

Is Digitization of Manufacturing and IoT the New Industrial Revolution?

Another manufacturing industrial revolution rising? Read more about increased competition between consumer technology companies and industrial manufacturers.

AUSTIN, TEXAS, UNITED STATES, October 2, 2018 /EINPresswire.com/ -- Are we on the verge of another industrial revolution in [manufacturing](#)? Signs of increased cooperation — and competition — between consumer technology companies and traditional industrial manufacturers indicate the answer is yes.

IS THE DAWN OF THE FOURTH INDUSTRIAL REVOLUTION AT HAND?

You say you want a revolution?

Many economists and technology consultants feel we are on the cusp of a new, fourth industrial revolution.

We've had three industrial revolutions since the 1800s:

First Industrial Revolution: Early mechanization powered by water and steam.

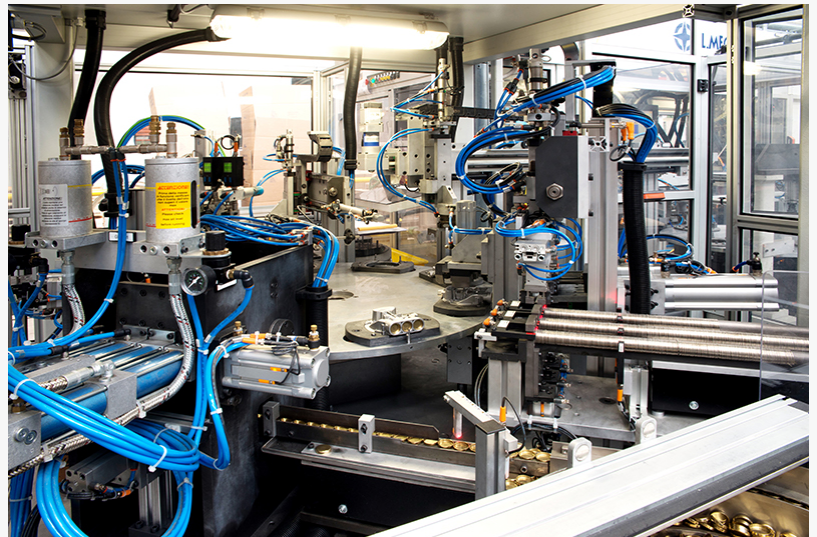
Second Industrial Revolution: Assembly-line mass production powered by electricity.

Third Industrial Revolution: Computer-aided design (CAD) and automation powered by digital technology

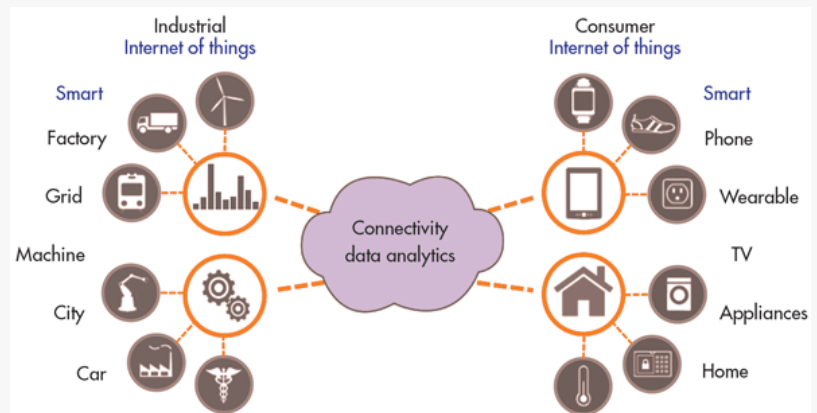
So what would 'power' a Fourth Industrial Revolution?

