

enterprise consulting success story

Step Back and Take a 30,000 Foot View

Executive Summary:

- Develop an **immediate and long-term solution** to transition a designer & manufacturer of integrated electronic solutions from a mid-high volume/low-mix **to a low-mid volume/high-mix** environment.
- The net result **saved millions** in labor and overhead expenses while **increasing line capacity and flexibility**.

Engagement Results:

- \$13 million estimated saved over next 3 years
- 63% reduction in changeover time
- 42% reduction in overall average product cycle time (across 72 products)
- 15% reduction in floor space and 25% reduction in SMT utility costs
- 40% reduction in labor requirements (3 lines instead of 5)
- Minimized new capital expenditures (from 2 machines to 1 machine)
- Assets gained: screen printer, reflow oven, set of board handling units

Customer's Initial State:

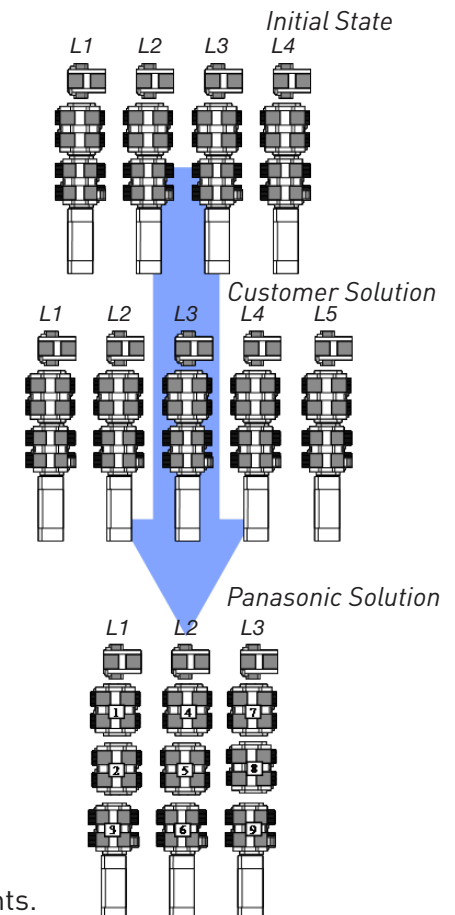
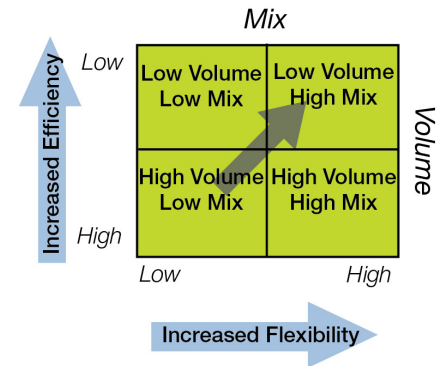
- 4 production lines
 - 3 lines of MSR/MVIIV – MPA(V/G3)
 - 1 line of CM402A / CM401B
- 2 shifts/day, occasional 3rd shift & weekends
- 1-3 major changeovers/day/line with 45 min/changeover
- Average lot size: 100
- 8 hours required per work order to prepare
- High part commonality among products and product families
- 75% - 80% of placements are 8 – 16 mm
- 450 placements required / board
- 20 – 30 different assemblies built each week per line
- 3.5 min/part exhaust — avg 64 exhausts/day on SMT Line 3
- 100 unique parts used on each assembly

Customer's Initial Solution Strategy:

- A 5th line would be required to handle the additional upcoming new products and seasonal demand spike requirements.
- Thought Panasonic equipment wasn't designed for high-mix environments.

Panasonic Solution Details:

Please refer to the next page to further learn how this success story may be similar to your situation and how Panasonic Factory Solutions Company of America's solutions team can help you today.



Panasonic's Solution Proposal Details:

- After an initial on-site factory analysis reviewing the customer's operations, work processes, part commonality, and production schedules, a two phase further analysis proved the feasibility of combining lines and the possibility of reducing production from 4 lines to 3.
- Phase I:
 - Identified the uptime capabilities on the current 4 production lines.
 - SMT 1, 2, & 4 had enough uptime to shift production from SMT 3 to those lines.

LINE	Tot # WO's	Avg WO/Wk	Avg WO/Shift/Day	New Exhaust Time (Hrs/Day)	Difference Hrs/Wk	Uptime Revenue Per Wk Potential	Potential Revenue/Yr
SMT 1	185	31	3	2.57	39	\$ 57,812.50	\$ 2,890,625.00
SMT 2	97	16	2	1.35	20	\$ 30,312.50	\$ 1,515,625.00
SMT 3	63	11	1	0.88	13	\$ 19,687.50	\$ 984,375.00
SMT 4	92	15	2	1.28	19	\$ 28,750.00	\$ 1,437,500.00
TOTAL	437			6	91	\$ 136,562.50	\$ 6,828,125.00

Uptime Total SMT 1, 2, & 4 = 74 Hrs/Wk Enough time to reduce or eliminate SMT 3's two-shift line.

- Phase II:
 - Identified ability to combine SMT 2 & 3 into the SMT 2 line after some movement of products to SMT 1 & 4.

Runtime % Ratio of Hrs Available **Before** Changeover

	March '09	April '09	May '09	June '09	July '09	Aug '09	Sept '09	Oct '09	Nov '09	Dec '09	Jan '10	Feb '10
Current SMT 2 & 3 Setup Demand	189%	207%	141%	106%	116%	91%	107%	116%	143%	160%	159%	164%
CM402AAC w/ Feeder Setup	91%	100%	77%	59%	66%	51%	58%	64%	76%	84%	84%	84%

Runtime % Ratio of Hrs Available **After** Changeover

	April '09	May '09	June '09	July '09	Aug '09	Sept '09	Oct '09	Nov '09	Dec '09	Jan '10	Feb '10	March '10
Current SMT 2 & 3 Setup Demand	278%	291%	224%	183%	202%	155%	191%	195%	233%	250%	237%	245%
CM402AAC w/ Feeder Setup	118%	125%	102%	82%	91%	70%	83%	87%	104%	111%	108%	109%
Year 1	95%	100%	82%	65%	73%	56%	66%	70%	83%	89%	87%	87%
Year 2	80%	83%	73%	62%	54%	47%	62%	54%	76%	85%	81%	87%
Year 3	78%	84%	71%	62%	54%	47%	59%	53%				

- Continuing the occasional 3rd shift or weekend per month, both SMT 2 & 3 products could be built on one line.
- Over the course of the projected 2nd and 3rd yr, there was less requirement of a 3rd shift or weekend.

Summary:

- By changing the lines to three longer lines, the option was available to fit all of the parts onto the machines with one large fixed feeder setup on each.
 - This eliminated much of the indirect labor activities of kitting/prepping/staging, which was very repetitive from day to day, and saved over \$370K/yr.
 - Eliminating the 4th line saved an additional \$370K/yr labor (to operate the line)–not including the additional savings of not adding the 5th line originally assumed needed.
- The net result of the engagement reduced not only the number of assets to purchase from 2 to 1, with the total number of placement machines 9 instead of 10, but also incorporated a fixed feeder setup reducing major changeover activities all together.
- Additional assets gained from the reallocation (screen printers and ovens) were sold to minimize investment expenditures.



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