



Manufacturing Vision Study

The Power of Actionable Visibility

Transforming Manufacturing for the Digital Age

Uncover the power of digital transformation by integrating advanced technologies to improve visibility in manufacturing processes. See how digitizing assets and operations leads to multifaceted benefits, from short-term gains to long-term strategic foundations.

Learn how industry leaders are prioritizing business challenges and implementing solutions that yield immediate returns.



Elevating Manufacturing with Advanced Visibility

The manufacturing industry is experiencing a profound transformation driven by economic shifts and rapid technological advancements. As global competition intensifies, the ability to adapt and innovate through digital transformation is vital for survival and success. From enhancing operations through digitalization to advancing supply chain traceability, industry leaders are pushing the boundaries of technology to secure a competitive edge.

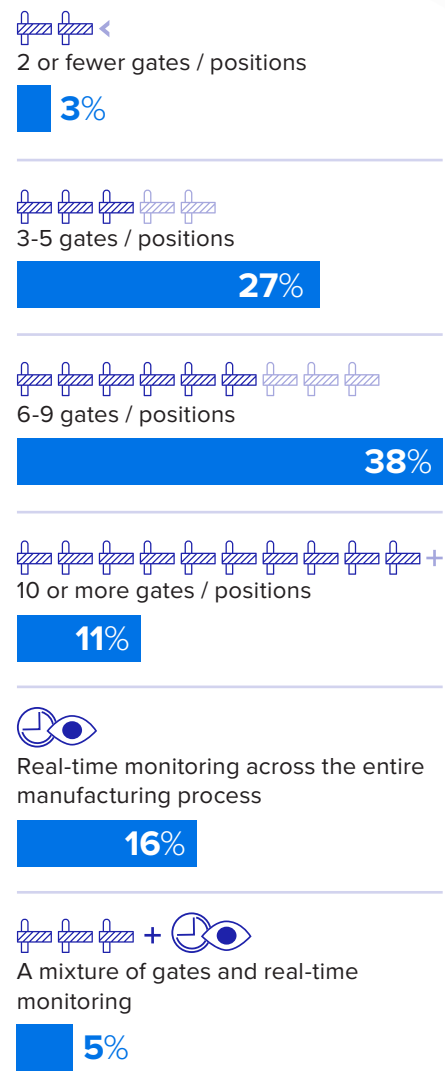
Modernization Maze: Navigating Tech, Traceability and Enhanced Visibility

Top 5 challenges impacting the manufacturing industry

- 1  Digitalization of operations
 - 2  Investment in technology to improve supply chain visibility and traceability to support production
 - 3  Needing more immersive technologies to support workflows and assembly lines
 - 4  Accommodating sustainability in the manufacturing process
 - 5  Integrating advanced technologies to increase manufacturing automation
-  Keeping up with accelerating technology advancements

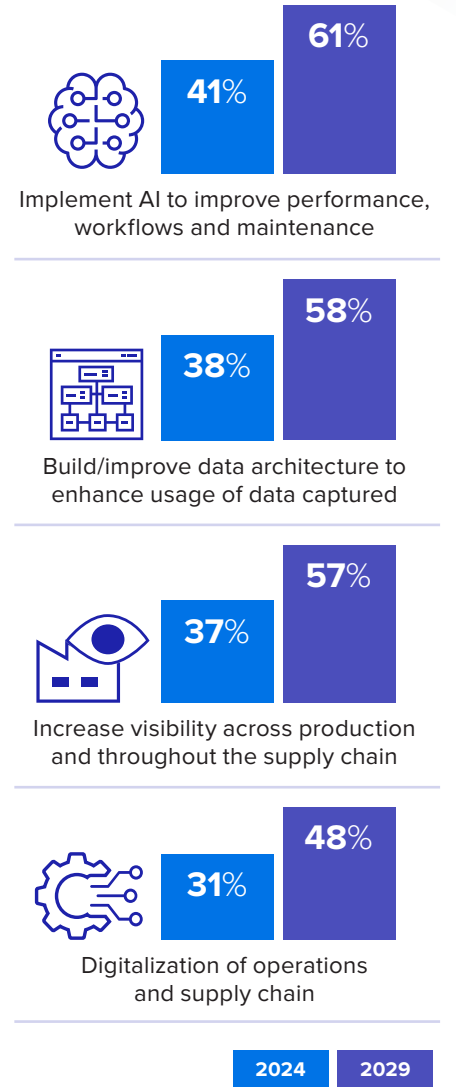
Visibility Variance: Tracing Product Paths Across Manufacturing Lines

Percentage of manufacturers that can track product build across their manufacturing lines



Vision to Value: Harnessing Actionable Insights for Dynamic Business Growth

Manufacturers weigh in on initiatives crucial to advancing their business growth strategies



Bridging the Transformation Divide

Navigating the dynamic realities of manufacturing modernization requires organizations to align the C-suite, IT and OT. While executives pursue competitive advantages, IT and OT teams grapple with the practicalities of digital integration and operational optimization. Despite their differing priorities, manufacturers unanimously acknowledge the pivotal role of IT/OT convergence in enhancing operational efficiency. Yet, each group brings its unique perspectives and priorities to this journey, underscoring common barriers such as scalability, resource availability and integration with legacy systems.

