




# Is Real-Time Improvement Disrupting Continuous Improvement?

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## Who is Carlos Chavez?

Before we begin let me share a little about myself

I am the Director of Business Process Evolution for Crean.Inc.  
In my current position I manage company optimizations, which are based on a rapid system-wide improvement methodology that embraces Lean, Six Sigma, Theory of Constraints, Optimal Information System Utilization and Smart Factory Technologies.

My experience spans over 30+ years in multiple companies and positions.  
These companies are associated with Aerospace and Defense, Agriculture, and Logistics/Distribution industries.

I have provided significant contributions to Hughes Aircraft (multiple divisions), Boeing Satellite Systems, L3 Communications – Telemetry West, Altman Plants and NFI.

My roles have included: Continuous Improvement Manager, Production Manager, Sr. Supply Chain Manager and Regional Project Manager


My current focus is to help transform American manufacturing by implementing a revolutionary optimization methodology intended to help bring back manufacturing that has been offshored.

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## Why We Must Embrace Change?



- **Disruption caused by advanced manufacturing technology is accelerating**
- **To be a Global Manufacturing Powerhouse, the US needs to transform faster than our competition**
- **The US is behind China in driving the development, deployment and utilization of the latest technologies and tools**




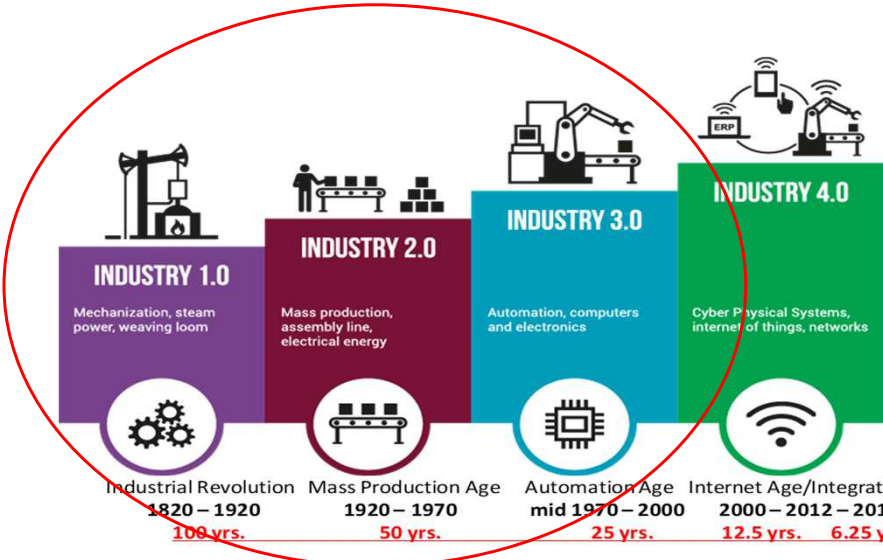
***Our Competition is Ahead***

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## Why We Must Embrace Change Now



