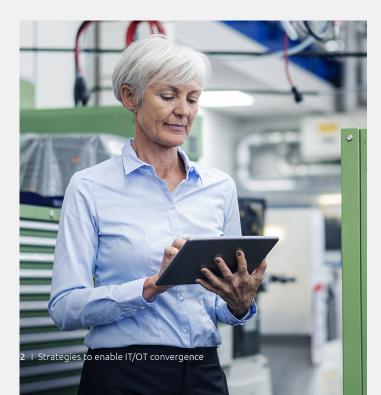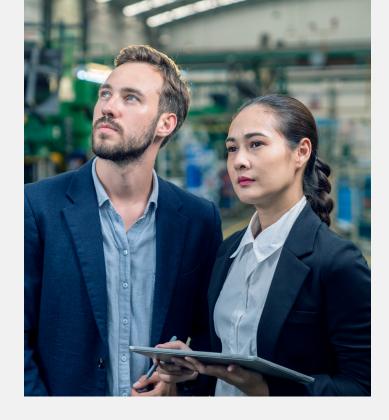# STRATEGIES TO ENABLE IT/OT CONVERGENCE

IT and OT alignment is fundamental to a successful **digital transformation** across industry sectors

The rapid deployment of technologies such as cloud and AI is driving a new era of digital transformation across all industrial sectors. Digital technologies continue to provide well-established benefits, such as increased operational efficiency. But now, the combination of smart and connected products, advanced data analytics, and intelligent industry operations is creating new opportunities – including faster, more agile product design, the creation and deployment of new products and services, enhanced customer engagement, and increased sustainability.

In its 2021 publication *Conversations for Tomorrow 3 – Intelligent Industry: The Next Era of Transformation*, the Capgemini Research Institute knits together data from several research reports to describe how this transformation is affecting businesses. The institute notes:

- 68 percent of organizations planned to boost investment in their digital-transformation process.

- Software-based features and connected services are making new income opportunities possible for OEMs, including recurring revenue streams from "as-a-Service" offerings.

- 5G networks are still in an early stage of deployment but already are enabling new use cases for organizations, such as remote monitoring and predictive maintenance. As these networks are rolled out more broadly, they will spur a massive expansion in the number of connected products and devices, allowing companies to explore and exploit even more use cases.

- Digital twins – which enable organizations to connect virtual systems with the physical world via real-time models – are delivering significant benefits, from operational efficiencies to improved lifecycle management.

- Unlocking an organization's data through emerging tools such as AI-powered insights fosters innovation, resulting in new and differentiated "smart" products and enhanced customer experiences.

TRANSFORMATION REQUIRES CONVERGENCE

However, as companies look to take advantage of emerging technologies, many must reorganize their Information Technology (IT) and Operational Technology (OT) systems, which typically have been entrenched in separate silos:

- IT systems manage the processes, software, infrastructure, and security protocols used to acquire, store, analyze, and share data.

- OT systems manage and control operations within physical assets such as industrial machinery and consumer products.

Silos may not have been an issue in the past, when a machine such as a welding robot was simply a tool and the product it helped build was simply a refrigerator. Today, however, that robot and the appliance it makes can become valuable sources of the high quality, trusted data that technologies such as AI demand.

Done properly, IT/OT convergence enables companies to apply many IT capabilities to these devices. For example, monitoring and predictive analytics can identify and correct issues before they lead to device failures. For the welding robot, that translates to increased uptime on the factory floor. For the refrigerator, that could create a better customer experience and stronger brand loyalty.

BEYOND BUSINESS PAYBACKS, TO NET ZERO

In addition to direct business benefits, IT/OT convergence will play an increasingly important role in enabling organizations to meet their sustainability targets. In its recently released *Data for Net Zero report*, the Capgemini Research Institute notes that 68 percent of the 900 organizations surveyed have established targets within the past two years to achieve net-zero emissions by 2050.

But researchers also discovered only 25 percent of the organizations surveyed are tracking scope 3 upstream emissions – and only 16 percent are tracking scope 3 emissions generated downstream. Given that scope 3 emissions are responsible for 65 to 95 percent of a company's carbon footprint, that's a huge unaddressed issue.

Companies can only improve on what they can measure – and connected devices, managed by a well-executed IT/OT convergence strategy, will be essential to providing the necessary data for organizations to achieve their net-zero goals.

BUILDING A SUCCESSFUL CONVERGENCE STRATEGY

In discussing these imperatives with current and potential clients, Capgemini has determined many companies' IT and OT operations are still stuck in organizational silos. These companies are exposing themselves to many challenges – including significant issues related to security, efficiency, and scalability. Here are some useful steps to building a successful convergence strategy.

Establish executive buy-in: Any transformation needs a champion in the C-suite. IT/OT convergence will disrupt the traditional way of doing things, so someone at the top needs to lead the process.

Embrace product-centric teams: Ditch the silos in favor of product-centric teams that bring together IT and OT professionals to identify the desired customer outcomes, then align the organization effectively to address them. When an enterprise focuses on product centricity – whether it's application development or product development – it's able to leverage agile methodologies. These enable teams to deliver value incrementally to clients – and therefore to the business – in a systematic manner.

Make security a priority: Cybersecurity breaches are an ever-present danger and poorly executed IT/OT convergence strategies can allow hackers to infiltrate an organization through its OT assets. OT devices typically have not been exposed to these threats, so historically they have not been hardened from a security perspective. Fortunately, IT professionals are well-versed in security challenges and solutions, but it's important for companies to take a holistic view of security – not just for the organization itself, but also for the customers using its products.

Plan from the start for scaling: When converging IT and OT, many companies get stuck at the proof-of-concept stage. Often, this is because departments launched initiatives on an ad-hoc basis. If departments deploy incompatible technologies, they can run into scaling roadblocks. A properly designed strategy includes technology procurements that ensure convergence can be accomplished globally.

Plan for the future: Between its internal uses and its products, an enterprise's ecosystem may contain millions of connected devices. Without a plan, in just a few years companies may be unable to properly manage these and benefit from their data. For example, organizations often don't think about the lifecycle of these devices or what happens at end of life. Will they be upgraded or replaced – and how? This should be addressed up front, before it becomes an issue.

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ENGAGE THE RIGHT PARTNER

If IT/OT convergence is essential, engaging with the right technology partner is equally important. That's why in 2019 Capgemini acquired Altran Technologies, a global engineering and R&D company. This acquisition enables Capgemini to offer

IT, OT, R&D and engineering services, organizational change management, and other capabilities that its clients require to take full advantage of the intelligent-industry evolution.

TO LEARN MORE ABOUT CAPGEMINI'S STRATEGIES FOR IT/OT CONVERGENCE, PLEASE CONTACT:

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About Capgemini

Capgemini is a global leader in partnering with companies to transform and manage their business by harnessing the power of technology. The Group is guided everyday by its purpose of unleashing human energy through technology for an inclusive and sustainable future. It is a responsible and diverse organization of 325,000 team members in more than 50 countries. With its strong 55-year heritage and deep industry expertise, Capgemini is trusted by its clients to address the entire breadth of their business needs, from strategy and design to operations, fueled by the fast evolving and innovative world of cloud, data, AI, connectivity, software, digital engineering and platforms. The Group reported in 2021 global revenues of €18 billion (about $21 billion USD at 2021 average rate).

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