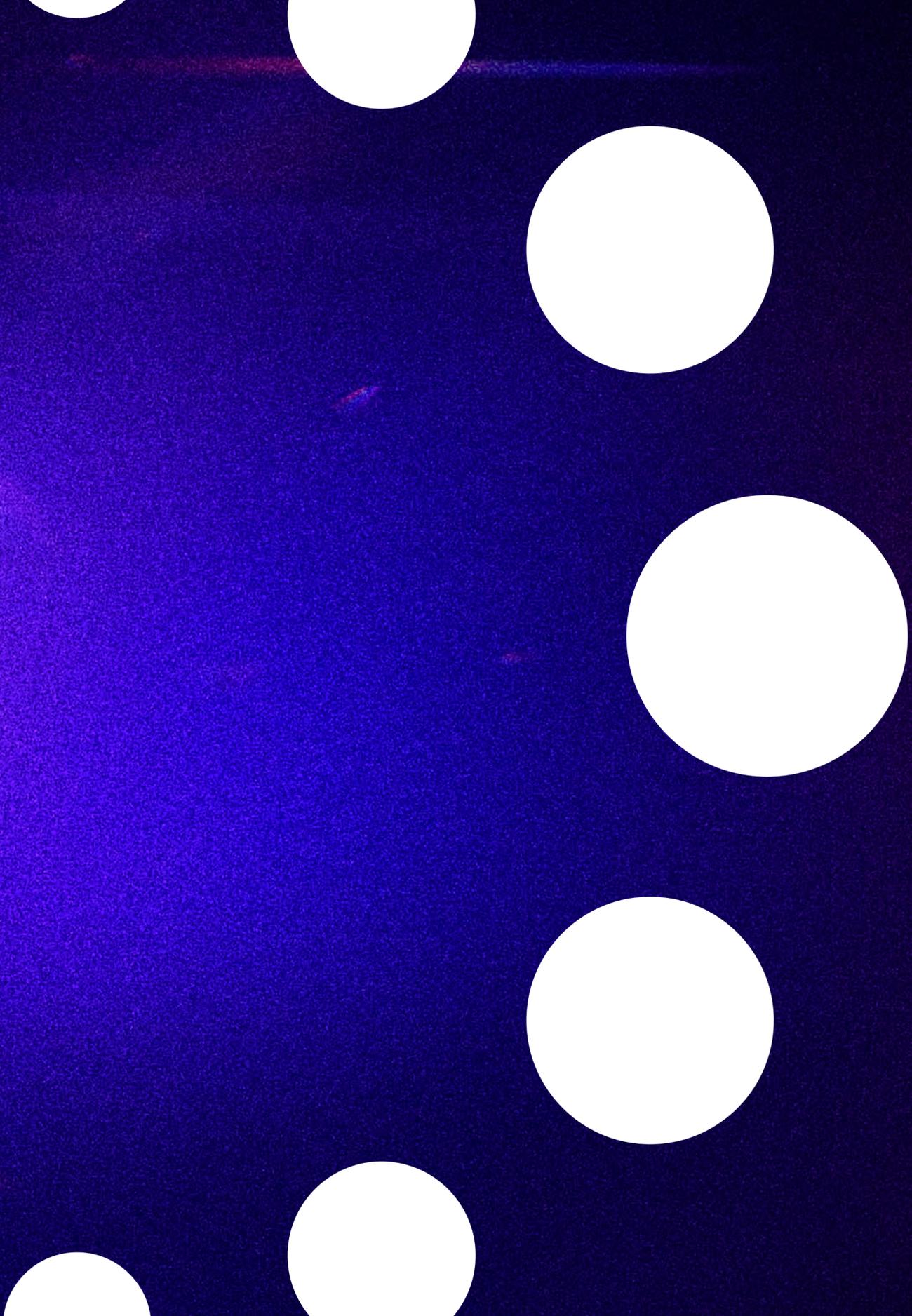


Unlocking the Value of Data

A Wipro Perspective on the New Data Dividend for Manufacturers





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Foreword

Unlocking the Value of Data in Manufacturing: A New Era of Smart Operations

Manufacturers are at a pivotal moment where the ability to convert data into measurable value is becoming a primary source of competitive advantage. As smart manufacturing accelerates, organizations are moving beyond digitizing operations to rethinking business models; developing data-driven products and services supported by disciplined data monetization strategies and partner ecosystems.

This Pulse Survey Report, “Unlocking the Power of Data,” presents insights from 100 senior manufacturing executives on how leading organizations are using data to improve operational performance, focus investments, and address persistent barriers. It also highlights the technologies being adopted, the strategic priorities shaping executive agendas, and the differentiators that separate mature data-driven organizations from the rest.

One clear theme is the strong link between smart manufacturing programs and the development of digital products. Priorities such as operational efficiency and overall equipment effectiveness (OEE) are mutually reinforcing and are underpinning continued investment in digital innovation; investments increasingly tied to revenue growth and long-term resilience.

The report outlines practical considerations for establishing a clear data monetization strategy and building collaborative partner ecosystems to capture the full value of smart manufacturing and digital products. We hope these findings help guide your programs and accelerate progress across your transformation journey.



Data is rapidly becoming the growth engine of next-generation manufacturing. Every advanced technology shaping the sector's future—machine learning, digital twins, Industrial IoT, and generative AI—depends on how effectively manufacturers **use data to generate insights, drive outcomes, and improve operations.**

Wipro's study of 100 senior decision-makers at large U.S. manufacturers shows how companies are advancing in their ability to pair data with the right technologies to achieve measurable results. The most advanced organizations—the *leaders*—are building unified data architectures that bridge IT and OT environments, enabling insights to flow seamlessly across plants, products, and ecosystems.

This progression is driving the industry toward two connected domains where data creates value—**smart manufacturing** and **digital products and services**—supported by a growing emphasis on **data monetization and strategic partnerships.**

The research explored two distinct but connected, paths:

- **Smart manufacturing** – how manufacturers use data to improve internal operations, driving efficiency, quality, flexibility, and resilience.
- **Digital products and services** – how manufacturers use connected data to serve customers directly, creating new revenue streams through connected services and enabling outcome-based servitized business models.

The manufacturing industry is unlocking the value of data in two ways:

1. Advancing smart manufacturing beyond efficiency

Manufacturers are not only pursuing traditional efficiency gains—they are strengthening **flexibility and resilience of operations** by investing in real-time data, tools, and processes that help them withstand disruptions and maintain operational performance.

2. Expanding Digital Products & Services to create new revenue streams

Manufacturers are increasingly using connected products and usage data to build **digital offerings**, including performance advisory, subscriptions, outcome-based services, and performance guarantees.

This evolution marks the shift from isolated efficiency programs to a comprehensive data value chain—where operational data fuels growth, innovation, and collaboration across the enterprise.

1

Smart Manufacturing:

Efficiency, Flexibility, and Resilience





“With today’s volatile markets, supply chains, and operational environments - resilient and flexible operations have become paramount and have surpassed the criticality of efficiency and cost optimization.”

Amit Kumar, Managing Partner & Global Head, Wipro Consulting

Data as the Engine of Operational Excellence

Smart manufacturing focuses on using production, operations, and equipment data to improve internal KPIs such as quality, uptime, and throughput. But leaders are going further, using data to anticipate change and build resilience.

Leaders are embracing *Manufacturing Data Excellence* frameworks that unify IT and OT systems—laying the groundwork for the data-driven, Industry 4.0-ready enterprise.

