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Example slides for Data Science Strategy

Market focused AI strategy using Porter's Five Forces

Barriers to Entry:
The digital advertising sector has moderate entry barriers due to the need for substantial investment in AI technologies and data analytics capabilities.
Emerging AI-Driven Platforms: New entrants leveraging advanced AI for personalized content and advertising can disrupt the market, posing a threat to established players.

High Competition: GOBankingRates operates in a competitive landscape with direct competitors like Bankrate, Fortune, FoxBusiness, and NerdWallet, which also provide personal finance content and vie for advertising revenue.
AI Adoption Among Competitors: Competitors are increasingly integrating AI and ML to optimize ad targeting and personalize user experiences, intensifying the race for technological superiority.

Threat of New Entrants

Bargaining Power of Suppliers

Rivalry Among Existing Competitors

Bargaining Power of Buyers

Threat of Substitutes

Dependence on Quality Data:
Effective AI models require high-quality data. Suppliers of such data can exert influence, especially if they are scarce.
Content Partnerships: Collaborations with financial experts and content creators are vital. Their bargaining power increases if their contributions are critical to user engagement.

Alternative Information Sources:
Users can access financial information through other channels, including social media, financial news, and emerging AI-powered personal finance apps.
Direct Advertiser Platforms:
Advertisers might opt for platforms that offer direct access to target audiences using advanced AI abilities, without intermediaries.

Demand for ROI:
Advertisers seek high returns on investment, favoring platforms that offer precise targeting and measurable outcomes, often achieved through sophisticated AI algorithms.
Multiple Advertising Channels:
The availability of various platforms with advanced AI capabilities gives advertisers the leverage to choose partners that best meet their needs.

Strategic Implications:
- GOBankingRates should focus on strengthening its AI infrastructure and continuously improving its ad offerings to deter new competitors.
- Enhancing AI-driven ad targeting and performance metrics can make GOBankingRates more attractive to advertisers, reducing their bargaining power.
- Diversifying data sources and building strong relationships with content providers can mitigate supplier power.
- Investing in unique AI-driven features that enhance user experience and ad effectiveness can reduce the threat of substitutes.

Recommendations
- Continuous AI Innovation: Invest in cutting-edge AI and ML technologies to improve ad targeting, user personalization, and operational efficiency.
- Data Strategy Enhancement: Develop robust data collection and analysis frameworks to support AI initiatives and provide valuable insights to advertisers.
- Strengthen Partnerships: Collaborate with content creators and data providers to ensure a steady flow of quality inputs for AI models.
- Monitor Industry Trends: Stay informed about AI advancements and competitor strategies to adapt and maintain a competitive position.