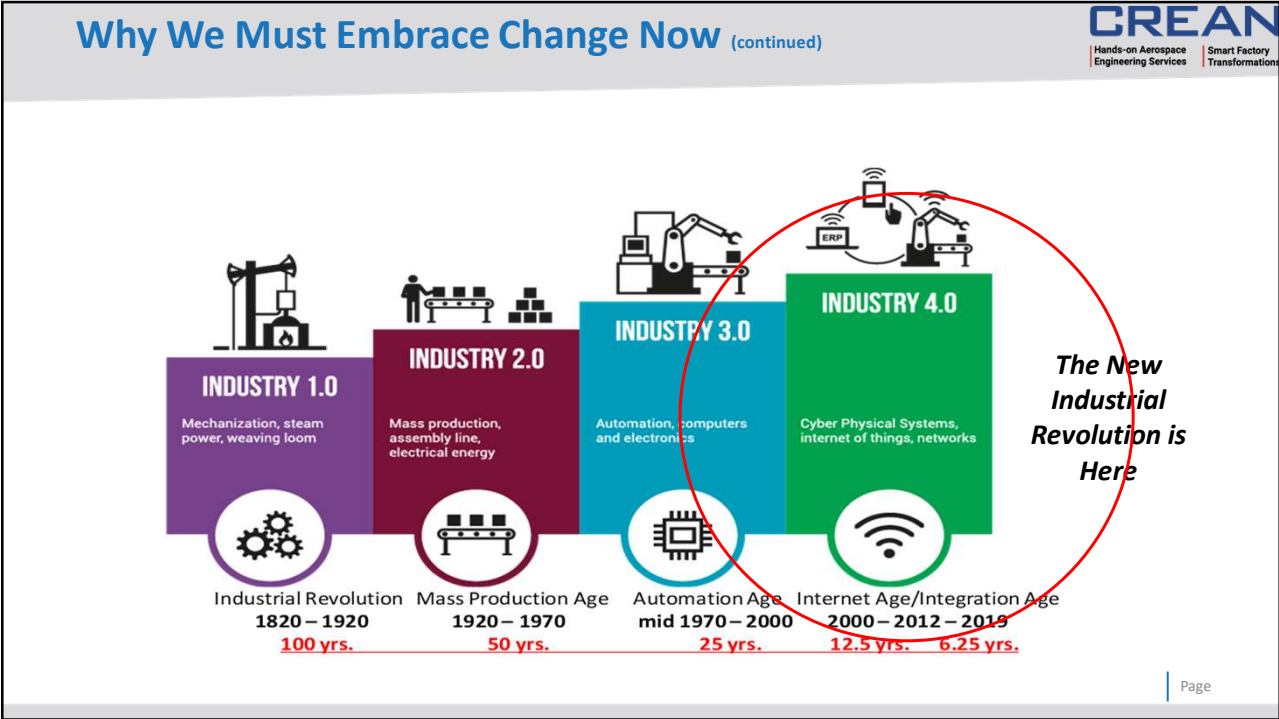


<b>INDUSTRY 1.0</b>	<b>INDUSTRY 2.0</b>	<b>INDUSTRY 3.0</b>	<b>INDUSTRY 4.0</b>
Mechanization, steam power, weaving loom	Mass production, assembly line, electrical energy	Automation, computers and electronics	Cyber Physical Systems, internet of things, networks
Industrial Revolution	Mass Production Age	Automation Age	Internet Age/Integration Age
1820 – 1920	1920 – 1970	mid 1970 – 2000	2000 – 2012 – 2019
108 yrs.	50 yrs.	25 yrs.	12.5 yrs. 6.25 yrs.

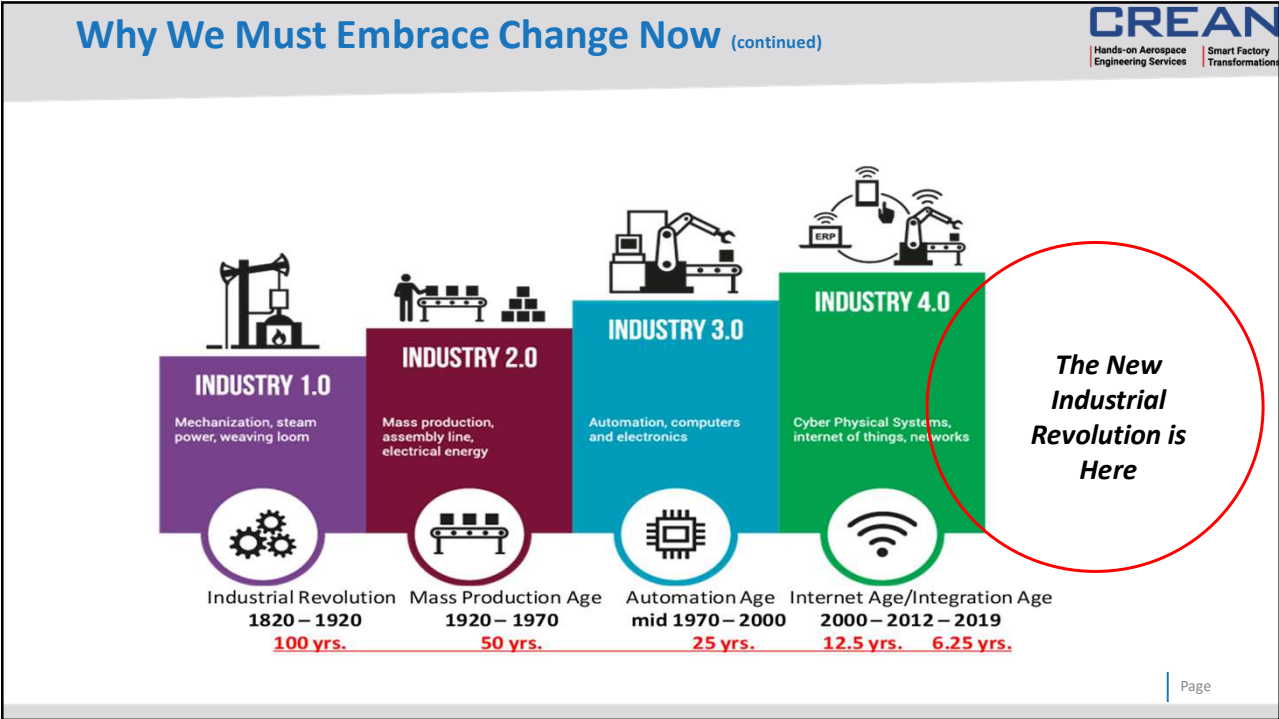
***The New Industrial Revolution is Here***