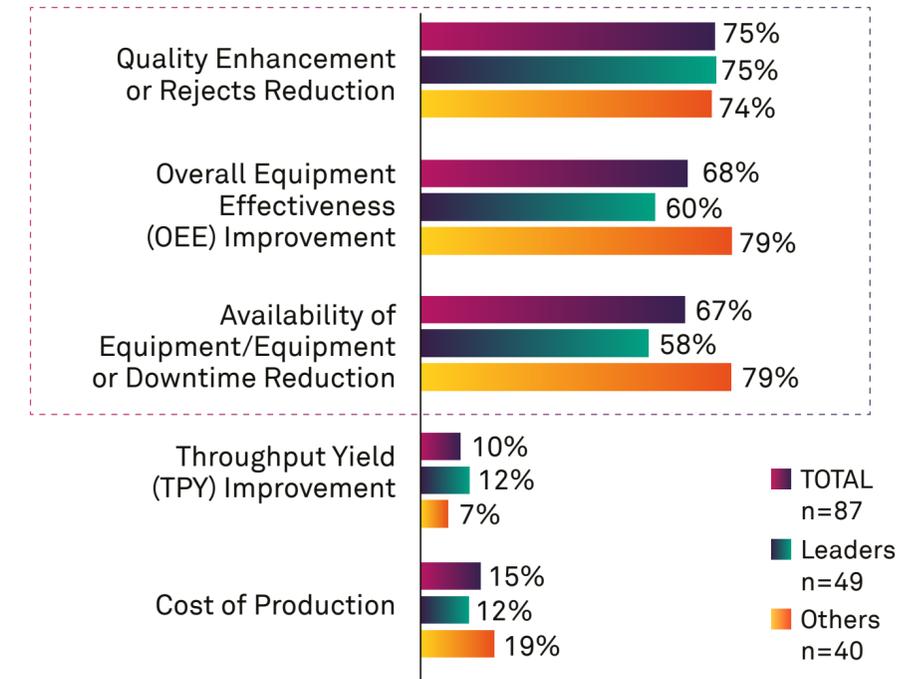
Real-world applications of data-driven technologies—from predictive maintenance to AI-powered quality control and supply chain optimization—are enabling:

- **Operational Excellence:** reducing downtime, improving throughput, and cutting the cost of quality.
- **Innovation:** enabling faster product development and flexible production lines.

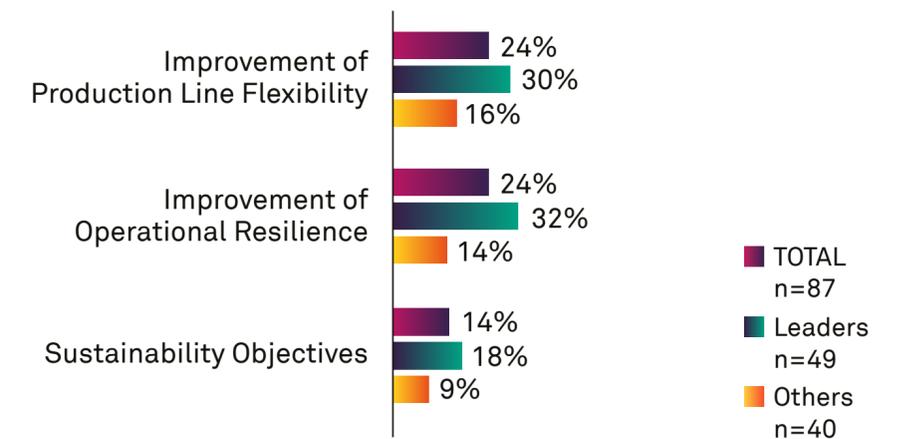
Core Objectives

Quality enhancement (75%) and overall equipment effectiveness (68%) remain the top operational priorities across manufacturers. But **leaders are not stopping at efficiency**—they are simultaneously emphasizing **flexibility and resilience**, which are essential to responding to disruptions and maintaining long-term operational excellence. They are also recognizing the role that flexibility and resilience play in ensuring consistency and in delivering quality and efficiency in a sustainable way.

Core Priorities in Smart Manufacturing



Operational Priorities: Flexibility and Resilience



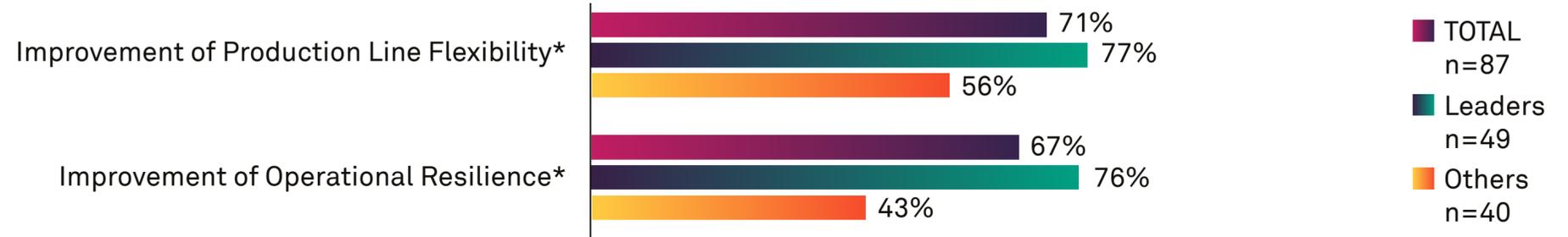
Improvements Across Time Horizons

Manufacturers expect steady performance gains, but leaders are moving with far greater urgency—especially around flexibility and resilience.

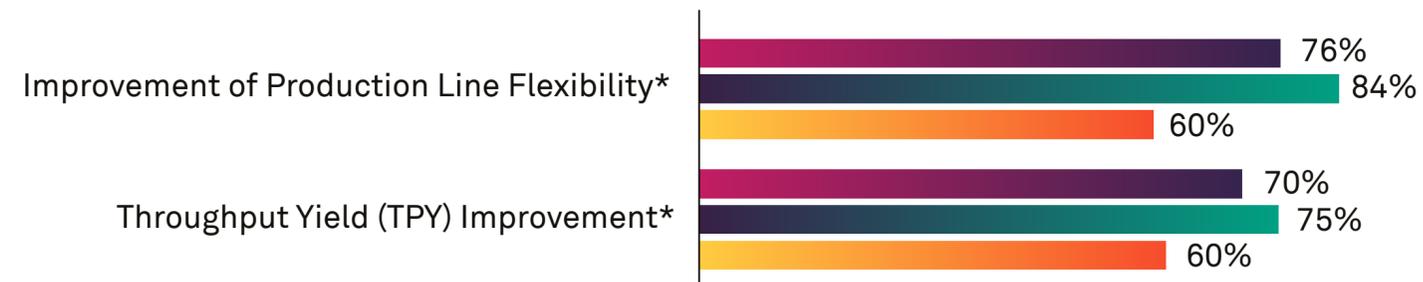
- **Short-term:** 71% expect improvements in production line flexibility and 67% in resilience, yet leaders surge ahead with expectations of 77% and 76% respectively.
- **Midterm:** Throughput yield (70%) and flexibility (76%) improve further, with leaders again outperforming these averages.
- **Long-term:** Resilience (83%), sustainability (82%), and quality (70%) remain key areas of investment.

Almost 94% of the leading manufacturers are expecting improvements across in resiliency and 84% expect improvements in flexibility.

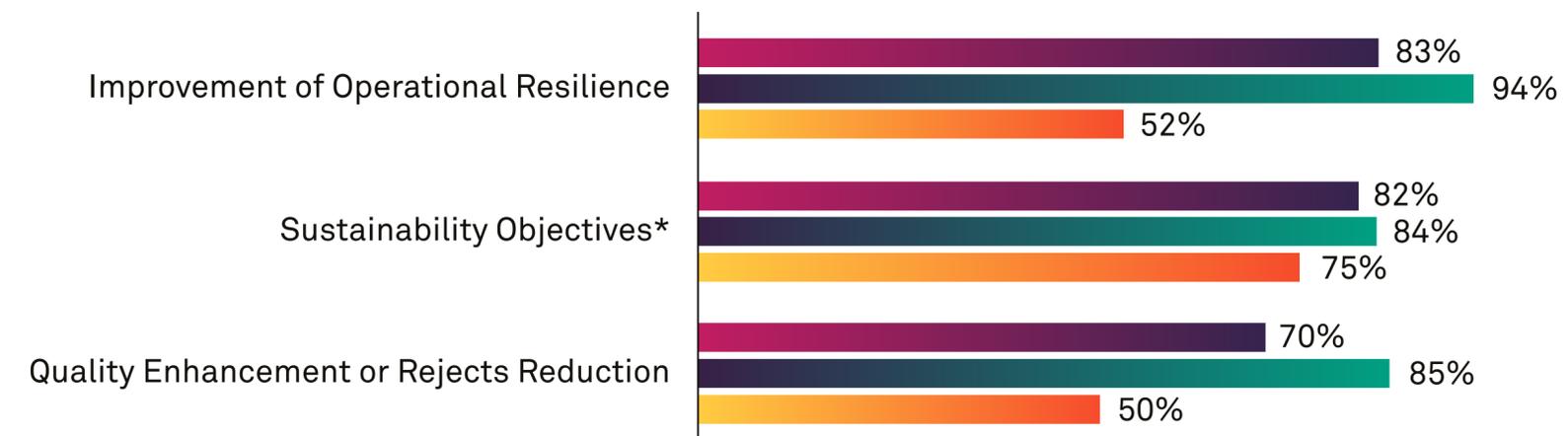
SHORT-TERM: Flexibility and Resilience Gains



