DELLTechnologies

Accelerate Your AI Innovation with the Dell AI Factory

Best practices for bringing AI to your organizational data

Designing a robust AI strategy for future success

Foreword by John Roese
Global Chief Technology Officer and Chief AI Officer, Dell Technologies

Generative AI (GenAI) is transforming industries and the way enterprises work. Dell Technologies is uniquely positioned to be your trusted partner in AI adoption – accelerating your path to increased productivity and efficiency. Based on the work we've done using our own enterprise as customer zero, we're uniquely able to help you design a strategy tailored to your business needs while ensuring you have full control over the data and AI outcomes you pursue. Let's explore how you can design a holistic AI strategy, forge a strong connection between the business units and your IT teams, and accelerate your journey to success.

Start with what makes your business unique and where AI can have the greatest impact.

If you're ready to begin your AI journey, start by understanding what makes you unique, what you want to accomplish, and we'll help you understand what you need to do to see a return on your AI investment.

If you are unsure about the answers to some of these questions, Dell Technologies has an approach that can simplify and accelerate your AI journey.

AI readiness falls into six common areas:

☐ What makes you special?

☐ What problems are you trying to solve with AI?

☐ What specific process are you changing with AI?

☐ Have you established a modern data foundation, and is your data clean and protected?

☐ Look for the patterns in your AI use cases.

☐ After finding the patterns in your use cases, determine if your best AI architecture should be built in-house, bought/licensed, or a combination of both.

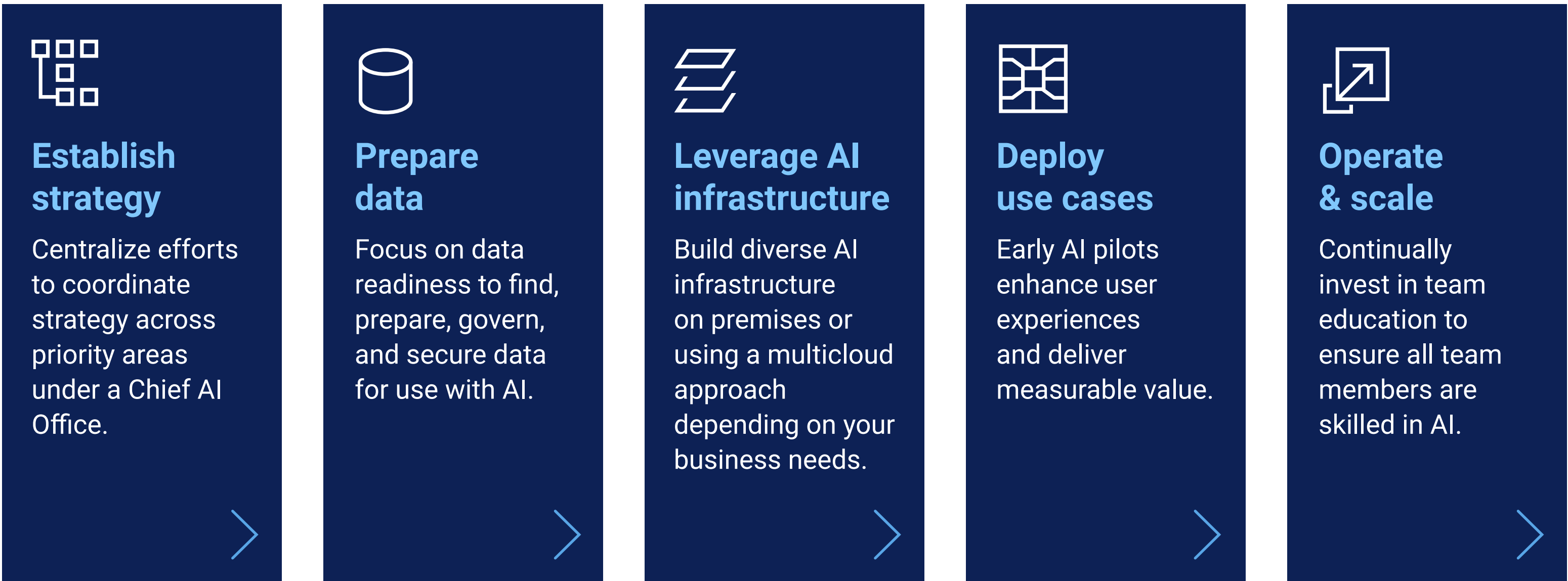# The essential components of your AI journey

The need for a governance framework and a centralized strategy

Centralizing AI efforts and applying a strong governance framework is essential for responsible scaling. Creating a centralized function like a Chief AI Office guided by a Chief AI Officer can help streamline decision-making and foster collaboration between business and IT, while a governance framework for responsible AI focuses on ethics, compliance, and security. Together, these elements enable organizations to scale AI confidently, minimize risks, and achieve sustainable results.