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## Why We Must Embrace New Technology?



- **The need for continuously evolving business processes has never been greater**
- **Those that can adapt quickly are positioned to be the leaders within their marketplace**
- **American Manufacturing cannot afford to wait**




***Increase Quality, Ensure On-Time Deliveries,  
Reduce Operational Cost***

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## Business Imperative – Evolve Continuously



- **National Security Imperative:**
  - America Must Lead Smart Factory Transformation
  - Countries with a Smart Factory Industrial Base will Dominate (Defense) Markets
- **Traditional Continuous Improvement Methods must Integrate Smart Factory Technologies**
- **Lean Six Sigma, Theory of Constraints are foundational but must evolve**
- **We must ensure that improvement activities are focused on improving the company's position in the Market**
- **Current transformation cycles must become shorter and exponentially more disruptive**
- **Improvement Activity Must (as always)**
  - Improve Performance and Quality
  - Reduce Cycle Times and Operational Costs

***Rapidly Change or be Left Behind***

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## New Tools Needed – Technology - People



**People**

- With the delivery of smarter operations and intelligent business systems a New Breed of Professionals needs to be developed

**Processes**

- Employing real-time improvement tools utilizing the foundation of Lean Six Sigma and Theory of Constraints will disrupt traditional approaches

**Technology**

- The US must be able to stay ahead of the business demands through utilization of digital Manufacturing and AI




*Artificial Intelligence Disrupts Traditional Transformation Methods*


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## What is Required, New Mindset and New Skillset



- We must think in terms of process and complexity levels not part numbers
- As previously stated, many companies attempt to implement continuous improvement, and many have failed, which leads to a deemphasis of implementing Lean, Six Sigma and TOC
  - This due, in part, to the ineffectiveness of discrete improvement events that are uncoordinated
- We must ensure that all optimization results are quantifiable and focused on Increasing Quality, Reducing Delivery Times and Operational Costs




*Making the Enterprise Flow*

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**What is Required, New Mindset and New Skillset** (continued) **CREAN**  
Hands-on Aerospace Engineering Services | Smart Factory Transformation

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*Making the Enterprise Flow*

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## What is Required, New Mindset and New Skillset



**We Must Fully understand the following:**

- **Lean, Six Sigma and TOC Principles**
- **The Products we are manufacturing**
- **Problem Solving (Critical Thinking)**
- **The Company Information Systems**
- **Principles of Data Analytics**
- **How to communicate to executives**
- **The new evolving manufacturing, quality assurance and optimization technologies (increasingly utilizing Machine Learning and AI)**




*New Breed of Professionals*

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## In Conclusion




**As Stated,**

- **If the US wants to be a Global Manufacturing Powerhouse, we need to make the necessary changes faster than our competition**

**This is Enabled By**

- **Adopting a Rapid Transformative Process**
- **Implementing Smart Factory Technologies, Machine Learning and AI**
- **Developing a New Breed of Professionals**
- **Changing Your Mind and Skill Set**




*Are You Ready?*

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**Thank You**



**For Any Questions  
Please Contact Us**

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**Contact Us**



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