MIDTERM: Throughput Yield and Flexibility



LONG-TERM: Resilience, Sustainability, and Quality



*Sums may vary due to rounding

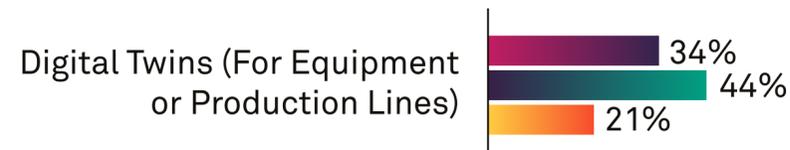
Technologies Driving Resilience

Analytical and visualization models (71%) and traditional AI/ML (60%) are the most extensively used technologies today, according to the chart below. **But the leading manufacturers are moving well beyond these foundational tools.** They are **combining** advanced technologies such as **digital twins, AR/VR, and blockchain** with analytics and AI to strengthen adaptability, improve predictability, and enable more autonomous operations.

This broader technology stack and an ability to combine the technologies to deliver outcomes is a key differentiator between leaders and others.

Digital Twins

Adoption Rates of Digital Twins



AR/VR

Adoption Rates of AR/VR Technologies



Blockchain

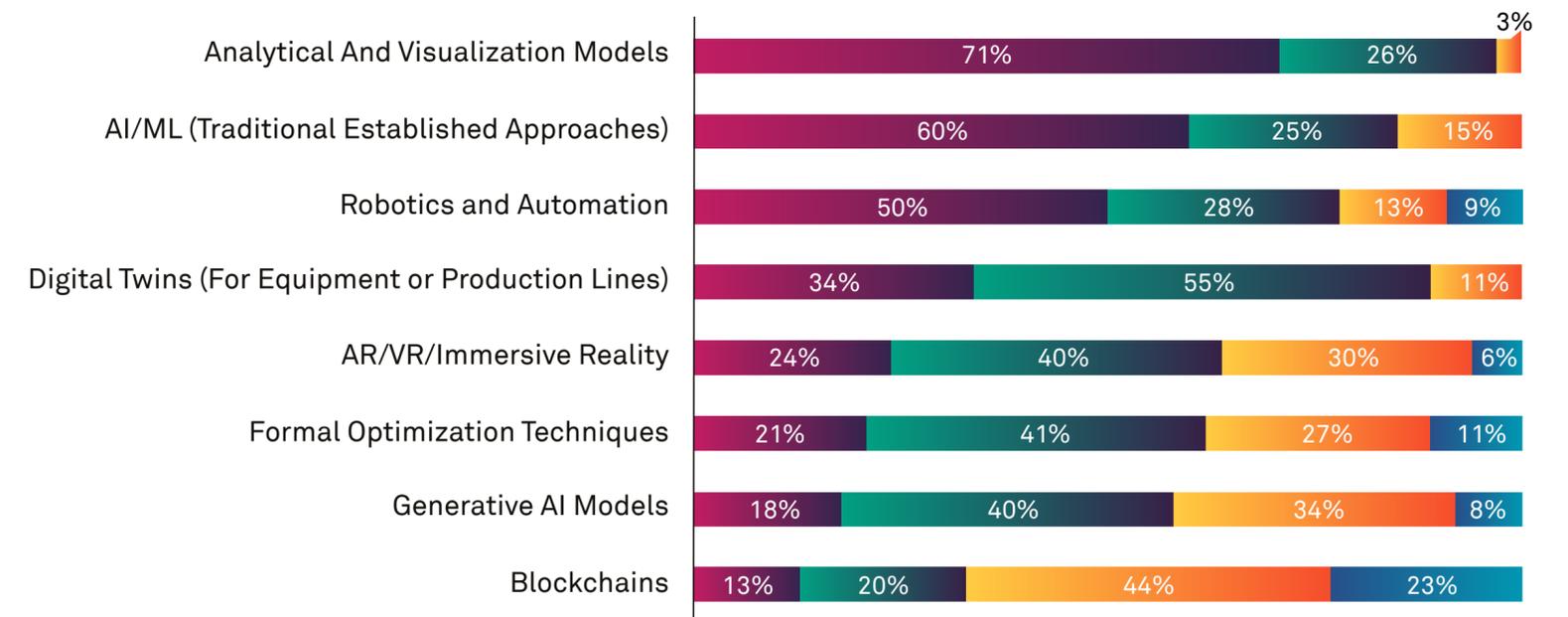
Blockchain Adoption Rates



■ TOTAL
n=100
■ Leaders
n=57
■ Others
n=43

Differentiating Leaders from Others

Adoption Rates of Key Technologies



■ Using Extensively
■ Using on a Limited Basis
■ Not Using yet but Planning in the Next 12 Months
■ No Plans to Use in the Next 12 Months

Use Cases and Maturity Signals

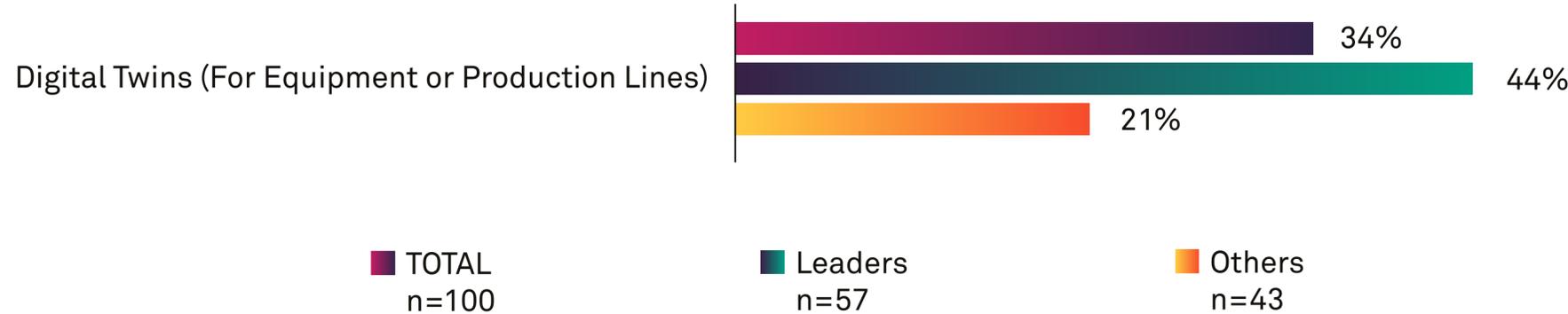
Most manufacturers apply data across well-established use cases such as **efficiency (86%)**, **monitoring (77%)**, and **automation (77%)**. These are essential but largely foundational applications.

Leaders, however, are moving into higher-value use cases—particularly **simulation and digital twins**. These capabilities allow them to test scenarios before making changes on the shop floor, anticipate bottlenecks, and optimize performance without interruption.

