Challenges exist at every stage of generative AI adoption that often require expert advice to navigate. Professional services providers can serve as trusted advisors in designing, implementing, and operationalizing solutions to deliver desired business outcomes.

The Role of Professional Services in Realizing the Vision of Generative AI

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Introduction

While the market for generative AI (GenAI) solutions is still nascent, few technologies have dominated in so many different areas (consumer, enterprise, academia, public policy, etc.) over such a short period of time. This is the first technology IDC has seen emerge with this much executive support, clearly defined business outcomes, and rapid adoption. As GenAI takes center stage in conversations across the technology industry and beyond, organizations are feeling the pressure to move faster to incorporate GenAI into digital business strategies or risk being left behind by competitors. According to IDC's August 2023 *GenAI Awareness, Readiness, and Commitment (ARC) Survey,* more than 80% of organizations worldwide are either exploring potential use cases (32%), testing models and doing focused proofs of concept (27%), or investing significantly in GenAI technology, services, and training programs (21%).

Challenges exist at every stage of the GenAI adoption journey that often require expert advice to navigate. With the benefit of early investment in building and scaling GenAI expertise, professional services providers can serve as trusted advisors in designing, implementing, and operationalizing solutions. This IDC Spotlight examines how partnering with professional services providers can help organizations address business and technical needs, accelerate innovation and development, and drive desired business outcomes from GenAI.

Benefits

Professional services providers are a critical source of expertise, skills, and tools to incorporate GenAI into digital business strategies, build production-grade solutions, and realize ROI.

AT A GLANCE

KEY STATS

According to IDC research:

» More than 80% of organizations are exploring, testing, or investing significantly in generative AI initiatives.

» Organizations' top concerns include data and IP asset control, brand and regulatory risk exposure, high infrastructure costs, and inaccurate or toxic data.

» Top requirements for third-party services providers are access to ROI models and cost-benefit analyses, proven tools and methodologies, and knowledge transfer and training for internal teams.

GenAI services providers' offerings typically address all or portions of the following life cycle:

» **Assess and plan:** Consultants offer advice and expertise to lay the foundation for GenAI adoption, including establishing a responsible AI policy, creating an AI strategy and a road map, designing an intelligence architecture, and preparing programs for staff training and reskilling. This stage often starts with an assessment of the organization's AI readiness, data, infrastructure, and talent needs and can involve creating or refining AI strategies and operating models to achieve specific business objectives. Consultants can also assist organizations to adjust previously established AI strategies and governance frameworks to consider new implications of GenAI and incorporate appropriate guardrails. Providers typically assist clients in identifying and developing impactful GenAI use cases by applying their industry and functional domain knowledge, frameworks, methodologies, and tools to accelerate the process of use case discovery and prioritization. GenAI services providers also advise on technology selection and provide reference architectures, and they can help organizations conduct cost-benefit analyses to determine the appropriate technology solution for their goals and available resources. Combining GenAI with business workflows will almost certainly require some reengineering of business processes as well as training and change management for employees whose roles will be changed by the introduction of a new and disruptive technology.

» **Design and implement:** GenAI services providers support organizations during the design and implementation stage across a variety of deployment scenarios, including implementing an off-the-shelf GenAI application from an independent software vendor, designing a custom application around a pretrained foundation model, integrating GenAI capabilities with enterprise intelligence and automation systems, prompt-tuning or fine-tuning foundation models for specialized tasks, and orchestrating multiple technologies within a GenAI system. Providers can also help design solutions with the user experience in mind and consider the dependencies and linkages between GenAI and the systems and processes into which the technology is integrated.

» **Develop and operate:** GenAI services providers speed up the development of GenAI applications through innovation and delivery accelerators, which can include pretrained industry- or function-specific models, reusable component repositories, curated and annotated training data sets, developer tools and microservices, and even full-fledged products and platforms. These assets can fill gaps in commercial software products, address specific business domain or technical challenges (such as integrating legacy enterprise systems with GenAI capabilities), and industrialize GenAI solution development and management. GenAI services providers also help organizations adopt and manage GenAI at enterprise scale through center of excellence (COE) services that offer expertise and solutions in key areas such as performance, security, scalability, and cost optimization.

» **Support and training:** GenAI services providers offer support and training to enable internal IT resources to run the day-to-day operations of GenAI solutions and empower nontechnical businesspeople to develop the necessary skills to use GenAI within their job roles. GenAI technology providers also increasingly offer enhanced support services and training programs to enable organizations to optimize their use of technologies and platforms as they deploy models and consume GenAI services.

