



Manufacturing 4.0

Where is LAI in the Journey to Improve Our Business

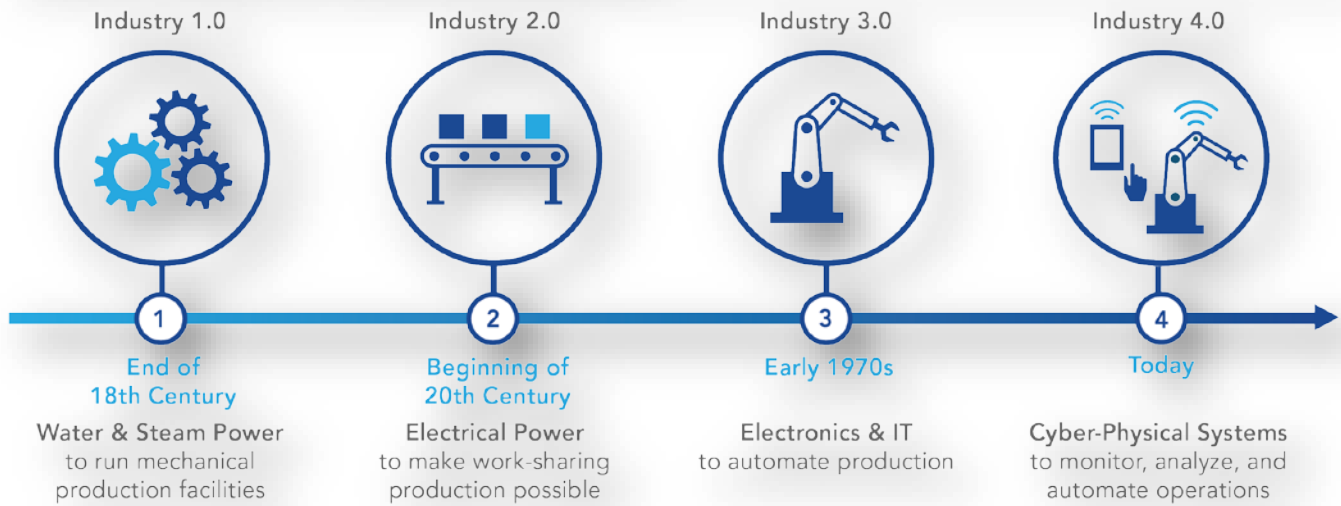
By

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Four Phases of Industrialization



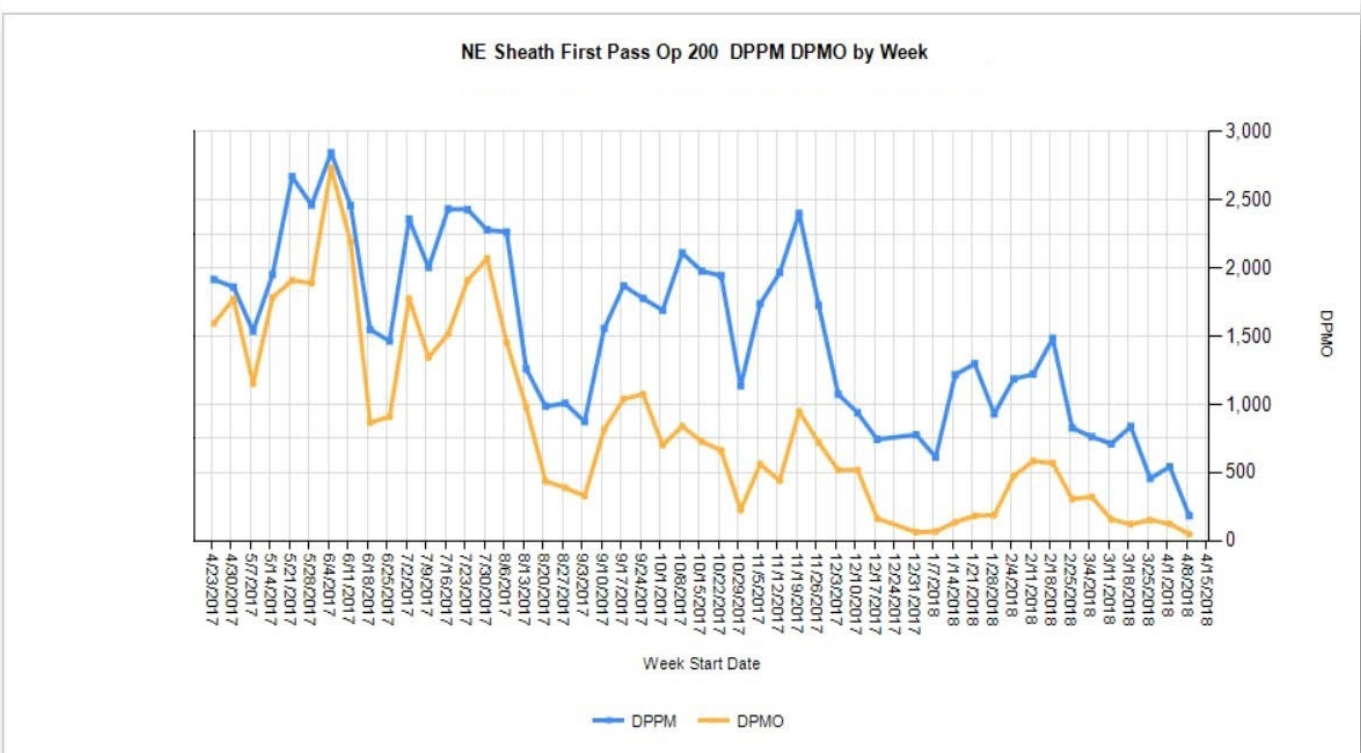
As we shared back in August 2017 and later in April of this year about our view of Industry 4.0, we would like to share what we have learned along the way. As we noted in earlier articles we are looking to gain these 6 areas of Increased competitiveness of businesses, Increased productivity, Increased revenue, Increased employment opportunities and enhanced human and IT resources management, Optimization of manufacturing processes and Delivery of better customer service.