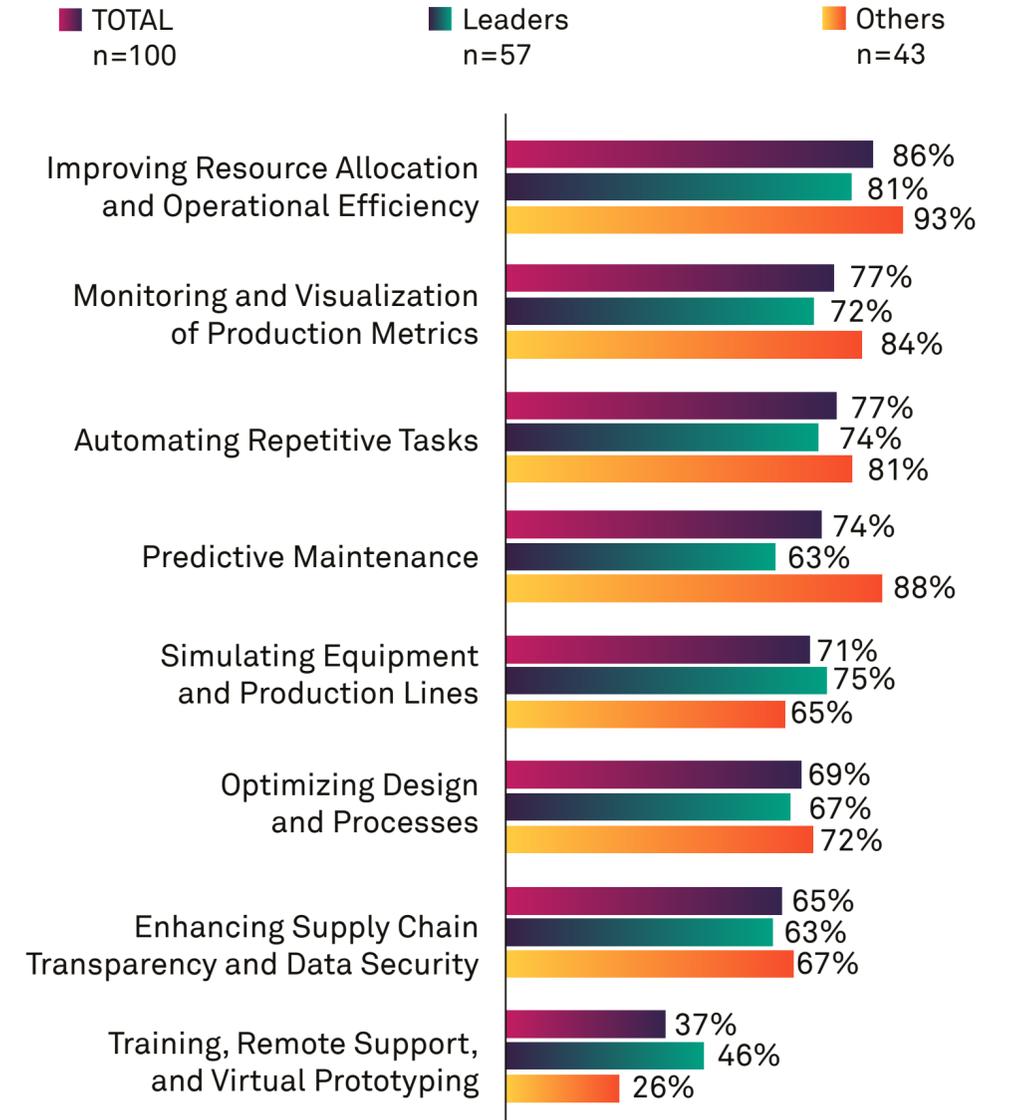
This marks a clear step up in maturity: while others focus on observing and reacting to data, leaders are using data to **predict, experiment, and shape decisions in advance**. The others are clearly playing a catch-up game.

The focus from leaders on simulations and digital twins is a strong evidence of a correlation with the objectives of resilience and flexibility.

The implication is clear: manufacturers that want to build resilience and agility need to expand beyond foundational use cases and move toward predictive and simulation-driven approaches.



Key Use Cases and Priorities



Challenges

Integration with legacy systems (66%) and cost (60%) remain the most common barriers for manufacturers. These issues tend to slow down organizations that are still building basic data and automation foundations.

Leaders, however, are largely getting better at these entry-level obstacles. They are not relatively held back by change management, integration, or readiness to the same degree.

Instead, their challenges are **more advanced**, centered on:

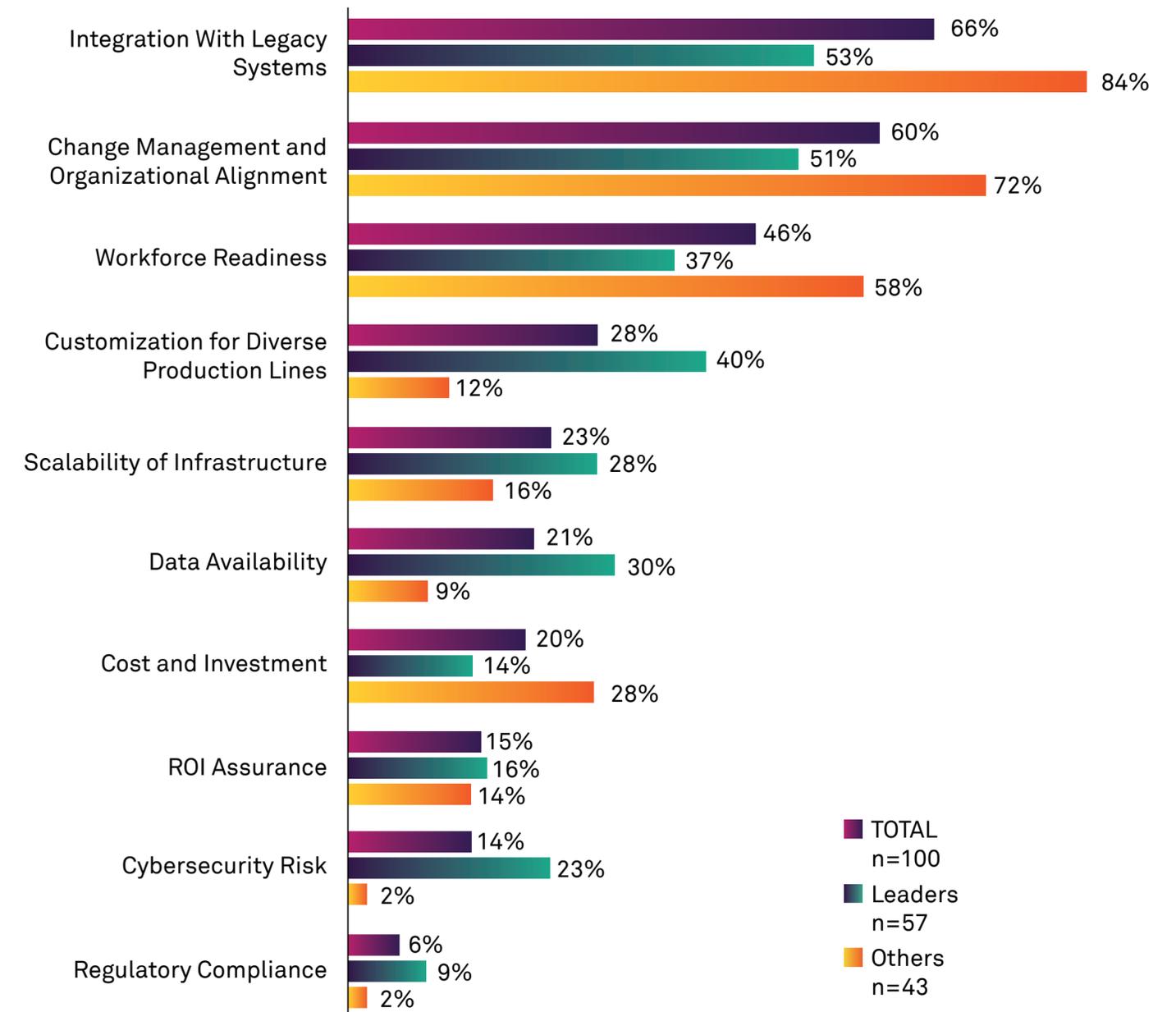
- **Customization**, as they tailor digital solutions to specific operations
- **Data availability and quality**, as they scale use cases across sites

This progression shows that **leaders manage strategy and change more effectively**—freeing their organizations to focus on higher-order challenges that emerge only once foundational issues have been resolved.

The takeaway: companies that address foundational barriers early gain the freedom to pursue the next-generation capabilities that define digital leadership

Integration Remains the top Barrier Leaders Now Face, Followed by Customization and Data-Access Hurdles.

