EMS Company Background and Challenges

A California-based Electronics Manufacturing Services company was dealing with the many challenges faced by all EMS companies:

- How do we reduce cycle time?
- Where can we lower labor costs?
- What can we do to improve yields?
- Which areas do we target for these improvements?

Key Areas to Examine for Improvement

Company analysis showed that the documentation process performed by the senior engineering staff members was consuming upwards of one half of their work week!

These engineers were dealing with the diagrams, drawings, and spreadsheet analysis needed to convey order information to their stencil provider. It was a great deal of documentation for an approved design, to be cut and delivered to them, for a small lot, 1st run.

With this EMS company's business model being a high mix and low volume, it was taking upwards of three revisions of a stencil to produce a satisfactory yield of their customers' boards. All of these issues combined, resulted in:

- Poor profit margin
- Overloading of factory capacity
- Wasting a great deal of Engineering time
- Unanticipated late deliveries to customers.

They knew they could not continue down the same path while still looking to increase profits, get new customers, and keep the good will of their existing customers. ***They made a corporate decision to eliminate the outsourcing of their stencil editing, and take total control of the process to mitigate these issues. More specifically, they decided to find a way to dramatically decrease the time spent on documenting all of the edits required to generate a solder paste stencil, leverage their staff, and drive consistent quality.***

Decision to Use Gen Stencil™ Software

Once they decided to pull the editing process in house, they reviewed all of the available Stencil CAM editing software companies. In every category they tested their requirements against the capabilities of the software, and found Infinite Graphic's Gen Stencil Software was superior to other solutions. Their decision to purchase and implement the Gen Stencil were many:

1. The Gen Stencil core concept of a database library for both components and edit rules.
2. Once a component footprint was "learned" and edit rule assigned a to a component, they were able to import jobs into Gen Stencil and CAD technicians spent just minutes verifying component edits.

3. When a new component was introduced by a customer in a new design, the ease and speed of identification and applying edit rules took just a few minutes.
4. With the hierarchical methodology that Gen Stencil uses they were able to build a library based by: customer, foil thickness, and SMT line processing.
5. They were now in complete control of their processes and have eliminated the bottle neck caused by the back and forth documentation between this EMS and their stencil provider.
6. Since this EMS is now delivering stencil ready data to their stencil manufacturer, they are now reaping the additional benefit of having more shop floor capacity without adding new capital equipment or headcount.
7. They discovered that IGI uses the core engine of Gen Stencil software in their internal Precision Imaging engineering software tools that has produced hundreds of thousands of high quality glass and film masks for their customers around the world.

Excellent Return on Investment

It was vital to have an excellent Return on Investment (ROI). The ROI was calculated over a 5 year period where Cost is the Gen Stencil software license fee and maintenance. Savings were calculated using the cost of scrap, labor rate of the Engineering staff, machine downtime, and the cost of the extra stencils ordered to optimize the current revision of their customer's product. These Savings were estimated flat year over year. But in reality, Savings would likely increase year over year – improving ROI even more.

Purchase	Cost	Savings	ROI	Cumulative ROI
Year 1	**$28,000**	**$51,312.50**	**$23,313**	**$23,313**
Year 2	**$1,500**	**$51,312.50**	**$49,813**	**$73,125**
Year 3	**$1,500**	**$51,312.50**	**$49,813**	**$122,938**
Year 4	**$1,500**	**$51,312.50**	**$49,813**	**$172,750**
Year 5	**$1,500**	**$51,312.50**	**$49,813**	**$222,563**

This EMS was easily able to justify the purchase price of the Gen Stencil software with a breakeven of just 13 months a total ROI of 655% realized over 5 years.

Summary

This case study clearly showed how this EMS company realized significant financial, quality and customer satisfaction benefits by using Gen Stencil Software in their solder paste manufacturing process. Your EMS company can also eliminate issues with stencil documentation and realize the benefits of: accelerating your manufacturing process, increasing yields, adding shop floor capacity, and improving the relationship with your customers. Your customers will reap the benefit of your speed and quality improvements, enjoy consistent on-time delivery, will keep coming back with more orders, and refer you to new customers.