



A WHITEPAPER ON

# Digital Transformation Insights for Manufacturing Companies

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## EXECUTIVE SUMMARY

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This WP gives manufacturing companies an overview into Digital Transformation in the context of the manufacturing industry. The goal is to help manufacturers understand what Digital Transformation is, current trends, and how they can implement it. We will discuss the following:

- ❖ What is Digitization, Digitalization and Digital Transformation
- ❖ An Overview of Industry 4.0 and the evolution of the manufacturing industry
- ❖ Why manufacturers need to adopt Digital Transformation
- ❖ Key Trends that can help manufacturing
- ❖ How to implement Digital Transformation

## WHITEPAPER

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The future of the manufacturing industry is digital transformation and there is no denying it. Imagine a world where all machines will be networked with each other, where each workpiece has its own embedded system to store vital information, where raw parts can be networked to production machines with the ability to communicate what happens to them at which stage, where manufacturers will know the minds of consumers, and automation will translate this into products and services that perfect the customer experience – all with minimum human intervention. Strides in technology show that this is no pipe dream. It is happening, and its possibility is underway even today.

It is imperative therefore, that players in the manufacturing industry adapt to this revolution and adopt digital transformation without delay. This White Paper will discuss all that a manufacturing company needs to know in order to understand and implement digital transformation. The goal is to help companies who are still at zero levels of digital but want to make the leap to digital transformation.

## DIGITAL EVOLUTION

The first stage in your journey to Digital Transformation is to understand the concepts of Digitization, Digitalization and Digital Transformation and implement each of them into your business.

**Digitization** is the basic step of transforming your company's data into a digital format. Paper records, images, audio and all other information is converted into a format that can be stored digitally.

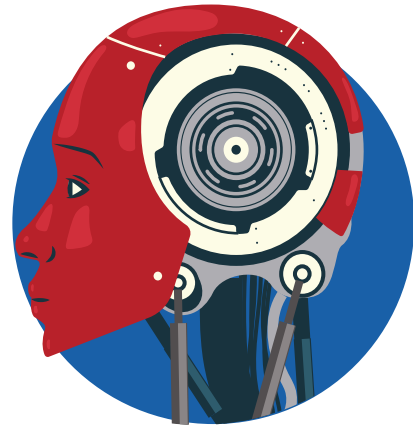
Once information has been converted to a digital format, it is put into action by **Digitalization**. Using software or tools like AI, CRM, CMS etc., the digitized data is put into use to enhance productivity or efficiency in processes.

**Digital transformation** is the process of completely transforming the business to 'digital first.' Where Digitalization happens in

silos, Digital Transformation involves the integration of all the functions of a business. It would also mean a complete change in the way you do business – new business models, digitally enabled offerings, a change in operations and culture and much more.

You can read more on this here:

<http://www.mukundkrishna.com/blog/things-digital-digitization-digitalization-digital-transformation-explained/>



Digital Transformation has a profound effect on these four core pillars of an organization:

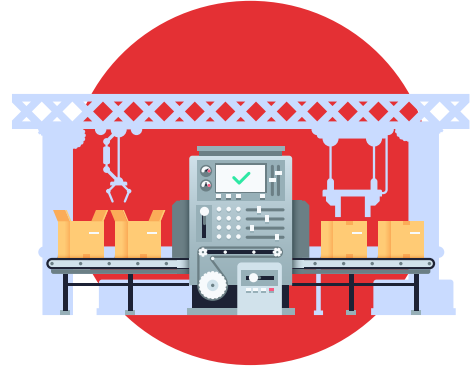
-  Culture
-  Business Model
-  Core Operations
-  Customer Acquisition

Its impact on each of these areas and how you can maximize its benefits are discussed in our WP on :

***How Digital Transformation Impacts the Core Pillars of An Organization.***

## INDUSTRY 4.0 OVERVIEW: THE EVOLUTION OF MANUFACTURING

Germany Trade and Invest (GTAI) defines **Industry 4.0** as a “paradigm shift from “centralized” to “decentralized” production – made possible by technological advances which constitute a reversal of conventional production process logic. Simply put, this means that industrial production machinery no longer simply “processes” **the product**, but that **the product communicates with the machinery to tell it exactly what to do.**”



Smart Production and Smart factories, where intelligent machines are capable of independently responding to information, will enable a faster and more efficient way of managing industrial production processes. Each entity in the Smart Factory continuously evolves by learning and adapting to the manufacturing process and creates a fully automated system.