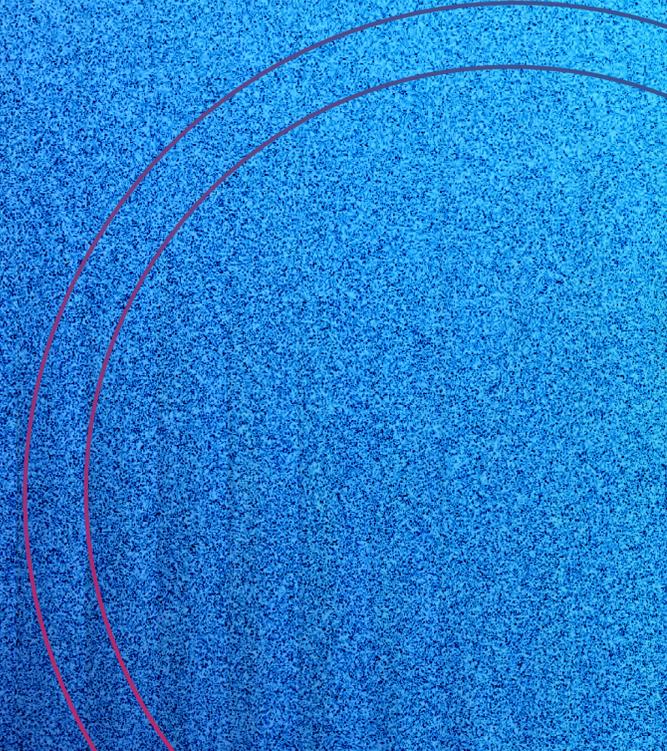
Challenges Ranked



2

Digital Products & Services:

Creating New Revenue Streams





“Digital products may begin as extensions of efficiency goals, but manufacturers are quickly shifting toward outcome-based business models—a fundamental change in value creation.”

Ed Engles, Managing Partner & Americas Head, Wipro Consulting

Building further on that foundation of smart manufacturing, the manufacturers are turning outward—using connected data from their products in the operations to deliver *digital products and/or outcome-based services*. This shift is elevating the use of data from a cost-saving and operational effectiveness tool into a revenue growth engine.

This **servitization** wave is rapidly redefining how manufacturers are looking to generate revenue and engage customers in the future.

Investment Priorities

Top areas of priority for digital products and service offerings include:

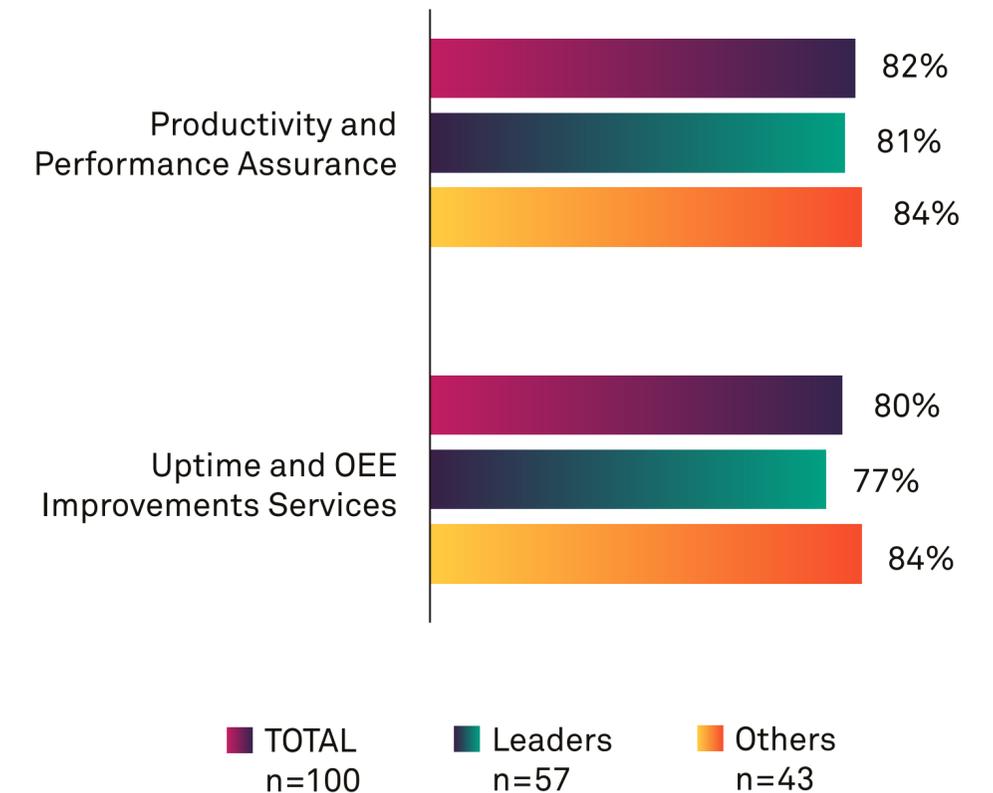
- ▶ Productivity and performance assurance (82%)
- ▶ Uptime and OEE improvement services (80%)

These are well aligned with the smart manufacturing or operations objectives of most of the manufacturing organizations. Given this, it’s but natural that digital product or service offerings focused on productivity, performance, and OEE are gaining traction.

Overall, all the manufacturers, whether leaders or otherwise are equally focused on these.

While current digital products are more aimed at delivering operational efficiencies for the customers, one in three leaders is experimenting with **outcome-based pricing models**, linking revenue directly to specific customer gains or success.

Investment Priorities for Digital Products and Services

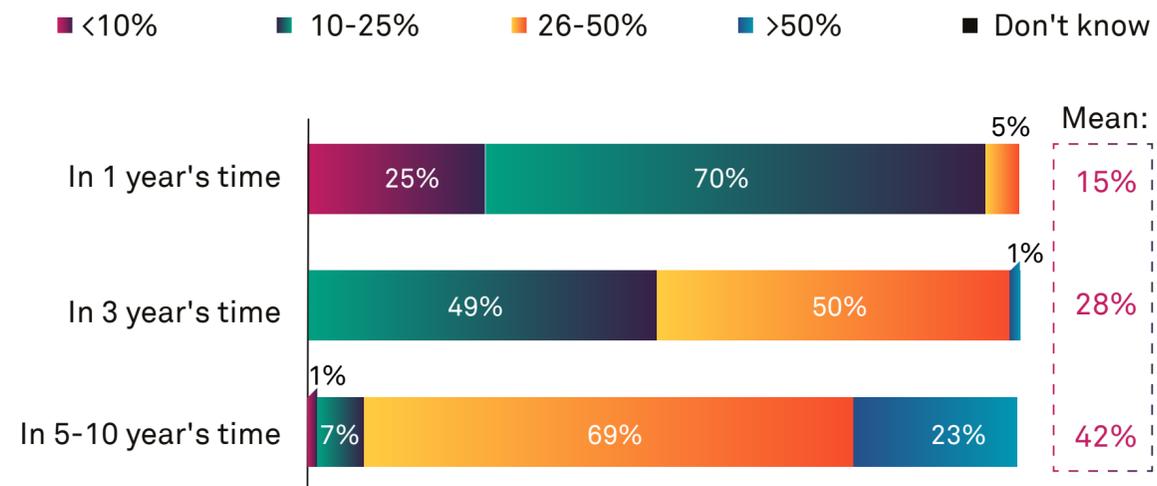


Revenue Growth Potential

Digital offerings already account for **15% of revenue today**, and manufacturers expect this to rise to **28% within three years** and **42% within five to ten years**. As connected products and services mature, digital revenue is becoming a meaningful share of the business rather than an experimental add-on.

That trajectory signals a clear pivot from selling physical products to hybrid business models—where value is created not only through equipment, but through the data, insights, and services that surround it. This is moving towards the ultimate goal of outcome or output based models where the products would no longer be sold but would be provided as a service.

Digital Revenue Share Over Time



The chart shows that leaders expect digital products and services to become a primary revenue engine far sooner than others. Their projections cluster in the 26–50% and 50%+ ranges, highlighting a shift to hybrid business models built on subscriptions, outcome-based services, and digital add-ons. Overall, almost 70% of manufacturers expect up to 50% revenue from digital products in next 5-10 years.

Measuring Success

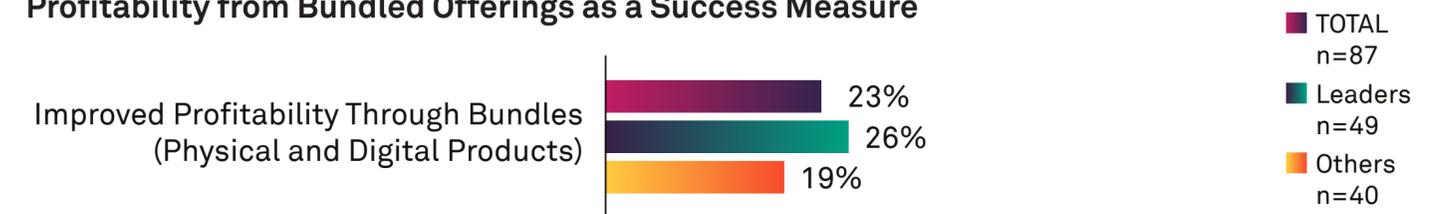
Manufacturers traditionally evaluate the success of their digital offerings through **enhanced customer experience**, cited by **47%** of respondents as a primary measure. But the distribution in the chart highlights a clear shift: **while many organizations remain centered on customer experience, leaders are increasingly focused on financial outcomes**.

