

IDC PERSPECTIVE

IDC European Future of Operations Digital Summit 2021 Analyst Snapshot

Jan Burian

Romain Fouchereau

Massimiliano Claps

EXECUTIVE SNAPSHOT

FIGURE 1

Executive Snapshot: IDC European Future of Operations Digital Summit 2021

The IDC European Future of Operations Digital Summit 2021 on March 23 provided participants with an overview of the latest trends related to operations management and digital transformation, digital technology, and organizational setups. Vendor, end-user executives, and IDC speakers shared their visions, hands-on experience, and guidance.

Key Takeaways

- Digital transformation is not just about technology. To make transformation sustainable and successful, people, processes, and technology must converge.
- Organizations should run operations excellence and digital innovation projects together.
- Organizations should think of digital architecture more broadly, particularly in terms of data visibility, data contextualization, and the future scalability of digital solutions.
- Security must become a core element of any IT/OT convergence initiative.

Recommended Actions

- Consider operations as an enabler of business resiliency: Improve a business model through the optimization of an operating model.
- Consider change management and persuading workers to change their routines a cornerstone of successful implementation at scale.
- Bring multidimensional expertise to the table. IT and operations departments need to codesign solutions.
- Bring in security early in the conception of new initiatives to bridge the need for comprehensive security coverage for IT and OT systems.

Source: IDC, 2021

SITUATION OVERVIEW

Developments and Dynamics

The COVID-19 crisis has brought challenges and opportunities for organizations across industries. No organization should think this is a good time to stand on the sidelines. Where there is a challenge, there is opportunity.

In light of this, IDC's European Future of Operations Digital Summit 2021, held March 23, took a close look at where most of the value in any organization is found: operations.

Operations hold most of the value in organizations in industries as diverse as manufacturing, mining, finance, oil and gas, power and utilities, healthcare, retail, and transportation. There are many similarities in the way organizations across these industries are transforming themselves by implementing fully digital environments.

On the digital technology level, we are witnessing the convergence of enterprise IT and operational technology (OT), underpinned by the automation layer. To make this "triangle" work seamlessly, cybersecurity must be the highest priority – it creates trust in the system.

Transformation also requires massive changes in organizational setups. New roles and responsibilities must be established. Traditional roles must evolve into engines of change.

Many people are suffering from COVID-19 exhaustion, and the pandemic has had negative impacts on many organizations' performance and financial situations. However, the impact of the crisis on operations was inevitable – and it has been momentous.

To keep operations running, many organizations have reengineered their operational models. Many internal aspects needed to be considered, such as social distancing, the need to execute processes contactless, the deployment of health and safety measures at scale, and the establishment of communication strategies for employees, customers, and business partners.

External forces are also impacting operations. The prices of certain commodities are growing. So is demand for logistics capacity. COVID-19 tests, vaccines, and respirators need to be produced and distributed. The spike in ecommerce has heightened expectations for small, just-in-time, and frequent deliveries.

As internal and external forces change the way organizations secure their operations, COOs are in the spotlight. They are having to cope with uncertain demand, workforce unavailability, and rapidly changing government policies. CIOs and CDOs are also becoming frontline soldiers. Technology is playing a crucial role in this "never-normal" situation, providing robust, safe, and scalable infrastructure to organizations.

IDC's European Future of Operations Digital Summit 2021: Highlights

The summit brought together stakeholders across industries to explore challenges in operations from technology, organizational, and process perspectives. Key themes emerged around digital transformation (DX) and operational excellence. Some of the issues addressed included how to overcome obstacles in terms of organizational setup, technology stack deployments, and cybersecurity.

In the opening keynote, **Jan Burian**, head of IDC Manufacturing Insights for Europe, the Middle East, and Africa, presented IDC's perspective on the top five strategic priorities of operations-intensive organizations. Burian highlighted a number of IDC predictions, including:

- **High-Value Customer Experience:** By 2022, 60% of G2000 companies will use customer experience as the top driver of IoT deployments.

