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There's No Time to Waste: Confidently Moving Ahead With Enterprise AI

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Contents

With AI Adoption Surging, the Time To Act Is Now

Enterprise-level AI adoption is undebatable, undeniable, and unstoppable. AI in its many forms—machine learning, predictive AI, causal AI, and especially generative AI (GenAI)—has rapidly progressed from a sandbox status to production systems across a wide range of business requirements. Analytics, business intelligence, software development, cybersecurity, network operations, and business decision support represent just a smattering of areas where enterprises already are using AI to achieve key business goals.

AI is much more than a byproduct of relentless discussion, coverage, and hype. It is a proven source of enterprise-wide innovation, process improvement, and economic value. In fact, the signs of AI's adoption and value are everywhere. Research from TechTarget's Enterprise Strategy Group showed:

- Half of organizations (50%) already have generative AI use cases in production or pilot/proof of concept stages.[1]
- 92% of organizations said they expect the percentage of their employees who have access to an AI platform will increase over the near year.[2]
- Over a short 3-year period, the percentage of organizations that saw value from their AI initiatives within three months surged from 39%[3] to 72%.[4]
- GenAI projects are moving rapidly through the adoption lifecycle. Nearly a third (30%) of organizations are either in "mature production" or "early production," while another 33% said they have GenAI projects in pilot or proof-of-concept stages.[5]

Perhaps the most important signals as to AI's remarkable—and growing—effect on organizations' competitive positions and operational improvements include the following:

- 99% of organizations cited improvements in productivity when using AI for analytics and business intelligence.
- 91% noted significant or moderate improvement in their ability to gain a competitive advantage.[6]

The results are clear: AI investments are poised for substantial uptake in the next 12 months, in large part because AI initiatives are backed and propelled by diverse functional groups throughout the organization, creating more momentum toward widescale adoption and more laboratories of innovation.

Having the Right Use Cases Is Critical for Successful AI Strategies

Organizations are also more sophisticated in the use cases they select and more demanding in the benefits they expect. This is vital because the emergence of a broader and more strategic group of use cases—aligned to key organizational goals—breeds further support, broader adoption, and more consistent resource allocation. As shown in Figure 1, AI use cases are wide-ranging and diverse, and many specifically utilize GenAI.[7]

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[1] Source: Enterprise Strategy Group Complete Survey Results, *Navigating the Evolving AI Infrastructure Landscape*, December 2023.
[2] Source: Enterprise Strategy Group Research Report, *Unleashing the Power of AI in Analytics and Business Intelligence*, May 2024.
[3] Source: Enterprise Strategy Group Survey Results, *Supporting AI/ML Initiatives with a Modern Infrastructure Stack*, May 2021.
[4] Source: Enterprise Strategy Group Research Report, *Navigating the Evolving AI Infrastructure Landscape*, September 2023.
[5] Source: Enterprise Strategy Group Research Report, *The State of the Generative AI Market: Widespread Transformation Continues*, September 2024.
[6] Source: Enterprise Strategy Group Research Report, *Unleashing the Power of AI in Analytics and Business Intelligence*, May 2024.
[7] Source: Enterprise Strategy Group Research Report, *The State of the Generative AI Market: Widespread Transformation Continues*, September 2024.

Figure 1. Generative AI Use Case Prioritization

Source: Enterprise Strategy Group, a division of TechTarget, Inc.

Expanding on these use cases, organizations are clearly looking for easy and sometimes creative ways to leverage this game-changing technology:

- **Data analytics and insights.** Many critical business functions, ranging from competitive analysis to customer sentiment analysis, used to be time-consuming, labor-intensive tasks. But GenAI enables the unearthing of very granular analytics to support a wide range of decision-making activities. This form of AI-assisted business intelligence extends the functionality and utility of data analytics to previously unseen dimensions.
- **Content summarization.** With so many more sources of content than ever—structured, unstructured, and semi-structured across a wide range of data formats—GenAI's ability to consume, parse, and transform all that content into manageable, actionable bites is critical.
- **Content creation.** Blog posts, email marketing programs, videos, social posts, and many other types of content are dramatically facilitated by using an organization's own data with GenAI tools.
- **Code development.** Thanks to increasingly sophisticated and task-specific GenAI tools, the entire software development lifecycle has become faster and less labor-intensive, enabling developers to bring out new apps and iterate existing systems faster, more securely, and more reliably.
- **Digital assistants.** GenAI-powered agents, often using familiar form factors from consumer applications, are helping organizations get clear, insightful guidance using natural language question and answer formats for both technical and non-technical issues.
- **Synthetic data generation.** GenAI helps to mimic real-world scenarios, such as modeling under-represented classes of data in order to avoid bias. Additionally, it enhances AI model performance and improves data privacy, among other benefits.
- **Computer vision.** GenAI's role in helping systems, ranging from shop floor automation to finished goods inspection, is instrumental. It enables ultra-high-quality imaging for a wide range of requirements, such as manufacturing quality control, medical imaging, and self-paced training.