Measures Used to Evaluate Digital Success



Specifically, leaders place more emphasis on the **commercial performance of digital offerings**, with a growing focus on **profitability from bundled physical-digital products** (about one-quarter of respondents). This indicates that leaders are moving beyond experience metrics and toward **direct revenue impact from digital services**—such as uptime guarantees, performance-based subscriptions, and add-on digital features that enhance equipment value.

Profitability from Bundled Offerings as a Success Measure



This signals a shift in how manufacturers measure the impact of their digital product initiatives. While others continue to prioritize enhanced customer experience, leaders are increasingly focused on revenue-generating outcomes—such as equipment add-on sales, service subscriptions, usage-based pricing, and bundled physical-digital offerings. This separates leaders from those who remain centered on customer experience alone. While this is in its early stages, it is fast becoming a trend.

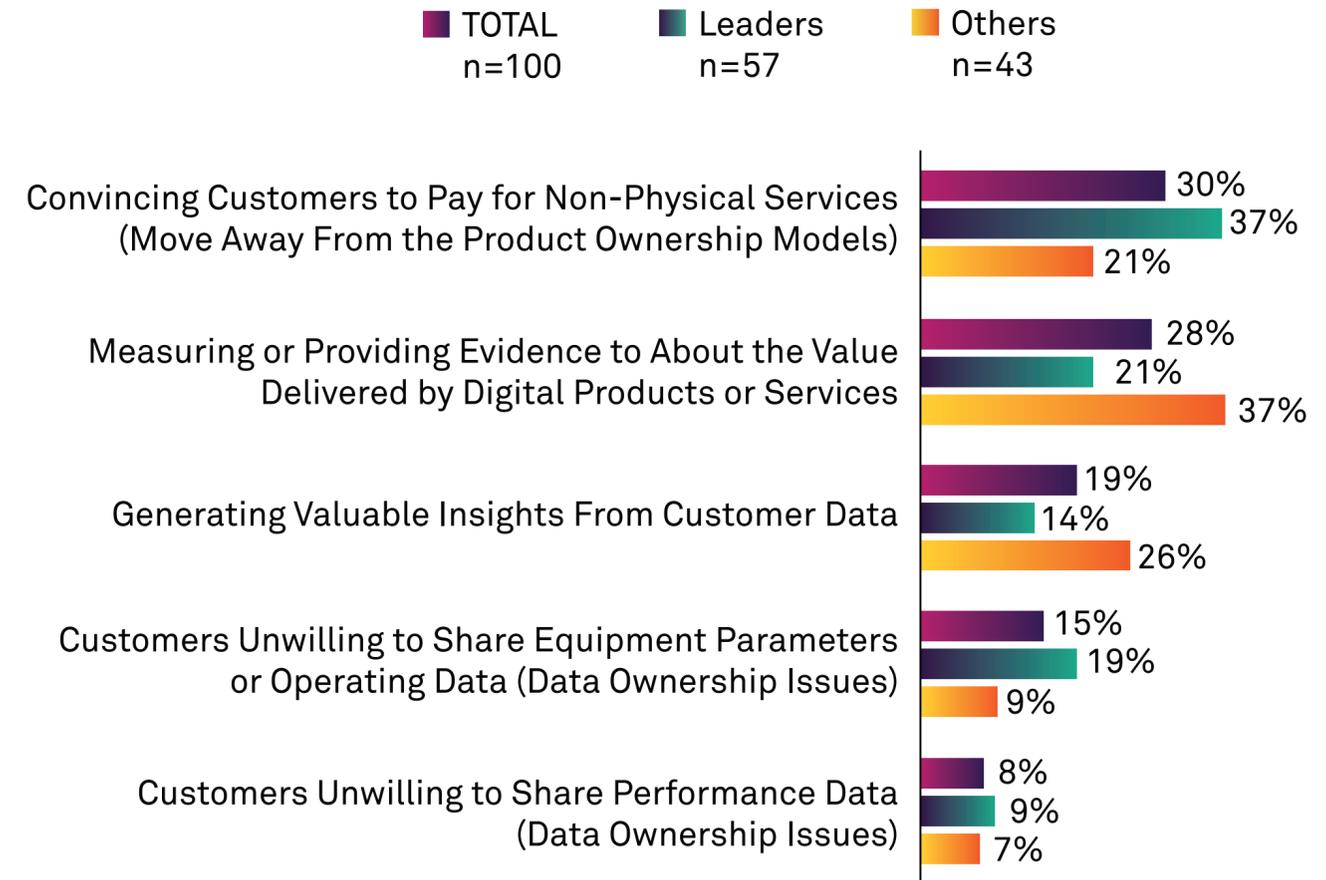
Challenges

The main hurdles are commercial, not technical:

- Change management to move away from product ownership models or move to service based models.
- Proving the incremental value delivered.
- Resistance from customer to share operational or performance data.

These barriers underscore a mindset shift: manufacturers must sell *value*, not just technology. There are issues such as sharing and ownership of data that needs to be worked on to build collective value between manufacturers and their customers. Data ownership can be addressed by presenting more value-based offerings that will make that question irrelevant in the future.

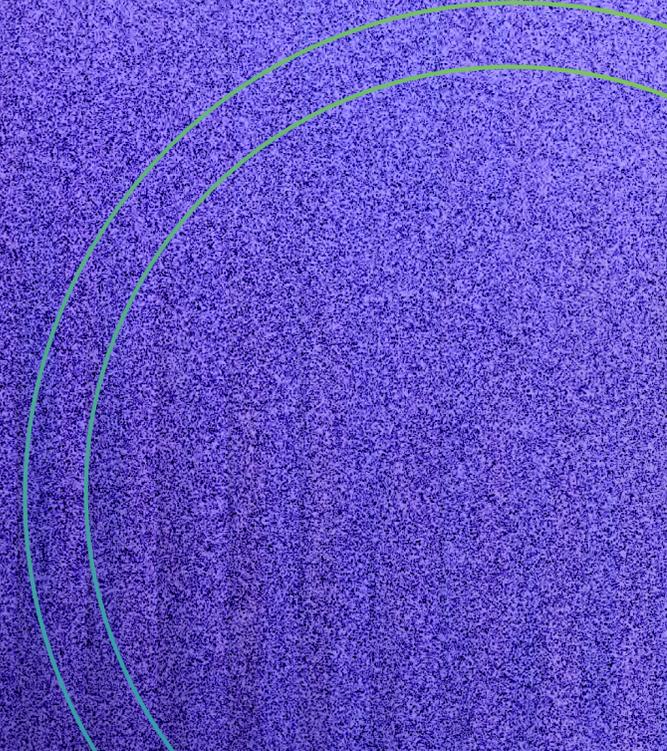
Challenges Ranked



3

Data Monetization Strategy & Partnerships:

Building the Ecosystem Advantage





“A comprehensive data monetization strategy is critical to driving smart manufacturing success and enabling impactful digital products—our clients confirm this every day.”

