



# Industry 4.0

**The key challenges**

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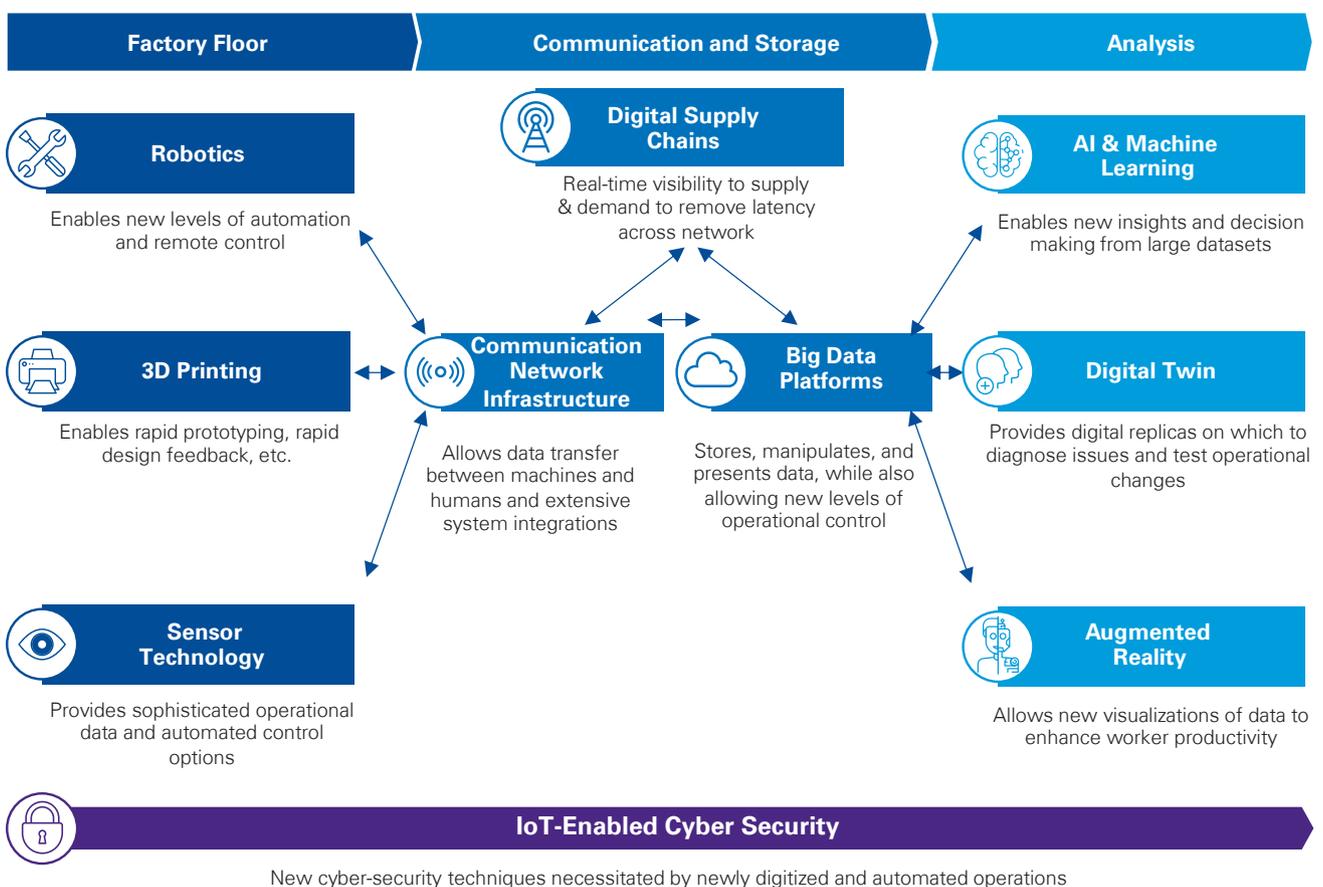


## What does I4.0 look like?

Industry 4.0 (i4.0) is used around the world to describe the **convergence of IoT-driven technologies, augmented decision making and advanced automation**. These technologies are fundamentally challenging the traditional concepts of value-chain organization and driving a step change in business performance and revenue streams.

I4.0 is addressing existing issues in the industry, such as improving and maintaining **quality**, unstable prices of **raw material, traceability** concerns, management of **external/ internal parties** and **regulatory** compliance.

### 14.0 is introducing a smart, interconnected & pervasive environment:



# Trends & COVID-19

In order to face the escalating crisis of the COVID-19 pandemic, companies are focused on pursuing a thorough Industry 4.0 adaptation.

