Dell Technologies is your innovation catalyst to

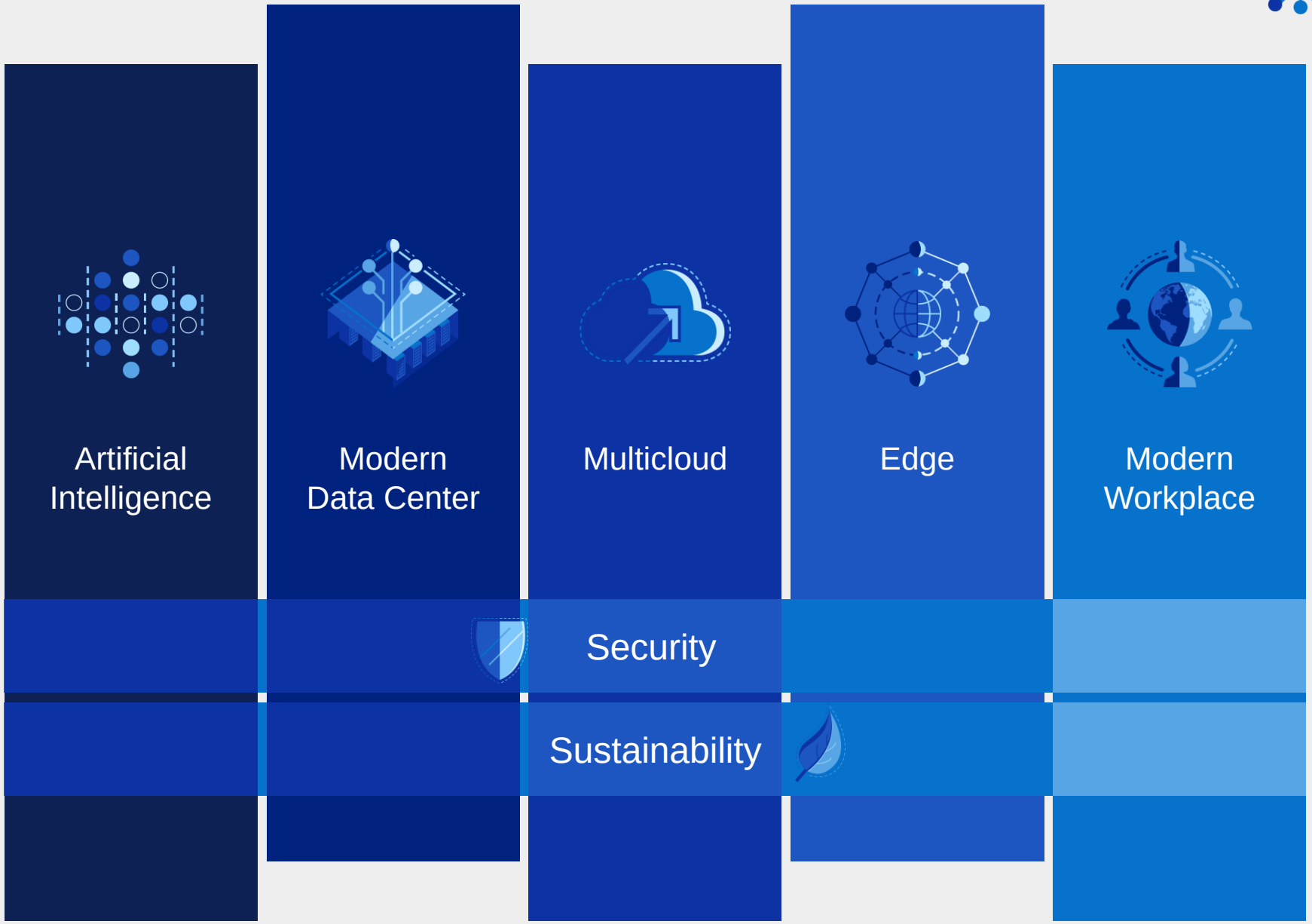
Accelerate AI Innovation with The Dell AI Factory

