

It's time to step up to Industry 4.0 – here's how

By Raghu Vadlamudi, Chief Research and Technology Director



Many people envision manufacturing facilities as scenes from the early 20th century, with electricity-powered conveyor belts and workers performing repetitive tasks. However, this model belongs to Industry 2.0 history. Today, medical device manufacturers should be deep into Industry 3.0 and at least beginning to embrace the smarter technologies of Industry 4.0 to improve productivity and efficiency.

Industry 4.0 technologies – including the Internet of Things (IoT), artificial intelligence (AI), big data analytics, cloud computing and embedded systems – are more efficient, flexible and interconnected. They help you gain better control over products and faster timelines.

Here's how to get started on the 4.0 journey.

Begin by evaluating your current business and portfolio needs and resources against your desired future state. For example:

- Assess the value of your legacy systems.
- Identify skill gaps in your workforce.
- Review current and anticipated regulatory requirements.

Then, determine and prioritize which “smart” technologies make the most sense for your organization, and begin leveling up incrementally. For example:

1. Implement connected devices and sensors to monitor manufacturing processes, create efficiencies and optimize quality control and predictive maintenance.
2. Deploy robots and collaborative robots to automate repetitive and inspection tasks that require precision, so you can free up skilled workers for higher-level decision-making roles and needs.
3. Adopt simulation technologies to predict material variations and improve product performance.
4. Leverage artificial intelligence (AI) and machine learning (ML) for data collection and analysis to optimize manufacturing processes, improve quality and increase productivity.
5. And so on.

Each step forward brings your organization closer to achieving better product control, faster timelines, and securing a competitive position in the future market.