Learn from those who have gone before you

Taking the first step in your AI journey is never simple—but one approach is to learn from the experiences of other organizations that have successfully embraced AI and achieved results. At Dell, our AI journey comprised five steps which allowed us to drive transformation across the business.
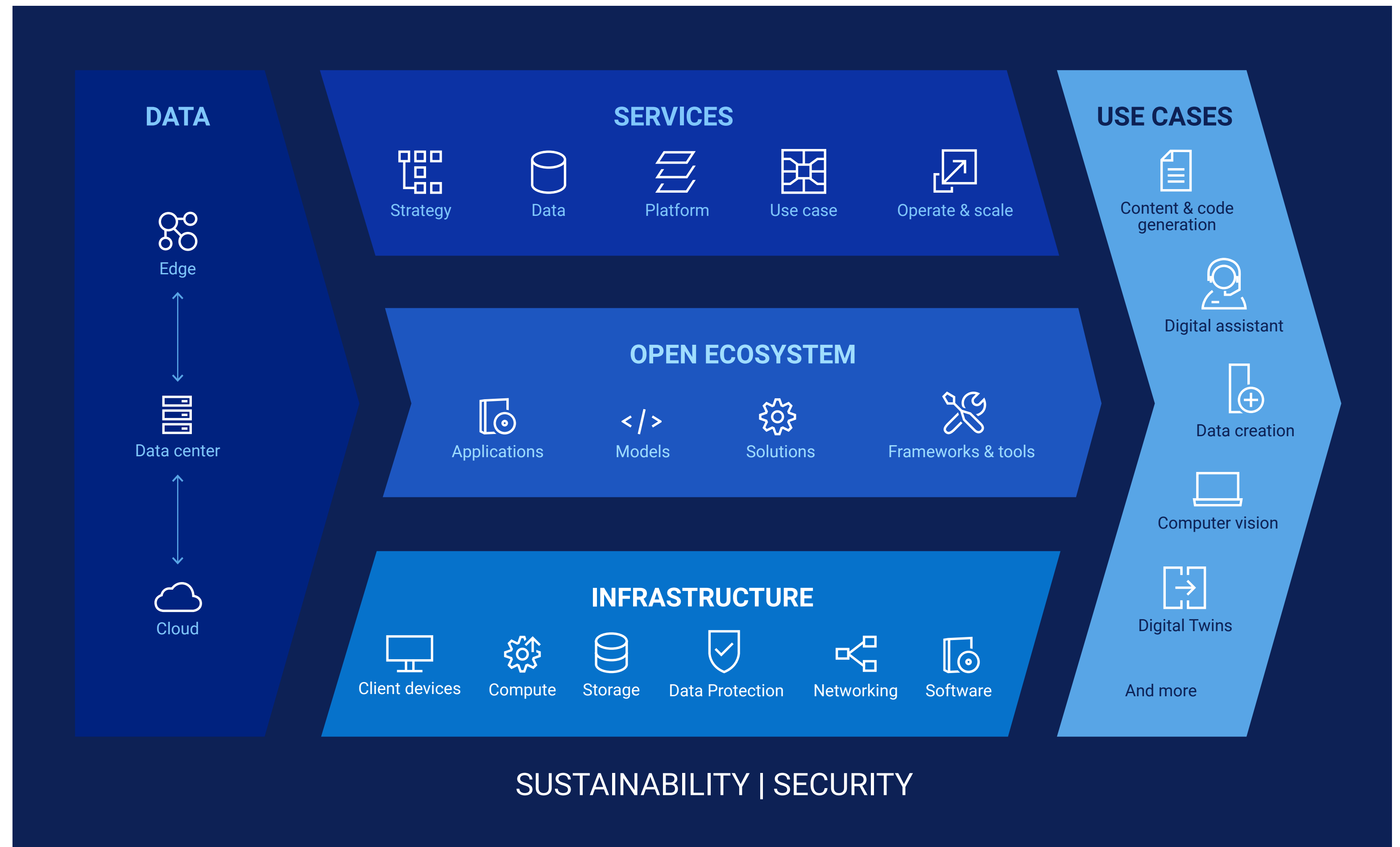
Key steps to enterprise AI adoption

Establish strategy

Centralize efforts to coordinate strategy across priority areas under a Chief AI Office.

Prepare data

Focus on data readiness to find, prepare, govern, and secure data for use with AI.

Leverage AI infrastructure

Build diverse AI infrastructure on premises or using a multicloud approach depending on your business needs.

Deploy use cases

Early AI pilots enhance user experiences and deliver measurable value.

Operate & scale

Continually invest in team education to ensure all team members are skilled in AI.

The essential components of your AI journey (cont.)

The Dell AI Factory

Our AI journey, as well as helping hundreds of customers worldwide with their AI journeys, gave rise to what we call the Dell AI Factory, Dell's approach to accelerating AI innovation in organizations of all sizes. Just like physical factories fueled the Industrial Revolution, AI factories will power the AI revolution. But instead of physical goods, AI factories produce actionable intelligence, new content, and fresh insights.

By adopting the Dell AI Factory framework, organizations can build a foundation for long-term innovation and confidently evolve their AI capabilities to stay competitive and drive meaningful impact.

