IDC PERSPECTIVE

Partnering with Engineering Services Providers to Navigate Disruption and Build Adaptive Operating Models

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EXECUTIVE SNAPSHOT

FIGURE 1

Executive Snapshot: Partnering with Engineering Services Providers to Navigate Disruption and Build Adaptive Operating Models

This IDC Perspective describes the challenges enterprises face in the current sluggish economic environment and discusses a few of their business priorities. It also provides guidance on how these enterprises should leverage partnerships with digital engineering services providers to accelerate their digital transformation initiatives.

Key Takeaways

- Enterprises want to invest and implement resilient operations infrastructure to deal with any business uncertainty.
- There are a host of technologies that can be deployed, but the dilemma is to choose the right set without increasing technical debt and figure out a way to secure budgets.
- These technologies can provide extensive data and analytics ammunition to understand a real-time market state, predict business outcomes, and prescribe business strategies.
- Digital engineering talent is getting expensive and difficult to source and retain.

Recommended Actions

- Focus your investment strategy on automation of processes to build adaptive operating models.
- Build a scalable talent model.
- Focus on an ecosystem strategy and leverage partners to walk with you in your transformation journey.
- Identify and work with those partners who can partner with you for operations strategy, execution, and running your operations.

Source: IDC, 2022

October 2022, IDC #US49714422

SITUATION OVERVIEW

Enterprises continue to struggle to navigate disruption due to the COVID-19 pandemic. Issues related to supply chain persist and are getting compounded due to inflation and recession fears. In addition to managing these challenges, operations teams need to build resilient infrastructure that is highly adaptive to change. Other considerations include new digital technology deployment, stronger internal and external stakeholder collaboration, change management, and ensuring sustainable practices among other initiatives. As digital transformation becomes increasingly pervasive, operations leaders must understand and figure out their priorities and execution timelines. There are other issues related to hiring, training, and retaining talent and technology choices for IoT, edge, cloud, analytics, artificial intelligence (AI)/machine learning (ML), AR/VR, digital twins, and other digital technologies and internal processes. In summary, a lot needs to be done in very short time span, and enterprises don't have the luxury of delaying digital engineering transformation initiatives if they must maintain or attain a leadership position in their respective markets.

Figure 2 represents IDC's executive graphic for future of operations. Digital engineering and operational technology (OT) services providers have the requisite skills, infrastructure, and experience to partner and accelerate their client's operations transformation initiatives. They have built services capabilities related to IoT, edge, security, analytics, cloud, AR/VR, and other required technologies.

FIGURE 2

IDC Executive Graphic: Future of Operations

Source: IDC, 2022

Enterprise Business Priorities

IDC's June 2022 *Future Enterprise and Resiliency Spending Survey, Wave 5,* revealed leading business priorities of global enterprises. As shown in Figure 3, the leading priorities include capabilities that must always exist for efficient running of any enterprise. In addition, these are key tenets for any enterprise to operate efficiently and provide value to its customers and achieve/maintain a leadership position in its market category. As digital transformation continues to be pervasive, enterprises must choose between various programs and initiatives to run smart operations and integrate various internal business units and external ecosystem stakeholders. This requires strategic investment in technology, talent, and processes.

As we can see, the leading priority is operational efficiency followed by customer satisfaction, employee productivity, and others. In many ways, all options connect directly or indirectly to how well operations are run. For example, less time to market is directly dependent on how well the operations are structured. It is important to ensure that supply chains are efficient, customer feedback is considered while manufacturing different SKUs, and employees on the shop floor are part of the operations strategy and are equipped with technology to stay healthy on the shop floor.

FIGURE 3

Top 3 Enterprise Business Priorities

Q. What are your organization's top 3 business priorities?

n = 832

Note: Numbers don't add up to 100% because respondents were asked to select three options.