The fundamental value that professional services providers offer is in helping customers achieve better outcomes from their GenAI investments than those organizations would on their own. Such improved outcomes can include one or more of the following:

» **Better solutions to specific business problems,** enabled by industry, functional, and technical expertise

» **Better value realization** through a focus on proving ROI and tying GenAI initiatives to quantified business outcomes

» **Faster development** by supplying skilled talent and leveraging rapid delivery methods, tools, and platforms

» **Greater risk awareness and mitigation,** enabled by expertise in secure, responsible, and sustainable AI use

» **Earlier access to innovation,** leveraging an ecosystem of technology providers, start-ups, and research organizations

» **Cost-effectiveness** made possible through global delivery, automated services, and flexible contracting

» **Better adoption** across the enterprise by managing key internal stakeholder needs and enabling end users to work effectively with the technology

Trends

The need for specialized knowledge to support the rising adoption of GenAI leads many organizations to leverage consultants, systems integrators, and the services arms of cloud and technology providers to complement their internal staff. According to IDC's *GenAI ARC Survey,* IT consultants and systems integrators stand out as the second-most strategic set of vendors (closely following public cloud providers) that organizations will turn to for their GenAI initiatives. The three most important requirements IT leaders indicated they had for third-party services providers were access to ROI models and cost-benefit analyses, proven methodologies and tools, and knowledge transfer and training for internal teams (see Figure 1).

FIGURE 1: *Top Requirements for Third-Party GenAI Services Providers*

Q *Based on your current or near-term plans to use third-party services providers to develop AI capabilities, what is the most important characteristic your organization will look for in a third-party services provider in the next 18 months? What will be the second most important?*

n = 1,363

Source: IDC's GenAI ARC Survey, August 2023

Considering Quantiphi's Professional Services for GenAI

Founded in 2013, Quantiphi's AI-first digital engineering services background drives the company's development of GenAI platforms. The company uses an industrialized, intellectual property (IP)–driven approach to build customized AI solutions using a repository of microagents that perform specialized tasks. A talent pool of more than 3,200 professionals, including industry analysts, data and platform engineers, and ML engineers, provides cost-effective AI services in a mix of onsite and offshore delivery.

Quantiphi's tenure in GenAI-related research began before five years, when engineers started experimenting with Google's open source LLM (BERT) to develop an AI tutor. Since then, the company has developed several patterns, published papers in the GenAI domain, and trained a talent pool of more than 800 large language model (LLM) engineers who work with customers on GenAI projects.

Quantiphi has also invested in the codevelopment of tools and solutions, with a variety of partners, stakeholders, and clients and has strategic partnerships with Google Cloud, NVIDIA, AWS, Snowflake, and Databricks. In March 2023, Quantiphi launched "baioniq," an enterprise-ready, modular GenAI platform that is designed to help organizations fine-tune LLMs and leverage them to automate domain-specific tasks to boost the productivity of their knowledge workers. Beyond embedding a responsible AI governance framework into the baioniq platform, Quantiphi also incorporates responsible AI into engineering processes across the ML life cycle in all AI solution development.

Quantiphi designed its GenAI engagement journey to support customers across three phases:

» **GenAI onboarding (5 days):** This phase focuses on brainstorming and synthesizing ideas to address unsolved problems for an industry and prototyping GenAI solutions. Onboarding begins with an executive master class session designed to provide C-suite leaders with a comprehensive understanding of GenAI, GenAI's applications, and GenAI's potential impact on businesses. Through the briefing, Quantiphi explores case studies and discusses how organizations can leverage GenAI, addressing key questions such as:

- How is GenAI technology different from other AI technology?

- Which capabilities come "out of the box," and which require fine-tuning?

- What effort goes into fine-tuning of an LLM, and what will the ROI be?

Throughout the rest of the weeklong workshop, Quantiphi works with customers on learning about use case discovery and prototyping; building functional proofs of concept through hands-on labs with programmers, designers, and extended engineering teams; and designing and developing the path to production for GenAI systems that are tailored to function and integrate with existing enterprise processes.

A key outcome of the onboarding phase is prioritizing GenAI use cases. To support this effort, Quantiphi provides a high-level ROI analysis based on industry standard measures and the company's experience with the types of activities the company's past clients have automated that delivered positive impacts to their businesses. This analysis considers both the services and computation costs required for GenAI solutions, as well as different engagement and contracting options that would reduce or spread out the investment over time.