Dan Bogdan
ISG Technology Consulting Manager CEE

DELL Technologies

Dell Technologies is your innovation catalyst to

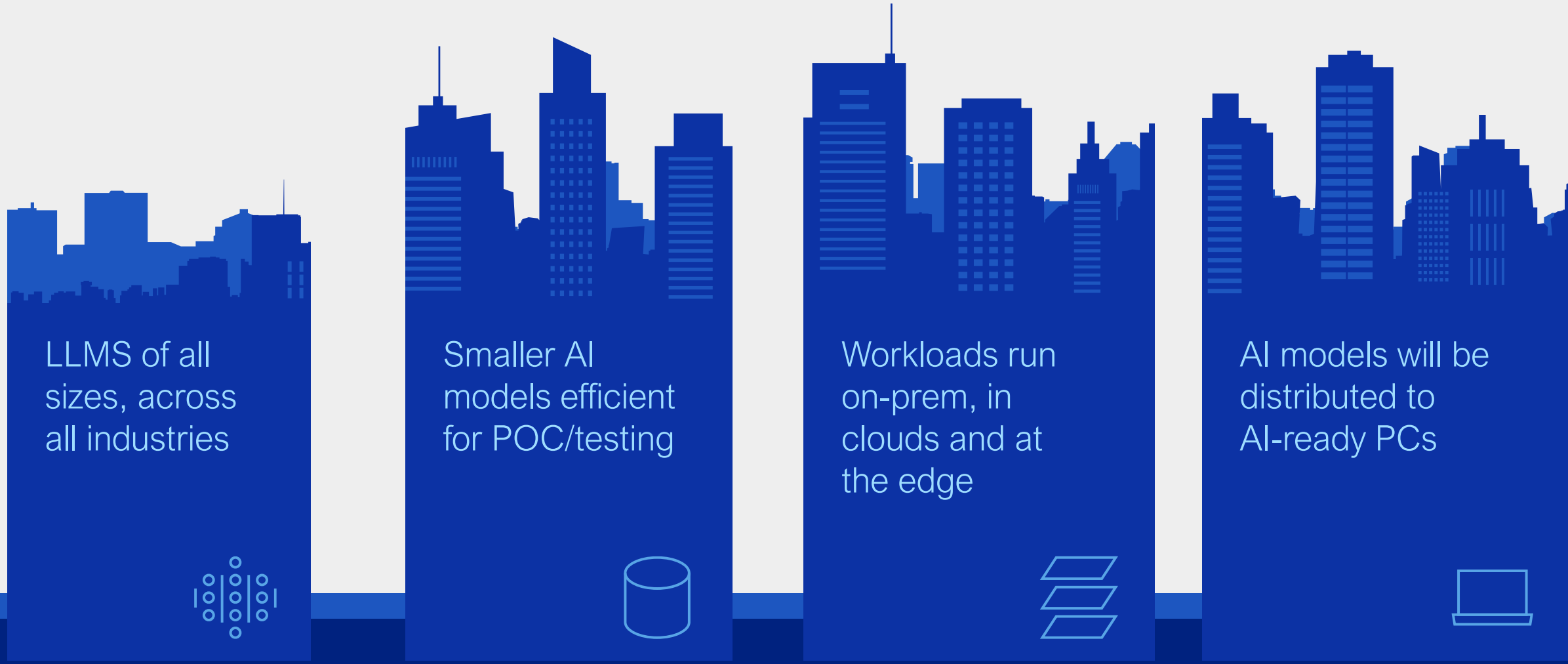
Accelerate your AI strategy from Ideas to Innovation



Copyright © Dell Inc. All Rights Reserved.

AI use cases and models becoming targeted and specialized

There is no one-size-fits-all approach

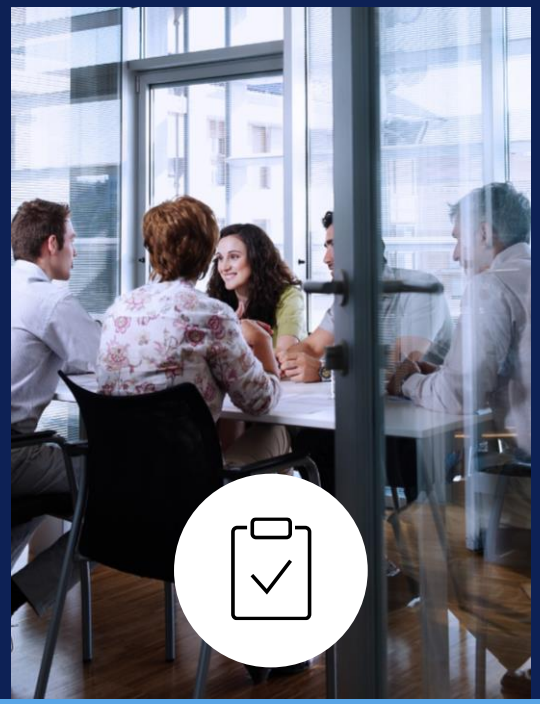


Copyright © Dell Inc. All Rights Reserved.

Accelerating AI adoption allows organizations to extract the full potential of their data

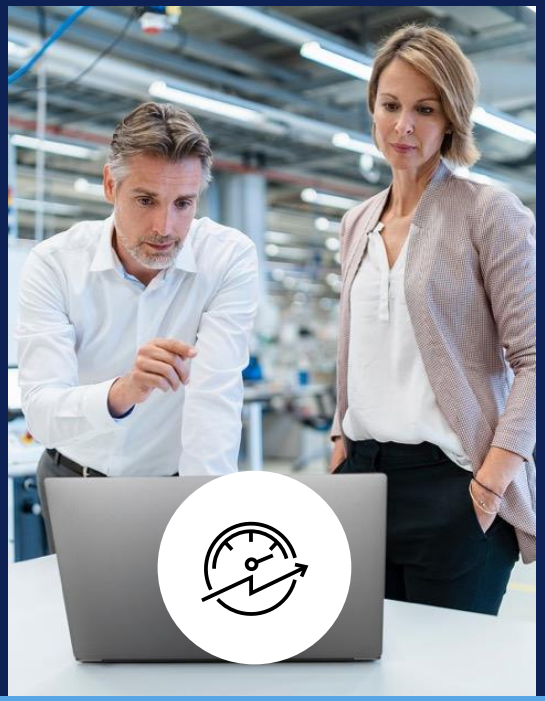
Leading to business outcomes that deliver unprecedented value creation

DRIVE GROWTH



ENHANCE EXPERIENCES

OPTIMIZE PRODUCTIVITY



ACCELERATE INNOVATION

AI Headwinds Slowing Down AI Adoption

76% of IT and business leaders believe GenAI will deliver transformative value for their organization[1]

Top challenge for enterprise AI adoption is an **AI skills and talent strategy**[2]

The #1 factor considered for choosing GenAI models is **security**[3]

Top challenge organizations face when implementing AI is **cost**

[1] Dell Technologies Innovation Catalyst Study, February 2024
[2] IDC Report: From Breakthrough Innovation to Impact: Monetizing the AI Moment Philip Carter, Directions 2024
[3] Dell Technologies Generative AI Pulse Survey, August and September 2023, www.dell.com/GenAIPulse
[4] IDC, Global AI Buyer Sentiment, Adoption and Business Value Survey, October 2023.

Copyright © Dell Inc. All Rights Reserved.