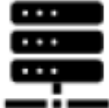# Assess data science maturity (one of many examples of this)
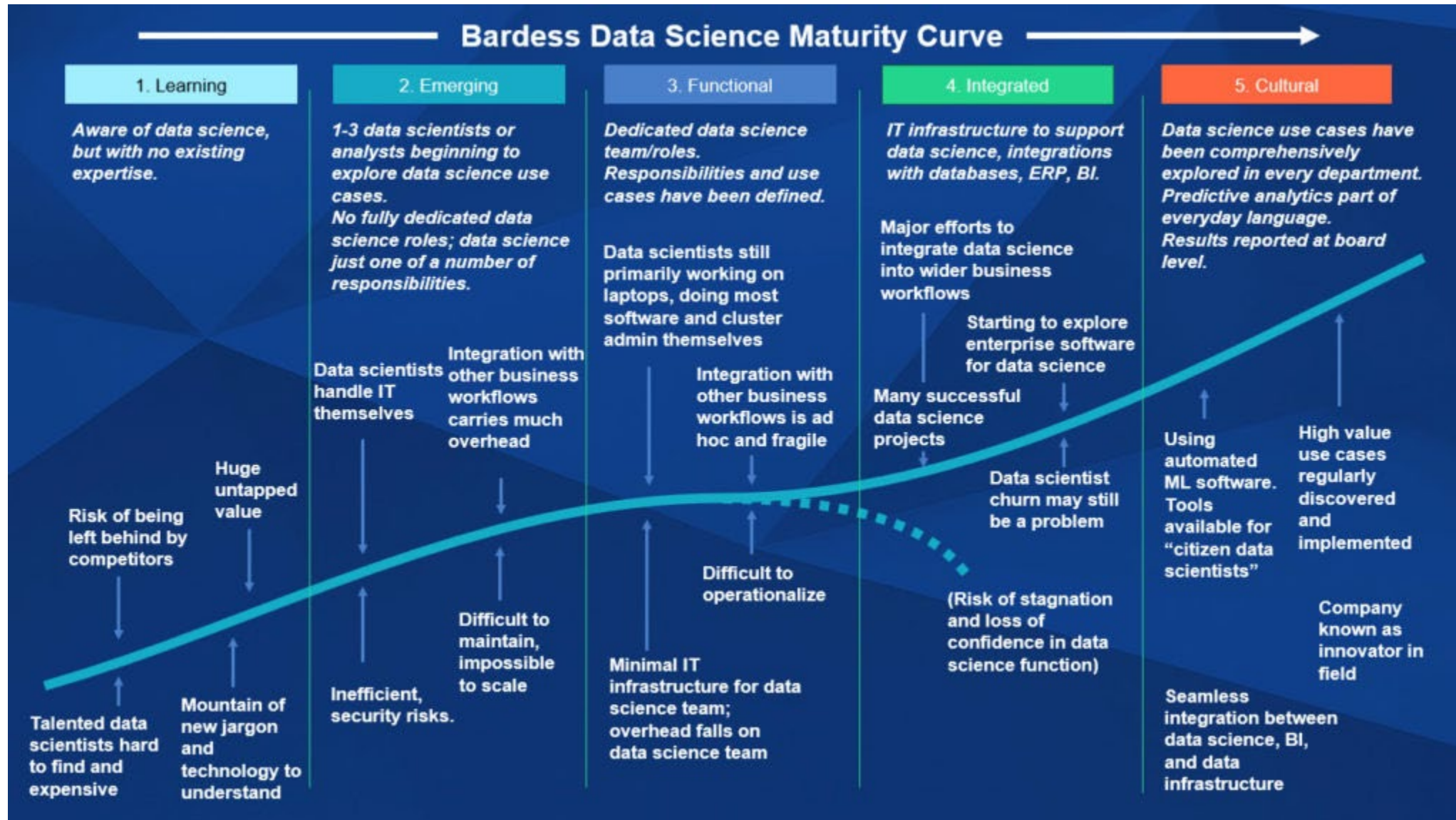
