ROCKWELL DIGITAL TRANSFORMATION REPORT 2020

IIoT initiatives move beyond planning to scaling

Rockwell Automation

The next industrial transformation is here

In its recent report, **The Internet of Things: Mapping Value Beyond the Hype**, McKinsey sees IoT having "a total potential economic impact of $3.9 trillion to $11.1 trillion a year by 2025." And nowhere is this more prevalent than in industry, where digital transformation has moved beyond "consideration" to experiencing significant business outcomes. In fact, 72% of manufacturing companies plan to significantly increase investment into digitization efforts in 2020. These manufacturers' combined financial commitment is expected to reach $907 billion in 2020, roughly 5% of revenues according to PWC.
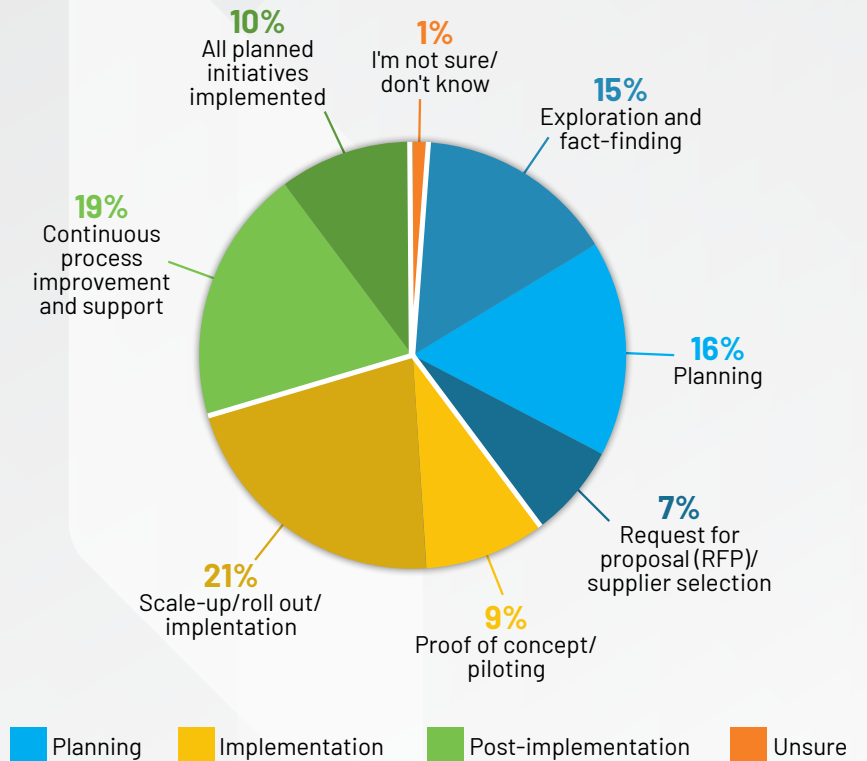
Digitization projects

The maturation of digitization projects will continue throughout 2020, and with this trend, the industry will evolve from exploring the primary benefits of data-driven solutions, to understanding how these projects can be used as a resource to help scale smart manufacturing and industrial operations.

Rockwell Automation conducted global primary research in Fall 2019 to explore the roles, perceptions and decision-making involvement of executives involved in digital transformation/IIoT decisions across seven key industries globally: oil and gas, chemicals, metals and mining, life sciences, food and beverage, household and personal care, and automotive.

In the study, it became clear that companies have moved beyond the "consideration" phase for digital transformation initiatives. **In fact, 2019 saw a 400% growth in digital transformation projects moving through post-implementation. Of companies interviewed, 50% are already in rollout or full-scale production, or applying continuous process improvement to initial digital initiatives.**

STAGES OF DIGITAL TRANSFORMATION*

- **10%** All planned initiatives implemented
- **1%** I'm not sure/ don't know
- **15%** Exploration and fact-finding
- **19%** Continuous process improvement and support
- **16%** Planning
- **7%** Request for proposal (RFP)/ supplier selection
- **21%** Scale-up/roll out/ implentation
- **9%** Proof of concept/ piloting

Legend:
- Planning
- Implementation
- Post-implementation
- Unsure

*GLOBAL RESPONDENTS

Legacy infrastructure

Enterprises tackle legacy infrastructure as digital transformation initiatives kick into high gear

Throughout digital transformation Planning, Implementation and Post-Implementation phases, "challenges in integrating legacy infrastructure" is among the key concerns for enterprises.

