

Lean Six Sigma and its relevancy to Architects, Engineers & Clients



Agenda

- Overview – Quick Poll of Audience
- Definitions - Six Sigma, Lean
- What is DMAIC?
- How Lean Fits In
- Applications of LSS
- Components of Six Sigma
- Bottom Line – Q&A

Quick Poll of Audience

Raise your hand if you are aware of Six Sigma

Keep your hand up IF you have been involved in a Kaizen or P2 event.

Can anyone share what you think Six Sigma is and an example of your exposure to it or Lean Design?

Last question, what are some of the reasons you are hear today?
What are some of the objectives you would like to learn?

What is Six Sigma?

- It is the application of a scientific method to the design and operation of management systems and/or business processes that improves customer experience and lowers cost.
- The results of implementation deliver value to customers (through increased efficiencies) and value to those organizations instituting Six Sigma (through increased profits/reduction of costs).
- Implementing Six Sigma in an organization involves rigorous training of professionals who then receive certification for various levels (i.e. yellow belt, greenbelt, blackbelt, master blackbelt).
- Process defects/errors must not exceed 3.4 per every million opportunities. Process improvement is implemented through DMAIC process.

What is Lean?

- The elimination of waste. The lean concept of waste is anything produced by YOUR process that is not actually wanted by the owner/client.
- An example in the world of architecture is working drawings. No client wants working drawings, they want a building. If we can eliminate working drawings and site meetings—all of which the client pays for, but none of which is actually something that's part of the deliverable (a BUILDING).
- It's this way of thinking that makes lean so radical... and radically effective. All kinds of things you consider “necessary”, you instead start seeing as “waste”.
- Another form of waste is “waiting”. And one of the applications of lean to architecture/development is to decrease the very long design and approval cycles between a request or need, and actual delivery. Every month that passes often means more changes, owners lose focus between iterations, key information or insight could be lost, the final result of a “constructed building” is delayed.

Difference between Six Sigma and Lean?

Six Sigma is focused more on data collection and the entire SIPOC & DMAIC method of gathering data and analyzing data in order to IMPROVE and control. Often this process requires Blackbelts and Greenbelts to actualize the results. It works best for larger organizations.

Lean involves collecting and measuring data but the work is not centered on a time-consuming process of gathering and analyzing statistically significant statistics. It's about people. It's about creating a system in which all employees in the organization are empowered to collect and measure data, and to create their own – and not a certified consultant's – improvement ideas. When staff are engaged in the work, they sustain that work and keep improving. They dig deeper, using lean tools each time, to make incremental improvements. The data they collect and measure is meaningful to them and to all of their colleagues involved in the improvement work.

What is DMAIC?

- Define the problem and the current process.
- Measure (inputs and defects)
- Analyze the data.
- Improve the process by implementing change.
- Control the new process

A + B + C = D REPEAT

Use Tools such as Voice of the Customer, SIPOC (Supplier, Input, Process, Output, Customer) and understand CTQ (what is critical to quality).

Application of Six Sigma in our Industry

- If you have processes and you have clients, Six Sigma is relevant! If you have ever had a project that did not finish “on time”? Or you were trying to manage to the budget – Six Sigma is relevant.
- Six Sigma and Lean purpose is to deliver value to our clients by improving processes thereby saving time and “time is money.”
- Have we ever wished that we had better processes in place that were more efficient?
- Have you ever felt that you completed work that was a waste of time? Have you had to redo work?
- Do you feel that you and/or your colleagues could be more efficient? More organized?

THEN SIX SIGMA CAN MAKE A DIFFERENCE!



How does “Lean” fit in?

- Lean principles and Building Information Modeling (BIM) are at the core of an Integrated Project Delivery (IPD) methodology. IPD shares some very consistent methodologies with Six Sigma. In other words, they really work well together.
- By implementing LSS processes in your organization, it is likely that design projects would incur fewer change orders and employees would be more efficient thereby saving time and money.
- Clients are showing an interest in securing architects, engineers and construction partners who are knowledgeable in “Lean and Six Sigma”. In healthcare, Evidence Based design can be a component of an LSS process.
- In August 2016 issue of Health Facilities Management, there was an article about “Designing to influence HCAHPS Scores”, and Kate Renner, AIA, EDAC, LSSCE, Associate Architect of HKS, explains that responses from patients are about matters directly impacted by facility design.

Components of Six Sigma



Remember This

- It's about differentiating your firm! Customers don't seek Commoditization – they seek value! They seek positive experiences! They seek relationships!
- 3.4 DPMO
- DMAIC
- Tools – SIPOC, Histogram, Control Plan, Cost/Benefit Analysis
- 2P Process Planning – 2P events are activities focused on designing, testing and planning the implementation of critical, but typically small-scale processes.
- 3P Product & Process Planning - 3P events cover 2P and considers the design of the product/service itself.
- It's all about the Customer Experience & Cost Savings!

The Bottom Line

In our world, it really comes down to 2 perspectives: DURING DESIGN and DURING and AFTER Construction. All of us CAN be more efficient in our design process and we can definitely save our owners headaches and money by choosing the right equipment – easy to maintain, efficient to run (example: maintenance costs can absolutely be impacted through Six Sigma).

If a process is involved, it can be defined, measured, improved, analyzed and controlled. The “creative” functions are not processes.

**We will never be able to improve what we won't admit
is a process and we cannot improve
WHAT WE FAIL to MEASURE**