AI Headwinds Slowing Down AI Adoption

76% of IT and business leaders believe GenAI will deliver transformative value for their organization[1]

Top challenge for enterprise AI adoption is an **AI skills and talent strategy**[2]

The #1 factor considered for choosing GenAI models is **security**[3]

Top challenge organizations face when implementing AI is **cost**

[1] Dell Technologies Innovation Catalyst Study, February 2024
[2] IDC Report: From Breakthrough Innovation to Impact: Monetizing the AI Moment Philip Carter, Directions 2024
[3] Dell Technologies Generative AI Pulse Survey, August and September 2023, www.dell.com/GenAIPulse
[4] IDC, Global AI Buyer Sentiment, Adoption and Business Value Survey, October 2023.

Copyright © Dell Inc. All Rights Reserved.

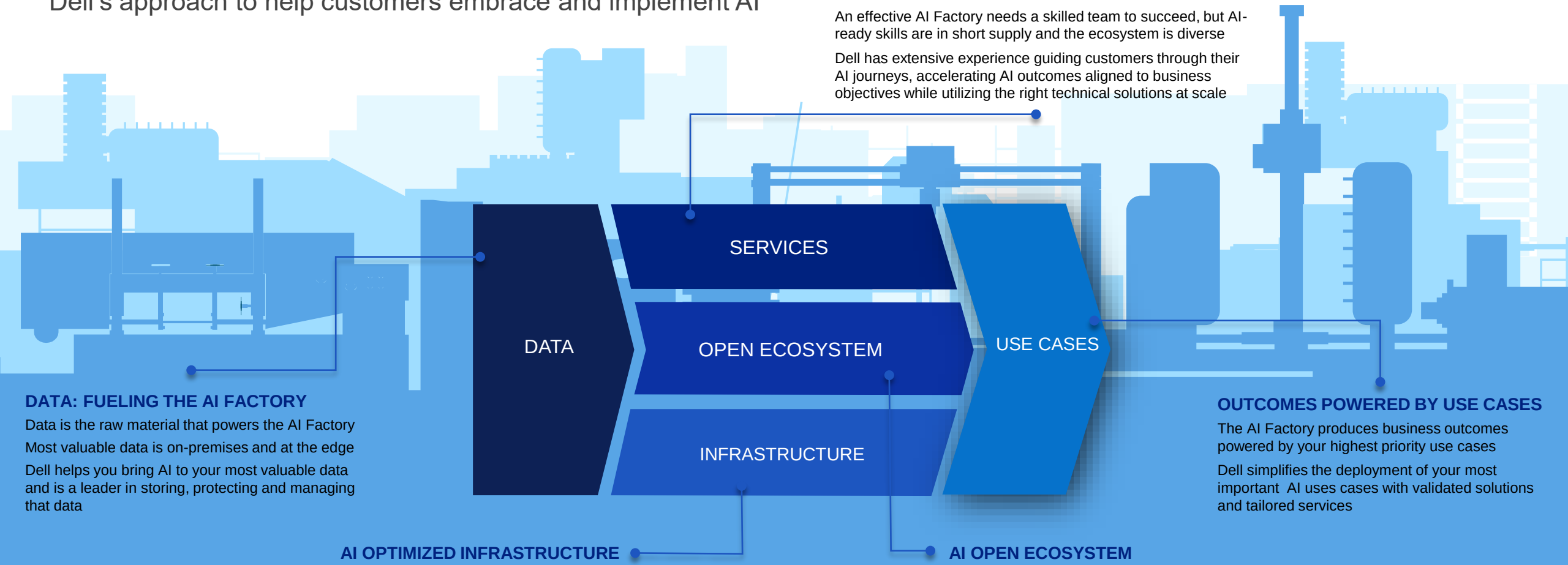
The Dell AI Factory

Dell's approach to help customers embrace and implement AI

EXPERT AI SERVICES

An effective AI Factory needs a skilled team to succeed, but AI-ready skills are in short supply and the ecosystem is diverse

Dell has extensive experience guiding customers through their AI journeys, accelerating AI outcomes aligned to business objectives while utilizing the right technical solutions at scale



DATA: FUELING THE AI FACTORY

Data is the raw material that powers the AI Factory

Most valuable data is on-premises and at the edge

Dell helps you bring AI to your most valuable data and is a leader in storing, protecting and managing that data

OUTCOMES POWERED BY USE CASES

The AI Factory produces business outcomes powered by your highest priority use cases

Dell simplifies the deployment of your most important AI uses cases with validated solutions and tailored services

AI OPTIMIZED INFRASTRUCTURE

Infrastructure is the foundation of the AI Factory

AI use cases are diverse and AI technologies are rapidly evolving

Dell has the broadest AI portfolio from client to cloud allowing you to right size your AI investment and giving you the flexibility to run AI anywhere