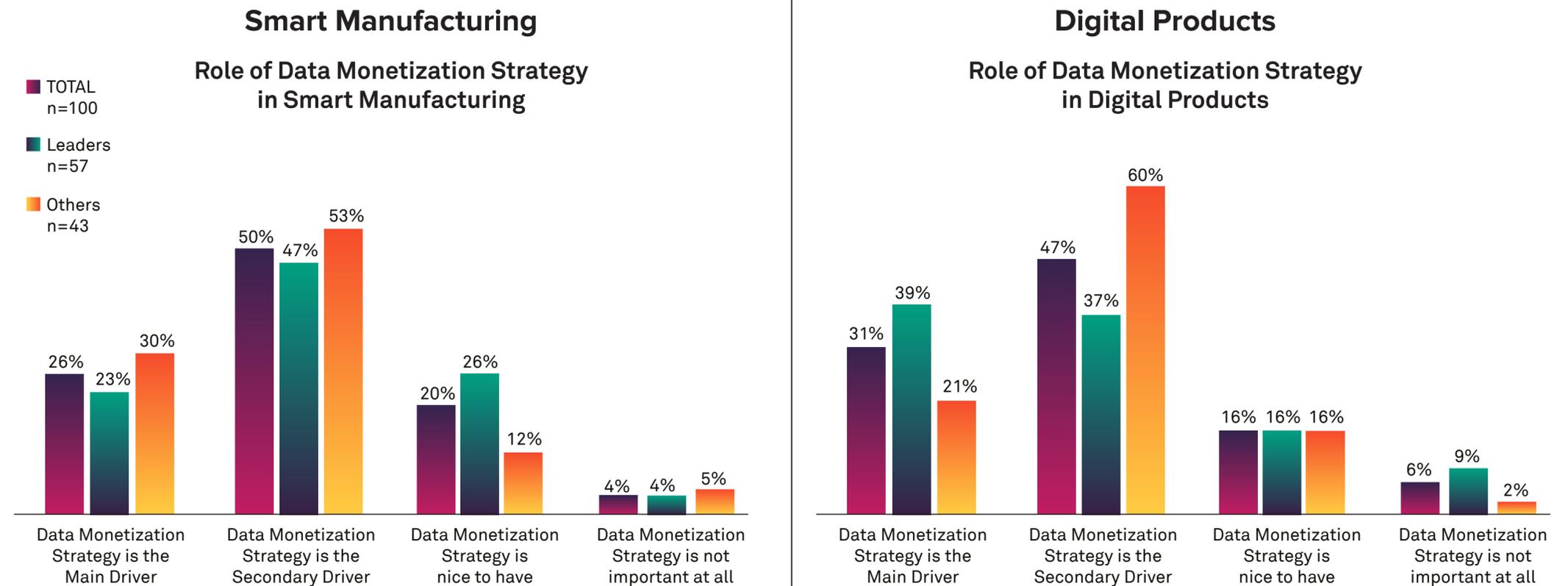
Amit Kumar, Managing Partner & Global Head, Wipro Consulting

The leaders are focusing on a comprehensive data monetization strategy, which they consider either a primary or secondary driver. The emphasis is on monetizing it directly through digital offerings and shared ecosystems.

Data Monetization in Practice

26% see monetization as a primary driver in smart manufacturing, while **31% cite it as a core driver for Digital Products**, with nearly half (47%) calling it a secondary incentive. It is still important to understand that almost 76% and 78% of the manufacturers consider Data Monetization Strategy amongst top two drivers for Smart Manufacturing and Digital Products, respectively.

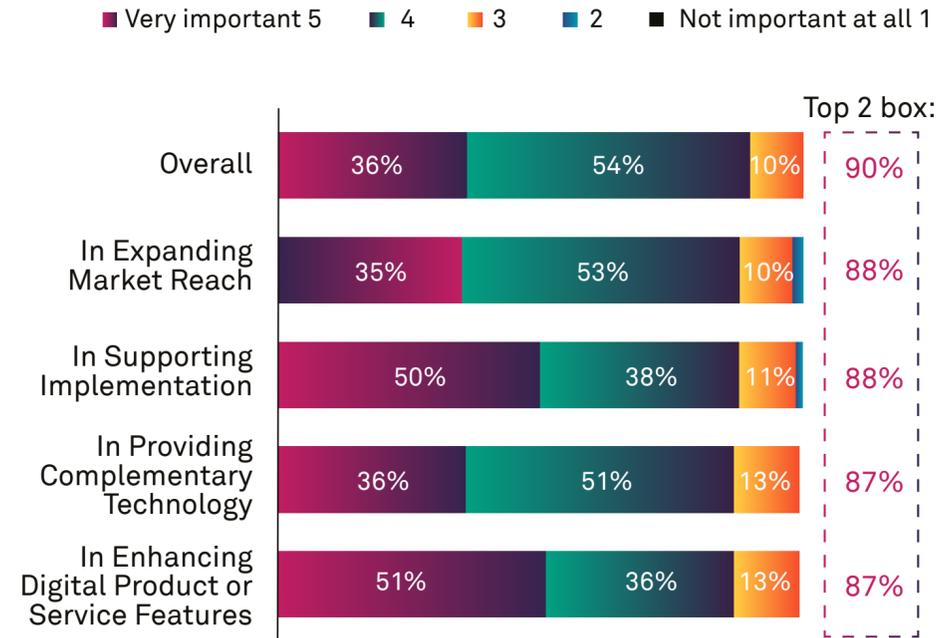
Leaders are integrating the data monetization strategy from the start—turning connected data into a commercial asset.



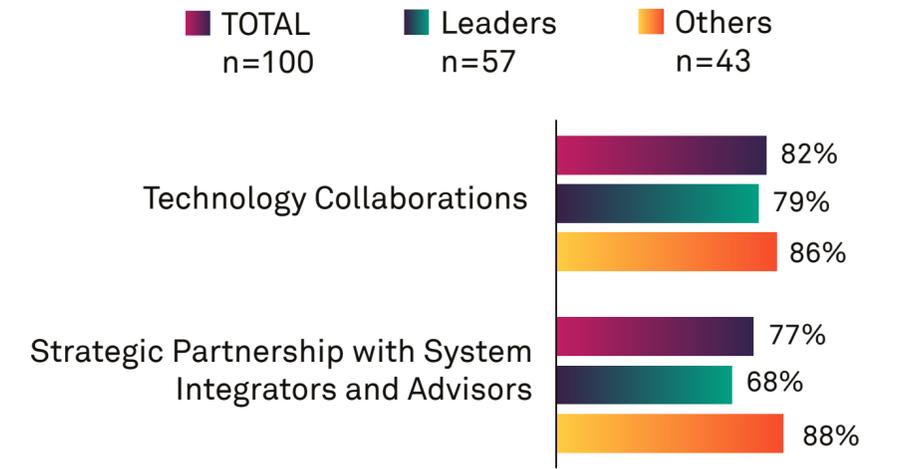
Partner Ecosystems

Nearly **90%** of manufacturers view partnerships as critical to delivering digital products and services.

While less-mature firms rely on system integrators to fill capability gaps, leaders who partnered early now pursue **joint ventures and co-innovation models** to deliver as-a-service solutions at scale.



Importance of Partner Ecosystems Across Digital Capabilities



Types of Partnerships in Partner Ecosystems

Yet even as leaders advance, many manufacturers continue to face challenges around data quality, siloed systems, and skill shortages—proof that the industry is still unlocking data’s full potential.

The Manufacturing Maturity Gap: From Efficiency to Ecosystem Growth

The data tells a clear story: efficiency alone no longer defines success. The next decade of manufacturing growth will come from resilient operations, connected digital offerings, and data-powered ecosystems.

Leaders are already there—embedding flexibility, outcome-based models, and partnership networks into their DNA. Others remain focused on integration and efficiency, risking obsolescence as data becomes the primary currency of competitiveness.

Three Imperatives for Manufacturers

1. **Move beyond efficiency to resiliency and flexibility**—balance productivity with adaptability in smart manufacturing.
2. **Develop data-powered digital products and services**—turn connected insights into outcome-based revenue.
3. **Focus on data monetization strategy and partnerships**—use a comprehensive strategy and ecosystems to scale innovation and long-term growth.

Together, these imperatives form a **data value chain**—from operational excellence to ecosystem-driven advantage.