- **Smart Operations:** By 2024, 60% of industrial organizations will integrate data from edge OT systems with cloud-based reporting and analytics, moving toward sitewide operational awareness.
- **New Ways of Working:** In 2021, 33% of G2000 operations employees will work remotely or in hybrid environments.

Burian highlighted IDC's view that the convergence of IT and OT, underpinned by automation, represents a powerful system that can shift operations toward a human-less environment.

Burian stressed that the more digital solutions organizations adopt, the more digital silos they inevitably create. Small pilots and isolated solutions make the IT environment even more complicated. To avoid this, organizations should think of digital architecture in a broader context, especially when it comes to data visibility, contextualization, and the future scalability of digital solutions.

Regarding operational setups, Burian's said real transformation requires a culture that supports innovation, accelerates digitalization, and provides true leadership. The traditional roles of the C-suite and middle management must change in tandem with the company's transformation. Members of the "digital dream team" – the COO, CIO, CDO, and CIO – must understand that their role is to enable DX. They must become even more involved in IT decisions.

Burian discussed how operations will likely evolve in the coming years. Organizations must change their operations management models. Operations processes must be built upon converged IT and OT systems and fueled by seamless flows of data. Many processes will become automated and touchless. This will strengthen the role of artificial intelligence (AI) in managing complex tasks and supporting humans in decision-making. AI may even replace humans completely.

At the close of his address, Burian emphasized the key issue of sustainable growth. He stressed that as individuals and as organizations, we must all do our part to equitably resolve environmental and social problems that are having diverse impacts.

In the closing keynote, IDC Security Research Manager **Romain Fouchereau** presented IDC's view of how an integrated approach to IT/OT cybersecurity can build more secure, risk-aware, and resilient operations. IT/OT convergence has been accelerated by DX, and European organizations often face difficult decisions when it comes to the security of OT environments. IDC survey data shows that the top two technology priorities for security professionals are IoT security and OT security. CISOs are already in charge of all OT security in 70% of European organizations.

IDC sees much interest in network security products for embedded system security in industrial environments where risk concerns are emerging as part of the modernization of the OT architecture. Risk mitigation strategies create interest in the adoption of network security gateways, industrial firewalls, network access control, and intrusion detection and prevention solutions. Security products that address proprietary industrial protocols, provide security operations center staff with increased visibility of operations, and give OT personnel access to actionable information are the types of products that are gaining the most traction.

The driving interest is to modernize plant equipment with, for example, components that support remote monitoring, secure remote access, and data analytics, and that enable predictive maintenance and productivity improvements. Network monitoring solutions can help maintain system resiliency in OT environments that may have been negatively impacted by the addition of wireless connectivity, sensors, or other supporting components.

The maintenance of heterogeneous and legacy systems can be a chore. Industrial networks usually include diverse assets and often consist of multiple connected architectures. The life span of OT assets is much longer than what is expected of assets in IT environments, meaning updates and

patching can become complicated. A strong patch management strategy can provide the controls required from security teams without introducing unmanaged risks into the organization.

IT/OT integration can increase an organization's vulnerability, but adoption of the right security-related policies and security tools can help reduce this risk. This is why security must be a core element of any IT/OT convergence initiative.

Advisory Board

Keynotes

In his keynote, **Dr. Thomas Andressen**, Vice President for Operations Digital Transformation at K+S, spoke about the convergence of operations excellence transformation and digital innovation transformation.

Andressen presented five major aspects of operations excellence transformation:

- Providing capabilities to react to changes
- Developing concrete actions and measures
- Setting targets and tracking implementation progress
- Getting alignment inside the organization to provide transparency of project deployment status
- Controlling disruptions within the environment (e.g., overcoming seasonal business effects and the potential "laziness" of process owners)

According to Andressen, operations excellence sets a baseline for innovation. About half of all operations-excellence levers feature digital components. Andressen presented a "digital project cluster" that illustrated a scale of projects ranging from those described as "low-hanging fruit" to "enablers," "fashionistas," "potential," and "game changers." The bottom line is that organizations cannot separate operations excellence and digital innovation projects – they must be run together.

