

Deploying AI at scale brings many challenges. Few organizations have the resources and skills to go it alone. Center of excellence services enable organizations to build internal AI capabilities with the help of expertise and tools from an experienced partner.

Accelerating Deployment of AI in Production with Center of Excellence Services

July 2023

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Introduction

Organizations increasingly look to artificial intelligence (AI) to drive revenue and profit growth as well as improve outcomes in areas such as customer satisfaction, operational efficiency, sustainability, process speed and accuracy, and speed to market for new products and services. However, desired outcomes cannot be achieved if AI solutions languish as pilots and proofs of concepts and never reach production. According to the second wave of IDC's *Future Enterprise Resiliency and Spending Survey*, conducted in March 2023, only 21% of organizations considered themselves to be mature in their use of machine learning (ML) and deep learning (DL) models with many such projects in production. Meanwhile, 25% said their ML/DL models were mostly in the prototyping or experimentation stage with none in production, and 34% had a limited number of ML/DL models in production (the rest of respondents were either unsure or had not started working on ML/DL models).

Pursuing multiple, uncoordinated use cases without appropriately defining overarching business goals for AI or considering the impacts on various stakeholders can lead to downstream issues with data quality, process workflows, governance and compliance, and employee change management. In addition, failing to see the potential benefits of AI beyond an individual use case or department can result in solutions that are not repeatable or scalable across the organization, increasing the cost for expanding the use of the technology in the future.

Despite the accelerating pace of AI technology innovation, many organizations continue to struggle with deployment and adoption of AI-enabled applications at scale. As Figure 1 illustrates, challenges spanning the dimensions of technology, data, processes, and people impede organizations from maximizing the value of their AI initiatives.