*Source: The Bardess Data Science Maturity Curve - Bardess Group: Business Analytics & Data Strategy
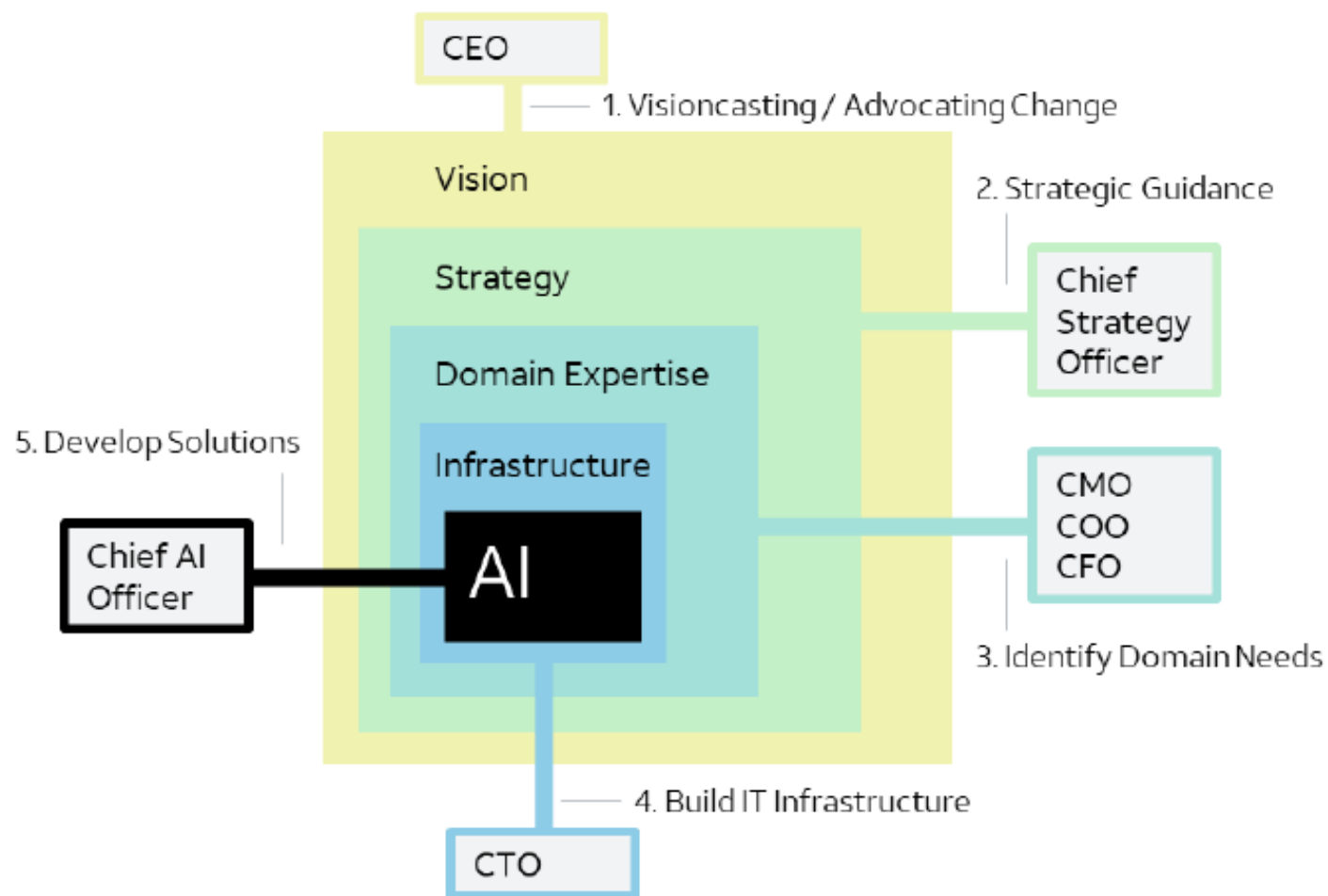
Perform a talent, needs, and enablement analysis.