Globally, these challenges run through the Planning Phase, where execution, rapid change of technology pace, legacy infrastructure and cybersecurity are of paramount concern. The Implementation Phase offers the additional issues of developing a digitalization strategy and competing demands on organizational resources. Finally, Post Implementation layers on the difficulty realizing the original stated ROI.

Clearly, industrial organizations are struggling to effectively deploy and maintain comprehensive, unified digital transformation initiatives — and given the complexity of IIoT systems, customers crave end-to-end partners that can support wide-scale deployments. Specifically, the industry will tackle the following challenges as digital business strategies scale and mature:

- High volumes of industrial infrastructure becoming integrated/connected

- Orchestrating multisite roll-outs

- Tighter OT/IT integration as more OT infrastructure (devices, production lines, plants) are tied into digital transformation initiatives

FOUR TOP TECHNICAL AND DATA CHALLENGES:

1 Integrating data across multiple systems

2 Converting data into an interoperable format

3 Ensuring organizational adoption

4 System security

Integration issues were listed as a primary concern for 83% of respondents, while 33% were concerned about adoption.

IT/OT CONVERGENCE

Smart manufacturing requires convergence between IT and OT data to drive visibility, collaboration and efficiency within plants and facilities and across operations. However, two decades after automation networks on the plant floor became ubiquitous, it's still generally true that information accessibility between plant floor devices — and the people and systems that can create new value from them — proves to be a significant challenge.

In 2020, the value of OT context will drive an increasing demand for interfaces that showcase an analytical combination of OT and IT into a single set of insights. Sharing data models between OT and IT allows users to make actionable, data-driven decisions in real time. Also, unified visibility into contextualized data will boost workforce productivity, improve the performance of the enterprise, optimize assets, and execute production with predictability.

Benefits of digital transformation

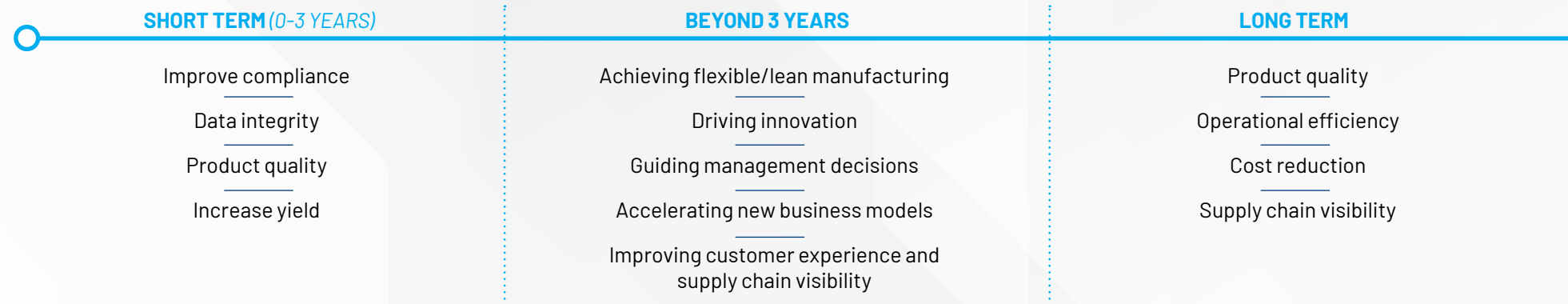## Organizations look to digital transformation to unlock efficiency gains, improve customer experience

The benefits of digital transformation run far and wide across the workplace, including improving compliance and data integrity, bettering product quality and customer experience, increasing productivity while reducing costs of goods sold, and achieving supply chain integrity.

Short term (< three year) priorities for organizations focus on a need to improve compliance and data integrity, product quality and yield. Beyond three years, priorities include achieving flexible, lean manufacturing, driving innovation, guiding management decisions, accelerating new business models, and improving customer experience and supply chain visibility.

