Excerpt
IDC FutureScape
Worldwide Future of Operations 2021 Predictions
Prediction:

By 2022, to support autonomous operations, organizations will increase their investments in data governance, digital engineering organizations, and digital operations technologies by 40%.

To support this imperative digital transformation, we predict that organizations will rapidly accelerate and increase investments in three key foundational areas:

- **Data governance** — To stand up the business processes necessary to create a data-driven and empowered decision culture, past behaviors must be modified. Historically, operations professionals have had little reason to develop standard practices in the way they tag, retrieve, and analyze operational data. This has resulted in many digital initiatives failing to scale up, as tedious data cleansing efforts related to pilot programs for a particular operations environment or asset category are unable to be transferred to the broader transformation effort.

- **Digital engineering organizations** — Centralizing the remote monitoring and optimization of assets and processes is a key value driver of digital technologies. But this value can only be achieved if those data streams are contextualized prior to driving an action. This is where IDC has observed “digital engineering” organizations coming in. While IDC has not witnessed a standard naming convention being adopted, we have observed leading organizations staffing up these central functions with a mix of IT skills and experienced operations professionals. These organizations will provide the business context and continuity necessary to realize value from digitalization and will accelerate the implementation and scalable management of technologies deployed in operations including industrial networking, data management and semantics, low-code application development, advanced analytics and machine learning, and operations cybersecurity.

- **Digital operations technologies** — To manage these five critical disciplines in a unified and scalable way, digital engineering organizations will require an integrated mix of technology solutions and platforms. Today, networking and security tools, device management and low-code solution development in IIoT platforms, analytics workbenches, and other essential digital engineering technologies remain somewhat isolated in terms of both technical capabilities and site-by-site adoption and architectures. Industrial enterprises are now moving quickly to integrate these tools and consolidate their technology portfolios around solutions and providers that make this integration practical. Digital operations technologies must be holistic where they align to a particular operational business process and complementary where there is a technical requirement from IT.

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**IT impact**
- Enterprise data governance models will include a host of new operations technologies including industrial control systems, asset management systems, distribution management, SCADA, process data historians, and laboratory and quality systems.
- IT will have resources embedded within the line of business (LOB) and will require specialization to operational business processes.
- IT will need to develop a digital operations technology architecture that includes a road map for legacy technologies as well as new digital requirements.

**Guidance for Technology Buyers**
- IT must adapt and bridge existing data governance models and best practices to operations settings and workers. New and existing tools and technologies must be stringently evaluated for their ability to align with and support overall data governance goals.
- Building and rebuilding relationships of trust with operations is a work transformation for both IT and operations. Focus on reducing redundancy of process and aligning around common goals to begin this relationship building.
- IT and operations must work together to take inventory of the physical and digital asset portfolio. From this foundation, the overall operations technology architecture can be reimagined for the digital future.

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