» **GenAI build (6–12 weeks):** This phase focuses on proving the capability of GenAI for a high-impact use case and then building an impactful GenAI solution for it. To quantify what "impactful" means, during the build phase, Quantiphi conducts a deeper ROI analysis for the use case, gathering more specific details from the customers

regarding the time and resources they currently spend on the process being automated and their associated values, to provide a business case for further investment in GenAI capabilities.

Key build phase activities include developing foundation models and fine-tuning, prompt-tuning, and reward modeling (reinforcement learning from human feedback [RLHF]) for foundation models, as well as developing the user experience, deploying the solution into production, and providing "hypercare" services. The commercial model for this phase includes transactional (token-based usage) fees and full intellectual property ownership of custom-developed or tuned foundation models transferred to the customer after 24 months.

» **GenAI center of excellence (18–24 months):** This phase focuses on institutionalizing GenAI capabilities within the customer's enterprise. Quantiphi designed its GenAI COE to provide customers with the skills, tools, and expertise needed to accelerate product development and drive business outcomes using GenAI across the organization. Although the operating model is evolving, it currently includes the following elements:

- Governance within the customer's frameworks for performance management, demand management, and resource management

- A collection of Quantiphi IP solutions, called AI Solutions Factory, namely, Qodex (prompt warehouse), Qompositor (data integration hive), Neqsus (foundation model gardens), Blinq (modality connector), Responsible AI (governance framework), and Qalibrate (model domain adaptation)

- Access to a team of experts, including a lead advisor, a program manager, an AI ethics expert, LLM engineers, prompt engineers, and LLMOps specialists

- Enablement and training, comprising curated programs for executive leadership and senior leaders to drive the AI agenda across the organization

- Monthly R&D briefings to keep customers apprised of new GenAI innovations and help them avoid investing in technologies that may soon become obsolete

- Industry subject matter experts to support ROI modeling and building out business cases (AI Canvas)

- Organization change management to help customers align their visions for change and deploy a strategy for the evangelization and adoption of GenAI solutions

- Ongoing service support and enablement, focusing on source data management, supervised and instruction fine-tuning, prompt engineering, and reward modeling (if RLHF is required)

Challenges

It will be important for Quantiphi and other services providers in this space to keep trust, oversight, and cost optimization at the forefront of discussions with clients around GenAI strategies. According to IDC's *GenAI ARC Survey*, the top factors that are limiting organizations' evaluation and testing of GenAI are concerns about data and IP asset control (42%), brand and regulatory risk exposure (38%), high infrastructure costs (37%), and inaccurate or toxic data (35%). Privacy and compliance concerns will be a key factor in deciding which deployment models will be utilized for GenAI. IDC's survey indicated organizations are allocating more than half of GenAI investments to infrastructure areas, with a slightly larger share (29%) of GenAI budgets dedicated to infrastructure (e.g., residing on premises, in colocated datacenters, or in edge locations) compared with public cloud infrastructure (23%).

Conclusion

Given the disruption GenAI brings to business and IT strategies, IDC believes that expertise and support from professional services providers will be essential to organizations' success with GenAI initiatives and technology investments. Organizations should consider the following to realize the full potential of professional services for GenAI:

» **Consider the organization's strategy and business objectives for GenAI.** Look for providers with proven methods for discovering and prioritizing use cases and identifying KPIs that can measure business value and ROI.

» **Assemble the right expertise to incorporate GenAI into applications and workflows.** Seek advice from GenAI services providers to help the organization select the most suitable technologies for its use case, business function, and industry context. To accelerate moving from proof of concept to production, consider providers that both demonstrate knowledge of the company's business needs and IT architecture and partner with the company's chosen technology providers.

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» **Consider the needs of key stakeholders early in the solution design process.** Choose a partner that can work across IT, line-of-business, and data teams to ensure solutions are built with the right business outcomes in mind while addressing IT architecture and governance concerns.

IDC believes to the extent that Quantiphi can address the challenges described in this paper, its approach to professional services positions the company for success in the growing and fast-evolving GenAI market.

About the Analyst

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Jennifer Hamel is a research director for IDC's Worldwide Services team responsible for the Enterprise Intelligence Services research program. In this research, Ms. Hamel covers the life cycle of project-oriented, managed, and support services related to the deployment of technologies, such as data management, analytics, AI, and automation, as part of enterprise intelligence initiatives. Her research focuses on how services providers work with organizations to ensure investments in enterprise intelligence technologies result in improved business outcomes.

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