Silos inside the organization must be torn down to enable cross-alignment. A crucial element of success is building strong governance for program leadership and project execution, as well as effective communication and adoption of a change-management approach.

In his keynote, Generali Switzerland COO **Martin Frick** revealed his perspective on the COO as a driver of operational, transformational, and business changes undergirded by digital capabilities.

According to Frick, a company's operating model and business model must be intimately connected. When the business model changes, operating processes must also change. A detailed understanding of technology, its potential, and deployment are key components of business resilience. Frick emphasized the role of Big Data collection and advanced analytics in driving digital capabilities (e.g., digital twins, smart process automation) that improve operating models and optimize business models.

Frick said COOs should embrace their role as drivers of comprehensive change – that is, they should see themselves as implementers of strategies that optimize the operating model and innovate the business model. Because digital technologies enable dramatically new value propositions for customers, the COO should be a digitalization agent. The COO should have a deep understanding of the operational use of digital technology and be capable of combining operational and transformational aspects. In a nutshell, the COO should uphold innovation as a driver of future business.

Frick stressed that the link between digital technologies and operational capabilities is mastery of data at scale. As operational capabilities drive new business models, the COO's role in driving change is inevitable. The COO orchestrates digitalization, closely interacting with the organization's units. Sometimes the lines between the roles of the COO and CIO may blur due to operational processes being strongly underpinned by digital technology. The COO may even be regarded as a digital technology evangelist inside the organization.

Matthias Patz, Vice President for Innovation and New Ventures for Deutsche Bahn (DB), presented the government-owned company's Augmented Reality Cloud program. He described DB's ambitious program to modify railway operations, production, and interactions with customers through immersive technologies like augmented reality/virtual reality.

Synergies between multiple maturing technologies are making this innovation journey possible:

- **IoT and data** produce information that can be combined with enterprise resource planning (ERP) and asset management systems to build digital twins of individual assets, railway lines, and eventually the entire network to enable informed strategic and operational decisions.
- **5G** makes it possible to collect inputs and deliver outputs in remote locations.
- **Vision technology** enables the recognition of objects, the pinpointing of exact location coordinates, and pattern analysis.
- **AI** can make sense of structured and unstructured data and translate it into insights for operators and customers.
- **Audio and voice technologies** enable the delivery of insights via voice assistance for passengers and hands-free instructions for maintenance employees, as well as audio input and analysis.

To exploit these opportunities, which have been made possible by technological advances in the context of DB's business, the in-house digital innovation unit, DB Systel, is implementing a strategic action plan. Elements of this plan include:

- The identification of use cases in which immersive experiences add value to customers and employees. This involves prioritizing use cases based on two waves of technology readiness. The first wave focuses on basic object recognition (e.g., step-by-step instructions for maintenance workers). The second wave explores the art of the possible concerning complex
- Improved agility in the DB units in charge of operations and digital innovation to enable them to bring the necessary expertise to the table. Dozens of workshops are planned for 2021.
- The piloting of use cases in real-world environments (e.g., large train stations and maintenance yards) in order to identify challenges and benefits.
- Use cases that can be turned into scalable services.

Advisory Board Panel Discussion

The main theme of the advisory board panel discussion was the challenges and opportunities in the area of operations.

Alexandros Ziomas, Director of the Information Technology and Telecommunications Business Unit at Athens International Airport, discussed his unit's key priorities. These include the enhancement of passenger experience and upkeep of the airport operations database, which he described as an enabler of efficiency, processes, and new tools. Ziomas said the IT stack must support operational agility and data visibility. To boost passenger safety, his organization also created a cloud-based platform that utilizes contactless technology.

Luis Miguel de Saz Rodrigues, Head of Digital Design Manufacturing Services for Airbus Commercial, Spain, said his organization's priorities include improving the quality of the operations forecast (e.g., supply chains, demand) and standardizing data usage. He said an accurate assessment of inventories in every country is crucial, but that sharing data across various plants and countries is complex. Improvement of forecast accuracy is key. The goal is to have all information in one data lake in the cloud, enabling data visibility across the entire organization.