AI OPEN ECOSYSTEM

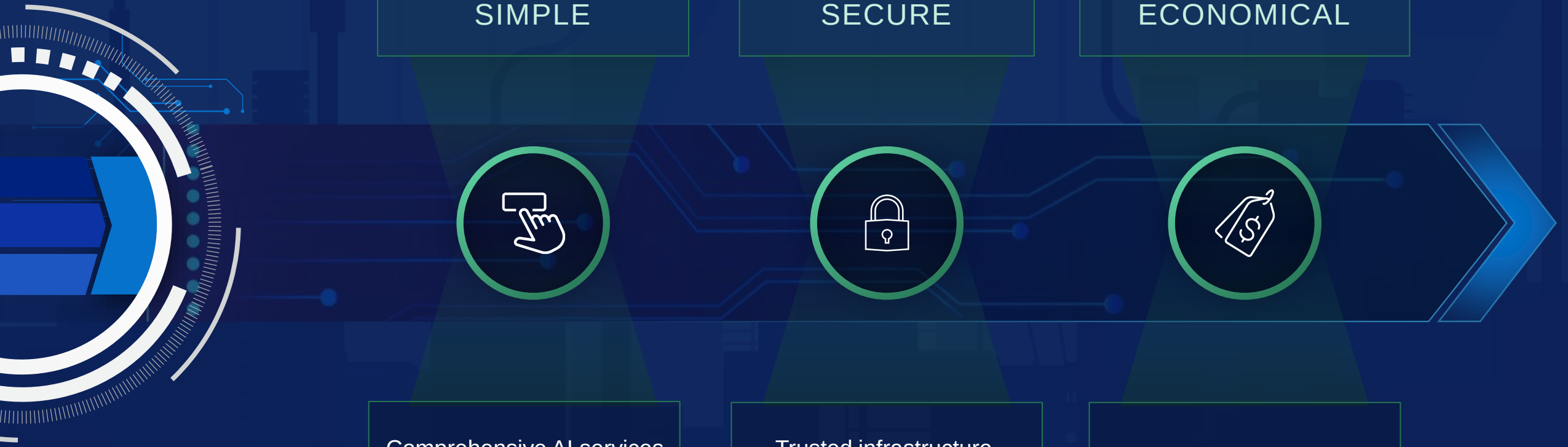
No single vendor can meet all your AI needs

Dell has a proven history of nurturing open ecosystems and is committed to building a broad AI ecosystem giving customers greater access to innovation and flexibility

DELL Technologies

Copyright © Dell Inc. All Rights Reserved.

Dell AI Factory Accelerates AI Adoption



Comprehensive AI services and validated, optimized solutions make AI easier, augmenting skills gaps and addressing data readiness

Trusted infrastructure, full-stack solutions and services ensure valuable data is protected, managed and accessible

Industry's broadest AI solutions portfolio addresses "no one-size-fits all" approach

DELL Technologies

Copyright © Dell Inc. All Rights Reserved.

The Dell AI Factory

Dell's approach to help customers embrace and implement AI

Copyright © Dell Inc. All Rights Reserved.

Hundreds of use cases – where do you begin?

Business strategy and operations management	Product innovation and R&D	Manufacturing and supply chain	Marketing, sales, and customer service	IT, HR, and finance
• Project management resource/task scheduling, budgeting, optimization and alerts • Resource utilization and sustainability optimization • Partner insights, optimization and contract compliance/recommendations • Identify and understand regulatory changes and impacts • Predict consequences and outcomes, anticipate workloads and demand • Facilities management optimization (smart buildings) • Automated meeting transcription, summarized notes and follow-up assignment • Meeting scheduling automation (bot) • Infectious disease screening of employees and customers (health and safety surveillance) • Predictive and adaptive environmental safety screening	• Design idea brainstorming and image generation • Scientific data and literature search and summarization • Fast-fail candidate screening • Identify unmet needs, underserved constituencies and unintended consequences • Identify new product/service opportunities • Medical/imaging diagnostics and personalized medicine • Population/public health analysis and campaigns	• Inventory and supply chain logistics, routing, scheduling, budget optimization, and alerts • Traffic management, optimization and emergency response adaptation • Manufacturing process quality control and alerts • Reduce material waste (materials and equipment tracking, utilization, forecasting, optimization) • Sales floor/display/site optimization • Video/sensor surveillance, risk assessment, and mitigation • Sound/light/air/water pollution compliance and minimization • Fleet, plant and equipment utilization/ productivity optimization • Predictive maintenance for fleet and equipment	• Draft copywriting (campaign messaging, customer personalization, translation) • Sentiment analysis, customer scoring and next best offer • SEO/keyword optimization/automation • Sales training/coaching • Customer support content screening, learning, search, and summarization • Customer service chatbot/digital human • Automated customer review responses • Derived market trends from unstructured data sources • Lead identification, qualification, ranking, and targeting • Customer churn risk assessment and alerts • Validate and protect customer/ patient data • Identity verification	• AI coding and documentation assistant • Code QA and testing, synthetic data creation • Log screening and early warning system • Network engineering resiliency, optimization, and self-healing • Metadata extraction and synthesis (NLP, GraphQL-readable tagging) • Intelligent search • Predictive maintenance for network, compute, and storage hardware • Automated penetration testing • Candidate resume screening • Employee performance screening • Personalized training (content and delivery) • Employee churn risk assessment and alerts • Fraud/waste/abuse detection and prevention • Human and financial resource forecasting, and budgeting

Most organizations have more than 200 use cases

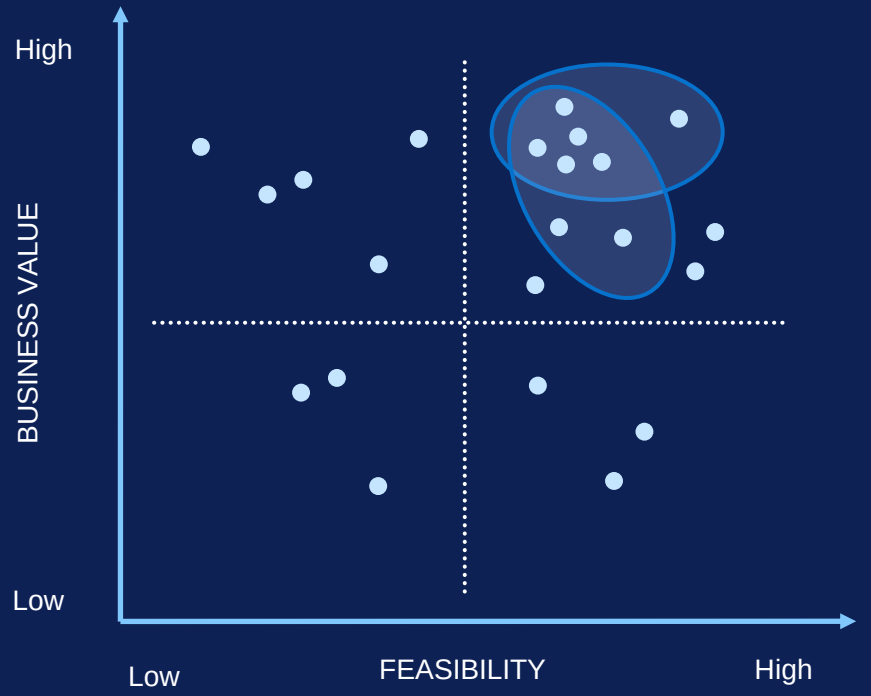
Copyright © Dell Inc. All Rights Reserved.

