

REGION FOCUS: WORLDWIDE

Peer Insights into Industrial Edge Solutions

New IDC research identifies the keys to successful deployment of industrial edge solutions.



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In This InfoBrief

In October 2022, IDC interviewed 24 industrial edge users in North America and EMEA about their operational challenges and strategies in efforts to understand how they used industrial edge solutions to improve their business.

Their experiences, combined with data from IDC’s broader research and quantitative surveys of over 1,000 respondents, provide key insights to help organizations understand industrial edge solutions and create successful industrial edge strategies.

This IDC InfoBrief provides real-world guidance from peers about the opportunity for industrial edge solutions to advance digital transformation — from identifying use cases, to refining a strategy, and selecting infrastructure partners to ensure success.



Strategy



Business Value



Investment

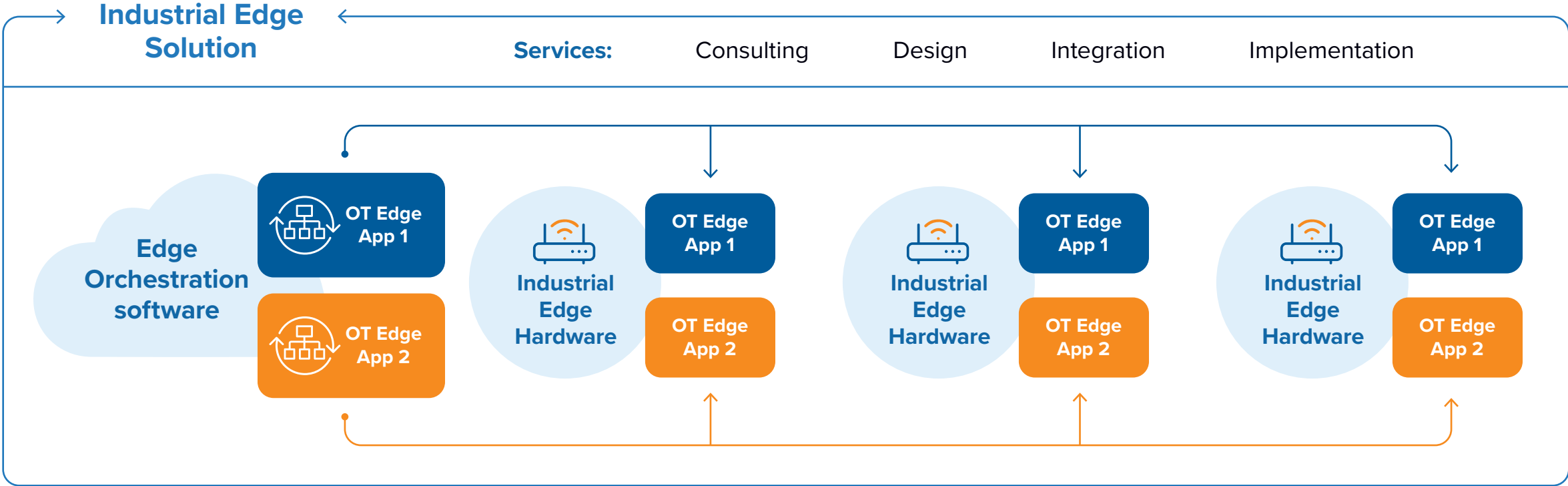


24 participants
with direct decision-making
influence located across
NA & EMEA

- ✓ Utilities
- ✓ Medical Devices
- ✓ Consumer Goods
- ✓ Automotive
- ✓ Healthcare
- ✓ Heavy Equipment
- ✓ Mining and Construction

What Is an Industrial Edge Solution?

An industrial edge solution is the combination of hardware, software, and services deployed at the OT edge that enable the running and managing of OT edge applications.