De Saz Rodrigues addressed scalability issues that must be tackled when deploying new digital solutions. He emphasized the importance of change management and persuading workers to modify their routines.

Mario Attubato, Corporate Head of Digital Transformation for Saipem, said ROI should not be the only parameter considered when discussing the wider deployment of a digital solution. Demonstrated quantitative savings and qualitative impacts, not only related to ROI, are also possible – such as returns on mindset and organizational culture.

Key Takeaways

- The role of business is increasingly important. This is why DX initiatives should be driven through collaboration between IT and the business side.
- DX is not just about technology. To make transformation sustainable and successful, people, processes, and technology must converge. Panel members recommended that organizations always consider transformation as a new business generator.

Partner Section

Schneider Electric: Herve Hellez – Industrial IoT for Resilient and Market-Driven Operations

Hellez outlined Schneider Electric's vision of the Future of Operations. His keynote stressed that we are in a new era of operations, particularly in manufacturing and other asset-heavy industries. The Industry 4.0 era is seeing the convergence of industrial systems that were robotized in the past 20-30 years, alongside the digitalization of enterprise processes. The Industry 4.0 era is unleashing the full potential of automation and embedding data and digital into operations to deliver intelligence at the edge.

Hellez explained that many organizations are only at the beginning of the journey. Most are still strategizing about the "next normal" of operations. Many run the risk of getting stuck in an endless cycle of pilots that do not make an impact at scale. It thus becomes paramount to recognize the challenges of Industry 4.0 and address them, in particular:

- The need to integrate disparate systems and data sets
- The differences in environmental conditions that distributed operations encounter
- The skills gap between data and digital experts at the enterprise level and process experts in operations
- The challenge to provide support to configure, deploy, maintain and monitor the performance of hybrid IT/OT environments that are being incrementally deployed

COOs and CDOs must collaborate to select and implement solutions that:

- Make it easy to collect data from operational asset and processing systems, analyze it, and return valuable insights
- Are agile and resilient enough to adapt to different operating contexts and environments
- Combine products with an ecosystem of services and expertise that help bridge the skills gap
- Are easy to manage remotely via analysis of data across the continuum of edge-to-cloud

Equinix: Theo van Andel – Modern IT Architecture (Cloud-Based) to Support Multi-Site Operations

Van Andel explained how businesses need to review and evolve their value chains faster than ever. He highlighted current digital-leader use cases across industries, and discussed IT/OT convergence and the importance of ecosystems. Van Andel emphasized the need for organizations to adopt a practical guide to real-time data exchange to achieve digital advantage, realize cost savings, and identify new revenue streams.

Business today is all about data, Van Andel said. Rising volumes of data from retailers, suppliers, warehouses, and logistics partners, as well as from IT and OT, are rapidly becoming integrated. These data exchanges need to be secure and, in most cases, occur in real time. Many organizations still use

a centralized IT architecture that does not fit today's needs (e.g., deploying IoT at scale or AI). Moving to cloud is not the complete solution; cloud is just a part of the story.

Van Andel identified five steps for successful IT transformation that organizations need to implement to keep pace with digitalization:

- **Network Optimization:** Expand capabilities to the edge and optimize last-mile connectivity.
- **Hybrid Multi-Cloud:** Connect to multiple clouds in strategic locations using a range of cloud and network providers. Establish a second hub for business continuity.
- **Distributed Security and Compliance:** Distribute secure infrastructure and edge services across hubs to locally secure digital interaction.
- **Distributed Data Management:** Deploy edge computing to support AI and machine-learning solutions for local analytics of large pools of data.
- **B2B Ecosystem Exchange:** Build out digital infrastructure at strategic exchange points for real-time participation in data marketplaces, industry exchanges, and B2B real-time processing.

Tanium: Daniel Oxley – IT Hygiene: Revisiting the Basics

Oxley explained why IT hygiene is fundamental to enterprise security and systems management. The definition of IT hygiene has two parts – the **What** and the **Where**:

- **What** is the status of patching and software updates in my environment?
- **What** number of unmanaged devices do I have?
- **What** are the port and incorrect configurations I currently have?
- **What** privileged accounts are being used?
- **What** is the accuracy of my software and hardware inventories?
- **Where** is the weakest link?
- **Where** could an attack come from?

