Dell Technologies

State of the Manufacturing Edge

Edge computing is gaining momentum across industries

As a critical-enabler of high value technologies like AR/VR and 5G, edge computing is seeing substantial investment across the enterprise landscape. In the near-future, IT infrastructure and operations will be increasingly deployed at the edge, delivering new levels of low latency, security, scalability and more.

Over

50%

of new IT infrastructure will be deployed at the edge by 2023.[5]

Over

90%

of new operational processes will be deployed on edge infrastructure by 2024, up from 20% today.[4]

Manufacturing's edge future

After years of anticipation, industry 4.0 technologies powered by edge computing are being widely deployed in factories around the world. Exclusive studies conducted by 451 Research, part of S&P Market Intelligence, and Vanson Bourne Omnibus show rapid transition along with some persistent challenges.

REAL-TIME AUTOMATED DECISION MAKING

89%

of Manufacturing IT executives expect it to be a reality in 3-5 years.[1]

EDGE MORE IMPORTANT THAN CLOUD

79%

of Manufacturing IT executives expect to see this shift in 3-5 years.[1]

MORE SECURE IOT DATA

87%

of Manufacturing IT executives expect edge to strengthen security in 3-5 years.[1]

BILLIONS OF SENSORS

86%

of Manufacturing IT executives expect cheap, ubiquitous sensors in 3-5 years.[1]

HIGHLIGHT

Edge computing's capacity to support and secure vast networks of IoT sensors, as well as deliver faster decision-making vs. the cloud are key drivers behind its deployment.

Key Adoption Concerns

	SECURITY, PRIVACY, AND REGULATORY COMPLIANCE	LACK OF EXPERTISE TO ALIGN BUSINESS GOALS WITH SOLUTIONS	DIFFICULTY MANAGING IT ACROSS MULTIPLE ENVIRONMENTS
OPERATIONS TEAM	44%	56%	47%
IT TEAM	56%	44%	53%

Operations team: of Production Managers are concerned about this.

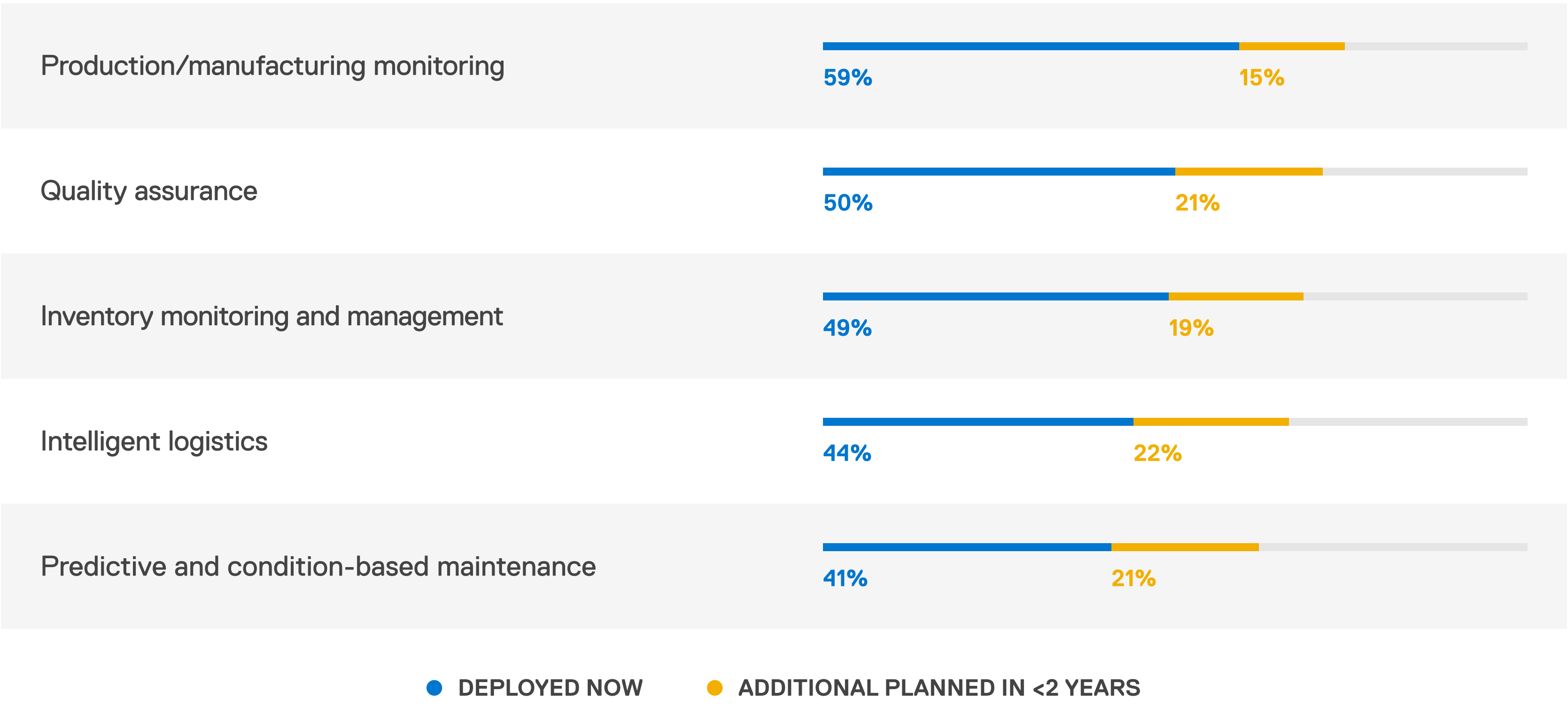
IT team: of IT Managers are concerned about this.