As organizations prioritize use cases that can have the greatest impact on their business in the shortest timeframe, customization and personalization is being prioritized. In fact, 84% of organizations agreed that it is important to incorporate their own enterprise data to support generative AI.[8] And they are turning to new techniques like retrieval-augmented generation (RAG) to deliver trusted, business-specific data to pre-trained models that, in turn, improves accuracy and context of responses while reducing hallucinations, especially for text-based use cases.

The bottom line is that AI is clearly making a difference across the enterprise, prompting more experimentation, more investment, and more innovation.

Overcoming Challenges and Reservations in Order To Plan, Commit, and Invest

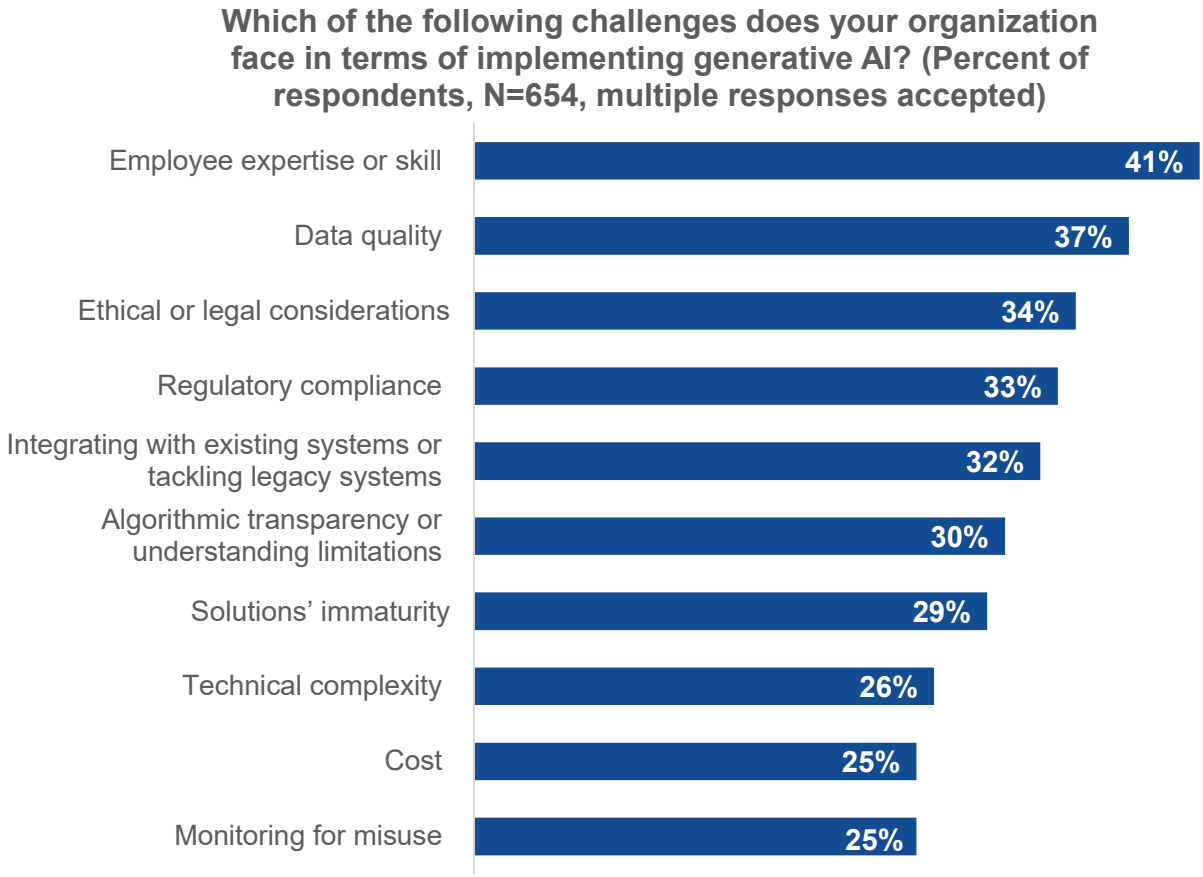
Although there is substantial research supporting the real-world benefits of AI across a wide range of use cases, some organizations still battle a variety of factors that inhibit their willingness and ability to fully commit to AI initiatives.

