comparison	Unit Cost	Unit Profit	# Units	Time (wks)	Total Profit	Δ to Baseline
Baseline: Brand X (12.5 hrs MT)	\$103.89	\$6.11	658170	52	\$4,024,027.05	
Case 2: Evert (+\$20K, 10 hrs MT)	\$103.53	\$6.47	676890	52	\$4,376,973.26	\$352,946.21