Let's explore the five components of the Dell AI Factory, starting with prioritization of common use cases.
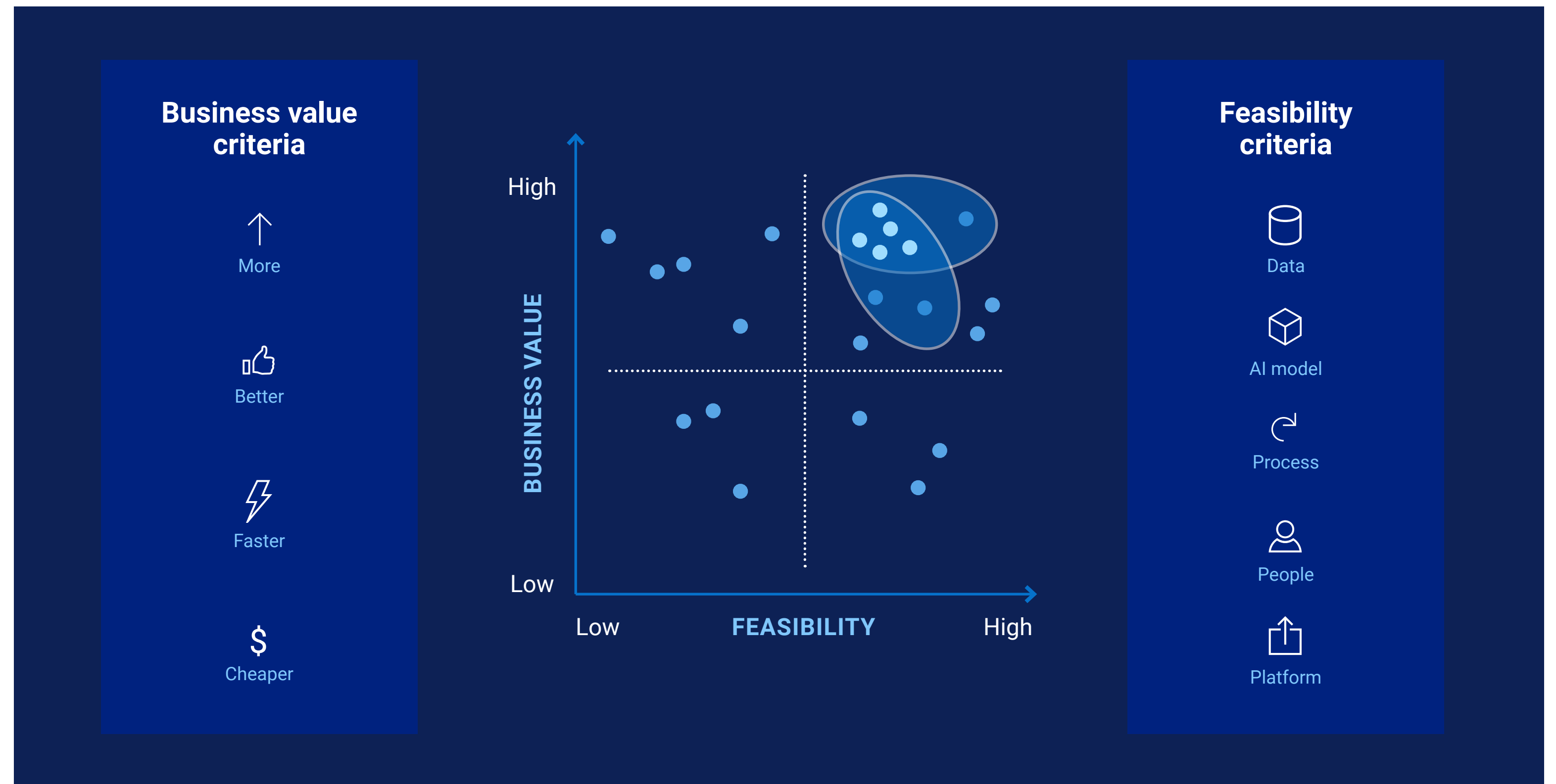

DATA

Edge

Data center

Cloud

SERVICES

Strategy | Data | Platform | Use case | Operate & scale

OPEN ECOSYSTEM

Applications | Models | Solutions | Frameworks & tools

INFRASTRUCTURE

Client devices | Compute | Storage | Data Protection | Networking | Software

USE CASES

Content & code generation

Digital assistant

Data creation

Computer vision

Digital Twins

And more

SUSTAINABILITY | SECURITY

Given that most organizations can have hundreds of potential use cases, it is critical to prioritize them in a thoughtful manner. Close collaboration between business units and IT is essential: business leaders identify high-impact use cases while IT delivers the technology that can support the objectives. Aligning these efforts helps define realistic goals and focus resources on projects that balance cost, security, feasibility, and ROI.

Clustering use cases based on business value and feasibility

Clustering AI use cases is key to driving strategic focus. By identifying high-impact projects that share common requirements, you can prepare for multiple use cases at the same time, avoiding waste, and delivering a faster ROI. Cluster your use cases based on both feasibility and business value as shown on the right.

Business value criteria

↑
More

👍
Better

⚡
Faster

$
Cheaper

Feasibility criteria

Data

AI model

Process

People

Platform

BUSINESS VALUE

High

Low

Low   FEASIBILITY   High

Criteria to analyze your use cases

By clustering use cases based on these factors, organizations can identify attainable projects and find opportunities to reuse efforts, making it easier to launch multiple AI initiatives simultaneously and efficiently.