Post-COVID-19 enterprises have prioritized the adoption of **Cybersecurity, Smart analytics and Hybrid Cloud tech**. The importance of these technologies remains at high levels during the COVID-19 period. Enterprises swift investment into more advanced technologies to improve internal processes and customer experience: **5G, AR/VR and AI tech** increase significantly.

67%

**Of companies have accelerated their transformation strategy as a result of the pandemic**

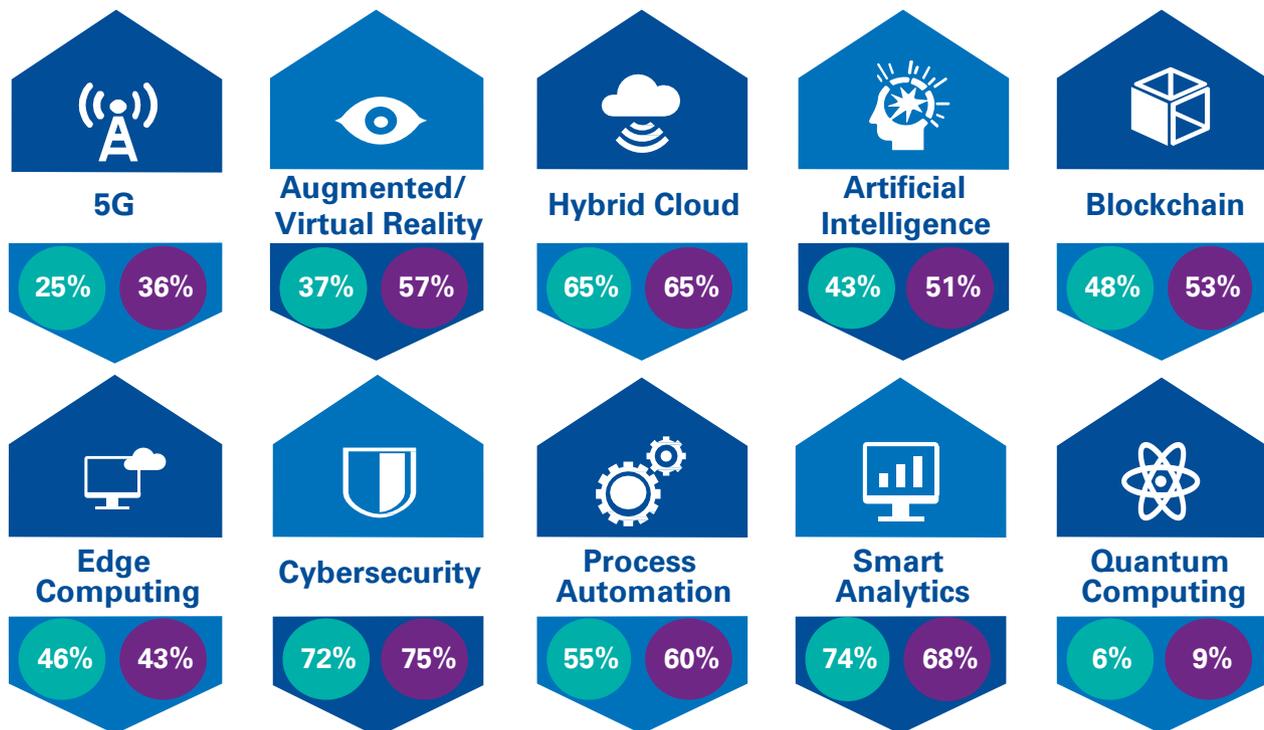
50%

**Of companies are pursuing their digital transformation strategy across the entire enterprise**

63%

**Of companies increased their digital transformation budget, as a result of COVID-19**

**Percentage of companies that adopted i4.0 technology before and during the COVID-19 pandemic:**



● Pre-COVID-19 period ● COVID-19 period

Sources: Impacts of COVID19 on digital transformation strategies (September 2020), HFS/KPMG Enterprise Reboot (August 2020)

## KPMG framework & capabilities

KPMG has brought together its experts to develop a performance-led approach that can address the strategic needs of our clients. Our approach recognizes the criticality of multi-disciplinary teams to deliver transformative value, weaving together the corporate and operational elements of the i4.0 ecosystem.

KPMG Framework consists of six core areas that must work in concert to drive i4.0 success: Customer experience, Strategy & Business model, Operational excellence, Technology & Systems, People, Governance & Risk Management.