AT A GLANCE

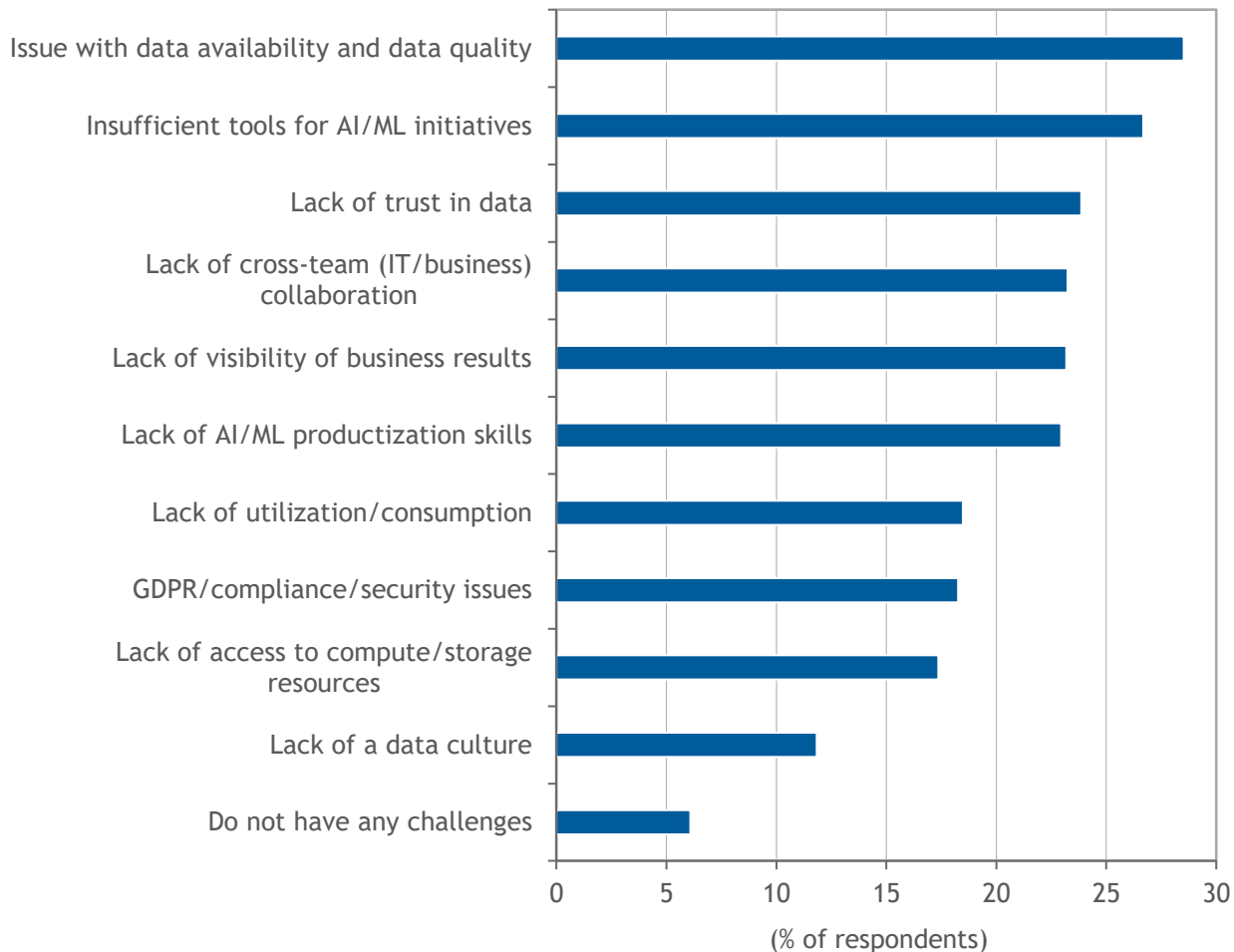
KEY STATS

According to IDC research:

- » Only 21% of organizations say they are mature in using ML/DL models with many such projects in production.
- » The top challenges to maximizing the value of AI/ML initiatives include data quality, availability, and trust issues; insufficient tools; lack of cross-team collaboration; and lack of visibility of business results.
- » An increasing share of AI services buyers expect to primarily develop AI capabilities and solutions internally in the next 12 months, while fewer expect to rely on external services providers.

FIGURE 1: **Challenges to Maximizing Value of AI/ML Initiatives**

Q Which of these are significant challenges to maximizing the value of your organization's AI/ML initiatives?



n = 952

Source: IDC's Future Enterprise Resiliency and Spending Survey, Wave 2, March 2023

Beyond supplying talent and implementing technology, professional services firms can enable organizations to address these challenges and improve their chances of success with AI initiatives by offering assistance platforms and tools for developing and managing AI solutions. Through center of excellence (COE) service offerings, these firms can also help establish a programmatic approach to AI use case development, solution engineering and implementation, data and model quality control, and talent and change management.

Benefits

As AI programs grow, a centralized approach to aligning expertise, resources, and governance for such initiatives can provide efficient and cost-effective deployment and management while encouraging innovation across the organization. Services firms can provide AI CoE services to augment a company's internal capabilities across the AI development life cycle. Example activities include:

- » **Advisory.** The process typically begins with an assessment of the current state of an organization's foundation for AI adoption, including data and technology infrastructure, business processes, and available skills. Services firms can help an organization define overarching AI strategy and governance frameworks, design target operating models, establish best practices for AI development and implementation, and select best-fit AI technologies to meet its business and IT needs. The advisory phase can also include identifying internal champions who will lead the AI COE and encourage employee engagement in AI initiatives, as well as planning for change management.
- » **Implementation.** After working with a company to discover, evaluate, prioritize, scope, and develop AI use cases according to strategic objectives, services firms then assist the AI COE to design, develop, and implement AI-enabled applications on top of an AI software platform. Data services are key to the AI solution implementation process, as data may come from a wide range of sources, both structured and unstructured, and it must be ingested, organized, and cleansed to be utilized within AI-enabled applications. Firms can also provide tools, platforms, and services to help the AI COE train, validate, and score AI models.
- » **Management.** As AI models enter production, firms can provide managed services for ML operations (MLOps) to support model deployment, management, and monitoring on a continuous basis. Such services involve monitoring model accuracy and detecting any drifts in performance (including human-in-the-loop evaluation of model output and recommendations), curating new data as it is ingested by the system, and handling exceptions when AI decisions dip below established confidence thresholds. Services firms can also help the AI COE to monitor adherence with responsible and ethical AI principles and to optimize financial management of cloud infrastructure consumption by AI applications.
- » **Support.** Services firms can offer support and training to enable internal IT resources to run the day-to-day operations of AI solutions, as well as enable nontechnical businesspeople to develop AI literacy skills and use AI within their job roles. Support can take the shape of on-demand access to a team of AI experts for specific needs, as well as regular workshops and training sessions to share knowledge from the services provider's experienced AI professionals with the organization's internal AI COE team and end-user community.