Understanding the needs and how to solve them is critical in determining:
- Organizational design
- Staffing requirements
- Playbooks
- Planning and Strategy

Needs

Name	Units	3PD	Data Engineering	Feature Engineering	NLP	LLM	API	ML	Storytelling	Visualization	...
		0.5	3.0	1.0	1.0	1.0	0.5	2.0	1.0	1.0	
J. Smith	1.0	●	◑	●	○	◑	◔	◑	○	◔	
V. Wang	1.0	○	◕	○	○	●	○	◑	◑	●	
M. Ali	1.0	○	○	◕	○	◑	◑	●	●	●	
A. Singh	1.0	◔	◑	●	●	○	◑	◕	◔	○	
...											

Talent

Enabling Tech: AWS Data Exchange, Kafka, SciKit Learn, GPT, Hugging Face, Gateways, Python, MS Copilot, Tableau

(illustrative example)

Develop data science transformation view.

	VISION	INFRASTRUCTURE	DATA	MODELING	APPLICATION	OPERATIONS	BUSINESS
PLANNING	Develop strategy.	Aligned with strategy. Compute, orchestration etc.	Capture, storage, etc. Build vs buy.	Identify solutions. Build vs buy.	Tools, platforms, UI. Build vs buy.	Training etc.	Playbooks aligned with strategy. Identify needs.
TESTING	Identify key areas for exploration and investigation.	Allocate a portion to testing.	Identify gaps.	POCs	User specifications.	Beta testing.	Identify needs.
SCALING	Identify which projects to implement and expand.	Deployment.	Connections needed.	AI ops.	Roadmaps.	Training.	Measurement.
IMPROVEMENT	Think tank.	Roadmaps.	Latency, accuracy, etc.	Latency,	Latency,	Feedback.	Measurement.

Adapt this framework.