These questions, it should be obvious, are aimed at identifying security gaps that could be maliciously exploited. They seek to detect information problems across the entire business. Staying in control of these basics ensures a solid foundation on which to build the entire IT infrastructure.

Oxley emphasized that if the contents of an organization's network are not known, then that network cannot be secured – it remains at risk. The goal should be to establish a simple process to prove that an organization's IT environments have proper IT hygiene. Accurate, real-time data from across the entire IT architecture should be used to perform these assessments.

The traditional approach to IT hygiene, however, leads to tool proliferation, silos, and bad data. But with a unified endpoint management platform, organizations can gain complete visibility and control of their environment, receiving the following benefits:

- **Discovery and Management of Assets:** Rapidly identify assets and bring them under management in real time.
- **Visibility:** Constantly monitor asset health across a variety of devices.
- **Identification and Remediation of Risk:** Continuously scan, identify, and remediate risk and misconfigurations at scale, enterprise-wide.
- **Data:** Tools are enriched by accurate endpoint data.
- **Simplify IT:** Reduce costs, complexity, and operational overhead.
- **Unify Teams:** Harmonize IT operations and security around a single actionable "source of truth."

Moderated Roundtable Discussion

The roundtable featured discussion of the business value, challenges, and path forward for intelligent operations. Participants included **Herve Hellez**, head of Strategic Marketing, IT Commercial and Industrial Applications, Europe, for Schneider Electric; **Julian Fahsig**, Team Lead for Service Management for ProLeiT; and **Max Claps**, IDC Europe Research Director, Government and Transportation.

From a **business value** perspective, Industry 4.0 delivers benefits beyond improving the performance and reliability of industrial operations:

- **Agility:** The digitalization of operations generates data that can be translated into insights about processes, assets, products, and life cycles. Key success factors include defining the insights that companies are looking for to augment the process expertise of skilled workers and exploring new, more intelligent ways of running operations to boost resilience.
- **Efficiency:** Digital and data empower enterprises to create connections across multiple systems that were previously in silos. By connecting a manufacturing execution system with ERP, for example, companies can gain huge benefits through just-in-time processing, thus reducing stock levels.

Many enterprises have embarked on the journey of using data and digital to make their operations more intelligent. Yet not all have realized the full benefits of their investments. The most common challenges have to do with connecting operational and information technology in a secure manner and implementing organizational change.

- **Cybersecurity:** Companies are ramping up the sensing, capturing, storing, and safeguarding of huge volumes of data. This can only be achieved by creating many interfaces – something that can make the system more vulnerable if an effective cybersecurity strategy is not in place.
- **IT Competency:** Many industrial processes are managed by workers who may not have the right expertise in IT. Enterprises need to upgrade skills, organizational structures, and culture to get the most out of hybrid IT/OT and edge-to-cloud environments.

The **path forward** is to move away from large, monolithic industrial control systems to a hybrid all-digital world that can support intelligent operations. Industry 4.0 transformation is creating the need to process large amounts of data. In the intelligent operations world, the real-time nature of these applications means data must be stored and analyzed as close as possible to the location where it is produced. Edge computing is ideal for helping to increase bandwidth, reduce latency, and improve performance while meeting regulatory and compliance mandates.

Cloud technology can be used to collect data from multiple sites to run advanced data analytics and AI. Hybrid IT architecture is scalable from the edge to the cloud and offers a reliable, modern design. Companies from multiple industries are going down this path. An oil and gas company, for example, deployed an edge computing solution that runs a combination of unsupervised and supervised machine-learning models that are continuously trained by operators and subject-matter experts. These models detect, classify, and, in some cases, even predict when an asset will enter an abnormal operating state, whether from an electrical/mechanical perspective or during a production process.