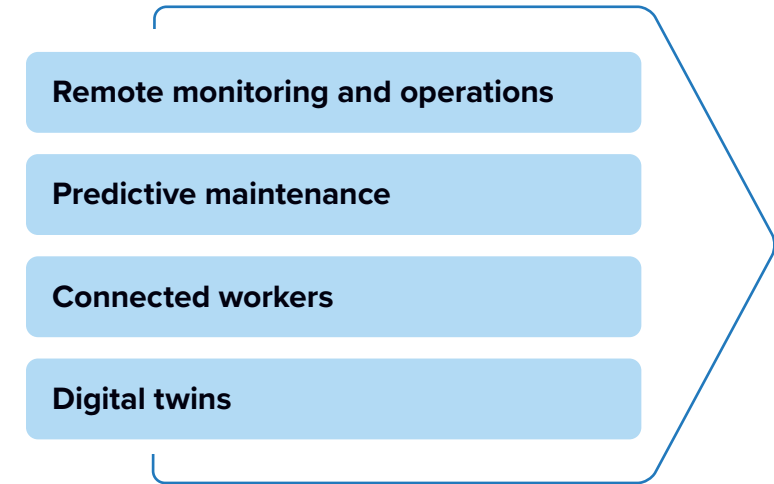
OT edge = All compute located on an industrial premises that can run virtual machines or containers (industrial edge hardware + smart PLCs, datacenters, and any other hardware that can run containers or VMs).

Industrial edge hardware = Ruggedized edge hardware able to run OT edge applications outside of a datacenter. Examples include industrial PCs, routers, gateways, PLCs, remote I/O, or sensors.

Use Cases and Capabilities Required for Transformation Strategies

Enterprises cited a variety of use cases and workloads in the cloud and on-site in industrial operations that are critical to advancing their digital transformation strategies. Capturing and making operational data more broadly available is critical to enabling this transformation. Industrial edge solutions offer a secure connection to the cloud and local destinations, in addition to executing local workloads that require low latency and high resiliency.

To achieve these use cases:



We need these capabilities at the OT edge and in the cloud:



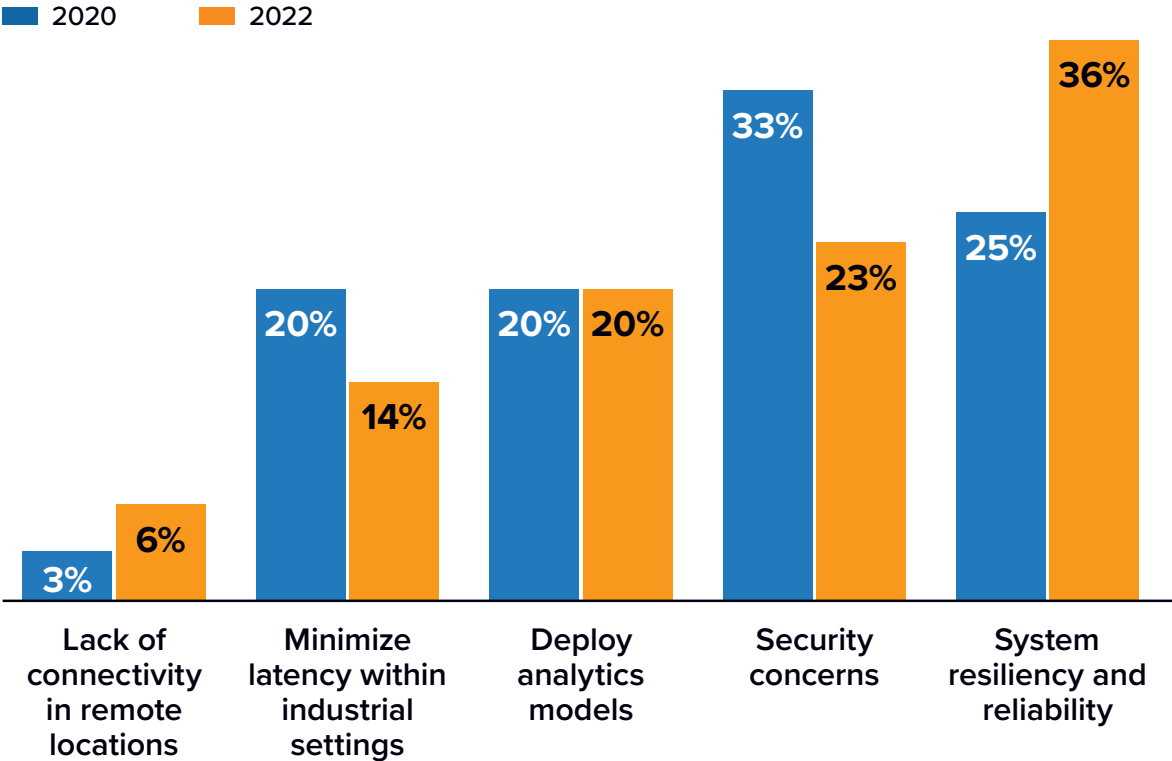
“We want to use IoT and digital twins to operate the plant. This transformation will [require] reviewing the entire OT stack and data flows.”