CEO

1. Visioncasting / Advocating Change

Vision

2. Strategic Guidance

Strategy

Chief Strategy Officer

Domain Expertise

5. Develop Solutions

Infrastructure

CMO
COO
CFO

Chief AI Officer

AI

3. Identify Domain Needs

4. Build IT Infrastructure

CTO
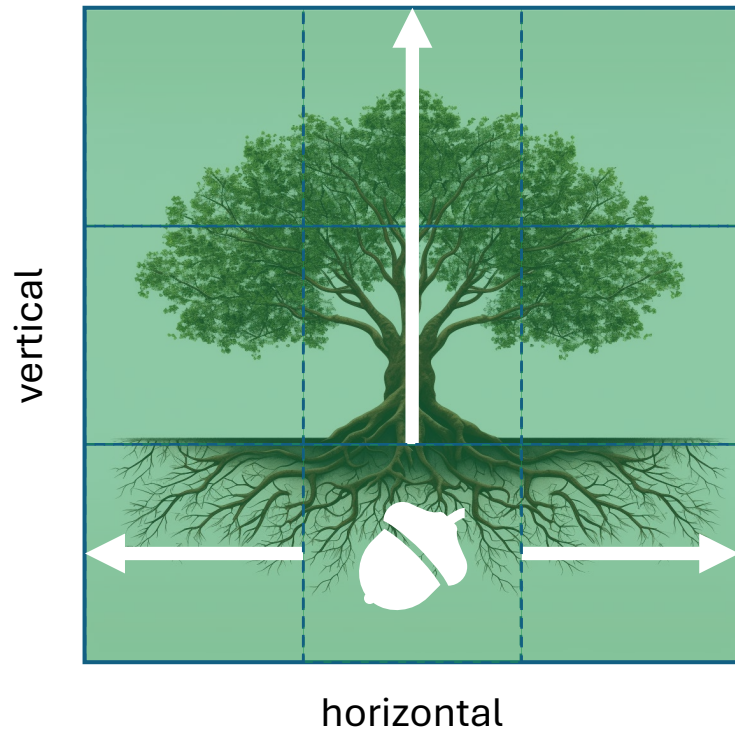
Value expansion approach

Every use case is a best viewed as a planted seed.

Expansion both horizontally and vertically is a primary consideration.

Example: When performing well with a specific audience, look for ways to drive deeper into the cohort and expand to similar audience.
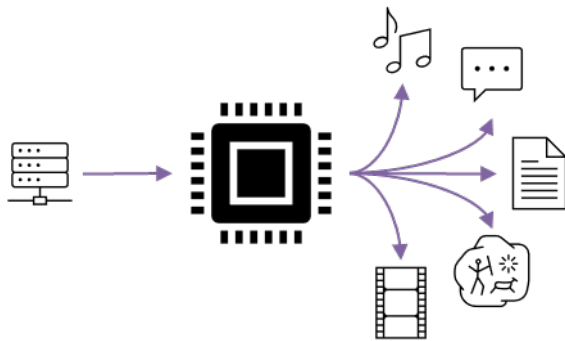
Gen AI has massive disruption potential
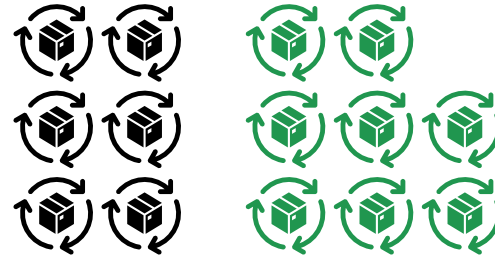
✅ **Gen AI creates content**

❌ **Does not predict, prescribe, categorize, optimize, analyze.**

💡 **But can be used to automate or augment components of these processes.**

"Gen AI could add the equivalent of $2.6 trillion to $4.4 trillion annually"

2021 UK GDP   Gen AI Potential

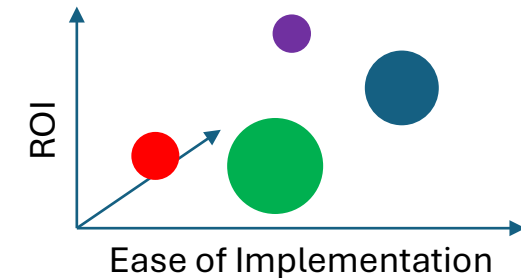**"75% from Customer operations, marketing and sales, software engineering, and R&D."**

(adapted from McKinsey)

How will the market unfold?

