



What is Industry 4.0 and How is it Different from IIoT

What is Industry 4.0?

This is a more complex question than a simple answer will satisfy. Industry 4.0 is the new age of manufacturing. This new age is a departure from the computer and automated systems in factories/plants of old, and into the interconnected systems of the future. Industry 4.0 is orchestrated to begin this new age. It is one of the catchphrases for the Industrial Internet of Things (IIoT), but it is the official name in this age. Industry 4.0 was originally established in 2011 by a group commissioned through the German government. They drew up a plan outlining how sensor framework and communication protocols- that originated from the Internet of Things (IoT)- would be similarly applied to the IIoT. The group presented their findings and recommendations for implementation in a final report that was presented to the German government in April of 2013. On the other hand, the Industrial Internet was a term coined by GE towards the end of 2012. They hope to “accelerate the development, adoption, and widespread use of interconnected machines and devices, intelligent analytics, and people at work” [1] in this new age of technology. It is also important to note that along with AT&T, Cisco, Intel, and IBM, GE formed the Industrial Internet Consortium (IIC) in 2014. The Consortium is a non-profit that is working to further the technology and security of the IIoT not only in manufacturing but also non-manufacturing.

IIoT may seem very similar to Industry 4.0 but there are some slight differences.

IIoT is the movement of IoT, a consumer concept, into the industrial setting. IoT is analogous to IIoT, as an Apple Watch being worn by someone is to a smart pump in the field being monitored. A person can wear an Apple Watch, or other wearable, to monitor their health and other vitals, while an operator on the plant floor is monitoring for efficient performance of his machines. The use of IoT technologies and

protocols in the industrial setting allows for the implementation and monitoring of more energy and cost-efficient practices. In order to do so, companies will use smart devices and edge computers that collect data from the machines, and send the values back to a human-machine interface (HMI). This allows for companies to make predictive changes to their processes instead of reacting to problems that may arise. Predictive decisions are far more productive and cost effective than decisions made in the wake of a problem.

Industry 4.0 was a government initiative that was organized and funded to further the German technological advances in their own manufacturing. These advancements could lead to the developments of standards and systems for manufacturing processes that would streamline their production and increase efficiency. These advancements are supposed to increase the competitiveness of the manufacturing industry in the ever changing, and competitive global market. On the other hand, the IIC is more for the tech businesses that are looking to expand upon their knowledge and push forward the technological advances for both manufacturing and non-manufacturing processes. The Industrial Internet Consortium has grown to 258 members including companies, some colleges and universities, and countries including Germany, India, and China. Their presence in the IIoT environment has shown that more and more devices and machines around the globe will become interconnected and will collect enormous amounts of data daily. This distinction between the two shows the separate angles that can be taken when approaching this new frontier in manufacturing.

Even though Industry 4.0 was one of the first initiatives in the IIoT space, the IIC will also continue to push technological changes and advancements for the industry. These advancements will increase manufacturing efficiency and cost-effectiveness.

Sources:

[1] GE "Everything You Need to Know About the Industrial Internet of Things," GE Digital [Online] Available: <https://www.ge.com/digital/blog/everything-you-need-know-about-industrial-internet-things> [Accessed Jul. 24, 2018]

Industry 4.0 Images originally sourced from: [What is Industry 4.0? Here's A Super Easy Explanation For Anyone](#) [Accessed Feb. 25, 2022]