Our infographic on [The Impact of Industry 4.0 Digital Transformation on Manufacturing](#) details the key drivers of Digital Transformation for Industry 4.0.

## WHY MANUFACTURERS MUST ADOPT DIGITAL TRANSFORMATION

A [study by General Electric](#) shows the ramifications of just 1% efficiency improvement enabled by this “marriage of machines and analytics.”



Some of its findings are listed below:

- ◆ 1% Improvement in fuel savings would yield a savings of \$30 billion over 15 years.
- ◆ 1% efficiency improvement in the global gas-fired power plant fleet could yield a \$66 billion savings in fuel consumption.

- ❖ 1% efficiency gain globally could yield more than \$63 billion in health care savings.
- ❖ Freight moved across the world rail networks, if improved by one percent could yield another gain of \$27 billion in fuel savings.

The gain in terms of increase in efficiency are astonishing indeed, and manufacturing companies are recognizing and implementing Digital Transformation to ensure that they aren't left behind. The disruption that is caused by Digital Transformation is vital to growth and competitiveness.

## KEY TRENDS THAT CAN HELP MANUFACTURING

Strides in Technology are being matched by their application in the manufacturing industry.



Currently, these three trends have been taking the manufacturing world by storm:

- ❖ IoT
- ❖ Decision Science
- ❖ Customer Experience

### i. IOT (INTERNET OF THINGS)

According to Accenture, ***the Industrial Internet of Things could add \$14.2 trillion to the global market by 2030.*** The use of IoT in manufacturing is called the Industrial Internet of Things and mainly involves gathering information by connecting smart

sensors to the internet and using the information for intelligent decision making. A highly agile infrastructure is thus created by connected systems and networks, which bring in increased operational efficiency and productivity.

One of the ways in which IoT is used is **predictive maintenance**. By using **sensors** in manufacturing equipment, manufacturers get to know when an equipment might fail. This knowledge helps them fix problems initially and make improvements in the design. These sensors also provide for **real-time data tracking**, which is invaluable in analytics. Robots, Kiosks, Wearables, IP Cameras and Trackers are also used in this way.

## ii. DECISION SCIENCE

Using data metrics, companies will be able to improve manufacturing responsiveness, enhance capacity utilization, and make better decisions faster.



Some of the techniques used in Decision Science are:

- ◆ Neural Network
- ◆ Data Mining
- ◆ Predictive Modeling
- ◆ Deep Learning
- ◆ Machine Learning
- ◆ Analytics

In the Supply Chain Management for example, each and every step can be aided by Decision Science. Commodity Sales Forecasting, Buying Recommendation Engine, Warranty Analytics, Predictive Asset Maintenance, Sentiment Analysis, POS Analytics and more can be enhanced by Decision Science.

### iii. CUSTOMER EXPERIENCE

The gulf between customer and manufacturer is closing in with the aid of technology. By using data provided to them directly by consumers through different channels, manufacturers can work on enhancing Customer Experience. Manufacturers listen to their consumers through the Internet, real time data tracking methods, social media and other means to design better products, respond to customer queries, address customer concerns and provide a more effective customer experience.