1. Horizontal use cases
2. Data rich domains
3. ROI driven
4. Text-based first
5. Regulatory considerations
6. Ethical concerns

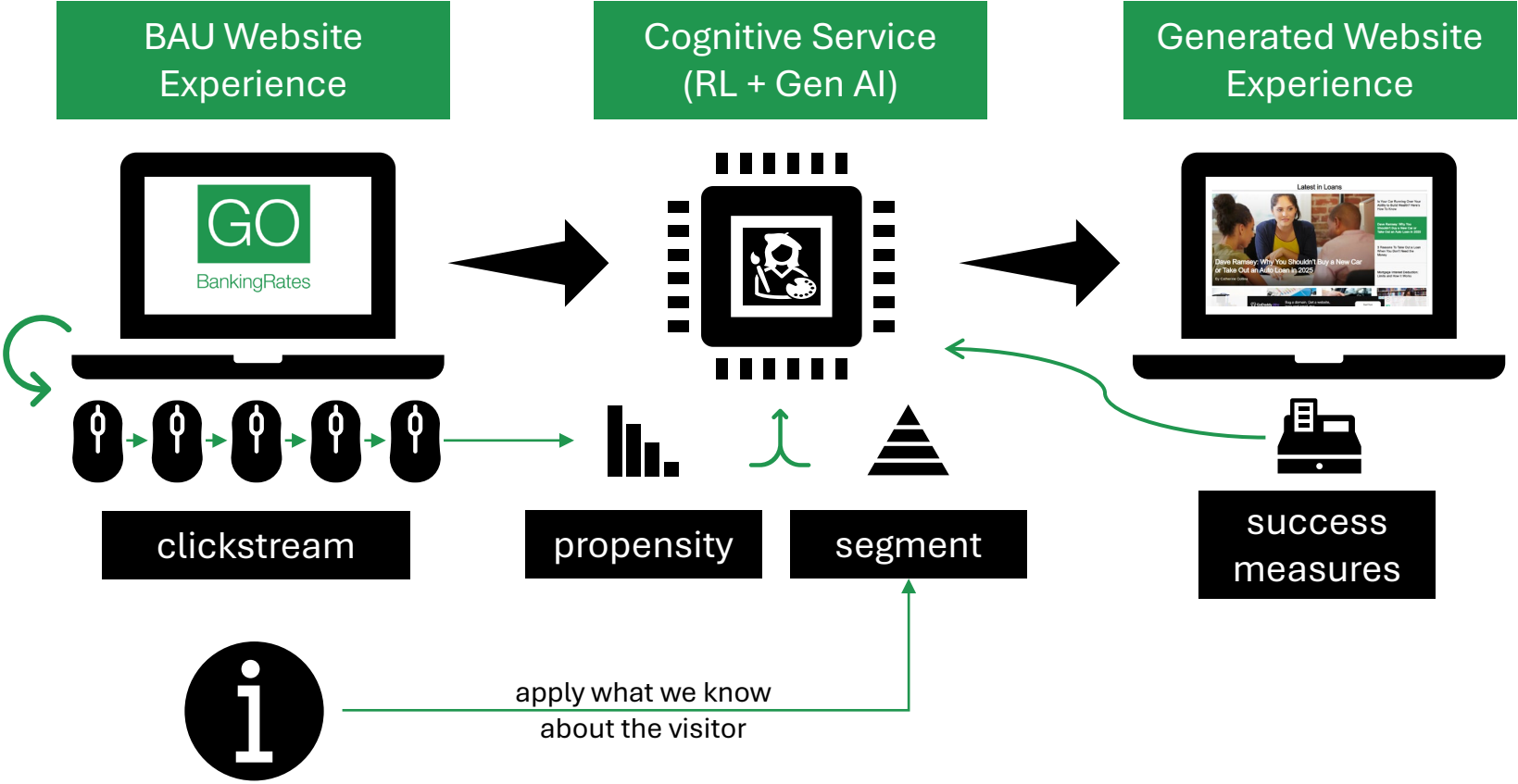**Matrixed Approach**

ROI

Ease of Implementation

(adapted from Deloitte)

Incorporating generative AI and reinforcement learning into the digital experience

BAU Website Experience

Cognitive Service (RL + Gen AI)

Generated Website Experience

clickstream

propensity

segment

success measures

apply what we know about the visitor

Cognitive Service: LLM orchestrates a generative model for website elements. Takes in propensity, closest assignable segment, and generates the elements of a website template that includes wording and imagery, perhaps even audio. Available elements are optimized through RL.