Key Takeaways

Tackling the cybersecurity challenge means having policies, training, vulnerability testing, and tools in place across the cloud-to-edge continuum.

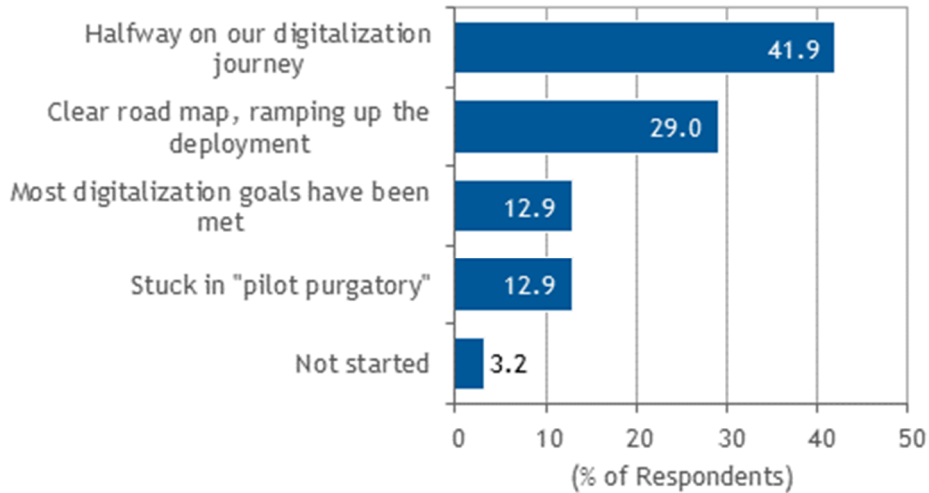
Fostering organizational change and filling the IT/OT competency gap requires companies to find partners that can provide system management but, increasingly, also have the process expertise to interpret data and augment the company's knowledge.

Pre-Event Survey Outputs

FIGURE 2

Digital Transformation Roadmap Maturity

Q. How would you rate the digitalization maturity of your business or administration?



n = 31

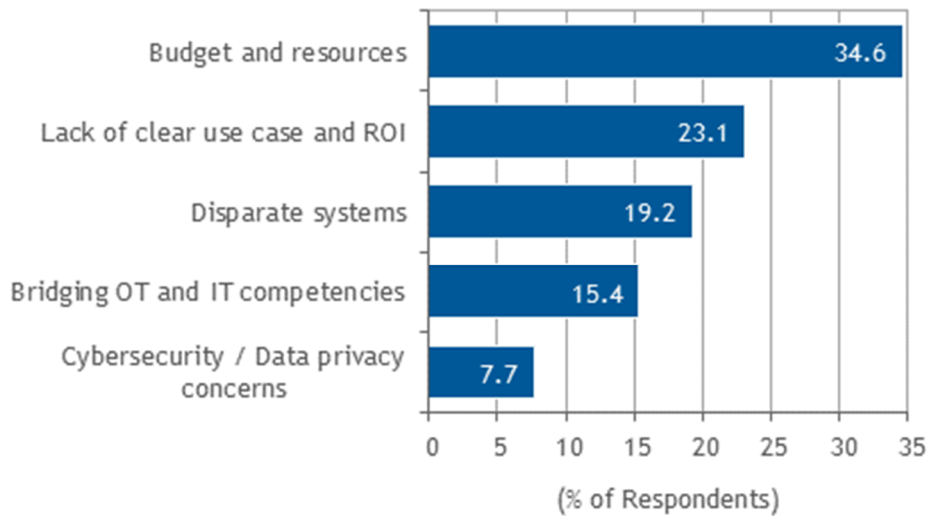
Source: IDC European Future of Operations Digital Summit 2021, Pre-Event Survey

The pre-event survey found that almost half of respondents are halfway or beyond on their digitalization journeys. IDC research has found that the COVID-19 pandemic has accelerated DX efforts at many organizations. However, it is critical that transformation road maps be updated to align with short- and medium-term business goals and investment priorities, with the goal of achieving business and operational resilience. Summit speakers emphasized the importance of cybersecurity, for both IT and operations systems. They also agreed on the crucial role of operations as an enabler of business models dedicated to business sustainability.