Prioritizing Generative AI use cases

Criteria for consistently evaluating use cases

Business value criteria

- More
- Better
- Faster
- Cheaper



Feasibility criteria

- Data
- AI model
- Process
- People
- Platform

Use cases

- Content creation
- Digital assistant
- Natural language search
- Design and data creation
- Code generation
- Document automation

Copyright © Dell Inc. All Rights Reserved.

The Dell AI Factory

Dell's approach to help customers embrace and implement AI

Copyright © Dell Inc. All Rights Reserved.

AI starts with better data management and preparation

Dell AI-Ready Data Platform

Open Ecosystem

- **Data Analytics Tools:** tableau, Power BI, looker
- **AI / GenAI / ML Workflows:** Meta, Hugging Face, DOMINO, jupyter, HOPSWORKS, tecton, data iku
- **Cloud Ecosystem:** databricks, snowflake, CLOUDERA, teradata.

Data Management

- **Dell Data Lakehouse**
  - Single Point of Data Access: Starburst
  - Open Data Formats: ICEBERG, DELTA LAKE
- **Enterprise Information Retrieval**

AI-Optimized Infrastructure

- **Dell Compute:** PowerEdge
- **Dell Unstructured Storage:** PowerScale, ObjectScale ECS
- **Dell Networking:** PowerSwitch, Dell Enterprise SONiC
- **Dell Data Protection:** PowerProtect

Multicloud by Design | Data Trust & Security | Professional and Managed Services

Dell Validated Designs and Dell Reference Designs

Data

Copyright © Dell Inc. All Rights Reserved.

DELL Technologies

Why bring AI on-prem to your data?

Data sovereignty is key to sustained success

Deliver secure access to valuable data

Increase visibility into data & models

Maintain control over how AI is used

73% say data and intellectual property are too valuable to be placed in a GenAI tool where a 3rd party may have access.*

**Source: Innovation Catalyst study, Dell Technologies, February 2024*

Data

Copyright © Dell Inc. All Rights Reserved.

Cost is a major consideration for LLM inferencing

Dell commissioned a study with Enterprise Strategy Group (ESG) comparing the expected costs to inference LLMs on-prem with Dell infrastructure vs. **public cloud IaaS** and **API services**[1].

Over a three-year period, Dell can provide inferencing that is up to:

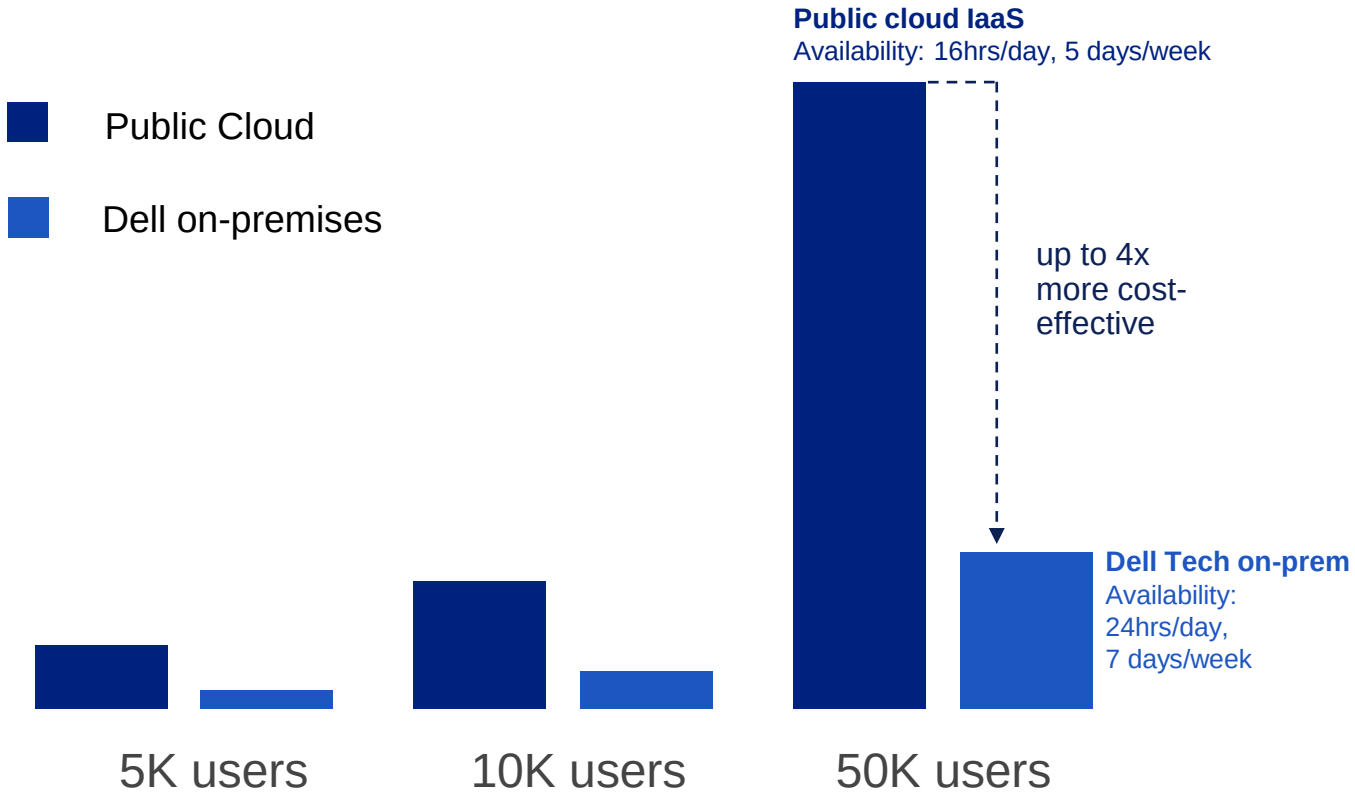
4x

more cost-effective than public cloud IaaS

8x

more cost-effective than token-based API services

Expected Cost to Deliver Inferencing for 70B Parameter Llama 2 LLM Using RAG



1. Based on Enterprise Strategy Group research commissioned by Dell, comparing on-premises Dell infrastructure versus native public cloud infrastructure as a service, April, 2024. Analyzed models show a 7B parameter LLM leveraging RAG for an organization of 5k users being up to 38% more cost effective while a 70B parameter LLM leveraging RAG for an organization of 50k users being up to 75% more cost effective. Actual results may vary.

DELL Technologies

Copyright © Dell Inc. All Rights Reserved.

The Dell AI Factory

Dell's approach to help customers embrace and implement AI

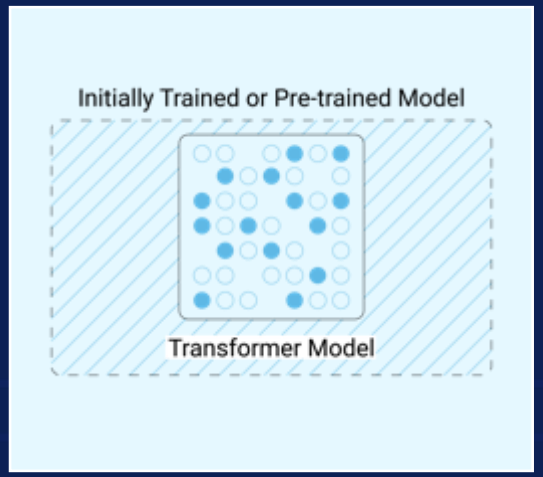
Copyright © Dell Inc. All Rights Reserved.

AI deployment patterns and their implications

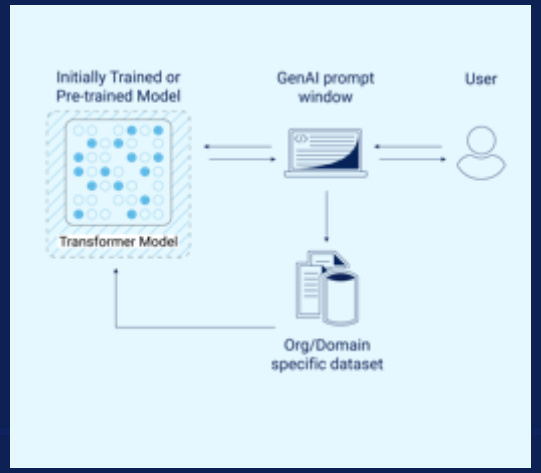
Value

Effort and cost

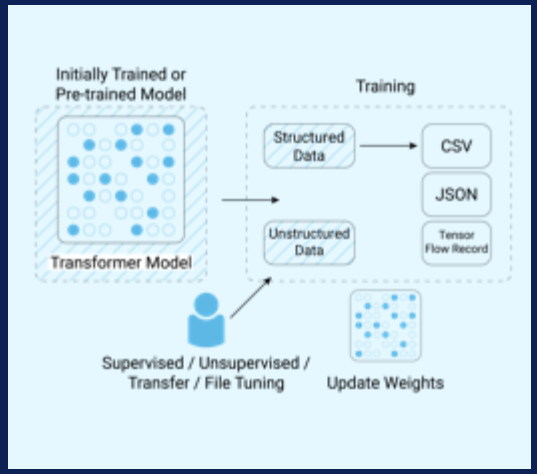
Pre-trained model / Inferencing



Model augmentation

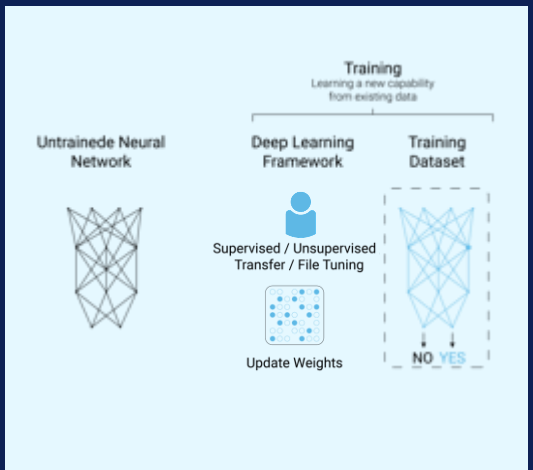


Fine-tuning



We think this is the sweet spot for most organizations

Model training



Developer(s) required

Data scientist(s) required

Infrastructure

Copyright © Dell Inc. All Rights Reserved.