Gartner places Gen AI at peak of hype cycle

- Gartner has iterated their thinking on Gen AI since 2022

- At the beginning of 2023, predicted 3-6 years and categorized as high potential. Also, interesting that they showed synthetic data with a shorter timeline, given Gen AI's usefulness here.

- In August 2023, placed at top of hype curve with 2 to 5-year plateau prediction.
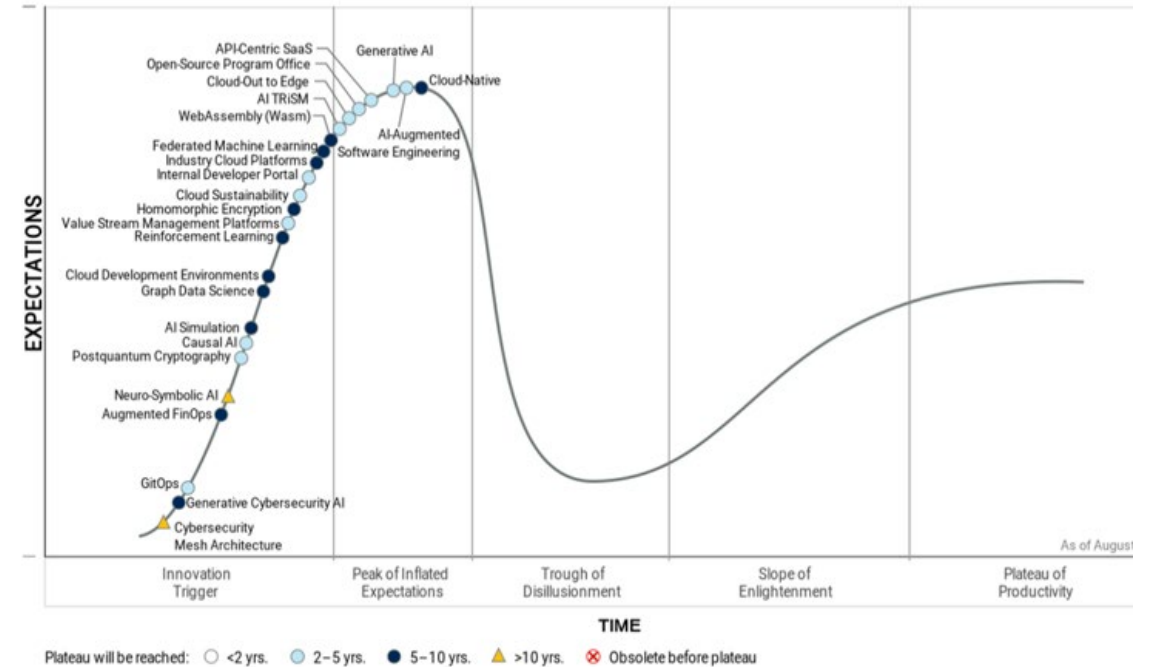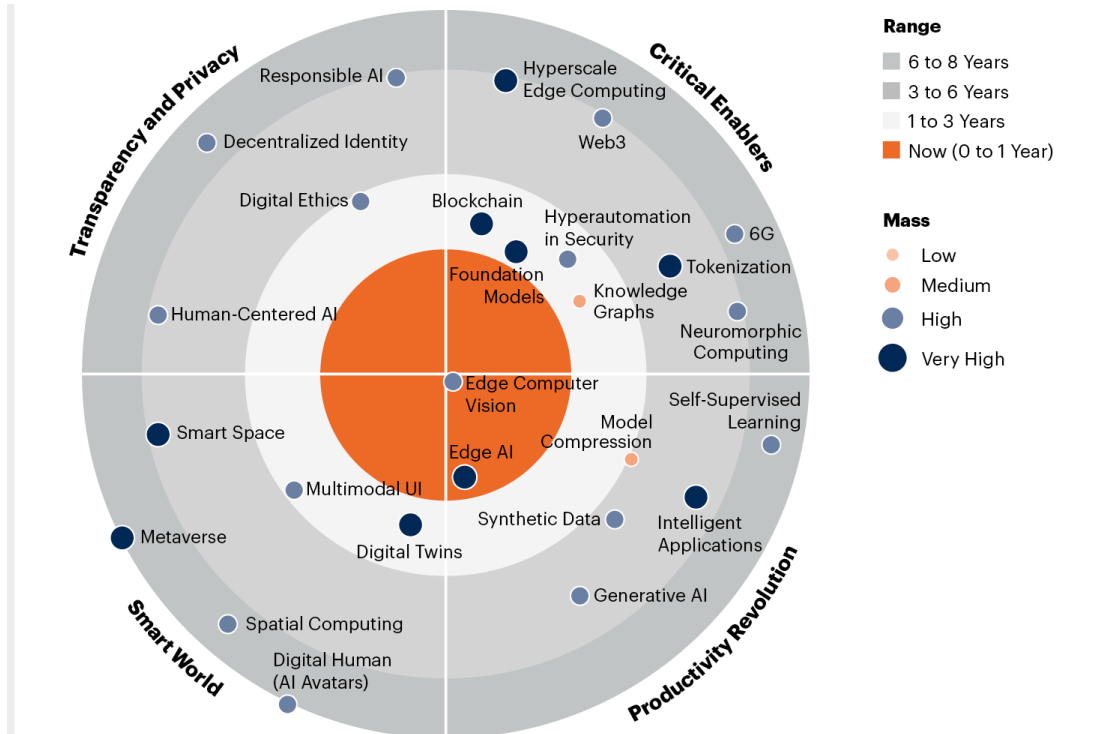
AI transformation should be approached carefully.