Four considerations for measuring business value

When evaluating the value of an AI initiative, focus on:

Assess how it can drive growth by increasing output, such as more leads or expanded customer reach.

Consider its potential to improve employee and customer satisfaction.

Look at productivity gains, such as faster decision-making or reduced cycle times.

Measure its ability to accelerate innovation, driving breakthroughs in product development and faster time-to-market.

Five considerations for measuring feasibility

When evaluating the feasibility of an AI initiative, focus on:

Data
Confirm access to, and the availability of, quality data for AI models to leverage.

Model
Understand the right AI models to use, ensuring they are suitable and adaptable.

Platform
Outline scalable infrastructure, including hardware and software, that will be used for AI initiatives.

Process
Clearly define and integrate AI and ensure that new processes for leveraging it are frictionless.

People
Upskill your teams to adopt and effectively use AI technologies.

Discovering data to power your use cases

Importance of data in the GenAI world

In an increasingly AI-driven business landscape, data is among the most valuable assets organizations possess. However, raw data alone is not enough. How you prepare and manage this data significantly impacts your ability to leverage AI effectively.
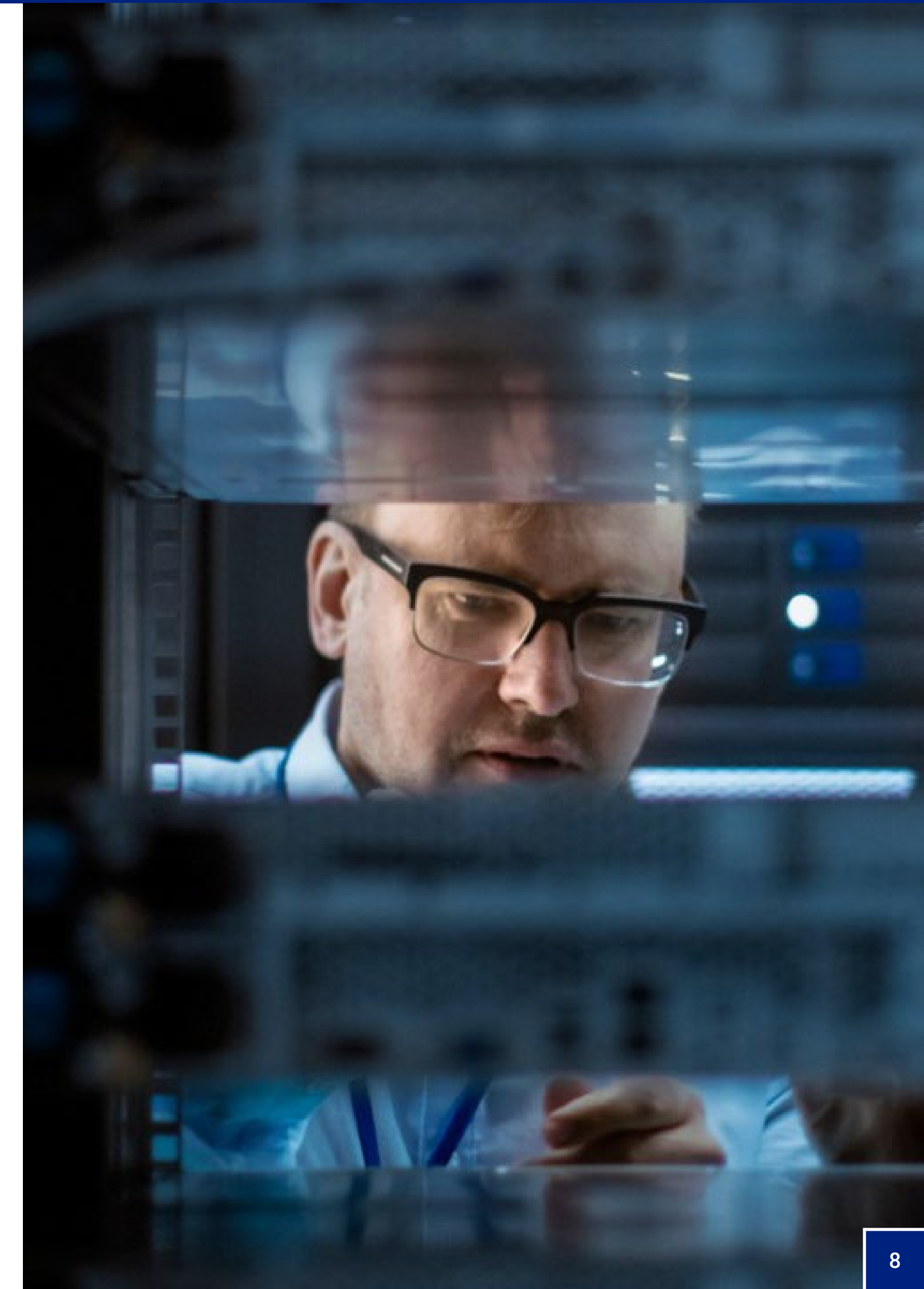
Focus Area #1:
Data discovery

Focus Area #2:
Data preparation

Focus Area #3:
Implementation

The first step in preparing your organization's data for AI is to identify what data you have and how it can be used.