Setting up our Structure within Manufacturing 4.0

Our CEO, Patrick PJ Gruetzmacher, presented our progress to the Manufacturing Leadership Council and the 123 companies represented at their annual Summit and Awards event held in Huntington Beach, California. LAI was in attendance again to receive 3 awards, 1 of which is tied to our Manufacturing 4.0 journey.

In our last article and his address to the audience, we highlighted the work we have been focused on creating the IT structure to allow our data transfer methods to be collected and formatted in such a way we could apply our analysis tools. In an effort to understand our manufacturing processes with added detail enables our integrated product team to assess the opportunities to improve quality and find improvements to our value stream.

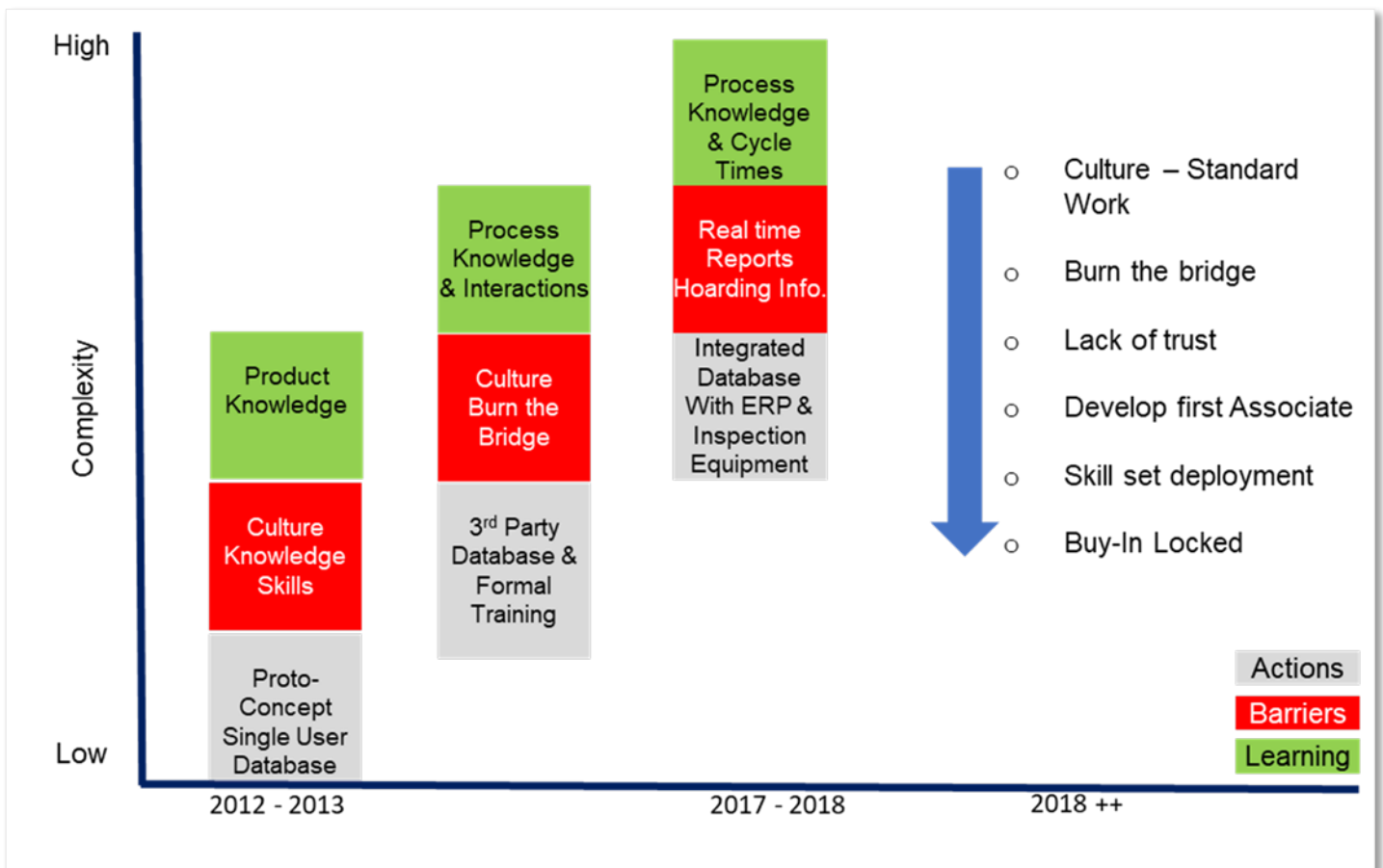
Our most recent focus over the last 9 months has been to take our machine output from our measuring equipment and analyze where our best opportunities were to improve quality. The chart below shows the improvements we have seen over recent months tied to efforts to adjust our machining processes in an effort to reduce defects.



LAI’s Journey to implementing Manufacturing 4.0

While there are plenty of tools and software to leverage in order to become a smart factory or factory of the future, we are taking a measured and scaled back approach to ensure we take steps towards Manufacturing 4.0 and still realizing benefits to our Associates and Shareholders to keep our business as competitive as possible and only making the investments necessary to improve our competitive position within the markets we choose to compete within. Our current approach is to bring the culture of our company along with our quest to improve the quality of our products and services to our Customers. By allowing our teams to focus on these elements, we ensure that we still are on our path to continuous improvement while integrating the elements of Manufacturing 4.0 so we can take the benefits as we manage the journey of the smart factory.