Overcoming these obstacles demands a united effort. Despite varying implementation priorities, there's consensus on the transformative benefits of this journey. Notably, both IT and OT teams emphasize the significance of optimizing the workforce through automation and the imperative to enhance throughput. Fostering a cohesive strategy across the organization is essential to ensure that initiatives are effectively launched and have a lasting impact.



Barriers to Digital Transformation: Decision-Makers Highlight Obstacles

- 1 Identifying which business challenges or plant floor areas to start with
- 2 Cost and availability of resources to train, support and maintain new technologies
- 3 Scalability from pilot program to organization-wide implementation
Getting IT and OT to agree on where to invest
Inability to prove proposed vs. realized ROI

Diverse Perspectives: Manufacturers Highlight the Benefits of Digital Transformation



C-Suite

- 42% Improve competitiveness in marketplace
- 40% Create efficiencies and reduce costs
- 38% Improve inventory management and material movement
- 37% Improve quality and reduce scrap



IT

- 40% Optimize workforce by enhancing productivity and adding automation
- 37% Improve throughput to increase yield and revenue
Supply chain and demand resiliency and agility
- 33% Improve competitiveness in marketplace
Improve inventory management and material movement

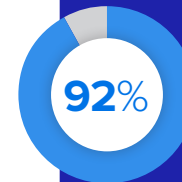


OT

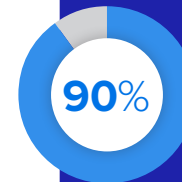
- 41% Optimize workforce by enhancing productivity and adding automation
- 38% Improve throughput to increase yield and revenue
Improve competitiveness and regulatory compliance
- 37% Supply chain and demand resiliency and agility
Improve inventory management and material movement

Digital Drive: Majority of Leaders Prioritize Transformation for Efficiency and Agility

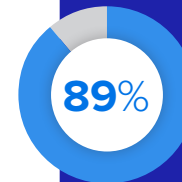
Percentage of manufacturers agree



Digital transformation is a strategic priority for their organization



Current and projected market conditions are accelerating digitalization priorities



IT/OT convergence enables organizations to be more cost- and resource-efficient

Prioritizing Innovation for Competitive Edge

Demanding market conditions are propelling digital transformation to the forefront of manufacturers' agendas.

As organizations move through the modernization stages, from improving operations to achieving full adaptability, the manufacturing landscape is undergoing a fundamental transformation.

Shaping the Future

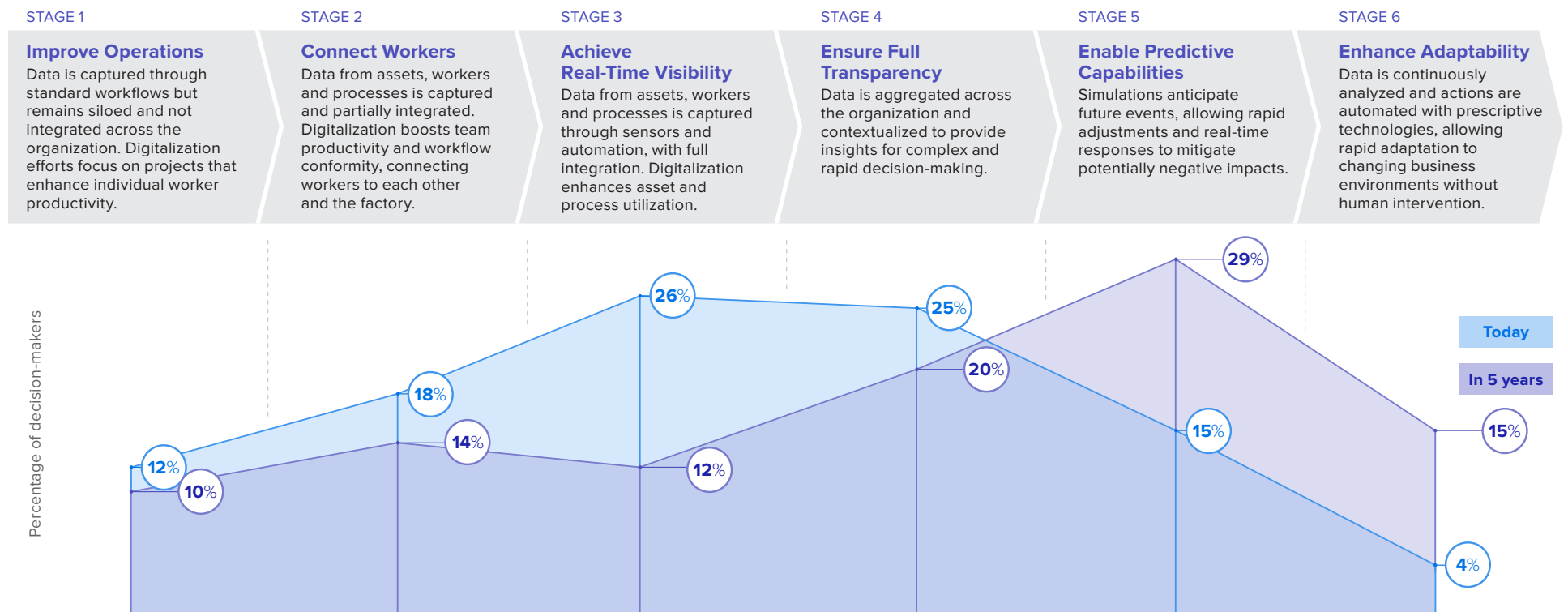
Early stages involve digitalizing manual tasks, implementing basic data-capture technologies and optimizing workflows. As maturity progresses, advanced analytics, real-time data processing and IoT integration enhance operational efficiency and decision-making. At the highest maturity level, predictive analytics, autonomous robots and seamless integration with supply chain systems enable a smart, agile and highly efficient manufacturing environment. While many manufacturers surveyed expect to advance digital maturity over the next five years, most do not plan to progress beyond stage five of the Digital Transformation Maturity Model.