- **Determine applicability** to drive data relevance across business functions.

- **Pair contextually relevant data** to uncover insights and identify patterns.

- **Solve for broad reuse** to ensure efficient data reuse across multiple applications.

- **Identify commonalities** across users, data types, and data sets to find opportunities for alignment.

Preparing and managing your data

Focus Area #1:
Data discovery

Focus Area #2:
Data preparation

Focus Area #3:
Implementation

The second step is to validate that your data is ready for AI model ingestion and effective use.

As we move toward an AI-driven future, it is crucial to keep control of your data by bringing AI directly to where it is stored to reduce costs and enhance accuracy and security. The Dell AI Factory provides you with the infrastructure, services, and ecosystem to fully harness your data's potential while maintaining control.

- **Data sanitation** removes duplicates, corrects errors, and provides consistency.
- **Data classification** categorizes data based on its sensitivity and relevance.
- **Data location** centralizes data storage to streamline access and management.
- **Data security and governance** introduces encryption, access controls, and audit plans.

For governments and other entities dealing with highly sensitive information, data sovereignty is a critical concern. Ensuring that data remains within specific geographical boundaries is crucial for compliance and security.
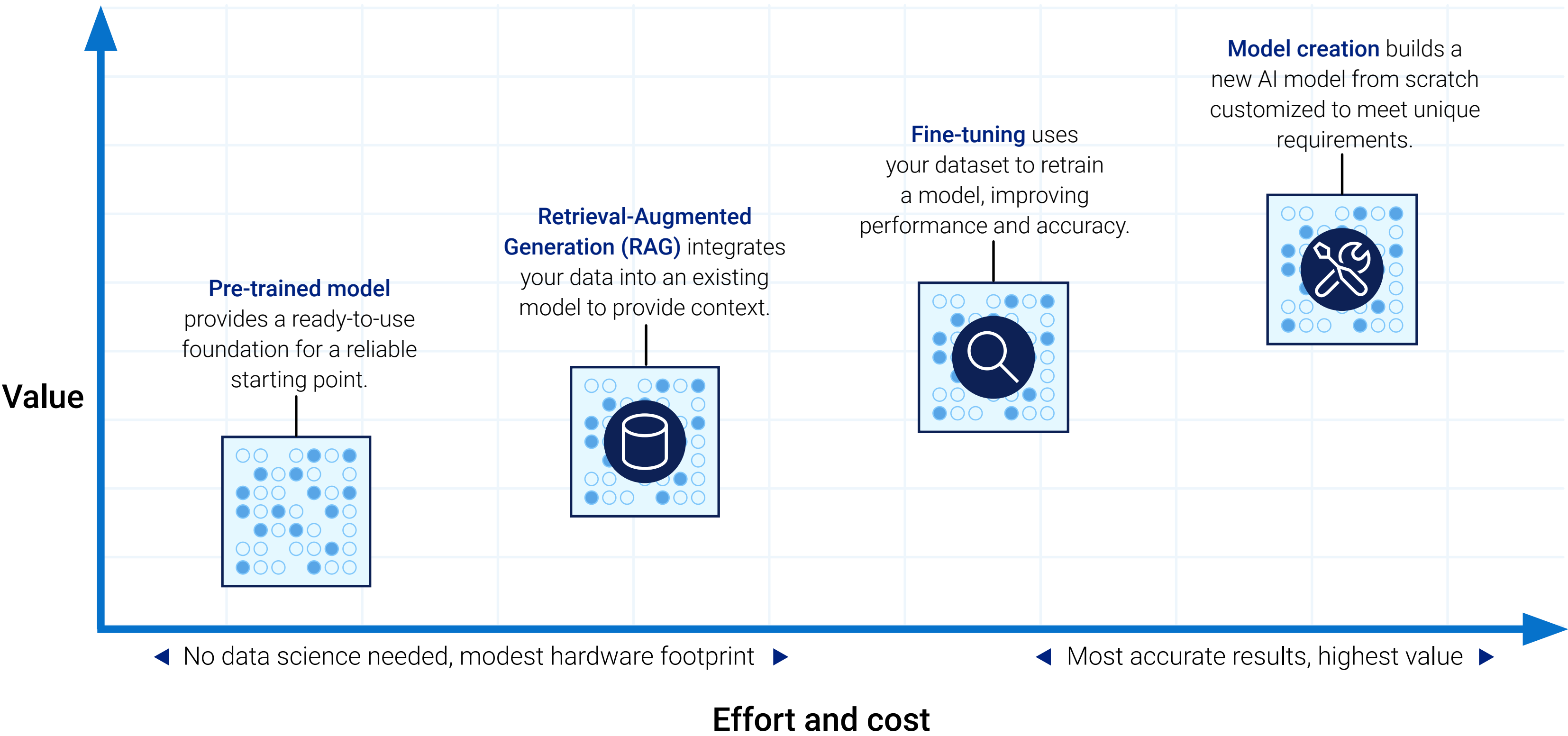
AI deployment patterns and implications

Focus Area #1:
Data discovery

Focus Area #2:
Data preparation

Focus Area #3:
Implementation

Finally, you'll need to determine the best deployment pattern based on your specific use cases.