12%
Transformations that meet or exceed expectations.
Bain & Company

90%
Enterprise gen AI deployments that will slow by 2025 as costs exceed value.
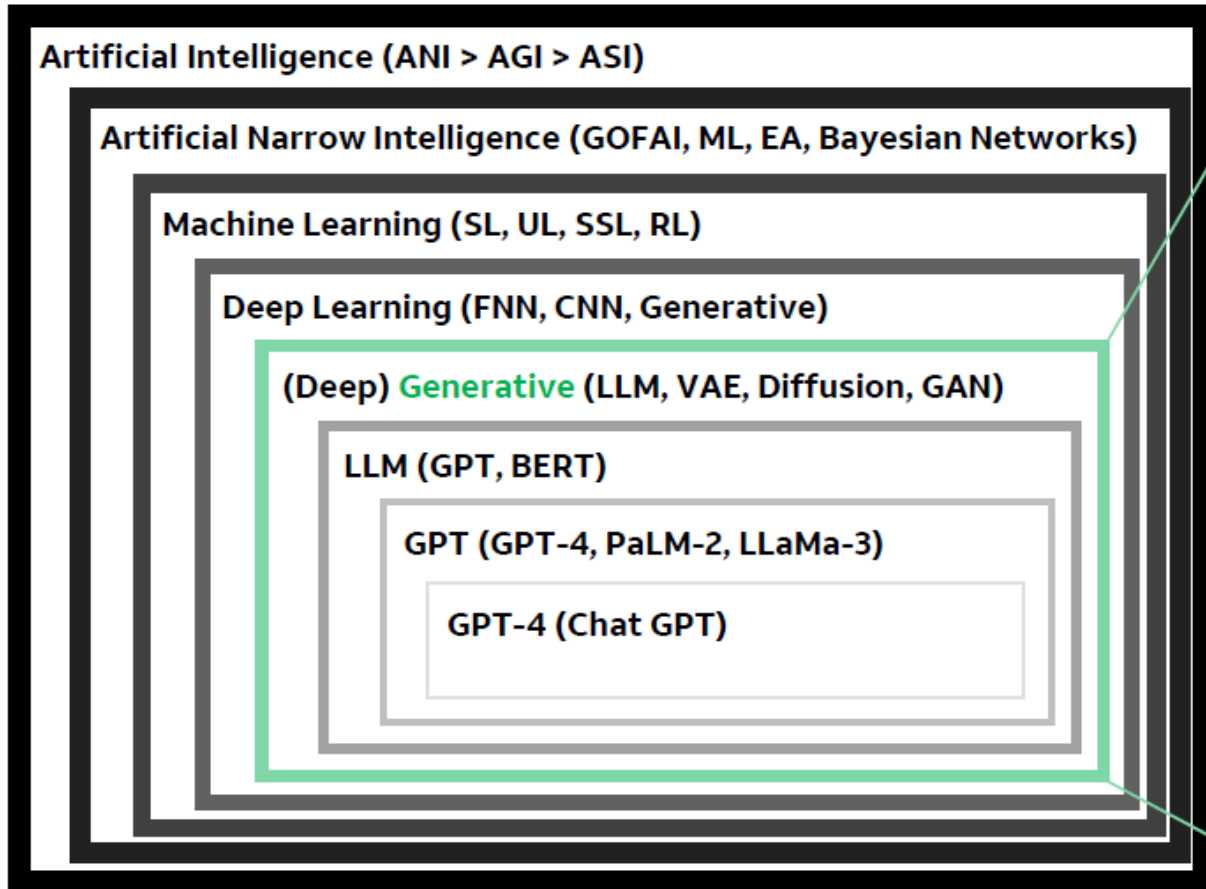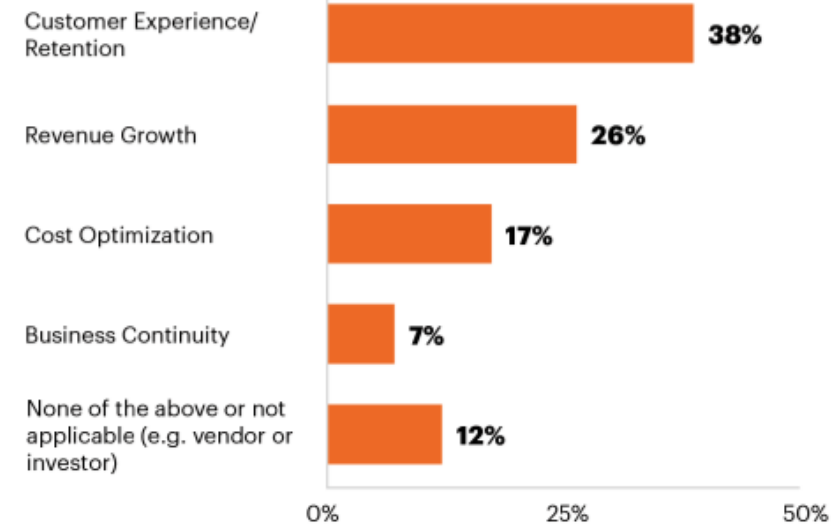*Gartner*

52%
U.S. adults who feel more concerned than excited about the increased use of artificial intelligence.
Pew

Generative AI is just **one** set of tools in a broad landscape of AI

Artificial Intelligence (ANI > AGI > ASI)

Artificial Narrow Intelligence (GOFAI, ML, EA, Bayesian Networks)

Machine Learning (SL, UL, SSL, RL)

Deep Learning (FNN, CNN, Generative)

(Deep) Generative (LLM, VAE, Diffusion, GAN)

LLM (GPT, BERT)

GPT (GPT-4, PaLM-2, LLaMa-3)

GPT-4 (Chat GPT)

Primary Focus of Generative AI Initiatives

Focus	Percentage
Customer Experience/ Retention	38%
Revenue Growth	26%
Cost Optimization	17%
Business Continuity	7%
None of the above or not applicable (e.g. vendor or investor)	12%

gartner.com

Source: Gartner
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Gartner

- Content
- Q&A / Discovery
- Tone
- Summarization
- Simplification
- Classification
- Chatbots
- Coding
- Synthetic Data
- Simulated Experiences
- Proactive Suggestions
- Code Modernization
- Automation