Right-sizing your AI investment

Focus Area

- Business strategy and operations management
- Product innovation and R&D
- Manufacturing and supply chain
- Marketing, sales, and customer service
- IT, HR ,and Finance
- Users
- Dataset
- Location
- •••

Use Case

- **Content creation**
- **Digital assistant**
- **Natural language search**
- **Design and data creation**
- **Code generation**
- **Document automation**

Patterns

- **Pre-trained model/ inferencing**
- **Model augmentation**
- **Fine-tuning**
- **Model training**

AI Models

A broad ecosystem of software models, frameworks, and orchestration and tooling stacks

Infrastructure

Laptops

Workstations

Dell Validated Designs

Compute

Network

Storage

Professional Services

Strategy → Data → Deployment → Implementation → Residency

Infrastructure

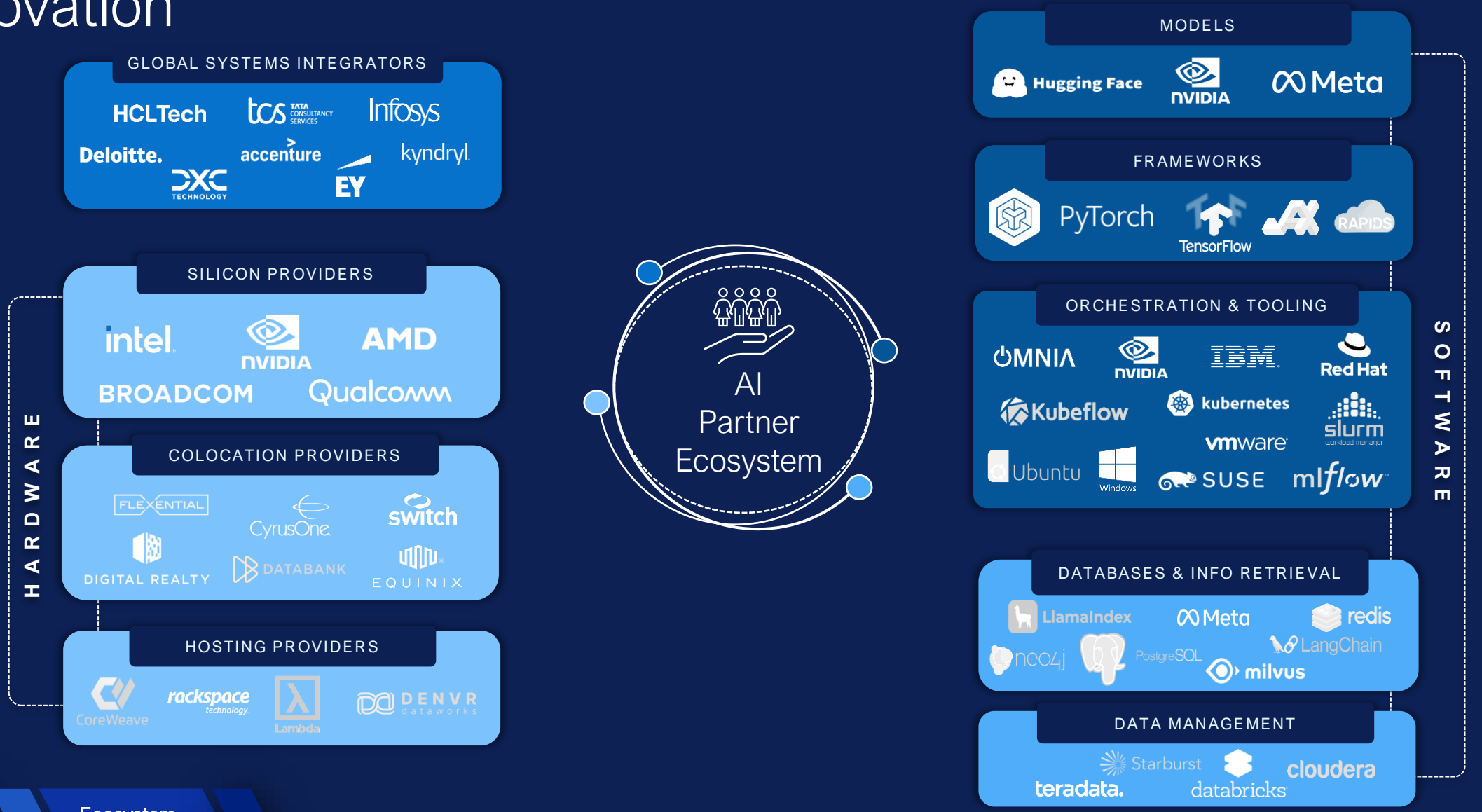
Copyright © Dell Inc. All Rights Reserved.

The Dell AI Factory

Dell's approach to help customers embrace and implement AI

Copyright © Dell Inc. All Rights Reserved.