By aligning your AI implementation with the right pattern, you can optimize performance and resource usage while delivering outcomes to the business.

Value

Model creation builds a new AI model from scratch customized to meet unique requirements.

Fine-tuning uses your dataset to retrain a model, improving performance and accuracy.

Retrieval-Augmented Generation (RAG) integrates your data into an existing model to provide context.

Pre-trained model provides a ready-to-use foundation for a reliable starting point.

◄ No data science needed, modest hardware footprint ▶   ◄ Most accurate results, highest value ▶

Effort and cost

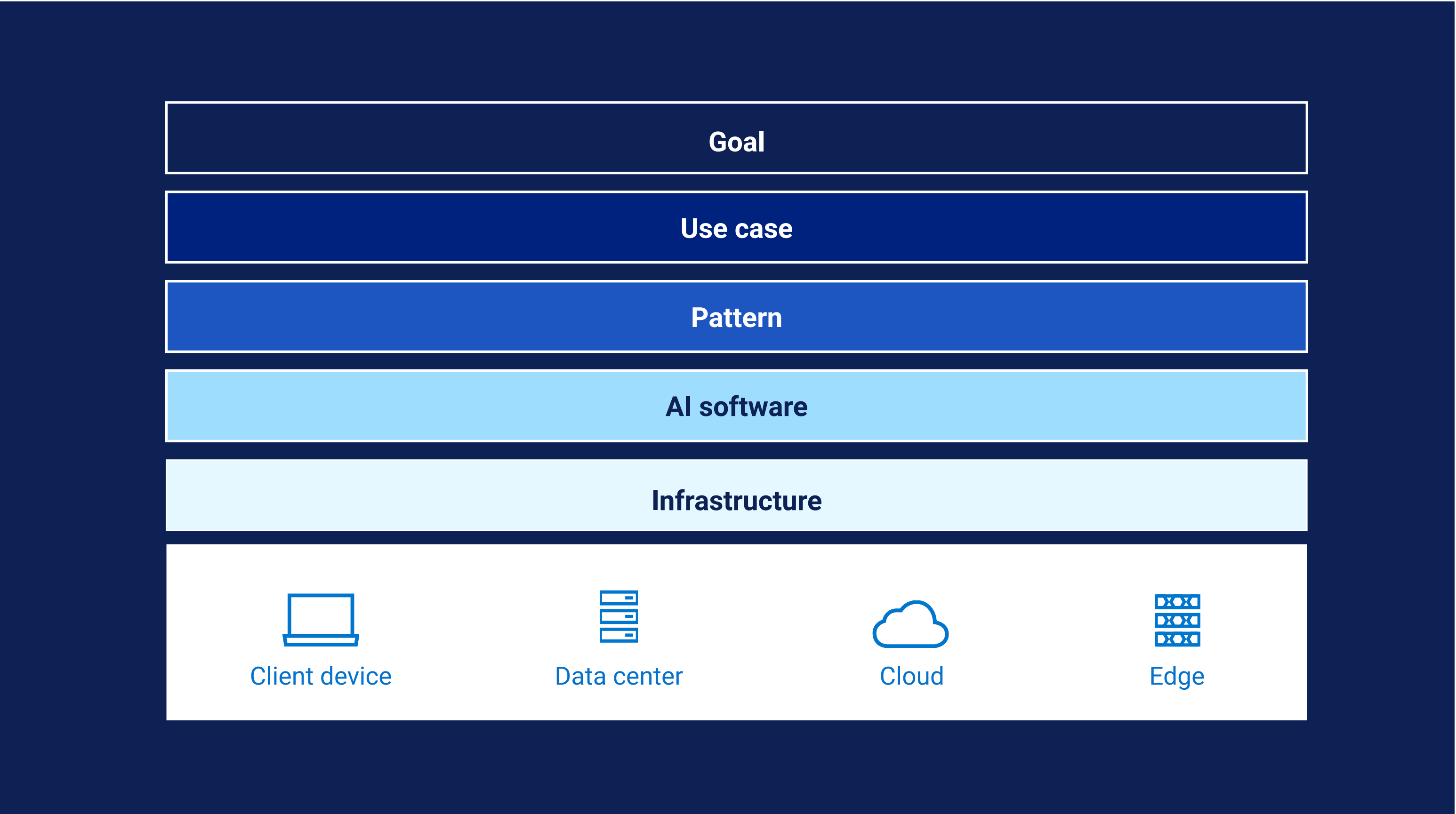# Right-sizing AI infrastructure

The importance of right-sizing AI investments

The success of AI initiatives often hinges on the ability to right-size your infrastructure—validating that your investments are neither underutilized nor overextended. Using the five steps below to right-size AI helps you align resources with business objectives while reducing costs, improving ROI, and enhancing scalability.

Key considerations

1. **Determine objectives:** Identify objectives, KPIs, and business goals of leveraging AI.

2. **Identify use cases:** Select AI use cases that are feasible and address objectives.

3. **Choose patterns:** Choose AI patterns that balance value, effort and cost.

4. **Leverage software solutions:** Determine models, middleware, and deployment tools.

5. **Right-size infrastructure:** Finally, we can right-size our investments accurately.