FIGURE 3

Challenges on the DX Journey

Q. What do you see as the biggest hurdle to the digitalization of your business or administration?



Note: n = 26

Source: IDC European Future of Operations Digital Summit 2021, Pre-Event Survey

ADVICE FOR THE TECHNOLOGY BUYER

- **Consider operations an enabler of business resiliency.** Improve a business model through optimization of an operating model (and vice versa!).
- **Design digital solutions to be scaled up and integrated with IT infrastructure.** Consider change management and persuading people to change their routines a cornerstone of successful implementation at scale.
- **Bring multidimensional expertise to the table.** IT and operations departments should codesign solutions. Digitalization teams should be set up under the leadership of a CDO.
- **Collaborate with the ecosystem.** Success in industrial edge computing deployments requires a collaborative ecosystem of partners to form a unique network of OT and IT system integrators that have strong domain expertise at the edge and can understand the data being collected.
- **Consider integrated products.** OT and IT suppliers are increasingly designing integrated edge computing reference architectures that can expedite deployment and reduce the cost of maintaining such solutions.
- **Bring in security early during the conception of new initiatives.** Bridge the need for comprehensive security coverage for IT and OT systems and assets to find the right balance between security, risk, and operational priorities to optimize resilience.
- **Get help with basic security hygiene and the implementation of best practices and cybersecurity frameworks.** This can include acquiring consulting and support services to help the organization with data governance, risk management, and compliance policies.
- **Drive integration by appealing to both IT and OT personnel.** The OT side must understand the value of adding cybersecurity policies to the environment. The IT security team should not inhibit initiatives, but instead seek to mitigate risks to acceptable levels, enabling operations to move forward.

LEARN MORE

Related Research

- *IDC FutureScape: Worldwide Future of Operations 2021 Predictions* (IDC #US46929820, October 2020)
- *IDC FutureScape: Worldwide IT/OT Convergence 2021 Predictions* (IDC #US45853820, October 2020)

Synopsis

This IDC Perspective provides an overview of the IDC European Future of Operations Digital Summit 2021, which took place on March 23. The online event provided insights and best practices around operations management across operations-intensive industries. Executives from end-user organizations, IDC experts, and vendor partners shared insights and hands-on experience about the digital transformation journey, the role that digital technology plays in daily operations, the importance of cybersecurity, and the evolving roles of the COO and CIO.

"Operations excellence is a cornerstone of organizational business and operational resiliency. As confirmed by Summit speakers, technology, organization, processes, and collaboration ecosystems must merge to create a complex, living organism." – Senior Director Jan Burian, IDC Future of Operations Europe Practice

About IDC

International Data Corporation (IDC) is the premier global provider of market intelligence, advisory services, and events for the information technology, telecommunications and consumer technology markets. IDC helps IT professionals, business executives, and the investment community make fact-based decisions on technology purchases and business strategy. More than 1,100 IDC analysts provide global, regional, and local expertise on technology and industry opportunities and trends in over 110 countries worldwide. For 50 years, IDC has provided strategic insights to help our clients achieve their key business objectives. IDC is a subsidiary of IDG, the world's leading technology media, research, and events company.

IDC U.K.

IDC UK
5th Floor, Ealing Cross,
85 Uxbridge Road
London
W5 5TH, United Kingdom
44.208.987.7100
Twitter: @IDC
blogs.idc.com
www.idc.com

Copyright Notice

This IDC research document was published as part of an IDC continuous intelligence service, providing written research, analyst interactions, telebriefings, and conferences. Visit www.idc.com to learn more about IDC subscription and consulting services. To view a list of IDC offices worldwide, visit www.idc.com/offices. Please contact the IDC Hotline at 800.343.4952, ext. 7988 (or +1.508.988.7988) or sales@idc.com for information on applying the price of this document toward the purchase of an IDC service or for information on additional copies or web rights.

Copyright 2021 IDC. Reproduction is forbidden unless authorized. All rights reserved.

