



## Improving Operations Using Systematic Layout Planning

The Los Angeles Chapter March 2014 Meeting

Presentation by

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### There is a Method to the Madness

*Ellison Technologies' Systematic Layout Planning methodology*

I'm sure it's happened to all of us at some point or another. Whether in our own manufacturing or distribution facility and when visiting others, the thought has crossed our mind . . . "There's gotta be a better way."

Marzel Neckien, VP of Operations, and Elias Tahhan, Manufacturing Engineer, from Ellison Technologies, were the guest speakers at March's Los Angeles chapter of the Aerospace and Defense Forum. Their presentation, "Improving Operations Using Systematic Layout Planning," walked attendees through the concepts behind and methodology applied to creating a systematic facilities layout that will provide the quickest material flow at the lowest cost with the least amount of handling.

As Marzel emphasized, the very first step in any facilities layout planning initiative is to align company strategy and vision with the mission of the project. "The layout needs to support the overall business strategy," Marzel accentuated. In a case study shared later in the presentation, Marzel told the group how a goal of one company was to in-source more of their manufacturing. The layout ultimately was designed to accommodate for that expansion.

The journey of any form of lean manufacturing/ process improvement project is one of purpose, not an aimless journey that takes one from start to finish without intention. Marzel and Elias laid out the steps they promote for achieving a successful result:

- **Define the Problem** – Don't visit the doctor without knowing what ails you.
- **Analyze** – Identify what's causing bottlenecks and delays. Understand the inter-departmental relationships so that all constituency needs are considered.

- **Determine Space Requirements** – Consider: How much space will be needed? How much space is available?
- **Consider Alternatives** –Evaluate options. The more alternatives considered, the more likely the result will be optimal. There’s typically not a “one size fits all” solution.
- **Make a Selection** – After considering all options, make a decision.
- **Implement the Design** – Get started. It’s time to make it happen.
- **Reevaluate** – Constantly evaluate. One message that Marzel expressed repeatedly . . . This is a continuous improvement process. What works today may not a year from now.

Before jumping into the specifics of the case study, Marzel and Elias entertained some questions from those assembled.

- **“What is the right time to plan?”** Ideally, it is “when a company first moves into their facility,” responded Marzel. But that is the ideal. Most times, it will be a matter of improving what exists rather than starting from scratch.
- **“Is it best to phase in the changes or accomplish everything at one time?”** The three criteria that contribute to this decision include: available resources, budget and amount of business interruption. For most, it is a phased approach. (Reminds me of the question and answer associated with a former United States Army General. “How do you eat an elephant?” “One step at time.”)
- **“What is a key to success?”** One of the key elements is to ensure that employees are part of the process. Getting staff buy-in . . . from top to bottom . . . is critical to implementing the necessary changes.

Now on to the case study. Ellison Technologies was engaged to conduct a Systematic Layout Planning (SLP) project for a medical device manufacturer that produced over 100 different parts. The goals of the project included their desire to . . .

- Insource more production,
- Minimize set-up time,
- Reduce idle time between activities, and
- Standardize cutting tools.

Elias and Marzel jumped in with both feet. They took a qualitative approach, analyzing every step along the way. They collected data, took pictures and measurements and learned how every process in the plant connected to the others. They connected the dots between primary and secondary operations, understood the flow of work and the transportation efforts required to move materials within the factory.

Armed with all the data they could accumulate, Elias created a proprietary activity relationship chart to put the puzzle pieces together. Relying on this Excel-based chart along with spaghetti diagrams to best understand optimal flow, Ellison ultimately presented to the client a series of alternative approaches to evaluate. One option after another was considered until there was a decision.

The results were eye opening.

- Flow was reduced from 7 days to 1
- Inspection queue time was reduced to zero
- Setups were reduced from 7 to 1
- Setup time dropped from 12 hours to 30 minutes

Based on the results of this one case study, the benefits of this Systematic Layout Planning tool and approach are quite impressive. The process helps improve lean activities, saves time and money, and improves customer satisfaction.

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