

Improving Non-Manufacturing Processes – Matching the Increasing Customer Demand for Clean Energy Sources

BY ALEXANDER LUNDQVIST & ERDAL BERGSTEN (June 2020)

Process improvement work is commonly used in most businesses. Much of the current theory in process improvement work is based on the typical manufacturing processes where each and every second matters. What do you do if you don't work at a manufacturing company or if you don't have well measured processes? Turns out there's still a lot that your company can start to improve.

The two of us recently did our thesis at one of the largest energy companies in Europe, where we analyzed their solar panel installation processes for private consumers. An industry which has had a booming growth over the last few years, largely thanks to the increasing debate of the environmental issues and also the governmental support in several countries. The solar panel industry has been around for a few years, but it still has a lot to learn from the larger construction companies and other companies in similar industries.

As a part of our thesis we were to look at the installation process of solar panels on private consumers' roofs and to improve it using the lean framework. The Lean framework is a methodology that originally was used to continuously improve manufacturing processes through the elimination of waste. The Lean framework was derived in the 1930s from Toyota's operating model, called "The Toyota Way".

The lean framework is mainly targeting the manufacturing companies and large parts of the lean theory has been implemented on manufacturing processes and repetitive processes. But what if you don't have a repetitive process and what if the times vary?

Usually, most companies have some kind of structured process with detailed information



<http://billalgersketchbook.blogspot.com/2010/11/nickelodeon-magazine-gag-cartoon-solar.html> (Accessed 2020-05-25)

about the activities. However, when we did our thesis project, the company had limited amount of useful data on their solar panel installation process and no map of the entire installation process. But still, being less than two years old the department where impressively well organized.

To find all elements of the process, we began with trying to visualize entire installation process by sketching up a process map. Shortly after talking to the people involved, we already had found a lot of different time wasting in the process. But comparing to manufacturing companies where it's mostly a matter of seconds or minutes, we noted that in our case time-wasting activities could last for hours per installation.

Our findings showed the importance of measurements and a visualization of the entire process. This enables companies to quickly determine possible areas for improvement. Also, the opportunity to find useful and proven frameworks that can be used for further development.

This popular scientific article is derived from the master thesis: Förslag på en förbättrad solcellsinstallationsprocess: En fallstudie hos E.ON. written by Alexander Lundqvist and Erdal Bergsten (2020).