

How to become LEAN

A GUIDE TO GET MORE TIME FOR INNOVATION
AND SECURE BETTER PRODUCT QUALITY.

Time is life's greatest commodity. And typically you never seem to have enough of it. When time is in shortage (or perceived very costly) you tend to spend it on keeping your daily operations running (business as usual), seldom taking the opportunity to change the way you work or move your business forward through innovation.

In this LEAN guide we describe six common challenges many manufacturing companies struggle with and what can be done to beat them. By taking a LEAN approach to your company's business processes, you can ensure continuous innovation, better product development and more efficient production!

1

ENGINEERING DEPARTMENTS USE A LOT OF TIME TO DO MANUAL WORK AND REPETITIVE TASKS.

Implementing a simple design change without the correct support in place can lead you to having to spend hours on updating drawings and documentation, and to perform design checks. This can cause delay to product innovation and development.

Getting the right systems in place allow you to maximise the capacity of your engineering work when you face increasingly complex demands.

Design automation presents an opportunity to increase the resilience of your engineering team by capturing knowledge and experience required for effective succession planning. The product knowledge gained from years of experience cannot easily be passed on to new starters and is often undocumented. By capturing and applying this information in a company's designs, key design decisions can be automated and mistakes reduced.

2

THERE ARE AS MANY WAYS TO WORK AS THERE ARE ENGINEERS.

Usually, if there are two or more designers working in a team, some shared, common rules are needed. This means that the work is standardised and of the same quality, not dependent on one individual doing the design.

By applying what we call Methodology Development you can develop the methods and procedures used in the company, documenting best practices and rules at the same time. Methodology Development aims at standardising how you work, making the work more efficient, with better quality outcome from the process. Additionally, bringing on new people is easier when the company's methods and procedures are clearly documented, as this allows for quicker training of newcomers.

3 DATA IS SCATTERED, OF INCONSISTENT QUALITY AND SELDOM OR NEVER RE-USED.

It is vitally important that you and your company secure the right solutions and processes to support efficient usage and control of data, across engineering and business processes.

The key elements to efficient management of data are:

1. Efficient management of your engineering files and documents.
2. Correct entering of file names and properties (continuous quality of data).
3. Regular back-up's of your company's engineering data.
4. Efficient re-use of data.
 - Minimise the time spent on repetitive tasks such as searching for files.
 - Creating production drawings.
 - Entering properties.
 - Connecting BOM data to ERP.
 - Managing change orders.

By making sure you have the above processes in place, you guarantee that the right data is available, at the right time and for the right people.

4 COSTLY PROTOTYPES ARE USED TO QUALIFY PRODUCT QUALITY.

Did you know that simulation can help you to recreate reality in a virtual environment? This is done by developing a digital prototype in which you can deploy sensors retrospectively and visualise it in a way that everyone understands. The aim is to show, sell and visualise what happens in reality, long before you go into production - in an easy and cost-efficient way.

Using simulation, you can redesign a product so that it doesn't use as much material or doesn't have such a complex structure, thereby lowering the cost of material, manufacturing time, and the overall cost of the product.

At a later stage in the design cycle, you might think that it's too far into the process to make any changes. However, if issues come up with the design, simulation offers a quicker and cheaper way to make changes. It's risk mitigation.

Investing in a simulation solution pays for itself over time by reducing material costs, eliminating the need for costly testing equipment (such as wind tunnels) and limiting the need for physical testing.

5

PRODUCT DATA IS NOT EFFICIENTLY USED AND SHARED THROUGHOUT THE PRODUCT LIFECYCLE.

Many manufacturing companies operates in all phases of the product lifecycle. By getting a solution in place that extends beyond the engineering department you can interconnect and optimize all your business process. We are talking about LEAN Product Lifecycle Management (PLM).

Although the first area of involvement in a PLM solution is typically the engineering department, as this is where most of the product data is created, PLM can be used for much more than just CAD data management – it benefits the whole company!

In fact, PLM presents Return on Investment (ROI) benefits in every phase of a product's lifecycle:

1. **Sales:** guarantee that the correct product options are selected and sold.
2. **Procurement:** ensure that the correct item revisions are ordered and documentation is provided to the supplier.
3. **Production:** see to that the correct items are assembled and delivered, and that engineering changes are implemented in a controlled way.
4. **Service/Maintenance:** ensure that the correct spare part documents are created and information related to the individual delivered product is stored and managed.

As new innovations come along and new technology, such as the Internet of Things, is introduced, PLM is a very valuable asset. When connecting real-time information from an individual product or fleet with product configuration information managed in PLM, you can dramatically expand the business opportunities related to additional product and service sales to your existing customer base.

6

WE WANT TO BECOME LEAN, BUT DON'T KNOW WHERE TO START.

To be able to optimise your business performance, it is vital to have a good understanding of the company's current situation and a clear strategy of where you are heading. A documented analysis of your existing processes is usually the starting point. As the changes in the company need to be made gradually, and may involve updating some of the technology to help drive and enhance the business performance, the task of optimising business performance can be challenging.

When you perform a proper Business Process Analysis not only processes and the technology behind them is taken into account, but also the people involved and how they are involved in these changes. With a focus on existing management strategies as well as strategies adopted during the analysis, you will create a clear picture of how to optimise your business performance in a LEAN way.

We hope that you found this LEAN guide valuable and that it has left you with some new ideas, or at least confirmation to your existing thoughts, on how to take your work and your company's business forward. For further discussions around your business processes and LEAN Manufacturing, please don't hesitate to contact us. We are happy to help and support you.

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