Source: IDC's *Future Enterprise Resiliency and Spending Survey, Wave 5,* June 2022

The Importance of Leveraging Data

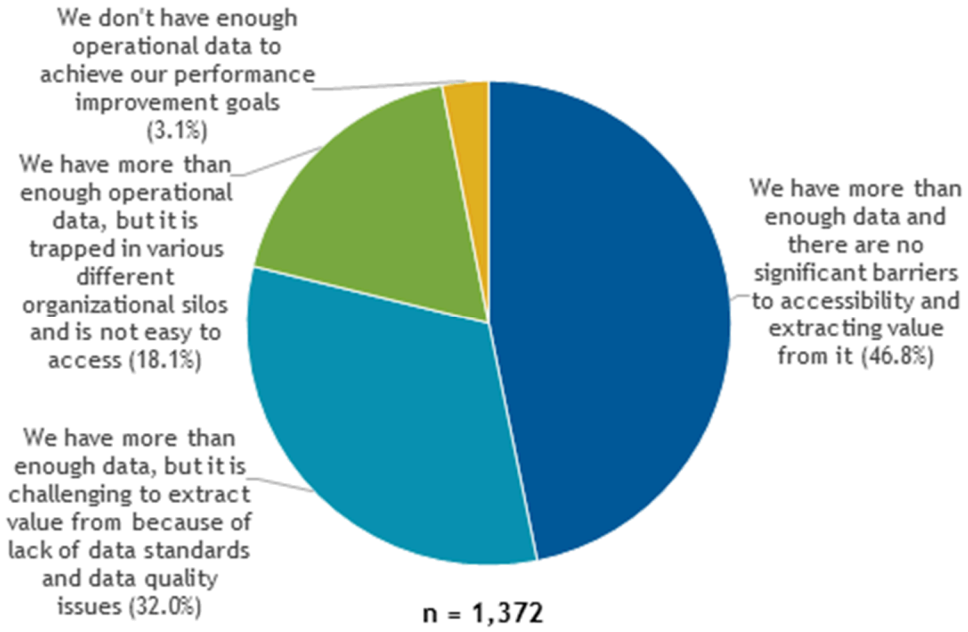
Enterprises must leverage insights from operations, engineering, and customers. Each of these operations business units has a lot of data that is often not harvested. Some examples of data sources that can provide this insight are:

- **IoT sensors, digital twins, edge, and other technology infrastructure.** The huge amount of manufacturing and operations sensors generate large amounts of data that can provide insight into the overall health of the system. These huge data streams can be stored at the edge (on premises) and in the cloud (off premises) and analyzed to provide predictive and prescriptive actions. Technologies such as digital twins that are created using software and the same real-time data can, in real time, provide a virtual representation of the overall system with performance status for each component or subunit. These technologies can also be deployed in the automotive industry where real-time data from each of the vehicles that is connected to the network can be leveraged to improve product and infrastructure performance. Sensors in the car can monitor driver behavior and can have a direct correlation to insurance premiums. Sensors in any retail environment can influence product placement. Such virtual models can also be leveraged to predict the impact on the overall system operations if any changes are made to the infrastructure.
- **Customer data.** Social media and other sources such as customer care response mechanism in any enterprise capture a huge part of a customer's experience related to a range of similar products. This data can be leveraged to modernize operations processes to add new features and functionality and produce the appropriate mix of various SKUs.

In many situations, enterprises are unable to harvest all this data and continue to operate in an inefficient mode. Figure 4 shows how customers struggle with leveraging operations data.

FIGURE 4

Operations Data Status



Source: IDC's *Future of Operations Survey,* July 2022

As we can see, almost 50% of respondents struggle with accessing and/or extracting value from the data that they had access to. If they try to do these activities in-house, it is possible but can take a long time. Doing it on their own, enterprises will have to hire the appropriate talent, research, and identify the right technology and, in addition, invest in infrastructure. In many scenarios, budget constraints compound the problem.

Many enterprises have started these operations modernization initiatives or are planning to start implementing. In IDC's June 2022 *Future Enterprise Resiliency and Spending Survey, Wave 5,* 44.1% of respondents indicated that "business operations resiliency programs" were a priority given the uncertainties related to geopolitical tensions, inflation, supply chain disruptions, and managing the ongoing impact of COVID-19. Another 41.5% indicated that this area was a high priority. In this same survey, respondents indicated that they saw a 22.2% improvement in operational efficiency in 2021 due to investments in digital transformation.

As can be seen, those enterprises that have focused on investing in building operations resiliency are seeing benefits. It is not an option anymore.