C-Level – Information Technology – Process Manufacturing/Power Generation/Transmission

The Benefits of Industrial Edge Solutions

By utilizing industrial edge solutions to run and manage critical workloads, companies can reap the benefits of new use cases without introducing disproportionate risk, complexity, or cost.

What is your primary motivation for the use of edge computing?



n = 1,019; Source: IDC Worldwide IT/OT Convergence Survey, 2022

“It is more efficient to run them [workloads] in the edge environment due to low latency, isolation, “closeness” to the operating platform, and it allows us to take the burden of their operation off of the network environment.”

C-Level – Information Technology – Process Manufacturing/Power Generation/Transmission

“Data Security, avoiding transport of data into Cloud and datacenters. Local processing and analysis is helpful.”

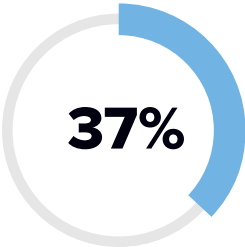
C-Level – Information Technology – Process Manufacturing/Power Generation/Transmission

“Data processing times; volume of the data is too much, and data insights are needed quickly.”

SVP/VP – Development/R&D – Process Manufacturing/Power Generation/Transmission

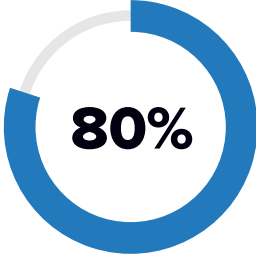
The Hardware Best Suited for Industrial Edge Solutions

According to IDC survey data, ruggedized industrial networking equipment are most well-suited to meet the unique needs of customers looking for OT edge solutions.



Many of industrial enterprises are **primarily using or plan to use intelligent networking equipment** to run edge computing workloads.

n = 1,014; Source: WW – IT and OT Convergence Survey, IDC, May, 2020



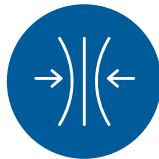
of organizations **believe their edge workloads are highly critical or critical to their business operations**. When edge service is interrupted, the consequences range from risk to safety to reduced profitability. Edge resilience is critical.

n = 1,500; Source: EdgeView 2023

Hardware must be:



Autonomous



Resilient and highly available



Remotely manageable



Protected from the environment

Many respondents say they are not able to find off-the-shelf hardware that meets their specific needs.

“Standard hardware is not ‘hardened’ for this type of operation — we want hardware that is specifically designed for this function.”

Director – Information Technology
Process Manufacturing/Power Generation/Transmission

How Companies Approach Industrial Edge Strategies

There are many technical considerations in designing, deploying, and maintaining industrial edge strategies.

Are virtual machines or containers the preferred deployment model for industrial edge applications?

Survey says:

The majority deploy through virtual machines today. IDC predicts a shift to containers through 2026

Are companies using orchestration tools to manage and deploy OT applications?

Survey says:

Most are not, but they would like to. There are limited options that fit industrial edge needs.

Where should I procure my industrial edge solutions?

Survey says:

The vast majority buy directly from the edge provider. However, some prefer channels such as OT distributors or IT systems integrators.



What to Look For in Industrial Edge Solutions

Enterprises are looking for solutions that include both technical capabilities and value-added services. Nearly half of the companies IDC interviewed prefer to bundle their purchases.