These varied according to sector, with short term priorities in food and beverage, household and personal care, and automotive focused on workforce productivity, while chemicals and oil & gas focused on improved compliance and data integrity. Metals and mining, meanwhile looked for increased throughput, while life sciences was concerned about reacting quickly to market changes.

In the longer term, product quality, operational efficiency, cost reduction, and supply chain visibility were top priorities across all industries.

TOP PRIORITIES ACROSS INDUSTRIES

SHORT TERM (0-3 YEARS)	BEYOND 3 YEARS	LONG TERM
Improve compliance	Achieving flexible/lean manufacturing	Product quality
Data integrity	Driving innovation	Operational efficiency
Product quality	Guiding management decisions	Cost reduction
Increase yield	Accelerating new business models	Supply chain visibility
	Improving customer experience and supply chain visibility	

End-to-end solutions

Enterprises lack technology expertise critical to success

Of the enterprises surveyed, less than one-third rated themselves as knowledgeable in technologies critical to their success.
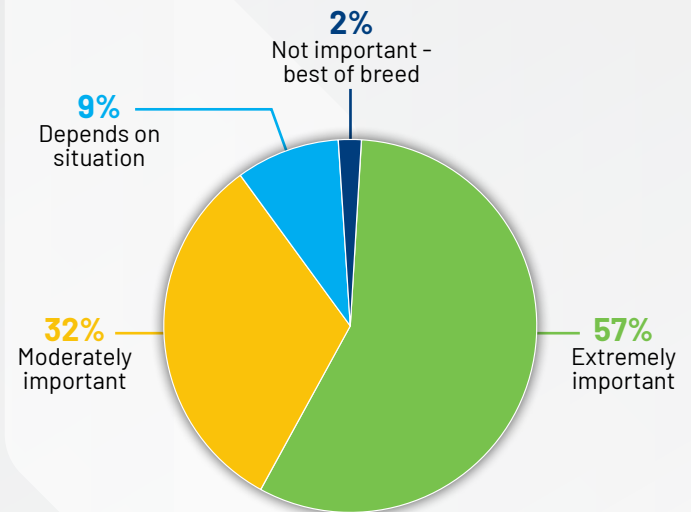
Specifically, only 37% of respondents felt they "knew a lot about" AI, while just 33% were knowledgeable about IIoT. It was 29% for augmented and virtual reality, 31% for cloud analytics, and 27% for robotics.*

One thing they all agreed on: there is a need to effectively deploy and maintain comprehensive, unified digital transformation initiatives — and given the complexity of IIoT systems, they look to end-to-end partners that can support wide-scale deployments.

The solution needs to address manufacturing execution systems as well as analytics, and act as a complete Industrial IoT platform. Over two-thirds of respondents do not see sufficient end-to-end solutions.

* There was some variation among verticals, with Oil & Gas and Life Sciences giving themselves better scores, while Automotive & Tire and Food & Beverage rated themselves lower in knowledge of these technologies.

IMPORTANCE OF HAVING AN END-TO-END SOLUTION

- 2% Not important - best of breed
- 9% Depends on situation
- 32% Moderately important
- 57% Extremely important

*GLOBAL RESPONDANTS

LEVERAGING DATA FOR ROI

To experience ROI from digital transformation initiatives, organizations must be able to quickly and efficiently gather enormous quantities of industrial data, include context with the data, and turn the result into actionable insights in real-time. Businesses that are digitally transforming their operations need a complete ecosystem that can help them simplify technology deployments and quickly achieve results. Customers will pursue vendors that provide a single source for services, solutions and updates to the entire IIoT ecosystem — or vendors that leverage partnerships with other providers to create unified solutions to serve customer needs.

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Methodology

Rockwell Automation conducted a global quantitative research program in order to provide Rockwell Automation with insights on the roles, perceptions and decision-making involvement of executives involved in Digital Transformation/IIoT decisions. This was an online, brand-blind survey with 350 respondents, conducted Fall 2019 (participants did not know that Rockwell Automation was involved in the study). Respondents recruited through an online panel and were pre-identified by market, position, and industry. Survey was provided in English, French, Spanish, German, Polish, Italian, Arabic, Afrikaans, Turkish, Chinese, Hindi, Korean, Thai, Vietnamese, Malay, and Vietnamese.

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