The "prosumer" concept, which includes involving the customer in the basics of design, is being effectively used in the automotive industry. The "Urban Driving Experience Challenge" by BMW is an example. Through this initiative, BMW plans to crowdsource ideas for future urban

vehicles. "Increasing urbanization, changing infrastructures and environmental pollution call for mobility solutions that strike a balance between global requirements and individual needs ... The BMW Group has chosen to work with the open-source community at Local Motors to offer consumers the opportunity to participate in this endeavor " **says BMW.**



## HOW TO IMPLEMENT DIGITAL TRANSFORMATION FOR MANUFACTURING

As discussed, we have seen the importance of implementing Digital transformation. It is important that this transformation be done on the basis of the digital customer experience life cycle. *“Systemic customer experience improvement and innovation were under-used building-blocks in the cause-and-effect system of customer experience optimization,”* says **Lynn Hunsaker**, founder of CX company, **ClearAction**. She further says that company-wide improvement and innovation

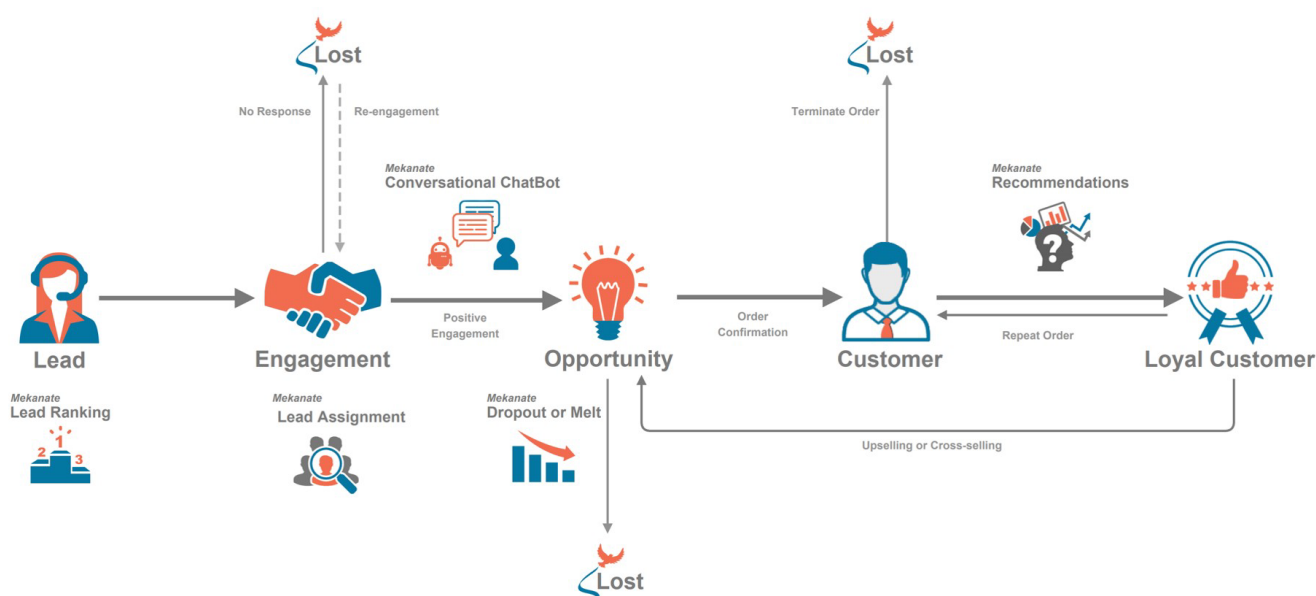
of customer experience is **the middleware for sustainable business results.**

With this in mind, Suyati recommends a three phase approach for implementing digital transformation. Beginning with helping you “identify high-impact but low-effort opportunities” for digital transformation to providing you “insight-driven solutions for greater efficiencies and growth,” Suyati helps you through the transformation process step-by-step. You can read more on our three phase approach here:

<https://suyati.com/how-digital-transformation>

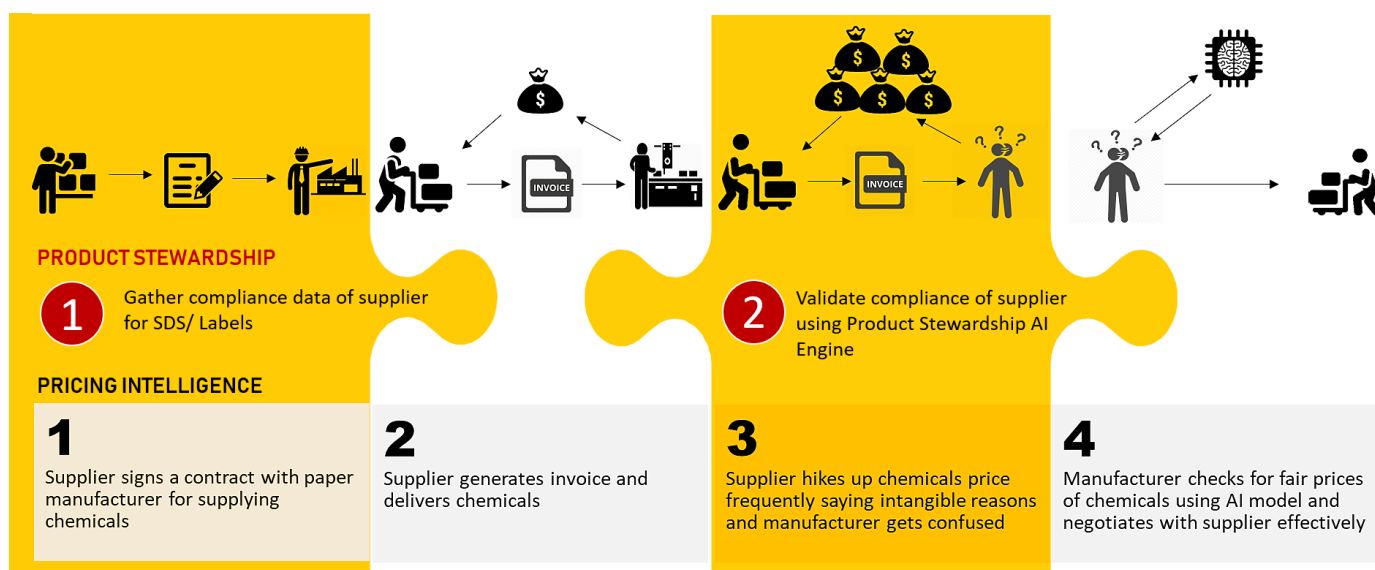
Consider how we used this approach and enhanced operational excellence with digitalized production systems for a chemical manufacturer:

## CASE STUDY 1: HOW CHEMICAL MANUFACTURER USES DT FOR CUSTOMER EXPERIENCE



Detailed case study can be found [here](#).

## CASE STUDY 2: HOW A PAPER MANUFACTURER USES DT FOR OPERATIONAL EXPERIENCE








## CONCLUSION

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As we saw, the benefits of Digital Transformation for Manufacturing companies are many and implementing it brings you efficiency in operations, gain in profits and an edge over competition. Industry 4.0 is advancing as we speak and smart factories with complete automation will be the order of the day. We have also seen how tools and systems like IoT, Decision Science, and focus on Customer Experience will help shape the future of the manufacturing industry. Implementing Digital Transformation is thus no longer an option, but it need not be difficult in the least. Suyati has worked with many manufacturers in implementing digital transformation and has developed the ability to cater to any customer segment based on your priority and budget. Speak with our team and see how you can transform your business to “digital first.”

## REFERENCE

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Suyati is a fast-growing, digital transformation solutions company that helps you rebuild your customer experience for the digital consumer. We collaborate with businesses to strategize and implement impactful digital initiatives that position our clients ahead of the competition. We are digital-first and we focus on delivering digital transformation solutions that support your various engagement strategies.

Our three-phase approach to implementing digital transformation for you ensures that you win stakeholder support, secure early wins through competitive advantage, and transform your business for future growth. And our tailor-made platform, Mekanate, helps you discover your business DNA from your passive and active data, and use it to initiate, integrate and accelerate your DT implementation.

With our niche and rich expertise in a wide range of technologies and services - CMS, CRM, e-commerce, Cloud, IoT, Data Analytics, and Product Engineering - we help companies across the globe leverage their best on web/cloud/mobile platforms.

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