### Customer Experience

Changing customer behavior is transforming business models. The ability to build a greater connection with the customer is one of the most valuable sources of strategic advantage

#### Our capabilities

- Redesign and alignment of customer journey and ecosystem
- New product and service market Assessments
- Comprehensive customer data and analytics use case development



### Strategy & business model

The leaders in i4.0 have a clear strategy and roadmap that is ensuring benefits are delivered and enterprise value is being achieved at scale

#### Our capabilities

- i4.0 maturity assessment and benchmarking
- i4.0 strategy and digital roadmap development
- Business case definition, i4.0 investment strategy and ROI measurement
- Joint venture and alliance facilitation



### Operational Excellence

i4.0 reinvents operational performance, seizing the opportunity to integrate the end-to-end value chain to offer competitive advantage

#### Our capabilities

- End-to-end value network optimization
- Predictive and advanced analytics
- Digital transformation of company operations



### Technology & System

Many organizations still need to understand where to invest the capital to best deliver their strategy

#### Our capabilities

- Analysis of data and technology infrastructure
- Technology roadmap development
- Business model transformation via cloud-based technology solutions



### People

New competencies are required to support i4.0-era change now and in the future. Focus is needed on skills development, recruitment, workforce integration and knowledge share

#### Our capabilities

- Organizational restructuring
- Behavioural change management
- Workforce planning and optimization



### Governance and risk management

Leaders in i4.0 are focusing on the value from technology led change rather than the costs of delivering it. Strong governance is required to mitigate risks and ensure ROI

#### Our capabilities

- Project governance framework
- Design and implementation of cyber security and intelligence functions
- Risk mitigation and optimization
- Tax incentives and considerations

## Your challenges

Implementation of i4.0 solutions creates a myriad of challenges that can be broken down into the 6 dimensions. Our experts have produced a body of research that our teams use as the foundations for a strategy and performance-led approach.



### Additional enterprise challenges in the post COVID-19 era are affecting the i4.0 journey:



## Our measurable results

Measurable results have been captured and will be obtained through our industry 4.0 lever application



**Indicative  
Industry 4.0  
Levers**



**Concrete  
examples of  
actions**



**Obtained  
results**

### Reduce time-to-market

Customer Cocreation / Open Innovation  
Rapid experimentation and simulation

**Time-to-Market -20 to -50%**

### Optimise the supply/ demand match

Data-driven demand prediction  
Data-driven design to value

**Forecasting Accuracy > 80%**

### Develop the service/ aftersales

Predictive maintenance  
Remote maintenance  
Virtually guided self-service

**Costs -10% to -40%**

### Control quality

Statistical Process Control (SPC)  
Advanced Process Control (APC)  
Digital Quality Management (DQM)

**Costs -10% to -20%**

### Master resources

Smart energy consumption  
Intelligent IoTs  
Real-time yield optimization

**Productivity +3% to +5%**

### Optimise assets utilisation

Routing and Machine flexibility  
Remote monitoring and control  
Augmented reality

**Downtimes -30% to -50%**

### Optimise the resource process

Human-Robot collaboration  
Remote monitoring and control  
Automation

**Productivity +45% to +55%**

### Optimise Inventories

In situ (on site) 3D printings  
Real-time SC optimisation  
Optimisation of batch sizes

**Costs -20% to -50%**

## We can help

Regardless of the i4.0 journey stage that you are currently in, our local & global teams of experts have the capabilities to address these stages from the onset (Strategy & Governance phase) or at any point along the journey.

### Our team can support every stage your transformation journey and consists of Experienced Professionals and Subject Matter Experts in:

**Operations Strategy**  
**Supply Chain & Operations**  
**Data & Analytics**  
**Technology Solutions**

**Cyber Security**  
**People & Change Management**  
**Financial**  
**Tax**

#### Planning & Design stage

Including:

- Organizational/ Business Model Design
- Process Design
- Technology Architecture & Solutions
- Partners Identification
- People & Change Planning
- Demand Driven Supply Chain
- Cybersecurity
- D&A/ IoT
- Risk Mitigation Planning

#### Sustainment stage

Including:

- Governance
- Monitoring KPIs
- Results assessment
- Executive Refresh

#### Strategy & Governance stage

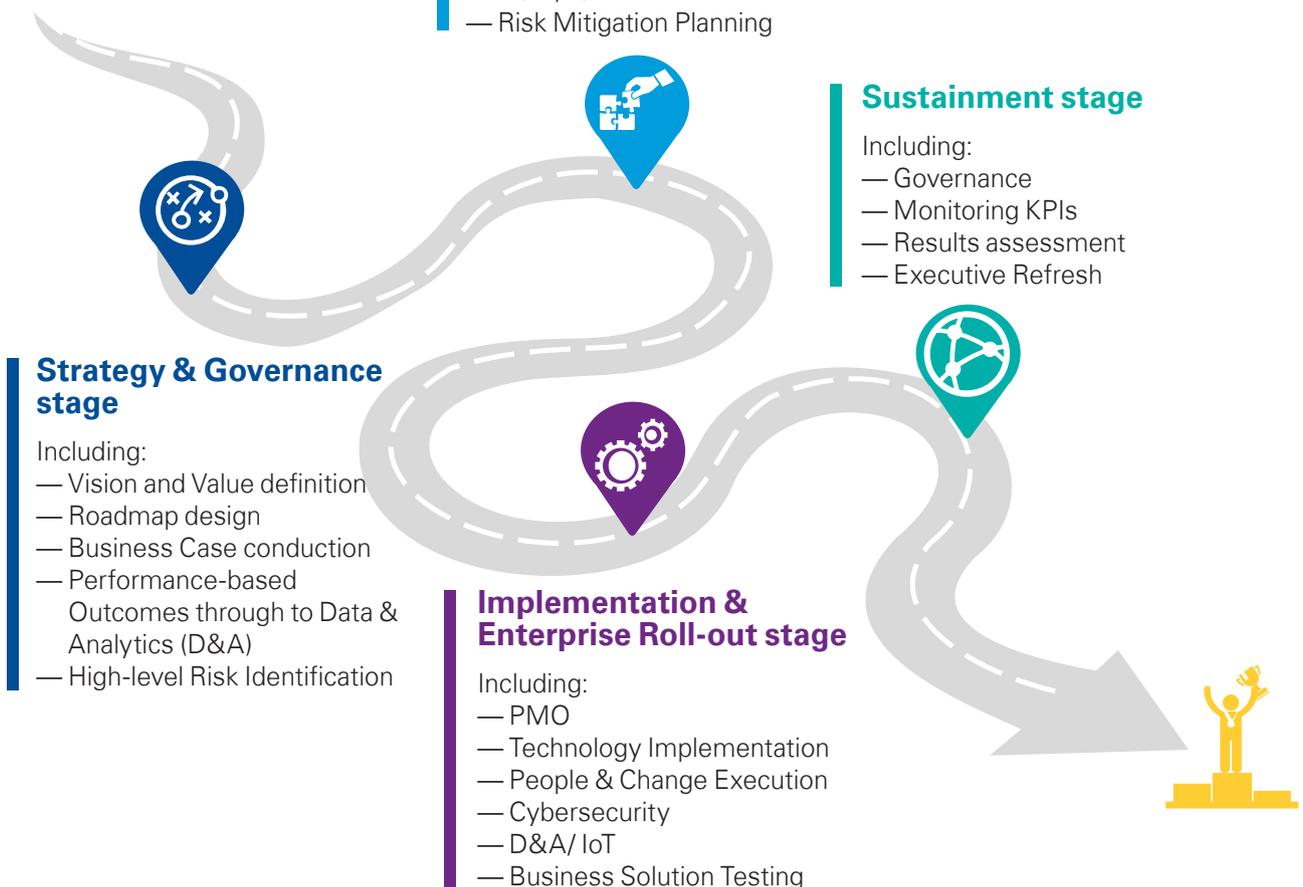
Including:

- Vision and Value definition
- Roadmap design
- Business Case conduction
- Performance-based Outcomes through to Data & Analytics (D&A)
- High-level Risk Identification

#### Implementation & Enterprise Roll-out stage

Including:

- PMO
- Technology Implementation
- People & Change Execution
- Cybersecurity
- D&A/ IoT
- Business Solution Testing



## Our value proposition

At KPMG, we put i4.0 within a business context to help manufacturers achieve lasting value from their i4.0 investments. We work with industrial manufacturers to create, execute and improve their enterprise-level i4.0 roadmap. And we help them achieve the scale and integration required to deliver real and sustainable business results.

At KPMG, we understand the challenges and opportunities facing industrial manufacturers. Every day, our people work shoulder-to-shoulder with the world's most innovative manufacturing leaders. And our experience and our research offer our teams significant insight into the reality surrounding i4.0.



We partner with our clients to embed i4.0 into their business.

No matter where our clients are on their i4.0 journey, KPMG professionals are available to help them find and secure value, across the technology maturity cycle and the product lifecycle

### We can help manufacturing organizations:



Create their unique **i4.0 strategy and vision**, aligned to their business objectives



Quantify the business case and **develop the roadmap** to support investment



Define, **improve and support** proof of concept initiatives and use cases, and **help** appropriately scale to **achieve value**



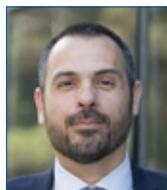
Take a holistic approach to addressing the **financial, change and risk management** requirements of i4.0 adoption

# Our experts



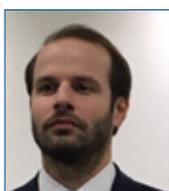
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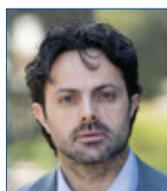
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