Those challenges may include any combination of real and perceived issues. Many of these issues relate specifically to tangible, "hard" requirements, such as the lack of internal AI-related skills, inadequate data quality to properly train AI models, concerns about high capital expense costs to purchase and deploy AI infrastructure, and an inability to pinpoint the right metrics necessary to determine the success of an AI initiative and to green-light further investments.

Research from Enterprise Strategy Group points out these—and other challenges—in its surveys with enterprise decision-makers. For instance, 41% of organizations said employee expertise/skill is a challenge they face when implementing GenAI, making it the top-cited concern of organizations. Following closely behind are data quality (37%), ethical or legal considerations (34%), regulatory compliance (33%), and integrating GenAI systems with existing or legacy systems (32%).[9] The top ten challenges are highlighted in Figure 2.

[8] Ibid.
[9] Ibid.

Figure 2. Top Ten Challenges Faced When Implementing Generative AI



Source: Enterprise Strategy Group, a division of TechTarget, Inc.

However, many other concerns voiced by organizations focused on "soft" issues, often less tangible than costs, technologies, or people, and more related to organizational dynamics. For instance, many organizations struggled to develop a clear roadmap that enables them to determine where and how to get started with their AI initiatives or weigh competing priorities for resources from line-of-business teams, IT organizations, data scientists, C-suite executives, and even board members.

And, perhaps even more fundamentally, many organizations are unable to get out of the starting blocks because they failed to ask themselves a fundamental question: Where is the organization most likely to generate high impact from AI investments? Their goals may include improving their competitive position, enhancing their process efficiency, creating more actionable insights, or driving greater employee productivity—but realizing the goal remains elusive for one reason or another.

It's important to note that organizations don't necessarily need to build their GenAI models from scratch; in fact, many organizations have made rapid strides augmenting existing foundational models via fine-tuning or RAG. This minimizes the investment needed to implement GenAI and delivers tangible value faster.

Ideally, these organizations need easily implemented, multi-dimensional, and proven tools, services, and frameworks to help them address these and other gating factors quickly and confidently. Ultimately, organizations need answers to several important questions:

- Is there a solution available today for near-term, measurable business value in developing and standing up successful AI projects?

- Does that solution address the full spectrum of needs in AI infrastructure (hardware and software), AI services, support, AI skill sets, responsible use frameworks, security, data protection, and success metrics?
- Is that solution backed by world-class technology partners with substantial experience in helping organizations build and deploy successful AI use cases?

An Integrated Solution To Address Infrastructure, Security, Responsible Use, and Skills Concerns

Creating, deploying, and optimizing returns from an AI initiative is no trivial task. It requires hardware and software tools that provide high performance, tight security, reliable data protection and cyber-resiliency, consistent scalability, and open architecture. But successful AI projects are much more than technical exercises; organizations need to extend the capabilities of technologies with knowledge and expertise in areas such as AI governance, regulatory compliance, deployment excellence, and purpose-designed metrics to provide a clear roadmap toward business goals.

Organizations need to understand the following four core concepts to support AI projects and should consider these requirements as essential to AI implementation:

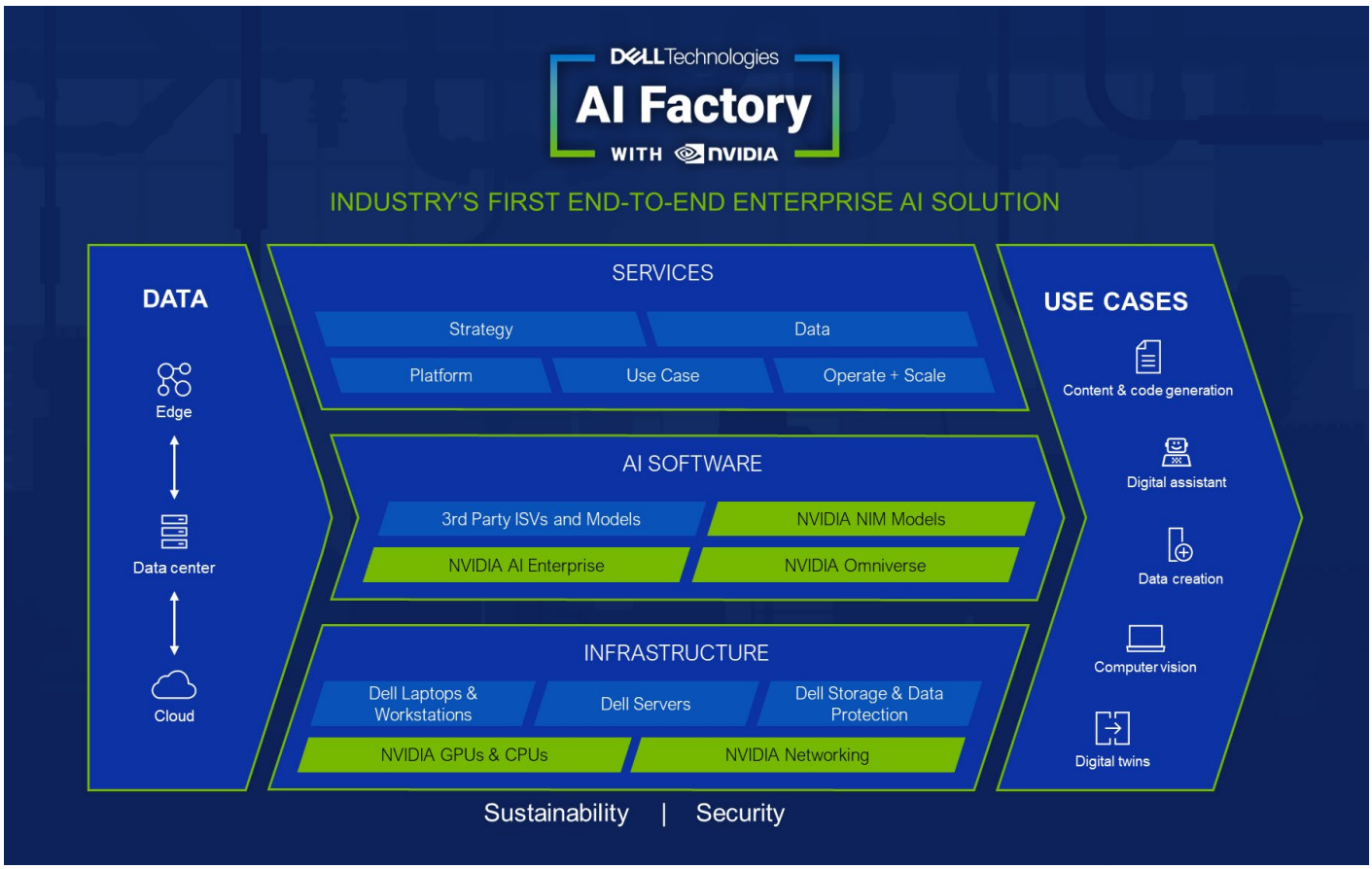
- Simplified deployment and operations using market-tested workflow automation.
- Scalable, optimally performing accelerated computing platforms, and right-sized hardware resources spanning desktop to data center.
- Tailored solutions designed and built to the unique needs of each organization, specific use cases, and different workflows.
- Trusted best practices in AI deployment, governance, privacy, and security.

In order to meet and exceed expectations in each of these areas, organizations not only need to identify and work with trusted technology vendors—and those partners' broad and proven partner ecosystems—but also must seek out AI development frameworks and deployment methodologies that can be implemented out of the box.

Simplifying Enterprise AI Through the Dell AI Factory With NVIDIA

As two trusted technology leaders in AI infrastructure, software, and services, Dell Technologies and NVIDIA have expanded their close partnership to deliver a comprehensive and secure AI solution customizable for any business. With a portfolio of products, solutions, and services tailored for AI workloads—from desktop to data center to cloud—the Dell AI Factory with NVIDIA paves the way for AI to work seamlessly for the enterprise. This jointly-developed solution incorporates a full suite of AI technologies, services, and deployment skills from Dell and NVIDIA, as well as an extensive network of AI partners. This growing partner ecosystem dramatically extends the capabilities that can be used in the development and deployment of AI solutions, including application development, project implementation and management, use case selection and optimization, and global service and support.