The engagement model for AI COE services can vary based on AI maturity and talent needs, as organizations differ in how they choose to invest in internal versus external AI skills and capabilities. Increasingly, services firms employ "core-flex" models for AI COE services to offer a balance of dedicated and as-needed advisory and innovation support.

Considerations

IDC research shows that organizations increasingly see AI not as a technology solution to be outsourced but rather as a capability to be built through partnership and co-innovation with a trusted services provider. According to IDC's 2023 *Enterprise Intelligence Services Survey*, the percentage of respondents who primarily develop AI capabilities and solutions

using an external services provider is expected to drop from 28% currently to 23% in the next 12 months. At the same time, the percentage of respondents who primarily develop AI capabilities and solutions internally is expected to rise from 29% currently to 31% in the next 12 months. Furthermore, 33% of respondents said they feared becoming too dependent on a third-party AI services provider over the long term. Therefore, it is important for organizations to consider the long-term role of AI COE services as their AI adoption matures.

Trends

One often misunderstood or under-considered aspect of the AI life cycle is the attention paid to the quantification of the financial and energy (e.g., kilowatt) costs it takes to train, validate, deploy, utilize, manage, and update today's AI and ML models. IDC predicts that in response to sustainability and economic uncertainty concerns, by 2024, 40% of the G2000 will adopt tooling to quantify, predict, and optimize the cost benefit of their AI life cycle. The more layers and connections in a model's neural network architecture, the greater the GPU training time and therefore the energy and financial costs for that model to operate across its life cycle. Foundation models underpinning increasingly powerful generative AI capabilities require an immense number of layers to support a greater number of tasks (e.g., to support broad use case generalization) and/or increase the model's overall accuracy. Now is the time for organizations developing and deploying AI at scale to think through how to include this cost-benefit analysis into their AI governance. The benefits of doing so go beyond the further prioritization of use cases through the lens of a profit and loss statement to help consumers, businesses, and even governments better understand the true carbon impact of this technology.

Conclusion

As AI talent gaps and other adoption challenges persist, professional services firms will remain a critical source of expertise, skills, tools, and platforms to help organizations incorporate AI into digital business strategies, build production-grade solutions, and realize ROI. By partnering with services firms through an AI COE construct, organizations can gain access to best practices and recommendations, innovation and R&D resources, on-demand AI talent pools, and managed services and support to ensure success moving AI solutions into production.

A centralized approach to AI initiatives can provide efficient and cost-effective deployment while encouraging innovation.

About the Analyst



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Jennifer Hamel is a Research Director for IDC's Worldwide Services team, responsible for the Analytics and Intelligent Automation Services research program. In this research, Ms. Hamel covers the entire life cycle of services related to adoption of analytics and intelligent automation technologies, which include information and data management, BI tools- and analytics application-related services, advanced analytics, big data, and cognitive/artificial intelligence services.

MESSAGE FROM THE SPONSOR

Organizations are shifting their perspective on AI from outsourcing to building capabilities through partnership and co-innovation with trusted service providers. As the demand for internal AI development rises, organizations must consider the long-term role of AI Center of Excellence (CoE) services to ensure the accelerated and successful deployment of AI in production.

Quantiphi offers AI CoE services throughout the AI development lifecycle, encompassing advisory, implementation, management, and support activities. Through our AI CoE offering, we help enterprises build production-grade solutions, achieve ROI, and leverage the support needed to navigate the complexities of AI implementation. We assist in defining AI strategy and governance, designing target operating models, implementing AI-enabled applications, managing ML operations, and providing support and training. The engagement model for AI CoE services can be tailored based on organizations' AI maturity and talent needs.

Email AppliedAI@quantiphi.com if you'd like to know more about the AI CoE offerings and how they can be leveraged for your enterprises



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