HIGHLIGHT

While the benefits of edge computing are widely accepted, access to purpose-built edge solutions and specialist expertise will be crucial in accelerating its adoption.

What are the leading use cases for the manufacturing edge?

Deployed and planned manufacturing use cases.[2]



HIGHLIGHT

While edge computing impacts every industry, the manufacturing sector is set to spearhead some of its most exciting use cases, and set new standards for efficiency, quality and productivity.

How do the manufacturing executives expect the edge to transform manufacturing in the near future?

100% ACCURATE MACHINE DOWNTIME PREDICTION

86%

expect to achieve this in 3-5 years.[1]

IMMEDIATE PRODUCTION LINE ERROR IDENTIFICATION

78%

expect this to be a reality in 3-5 years.[1]

HIGHLY PERSONALIZED PRODUCTS AND CUSTOMER EXPERIENCES

90%

expect this to be a reality in 3-5 years.[1]

HIGHLIGHT

Manufacturing executives agree that the transformative benefits enabled by edge computing are in reach and achievable in a relatively short timeframe.

Edge's most positive impacts

	SIMPLIFIED DATA MANAGEMENT ENHANCES PRODUCTION OPERATIONS	FASTER, BETTER DECISIONS ON THE PRODUCTION FLOOR	GREATER RELIABILITY AND RESILIENCE
OPERATIONS TEAM	55%	44%	45%
IT TEAM	45%	56%	55%

Operations team: of Production Managers expect edge computing to deliver this.

IT team: of IT Managers expect edge computing to deliver this.

HIGHLIGHT

Production and IT managers see edge computing as a critical component in delivering business outcomes of increased operational efficiencies, reduced downtime, optimized yield and improved asset utilization.

Dell Technologies

We simplify your edge so you can focus on insights and outcomes.

Dell Technologies accelerates your path to smart manufacturing outcomes with validated, end-to-end edge solutions that unify IT, OT, and the business.

Learn more about our Manufacturing Edge Solutions

Sources: 1. Dell Technologies research - July 2020 | 2. 451 Research, part of S&P Global Market Intelligence, research commissioned by Dell Technologies, August 2021 | 3. Manufacturing Leaders on Edge Computing and 5G | Dell Technologies research, May 2021 | 4. IDC FutureScape: Worldwide Future of Operations 2021 Predictions, IDC #US46929820 [idc.com], October 2020). | 5. IDC FutureScape: Worldwide IT Industry 2020 Predictions, Doc # US45599219, October 2019