Figure 3. Dell AI Factory with NVIDIA



Source: Dell and NVIDIA

Further extending the capabilities of Dell AI Factory with NVIDIA is the availability of NVIDIA AI Enterprise, a cloud-native software platform that streamlines development and deployment of production-grade AI solutions. It includes NVIDIA NIM, a set of easy-to-use microservices designed for secure, reliable deployment of high-performance AI model inferencing, with industry-standard application programming interfaces for both general-purpose and vertical-market use cases.

NVIDIA Blueprints are an essential part of the Dell AI Factory with NVIDIA value proposition, making it easier to build reference applications across a wide range of industries, workloads, and use cases. Customizable NVIDIA Blueprints leverage Dell's sophisticated server and storage technologies, NVIDIA's industry-leading graphics processing units (GPUs), and both companies' AI software tools for an integrated, comprehensive, end-to-end AI experience.

Recognizing the criticality of a strong data foundation to drive AI success, Dell, in partnership with Starburst, can deliver a data management and data lakehouse solution to empower organizations to streamline data ingestion to support GenAI. This is particularly valuable to customers as they seek to incorporate enterprise data via RAG techniques to fuel use cases such as building enterprise chatbots to effectively manage and interact with diverse data types, including structured, semi-structured, and unstructured data.

The operational and financial value provided by Dell Factory AI with NVIDIA is enhanced and accelerated by the availability of Dell Professional Services for GenAI. These AI-specific services dramatically enhance an organization's ability to build and deploy impactful solutions in a wide variety of ways. These include using Dell's trained and certified AI experts for overarching strategy; use case identification and selection; software lifecycle services, including development, testing, validation, and performance management; and on-site or remote service and support.

Other important AI capabilities available through Dell Professional Services include data security strategies, deployment, monitoring and remediation, data management and migration (via the aforementioned Dell Data Lakehouse solution), AI model development, IT and end-user training, and customized GenAI digital assistant deployment. Dell also stages and runs a pre-built, yet customizable, set of GenAI workshops (Dell Accelerator Workshop for GenAI) to help organizations envision, plan, and execute their initiatives.

This tightly integrated suite of technologies, frameworks, and services is a highly leverageable asset in overcoming the essential complexity of many AI initiatives. It also highlights the importance of teaming with trusted, experienced AI technology partners to mitigate the large and rapidly growing AI skills gap.

Conclusion

As GenAI continues to gain market momentum, organizations increasingly commit resources, time, and energy to that technology as a core driver of improved business outcomes. Most organizations have taken an enthusiastic, yet pragmatic, approach to standing up pilots and proofs of concept and are employing structured methods to measure progress, outcomes, and benefits.

And yet, far too many organizations are lagging—dangerously so, in fact—when it comes to making GenAI a core part of their transformative applications portfolio. Regardless of size, budget constraints, IT service delivery profile, or technographics, organizations simply cannot afford to wait. After all, keep in mind the important statistic cited earlier in this paper: 50% of organizations already have GenAI initiatives underway, either as pilots or as production systems. No organization can allow its competition to achieve and extend its competitive edge when it comes to GenAI workloads.

Dell, in collaboration with its partner NVIDIA, has positioned Dell AI Factory with NVIDIA as a purpose-built development and deployment environment for accelerating AI solutions. By making deployment faster and easier, while also using best practices for safety and security, Dell AI Factory helps organizations overcome such potentially limiting challenges as the AI skills gap, the lack of suitable data to train AI models, and poor data quality in order to realize more valuable insights from using AI tools and services from Dell and NVIDIA.

Organizations that have made AI a strategic part of their business toolkit should evaluate Dell AI Factory with NVIDIA to determine how and where the resource can advance their goals. Failing to sufficiently weigh solutions like Dell AI Factory with NVIDIA can put organizations at a competitive disadvantage against enterprises that understand how to augment and extend their existing in-house resources.

For more information on how Dell and NVIDIA can help you build your own AI factory, visit Dell.com/NVIDIA-AI.

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TechTarget's Enterprise Strategy Group provides focused and actionable market intelligence, demand-side research, analyst advisory services, GTM strategy guidance, solution validations, and custom content supporting enterprise technology buying and selling.

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