Digital Engineering Services Providers — Benefits of Partnership

Product engineering (PE) services can be defined as the taking over (in part or full) of a product company's value chain by a third-party services organization. The services offered can range from developing and sustaining products across a range of industries to building domain-specific products for industries such as medical electronics and aerospace design. Operational technology services refer to the deployment and management of hardware (e.g., meters, valves, pumps, sensors) and software to control, manage, and monitor any specific technology equipment or product or infrastructure (industrial plants including, but not limited to, electrical/nuclear power plants and manufacturing facilities). Digital engineering services refer to existing and new emerging technologies such as AR/VR, IoT, edge, AI/ML, robotics, 5G, edge, and digital thread/twins that augment PE and OT services and assist with executing an enterprise's digital transformation vision and goals.

Engineering services providers may have started with a staff augmentation approach over two decades ago. Today, they are acting as true partners for their customers. They are providing them with strategic guidance, implementing those solutions and running certain operations functions on their behalf.

The benefits of these partnerships to customers include:

- Assist with building smart factories and operations
- Accelerate product and solutions time to market
- Build connected products and operations
- Reduce costs
- Solve the talent dilemma
- Focus on sustainable solutions
- Access to labs and other infrastructure to innovate
- Automate processes required to create products and run operations
- Cocreate leveraging their ecosystem

Note: All numbers in this document may not be exact due to rounding.

ADVICE FOR THE TECHNOLOGY BUYER

Faced with limited budgets, those enterprises that work with their services and technology partners and adopt a collaborative ecosystem approach stand to gain the highest ROI. There are many initiatives operations customers will have to deploy as they modernize their operations by leveraging the right strategic combination of humans and technology. Some of these are:

- **Reduce dependency on manual labor and invest in automating processes.** This can be achieved by robotic process automation (RPA) and artificial intelligence/machine learning deployments. These initiatives will enable the buildout of adaptive operating models that can increasingly, in real time, monitor, react, respond, and take appropriate business decisions.
- **Build a scalable elastic talent model.** This will require an approach where you leverage different talent sources. It can include talent that is spread across your organization, external engineering services partners, and online gig talent sources. Such a hybrid talent strategy will ensure that your costs of owning talent are reduced and your budgets are well utilized.
- **Invest in analytics and cloud.** With appropriate technology deployment, this investment will provide you with scalable and automated infrastructure to get real-time alerts related to various business metrics. In addition, it will enable data-driven decision making for your leadership.
- **Adopt an ecosystem approach.** Ensure that you build an ecosystem of technology and engineering services provider partners. Wherever possible, this will enable you to accelerate your deployments and derive results faster.
- **Build a true partnership.** For engineering services partnerships to be successful, ensure that you approach them as a strategic partnership and not opportunistic or tactical where you use them for staff augmentation. Engineering services providers have over two decades of experience delivering transformation to their customers. The best results have come from true strategic partnerships.
- **Focus on change management.** Any change in your operations structure will entail new processes and doing away some old ones. Make sure you focus on building a team that manages various functions such as defining new process, rules of engagement, internal employee communication efforts, and other activities to ensure that you reach your operations modernization goal within the budgeted time as well as generate high ROI from your investment.

LEARN MORE

Related Research

- *Market Analysis Perspective: Worldwide Digital Engineering and OT Services* (IDC #US49670622, September 2022)
- *Worldwide Product Engineering and Operational Technology Services Forecast, 2022-2026* (IDC #US48533822, August 2022)
- *IDC TechBrief: Future of Operations — Digital Engineering and OT Services* (IDC #US49467722, August 2022)
- *IDC's Worldwide Digital Engineering and Operational Technology Services Taxonomy, 2022* (IDC #US48533922, June 2022)

Synopsis

This IDC Perspective discusses the enormous challenges enterprises face as they strategize to deploy new technologies to modernize operations. It discusses their business priorities and how many enterprises are struggling to really leverage existing data to build smart and intelligent operations. Finally, it highlights best practices for leveraging an ecosystem of engineering and technology partners to accelerate their operations modernization efforts.

"If enterprises have to differentiate themselves and maintain or achieve a leadership position in their market, they must invest in technology to accelerate the modernization of their operations. Acceleration and buildout of smart and modern operations infrastructure can be achieved by collaborating and partnering with an ecosystem of engineering services and technology partners," said Mukesh Dialani, research VP, Digital Engineering and Operational Technology Services at IDC.

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