FUTURE OF
Operations

Operational Excellence and Resilience: The Critical Role of Data

IDC

Data has been critical to achieving operational excellence and resilience since the early days of automation and process control — over 40 years ago!

However, data proliferation has engendered unprecedented challenges for organizations as they must now draw new insights from rapidly increasing amounts of data. There is no avoiding the hard work of generating, aggregating, and contextualizing operational data so that it can support both human- and machine-led decisions.

IDC's 2021 Worldwide Future of Operations survey results identify how organizations are using data and highlights the imperative to make data availability and quality a top investment priority for operations. The promise of AI and ML projects has led many organizations to simply throw all data into a repository while assuming it can be effectively and efficiently analyzed without adding context and meaning. But as IDC's survey reveals, most of these undertakings have fallen short. An organization's ability to share and collaborate around data — both intra- and inter-organizationally – will increasingly become a competitive advantage and ultimately a necessity.

IDC defines operations as the activities responsible for the safe, reliable, and efficient execution of a physical process central to an organization's business. These processes can include producing and/or moving goods or services and maintaining assets, infrastructure, or facilities.

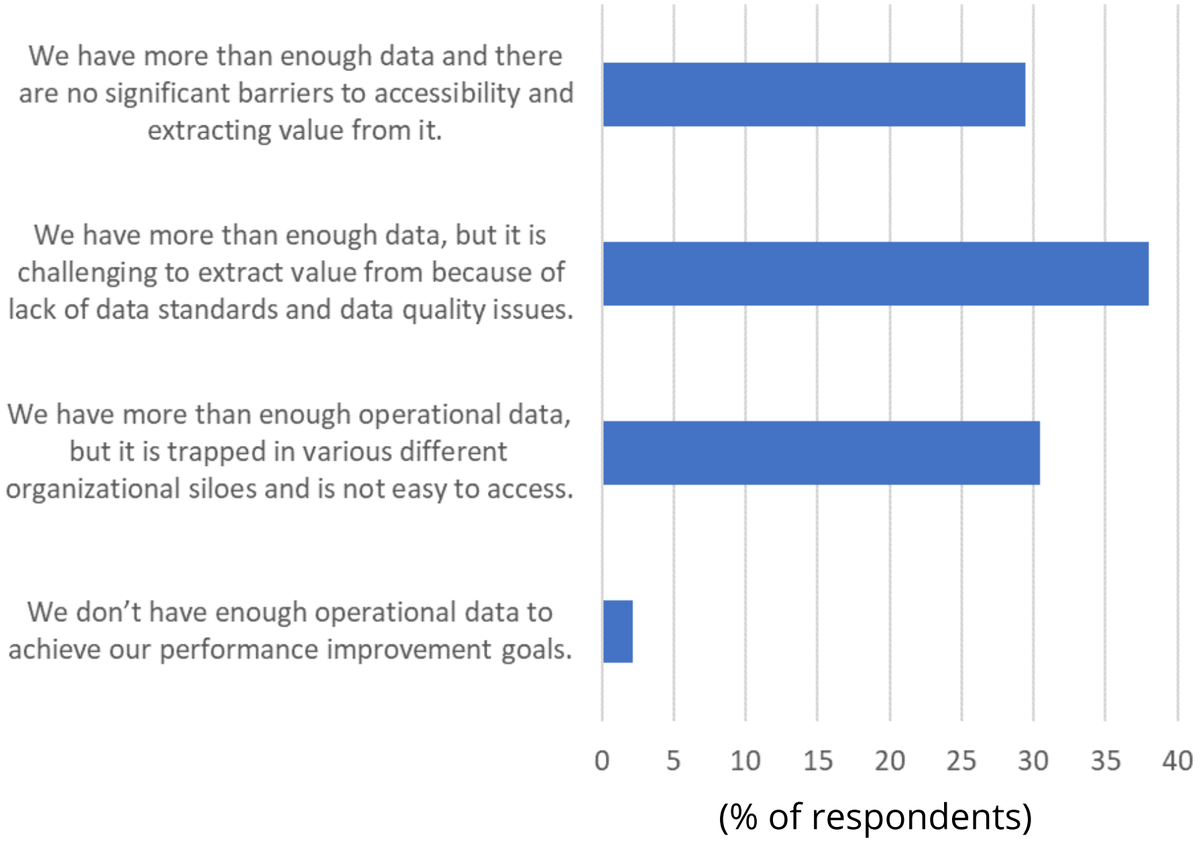
The primary inhibitors to achieving data-driven operational excellence involve issues of data quality and data silos/access, which most organizations struggle with. This is unsurprising given the growing consensus that in the context of operations-focused AI projects, approximately 80-90% of efforts are centered on making data usable.