Methodology / Survey Detail



Methodology

- Phone to web survey
- 100 total respondents



Audience Profile

Senior decision-makers in data, digital products and services, and smart manufacturing at large (10,000+ employees) manufacturing companies



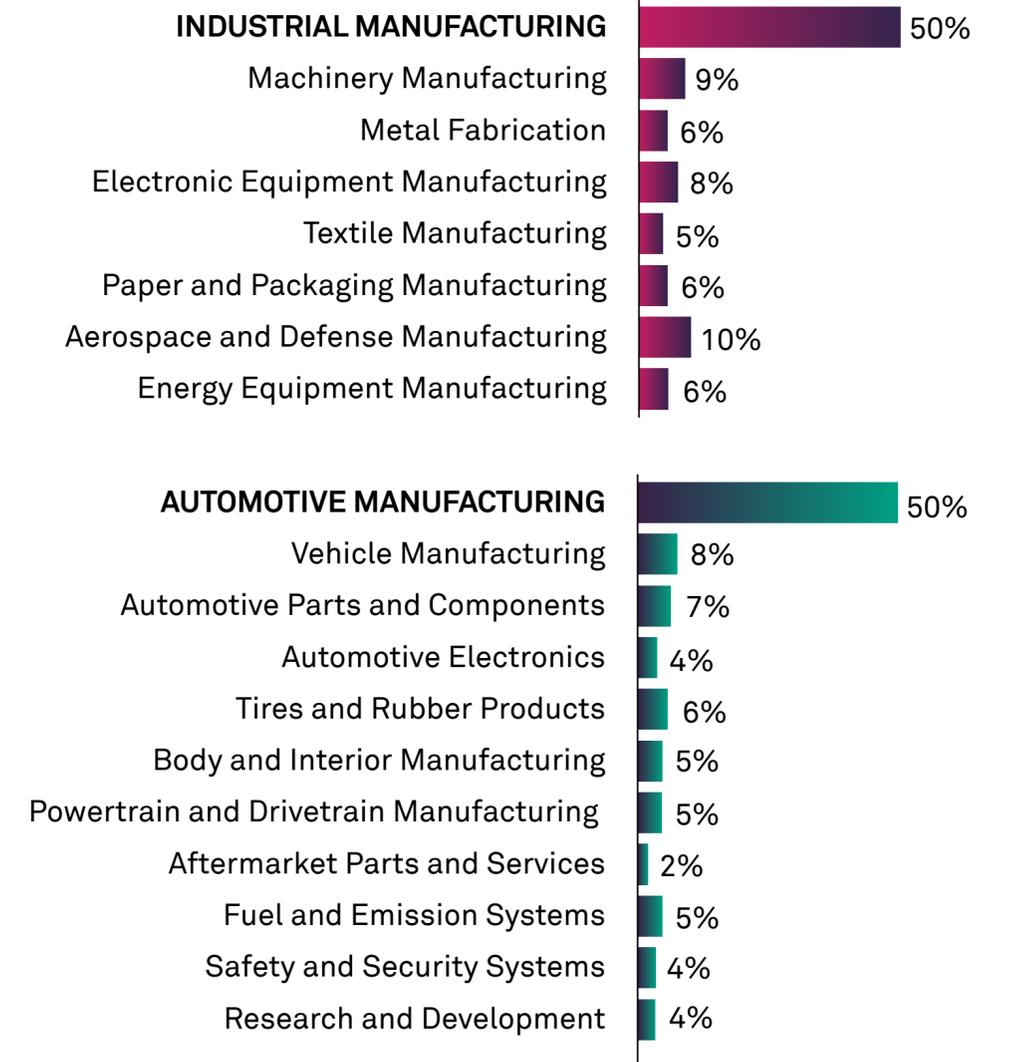
Fieldwork Dates

- June 2025

100% of Respondents Were in the US



Sector Splits

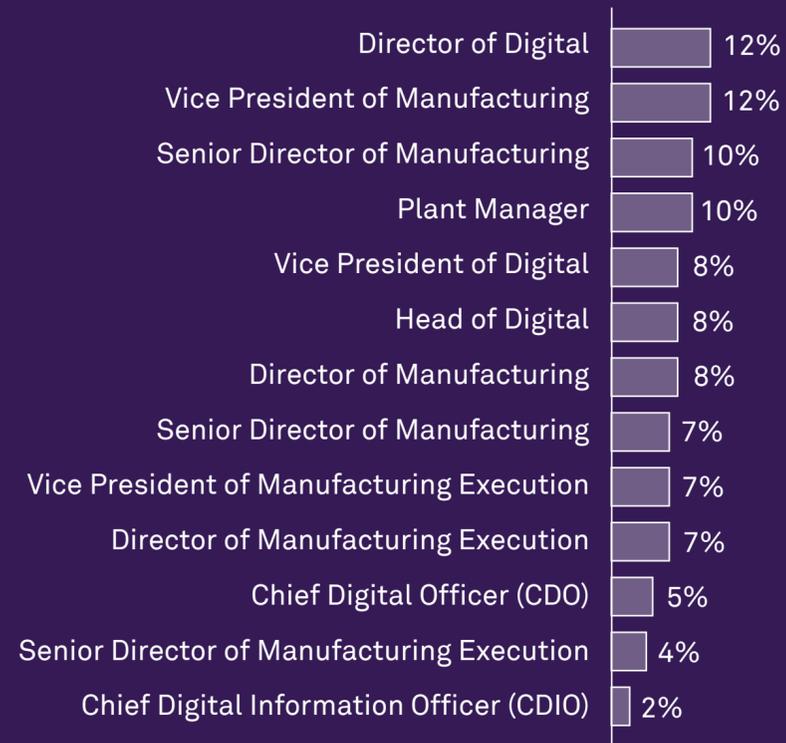


Methodology / Business Profile

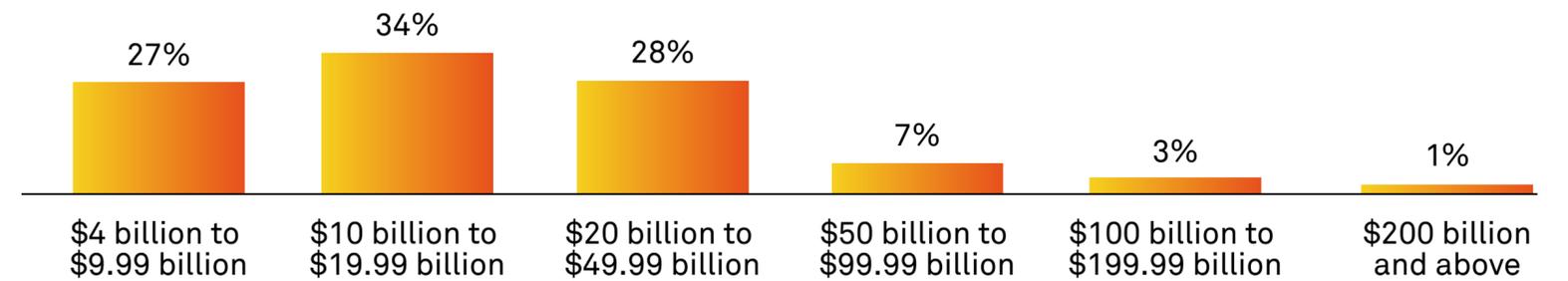
Number of Employees



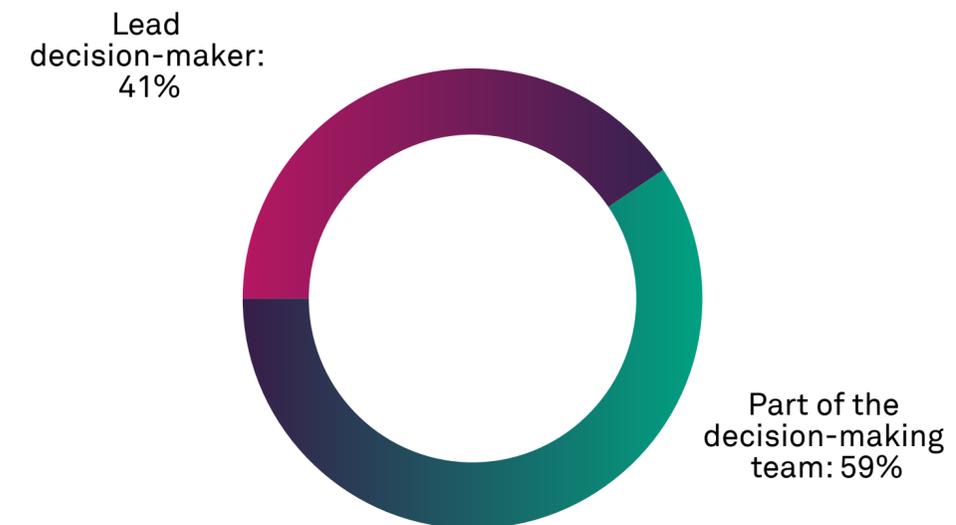
Job Title



Annual Revenue



Decision-Making Authority In Data, Digital, And Smart Manufacturing



About Wipro Limited

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The Wipro Innovation Network – part of the Wipro Intelligence™ suite – underpins our commitment to client-centric co-innovation and co-creation by bringing together capabilities from the innovation labs and partner ecosystems, academia, and global tech communities. With over 230,000 employees and business partners across 65 countries, we deliver on the promise of helping our customers, colleagues, and communities thrive in an ever-changing world. For additional information, visit us at www.wipro.com.