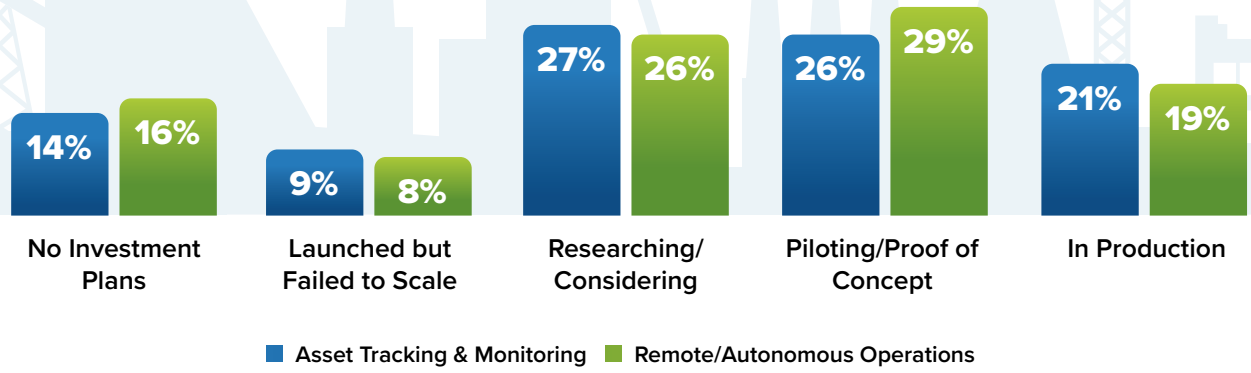
Building Resilient Manufacturing Operations

Competition has never been higher in manufacturing, and outside factors can cause major disruptions to operations and supply chains overnight. While there are varying levels of maturity, the majority of the manufacturing industry has plans in place to move towards more strategic asset management in pursuit of operational resiliency.

Strategic Asset Management in Manufacturing

Percentage of Respondents



Source: IDC, Global IoT Decision Maker Survey, June 2019; n = 1,259

The Future of Operations Requires Resiliency

The one constant present in today's business environment is change. In response, manufacturers are beginning to define their future success by how well they react to market disruptions. They are doing so through a process IDC calls resilient decision making. This process is the combination of ongoing efficiency measures by manufacturers and a new focus on providing decision makers with near-real-time information, detailed performance insights, and predictive capabilities supported by artificial intelligence (AI).

Physical asset management is a core aspect of connected factory operations and transforming this process through monitoring and remote control can serve as the foundation for resiliency. Investments in digitizing, connecting, and analyzing operational assets provide companies with the ability to remotely monitor and diagnose assets and equipment. Asset performance management (APM) applications or solutions provide an analytical platform for asset data management, analysis, visualization, and decision making.

40.7% of manufacturers named resiliency as a top organizational focus going forward.

The Benefits of Resilient Decision Making in Manufacturing

A core part of resilient decision making is using advanced analytics and AI, along with APM and edge technologies, to drive a form of hyper-automation that can do more than automate manual and repetitive tasks. These tools provide decision support, so employees have the timely and contextualized information they need to make rapid and effective decisions while extending the life of assets. Edge computing is also an important technology to consider as it provides the ability to collect, process, and store data at or near the location where it is generated, all in real-time. Edge computing is a way to decrease the amount of data traffic that must be sent across the network, eliminating latency concerns. The benefits of this more predictive approach towards asset management cannot be overlooked and include:

- Increasing mechanical efficiencies by 8%-10%
- Improving asset availability by 20%
- Lowering local maintenance labor costs by 15%-20%
- Increasing spare parts turnover more than 2x
- Achieving a total inventory reduction of greater than 30%

Source: IDC, APM manufacturing end-user interviews, 2018; n=17

While many manufacturers are well on their way towards more resilient decision making or enjoying its benefits, it is not too late for those that have hung back to get started. However, technologies like the Internet of Things (IoT), cloud, and edge computing need to be considered as they will define the infrastructure of autonomous operations. It will also be important to develop a long-term autonomous operations road map built on smaller, more discrete components centered around access to real-time data, analytics, and AI.

Manufacturers should begin by assessing the digital maturity of their plant operations and digitizing mission-critical assets first, then apply analytics to that data to generate insights and improvements. Real-time data and analytics are the building blocks for resiliency, which is an area from which every manufacturer can benefit.