The Reality of Digital Transformation

87%

Of respondents agree it's a challenge to pilot new technologies or move beyond the pilot phase

Digital Transformation Maturity Model



Advancing Modernization with Bold Moves in Digitalization

The manufacturing sector is laying the groundwork for the future with bold moves in digitalization. Leaders are investing heavily in data and systems to drive innovation and secure a competitive edge. These strategic investments are setting the stage for enhanced efficiency, agility and long-term success.

Investment Trends

In an era where supply chain disruptions can significantly impact production, inventory management has emerged as a critical component of manufacturing resilience. C-suite, IT and OT are looking to facilitate end-to-end visibility across their facilities to develop more agile and proactive organizations. This advancement offers several advantages, including enhanced transparency through real-time tracking of materials and assets, improved training and reskilling processes and increased adherence to regulatory requirements.



Five-Year Investment Priorities: IT Infrastructure and Data Analytics Dominate Across Departments

		C-Suite	IT	OT
IT infrastructure management		45%	47%	39%
Manufacturing Execution Systems (MES)		34%	39%	32%
Data management and analytics		38%	30%	38%
Autonomous systems for operations		35%	29%	35%
Quality management		28%	25%	38%
Cybersecurity		34%	27%	31%
Asset monitoring and management		34%	28%	31%
Training and reskilling		24%	31%	27%

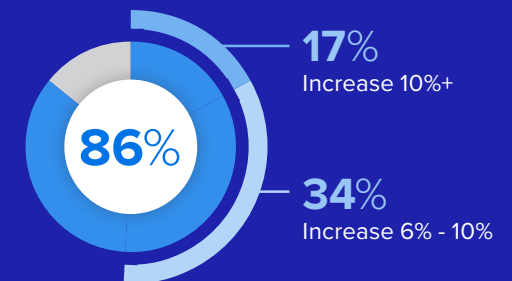
Reflects a broad strategic view with an emphasis on leveraging data for decision-making.

Focuses on maintaining robust IT systems and enhancing operational efficiency.

Emphasizes improving quality and integrating advanced automation technologies.

Bolded numbers denote highest response in each category.

Manufacturing Sector Commits to Growth: Significant Investment Increases in 2024



Of manufacturers plan to increase investments in manufacturing data, organizational structures and systems

Harnessing Technology for Strategic Growth

As the manufacturing sector continues to evolve, strategically integrating digital technologies will be paramount to achieving long-term success and resilience. Incorporating digital technologies is about maintaining operational efficiency and driving growth and innovation to help manufacturers unlock new revenue streams and expand their market reach. Industry leaders who harness the power of digitalization and advanced technologies will secure a competitive edge and drive sustainable growth and innovation.

About the Study

Zebra commissioned Azure Knowledge Corporation to conduct 1,200 online surveys among C-suite executives as well as IT and OT decision-makers across various manufacturing sectors. Respondents were surveyed in Asia, Europe, Latin America and North America.

Introduction to Series

Zebra's 2024 Manufacturing Vision Study addresses enterprise trends, challenges and priorities industry executives face in transforming the plant floor while gauging their outlook on technology drivers for deployment and spending as they work to digitally evolve their organizations. The results are summarized in a three-part series:



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The Future Workforce
Where Innovation Meets Productivity



In Pursuit of Excellence
Intelligent Automation for Superior Quality and Efficiency

To view the Manufacturing Vision Study series, visit zebra.com/manufacturing-vision-study

About Zebra Technologies

Zebra (NASDAQ: ZBRA) helps organizations monitor, anticipate and accelerate workflows by empowering their frontline and ensuring that everyone and everything is visible, connected and fully optimized. Our award-winning portfolio spans software to innovations in robotics, machine vision, automation and digital decisioning, all backed by a +50-year legacy in scanning, track-and-trace and mobile computing solutions. With an ecosystem of 10,000 partners across more than 100 countries, Zebra's customers include over 80% of the Fortune 500.

Explore how Zebra can revolutionize your manufacturing operations, enhancing efficiency, productivity and competitive edge. Visit zebra.com/manufacturing



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