Goal
Use case
Pattern
AI software
Infrastructure

Client device   Data center   Cloud   Edge

The Dell AI infrastructure portfolio

Wherever you intend to use AI, Dell is here to help

Infrastructure forms the foundation of every AI factory, but this foundation must be flexible because AI is rapidly evolving. That's why the Dell AI Factory can support diverse AI requirements with the world's broadest AI solutions portfolio from device to data center to cloud,[1] allowing organizations to right-size their AI investments and gain the flexibility to run AI anywhere.

1. Based on Dell analysis, July 2024. Dell Technologies offers hardware solutions engineered with AI-powered features and solutions to support AI workloads, from AI PCs and Workstations to Servers for High-performance Computing, Data Storage, Cloud Native Software-Defined Infrastructure, Networking Switches, Data Protection, HCI and Services.

Infrastructure
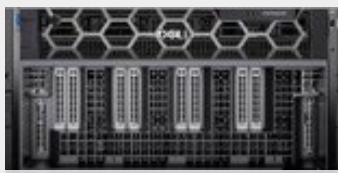
Dell Pro & Dell Pro Max AI PCs

Dell Pro Max Series

PowerEdge R-Series

PowerEdge XE-Series

PowerProtect

ECS

PowerSwitch

PowerScale

Laptops

Workstations

Compute

Networking and data protection

Storage

Dell Professional Services | Strategy | Data | Deployment | Implementation | Residency

Leveraging an ecosystem of innovation

Dell works with partners to provide full-stack validated solutions

AI factories need a large and dynamic AI ecosystem to succeed—no single vendor can meet all customer AI needs. The Dell AI Factory brings together leading AI ecosystem partners to create validated solutions that make it easy for customers to seamlessly integrate these AI technologies into their own AI factories.

Hardware partners

Deploy infrastructure with the highest performance and the most capabilities.

Software partners

Leverage advanced AI models, frameworks, and tooling.

Data partners

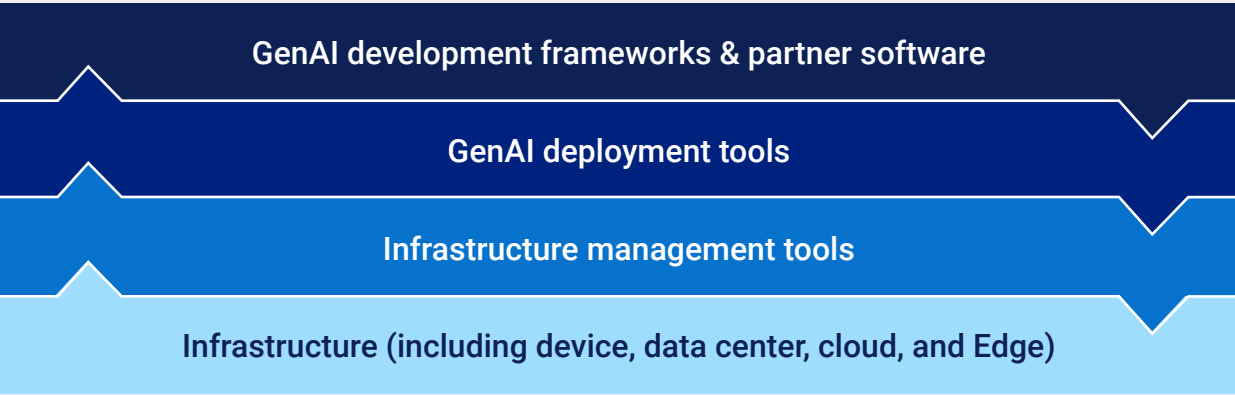Ensure your data is collected, organized and ready to be fed into models.

Specialized consultants

Integrate AI solutions into existing organizational processes.

Dell Validated Design example

Simplify AI deployment with engineering-validated solutions alongside our partners. Dell has many validated designs for common AI use cases, including for usage with laptops and workstations.

GenAI development frameworks & partner software
GenAI deployment tools
Infrastructure management tools
Infrastructure (including device, data center, cloud, and Edge)