Infrastructure

Key qualities for edge infrastructure:

- ▶ Interoperable with existing infrastructure and vendor agnostic
- ▶ Ruggedized and purpose built for industrial use
- ▶ Easy to source in a bundle



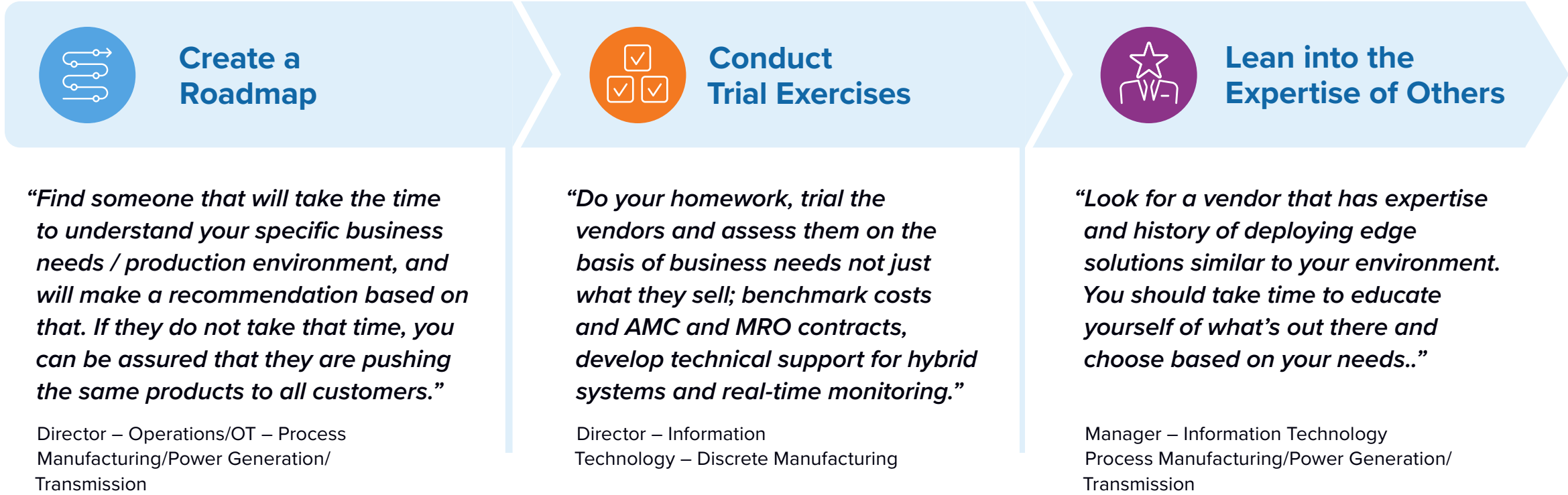
Services

Critical edge services include:

- ▶ Design engineering and strategy
- ▶ Integration and implementation support
- ▶ Expertise in the vertical and industry-specific solutions

Advice from Peers on Choosing an Industrial Edge Solution Provider

Decision-makers will be focused on challenges such as cost, long term fit, and ability to integrate with the existing environment. Ensuring security, reliability, and operational resilience are table stakes. Here is what you can do to build the business case according to peers:



About the IDC Analysts



Jonathan Lang
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Jonathan’s research focuses on digital transformation strategies in environments where operations technologies are deployed, including manufacturing, utilities, oil & gas, and healthcare provider settings. As IT capabilities redefine and extend the core value drivers of operations technologies, Jonathan’s research examines strategies, road maps, and governance models to drive this convergence and manage the new data and processes it requires.

[More about Jonathan Lang](#)



Jennifer Cooke
Research Director,
Edge Trends & Strategies, IDC

Jennifer Cooke is Research Director for IDC’s where she leads IDC’s Edge Strategies research. Jennifer’s research provides insights into the ecosystem of physical infrastructure, software, and services that support secure and resilient operations at the edge. With a background in datacenter research and a 25+ year career as a technology analyst, she has a keen interest in the evolving role of technology in supporting efficient operations and innovation.

[More about Jennifer Cooke](#)

Message from the Sponsor



Companies are increasingly relying on industrial edge infrastructure to manage and ultimately improve their critical operations. Research shows that companies need industrial edge infrastructure that is purpose-built, highly secure and reliable, and supported by a trusted partner with deep domain expertise.

Belden Inc. is a leading global provider of network infrastructure and digitization solutions, with a focus on helping customers achieve digital transformation and optimize their operations. Providers of critical infrastructure have trusted Belden for their connectivity solutions for over 120 years. During those 120 years Belden has evolved from a specialty cable company to a complete solutions provider consisting of trusted brands such as Hirschmann™, ProSoft Technology™, Lumberg Automation™, and others. Belden is evolving again by building on its deep-domain expertise in industrial networking, secure remote access, and OT protocol conversion to offer secure, reliable, and flexible industrial edge solutions.

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