Data Masters vs. Data Starved

IDC describes organizations with insufficient data as "data starved" and those with ample amounts of data as "data masters." Between these two ends of the spectrum are organizations with data quality and access issues (data restricted) and those with data stuck in functional silos (data siloed).

Across all performance categories, data masters were more likely to report improved performance over the past two years. However, the data required to achieve performance improvement goals is not widely available or readily accessible.

Which statement best describes the status of operational data in your organization?



n = 1,256

Source: IDC's Worldwide Future of Operations Survey, 2021

Fewer than 30% of survey respondents indicated that they had enough data and faced no barriers when extracting value from it.

Interestingly, only 2% of survey respondents cited insufficient data to achieve performance improvement goals. While this data point is encouraging and consistent with anecdotal evidence from conversations IDC has had with end users across a range of sectors, organizations tend to underestimate the amount of data needed for extracting valuable insights. It's not until they undertake a major data analysis endeavor — an AI project, for instance — that organizations truly identify their data gaps.

Many organizations struggle with outdated and inefficient data management systems that are hyper-localized and configured from the ground up rather than top down, limiting their ability to centralize data. Only approximately half of survey respondents indicated that they are centralizing their data management internally. But centralization in and of itself does not imply that data is being standardized and contextualized across the entire organization. Aggregation and contextualization are necessary to extract new insights and value from data to improve decision making.

Cloud and Collaboration

Cloud usage has become a key indicator of how effectively an organization leverages operational data to drive decisions. IDC uncovered a clear connection between putting operational data in the cloud and decision making. The organizations that reported an improvement in decision making due to having more data with better access were also far more likely to have an enterprise-wide strategy for putting data in the cloud. Data alone is not enough -- centralizing the data on a platform that supports better management, analysis, and visualization is essential.

Effective operational data management is essential to achieving operational excellence. Modern operational data management strategies enable organizations to realize the full value of advanced data analysis tools, helping to draw out new insights while fostering collaboration. Organizations that commit the necessary resources to enhancing their operational data management processes will position themselves for success well into the future.

IDC defines operational technology (OT) as the digital technology domain traditionally distinct from IT — that encompasses the dedicated hardware, software, and services necessary for monitoring, controlling, and managing operations. These include industrial control systems (ICSs), programmable logic controllers (PLCs), and data historians. OT is currently being expanded and transformed by the infusion of newer technologies and platforms.

Advice for Technology Buyers

- **Make operational data management — including aggregation, normalization, and contextualization — an investment priority.** Without effective management processes, stored data will be underutilized, limiting the ability to generate actionable insights.

- **Consider the importance of data sharing — both internally and externally.** Breaking down silos and implementing modern management tools enable benchmarking and collaboration around operational data, spurs more efficient overall operations. External operational data sharing provides a broader perspective that can help validate and buttress internal analyses.

- **Evaluate how the cloud and cloud-based services can be used as data management tools.** Cloud provides a centralized platform that is more scalable and accessible internally and across an organization's value chain. Having operational data in the cloud can enhance data security in a collaborative context that enables organizations to grant external partners access to specific data subsets without exposing internal systems.

Watch our new video or visit idc.com/FoX to learn more about IDC's Future of Operations research practice.

IDC