The [Boston Consulting Group has identified nine key technologies](#) that it calls the building blocks of our fourth industrial revolution:

Autonomous Robots



Industrial Automation



Industrial IoT

Simulation
Horizontal and Vertical System Integration
The Industrial Internet of Things
Cyber Security
The Cloud
Additive Manufacturing
Augmented Reality
Big Data and Analytics

How would we describe a Fourth Industrial Revolution? Looking into the crystal ball, we can see many possibilities. Product technology platforms first developed in the consumer space will enter more and more industrial markets, changing the way manufacturers interact with customers and products in the field. Artificial intelligence and robotics will extend our abilities to research and develop new products and technology. And immersive virtual reality will allow us to visualize information and new ideas as never before.

Let's take a look at each of these building blocks one-by-one:

AUTONOMOUS ROBOTS

What is it?

Robots that can access vast amounts of data and analytics to make well-informed decisions quickly.

<https://www.youtube.com/watch?v=bxzGCNaOEEI>

Amazon Warehouse Robots

Examples include:

Factory robots that work side-by-side with human workers or replace them on the factory floor. Google's experimental, autonomous driving cars.

SIMULATION

What is it?

Use of computer software programs that allow the creation of virtual models to examine complex systems under different conditions.

Examples include:

Computer simulation of prototype aircraft or rocket's performance in flight before building a physical prototype.

Computer simulation of traffic flows on congested roads and freeways during different

conditions.

Computer simulation of factory production, such as worker and material movements during assembly operations.

HORIZONTAL AND VERTICAL SYSTEM INTEGRATION

What is it?

Horizontal System integration refers to increasing the number of product lines or service offerings in the marketplace. Vertical System Integration refers to taking on increasing amounts of a [product manufacturing](#) process.

Examples include:

Amazon acquiring a fleet of aircrafts to deliver customer orders is an example of Vertical System Integration.

Google providing a suite of online services ranging from word-processing to shopping is an example of Horizontal System Integration.

THE INDUSTRIAL INTERNET OF THINGS

What is it?

Sensors attached to industrial components that can transmit information over the Internet to a database for analysis of field performance, customer usage data / behavior, and more.

Examples include:

GE and Rolls-Royce jet engines which provide real-time performance data of engine components to the pilot, airline maintenance crew, and manufacturer during flight.

Remote sensing of electronic components in hard to reach locations, such as electronics equipment installed in tall cell phone towers.

GE locomotives equipped with more than 200 onboard sensors, which can help trains run more efficiently.

CYBER SECURITY

What is it?

Security measures are taken to provide legitimate users secure access to critical information while preventing Internet hackers from compromising computers in order to access or steal that sensitive information.

Examples include:

Online security software/hardware
Auditing tools
Security consultants
Law enforcement agencies

THE CLOUD

What is it?

A trusted third-party service provides secure Internet access to computer hardware, including online software applications and data storage.

Examples include:

Rackspace and Amazon-hosted cloud services

ADDITIVE MANUFACTURING

What is it?

Commonly called 3D printing, additive manufacturing allows for the production of complex, freeform shapes by depositing individual layers of material sequentially to create an object.

Examples include:

Divergent 3D's Blade electric sports car built entirely from 3D printed components.
SpaceX rocket exhaust nozzles, printed out of high-temperature resistant Inconel metal.

What is it?

Also referred to as Cyberspace or Virtual Reality (VR), augmented reality is a man-machine interface that allows us to experience spatial simulations, for productive design use as well as for entertainment.

Examples include:

Head up displays used in aircraft and high-end automobiles.
Games that allow users to mix virtual imagery with live imagery, such as the Pokémon game.
Dedicated simulators, ranging from aircraft flight simulators to high-end consumer virtual reality head gear like Oculus Rift.

BIG DATA AND ANALYTICS

What is it?

Brooke Turner
Formaspace

8002511505
[email us here](#)

This press release can be viewed online at: <http://www.einpresswire.com>

Disclaimer: If you have any questions regarding information in this press release please contact the company listed in the press release. Please do not contact EIN Presswire. We will be unable to assist you with your inquiry. EIN Presswire disclaims any content contained in these releases. © 1995-2018 IPD Group, Inc. All Right Reserved.