We are currently developing a process to extract the data from our NC Equipment to understand if there are correlations between quality of the process and the environment being monitored within our machines to also provide a more proactive approach to our Total Productive Maintenance. While there are many companies offering solutions to do this, they are prohibitive for us to outfit our 5 manufacturing locations. We have teamed up with a university in the New England region to implement a much more cost-effective method for a company our size. We are excited by the prospects of evaluating that data from our milling machines and chemical processing equipment to learn if there are correlations between how the machines perform and the quality data we are collecting. We have been collecting the quality data by operation with work in process inspections which helps us confine where in the process we need to spend our engineers’ time to look for improvement objectives.



As the chart above shows the elements of the impacts to the workforce and the leadership team is making a concerted effort to focus on skills improvement in an effort to support the new way our work will look after we declare standard work that includes all the analysis and collection methods for each of our product lines where we install the “Factory of the Future”.

We are also starting to integrate some level of sensors and probes to provide additional feedback to the teams to help predict tool changeouts or retargeting before we fall out of statistical control. This ensures we hold true to our mantra; “Receive No Defect, Make No Defect, and Pass On No Defect.” It’s an exciting time for LAI International as we become better partners with our Customers by providing them the best value for their highly engineered components and our team has embraced the challenge of being a small company continuously focused on improved quality and service to our Customers and pushing the boundaries of what is possible in a small business like ours.