The Dell AI Factory with NVIDIA

The Dell AI Factory with NVIDIA combines Dell enterprise expertise with NVIDIA AI hardware and software to deliver a comprehensive infrastructure for GenAI. With co-engineered solutions, including NVIDIA-powered servers and specialized AI software, the partnership accelerates AI initiatives, simplifies deployment, and empowers organizations to innovate and scale with confidence.
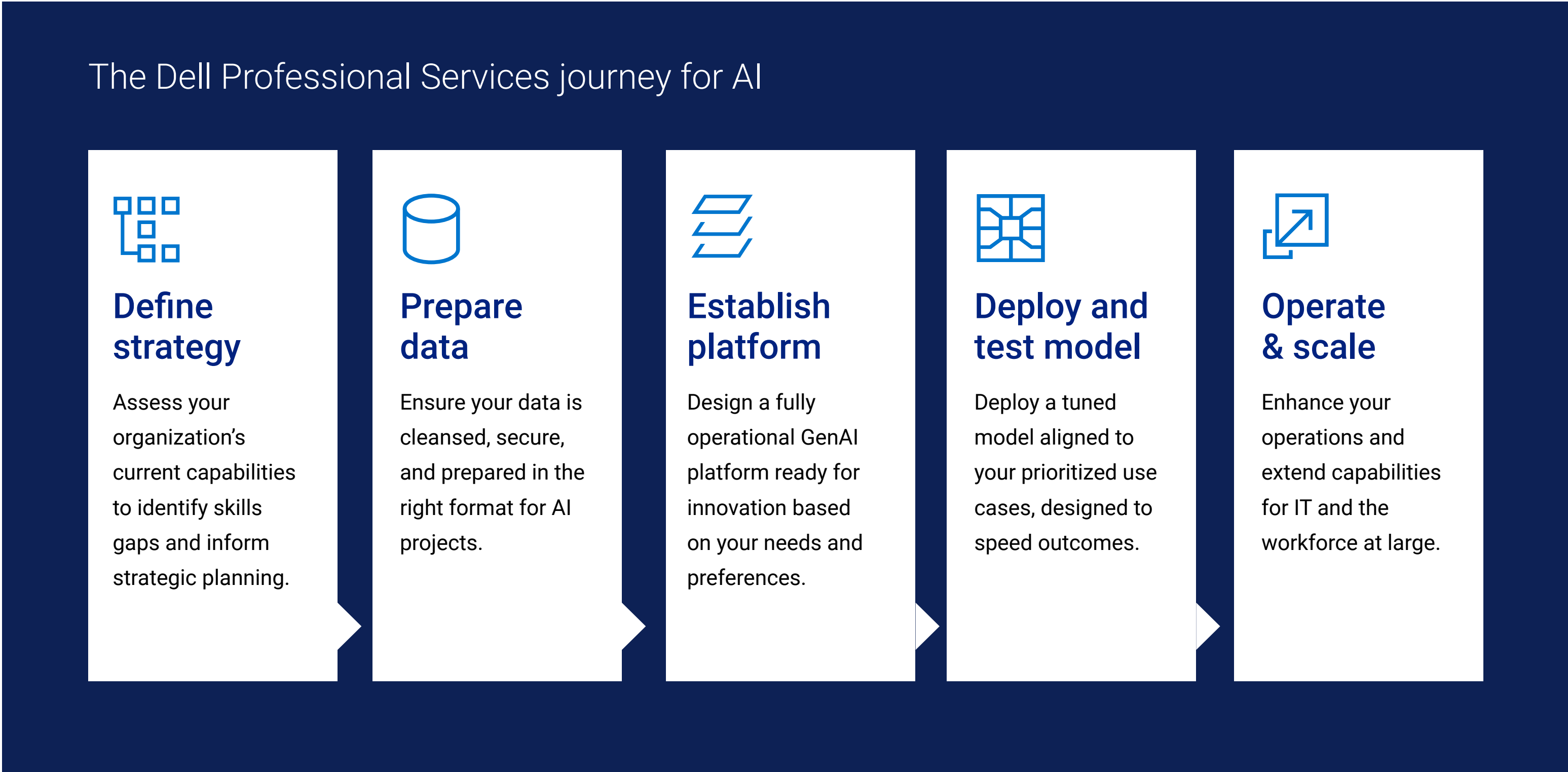
Learn more

Accelerating your journey and ensuring success

Expert guidance is essential to meeting the demands of AI. Dell Professional Services help businesses navigate through strategy, data preparation, platform building, and workforce readiness, bridging the skills gap and driving long-term AI success.

With Dell Professional Services, you can leverage expert support at any stage of your AI journey. Whether you need to create a winning strategy, prepare or manage your data, or deploy your platform, Dell can help simplify your path to success. Once you are up and running, you can also bring in Dell experts to help educate your workforce and manage your workloads.

The Dell Professional Services journey for AI

Define strategy

Assess your organization's current capabilities to identify skills gaps and inform strategic planning.

Prepare data

Ensure your data is cleansed, secure, and prepared in the right format for AI projects.

Establish platform

Design a fully operational GenAI platform ready for innovation based on your needs and preferences.

Deploy and test model

Deploy a tuned model aligned to your prioritized use cases, designed to speed outcomes.

Operate & scale

Enhance your operations and extend capabilities for IT and the workforce at large.

The importance of strategic AI adoption

AI is evolving at a breakneck pace. New models and types of AI will continue to be produced, and new use cases will be realized. As AI advances, the investments you make today in data, infrastructure, and workflows remain crucial. The Dell AI Factory is designed to be the foundation for your AI efforts, supporting both current needs and future advancements, ensuring you stay prepared for the changes ahead in this dynamic landscape.

Other things to consider

Drive value by engaging with both business and technical leaders to develop a strategy that aligns business goals with budget and technological feasibility.

Build a responsible AI strategy by reducing energy usage and improving sustainability through insights, improved hardware cooling, and eco-friendly hardware.

Conquer AI security challenges with strict governance and zero-trust principles, enhanced threat visibility, and cyber-resilient data protection.

Accelerate your AI journey today

We invite you to connect with our experts to explore how Dell Technologies can support your AI goals. Get started on your AI transformation journey with the Dell AI Factory today.

→ Establish a holistic strategy with an Accelerator Workshop for GenAI

→ Explore Dell AI use cases, solutions, and partnerships