Creating access to a broad open ecosystem for AI innovation



Ecosystem

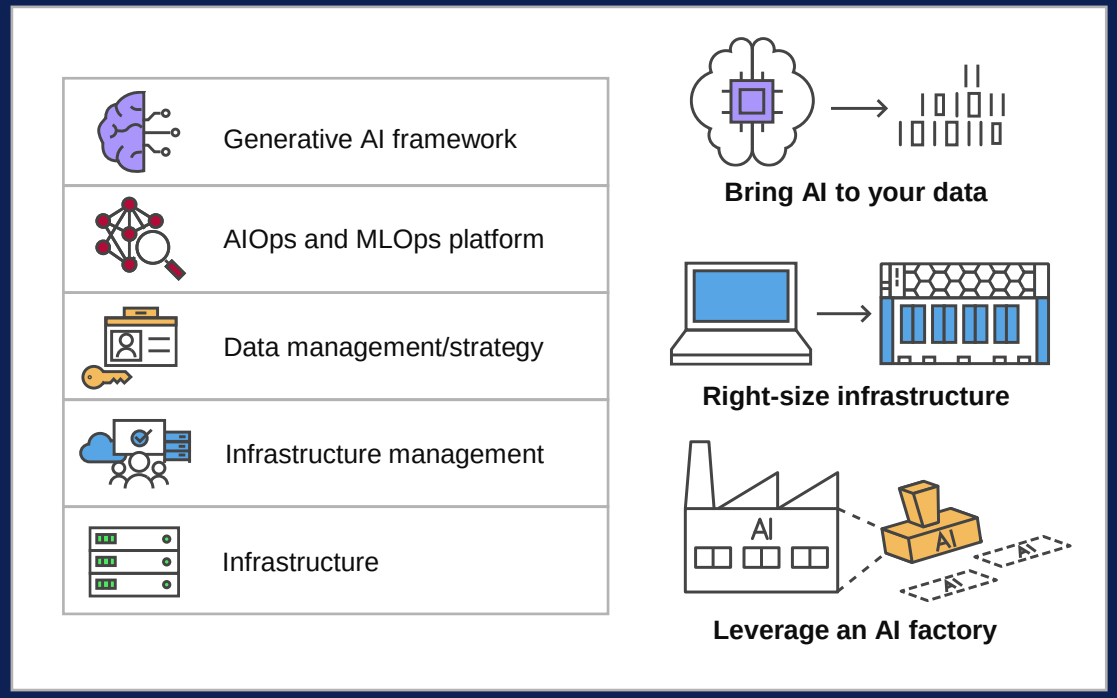
Copyright © Dell Inc. All Rights Reserved.

DELL Technologies

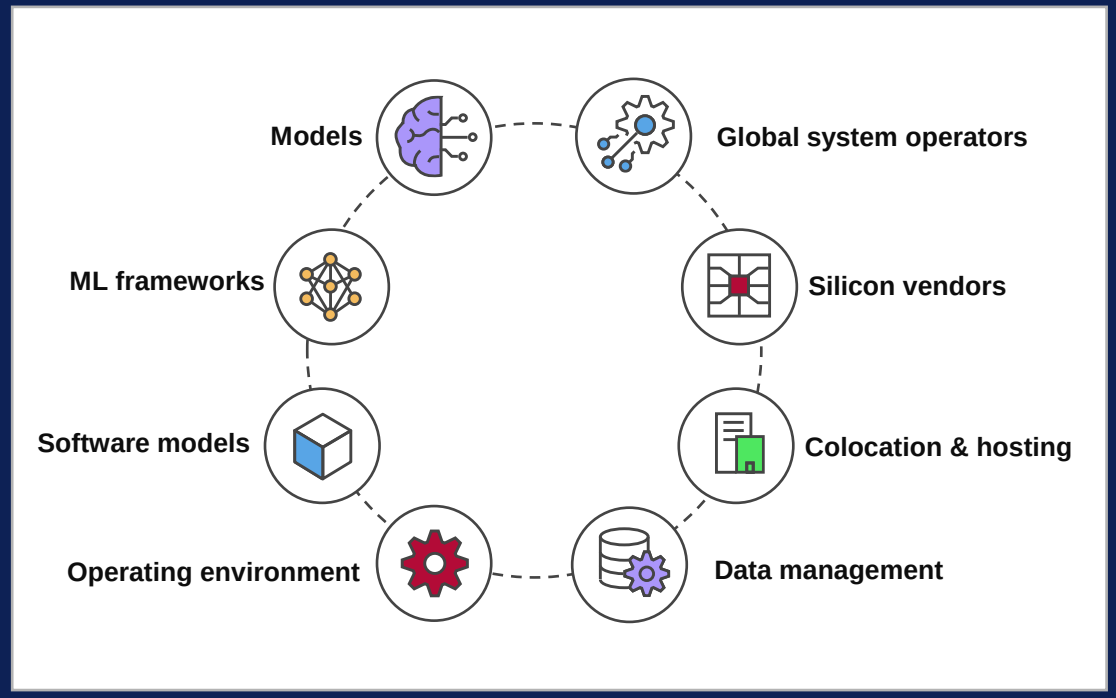
Dell ecosystem solutions

Over 340k engineering hours spent on design, development and validation on GenAI solutions*

Dell Validated Designs/Dell Reference Designs



Partner ecosystem & integrations



Source: Dell internal analysis

Ecosystem

Copyright © Dell Inc. All Rights Reserved.

The Dell AI Factory

Dell's approach to help customers embrace and implement AI

Copyright © Dell Inc. All Rights Reserved.

Accelerate GenAI outcomes and ensure long-term success with help at every stage

Establish strategy

Outcome

Consensus on Roadmap

- Accelerator Workshop
- Advisory Services
- Workforce Persona Services

Prepare data

Outcome

Validated data for model

- Services for Data Preparation, Data Security and Dell Data Lakehouse

GenAI Platform

Outcome

Deployed GenAI platform

- Deployment Services
- NEW Platform Implementation Services – *new for AMD*
- NEW Digital Assistants Platform Implementation

Deploy & test model

Outcome

Tuned Model

- NEW Use Case Implementation—*new for Digital Assistants*
- NEW Accelerator Services for RAG *+ on Precision workstations*
- NEW Accelerator Services for Dell portal with Hugging Face
- NEW Services for Microsoft Copilot
- NEW Red Hat OpenShift AI Implementation

Operate & Scale

Outcome

Simplified GenAI operations

- NEW Residency Services
- Managed Services—*new for AMD*
- Training and Certification
- Support Services
- Adoption & Change Management

Simplify your AI journey with the Dell AI Factory

Services

Copyright © Dell Inc. All Rights Reserved.