




Tech Today

Unleashing the Potential of AI

March 2024



in rjeremyadamson

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Jeremy is a leader in AI and analytics strategy, and has a broad range of experience in aviation, energy, financial services, retail, and public administration. Jeremy has worked with several major organizations to help them establish a leadership position in analytics and to unlock real business value using AI.

Jeremy is the Vice President of Business Intelligence at Steele Auto Group, an instructor in corporate strategy at the University of New Brunswick, and the author of *Minding the Machines* and *Geeks with Empathy*.

Jeremy holds a Masters in Transportation Engineering and a Bachelors in Civil Engineering from the University of New Brunswick, as well as a Masters in Business Administration from the University of Calgary. He currently resides in Halifax, Nova Scotia.

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Defining our terms

Leveraging technology for decision support has varied over time

Traditional Artificial Intelligence

Optimization and Modelling

Extrapolate based on data

Based on historic events, determines the contribution of different factors to allow for future scenario analysis or decision making.

e.g. "What price for this product gives the highest profit"

- Determine drivers of **customer behavior**.
- **Dynamic price** adjustments to optimize spend.
- **Inventory optimization** to reduce carrying costs.
- Fine tune marketing campaigns to **improve conversion**.
- **Filter emails** based on likelihood of spam.
- Identify fraudulent activity.

Generative Artificial Intelligence

Synthesis and Production

Interpolate based on data

In response to a prompt, will generate text, audio, video, or images that match the structure of the input data having similar characteristics. Very sophisticated text autocomplete.

e.g. "Generate 50 Twitter posts for a barber shop"

- Read a text passage in the **voice of a celebrity**.
- **Review contracts** and summarize differences.
- **Edit a manuscript** according to a particular style guide.
- Create a video advertisement with certain criteria.
- Generate several **social media** posts.
- Rewrite an article to **improve SEO**.

What is Artificial Intelligence?

Systems and applications that perform tasks that **mimic or augment** human intelligence

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Decision Support Systems

Operations Management

Business Intelligence

Just “Intelligence”

“Big Data” or “Data Mining”

Analytics

Predictive Analytics

Advanced Analytics

Data Science

Machine Learning

AI (as a catchall for above)

AI (meaning ML/DS)

AI meaning Generative AI

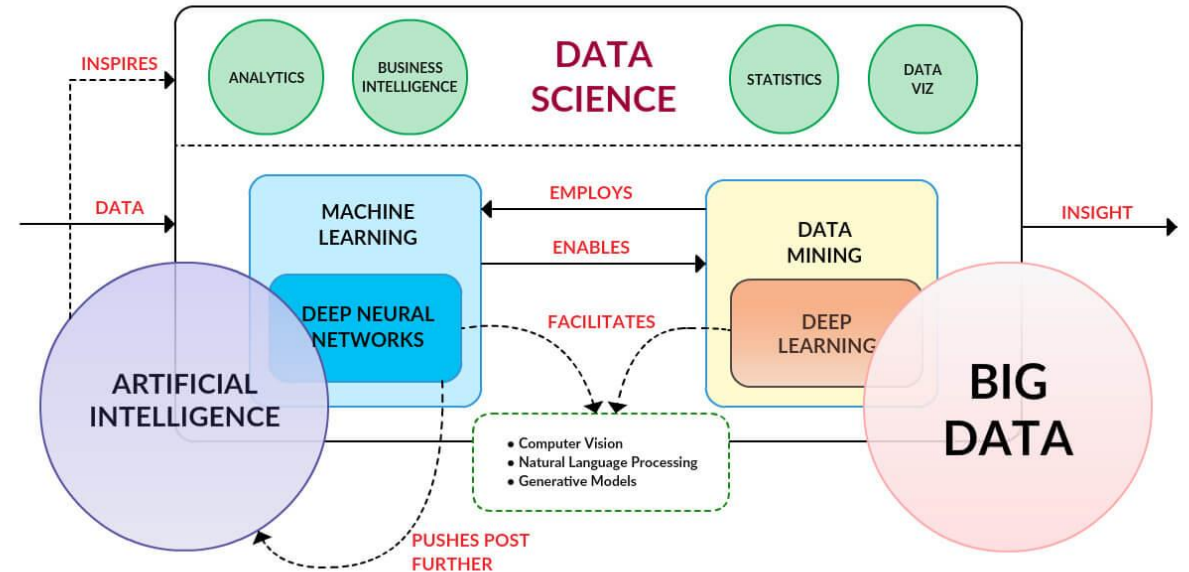


Image from Codecondo.com

We help people make decisions

Failure to Launch

Organizations, regardless of maturity, have been overwhelmingly unsuccessful at realizing value from AI investments

Half of organizations believe **data science will fundamentally change their organization** in the next 1-3 years (Deloitte, 2020)

***“85% of analytics projects end in **failure**”** – Gartner, 2017*

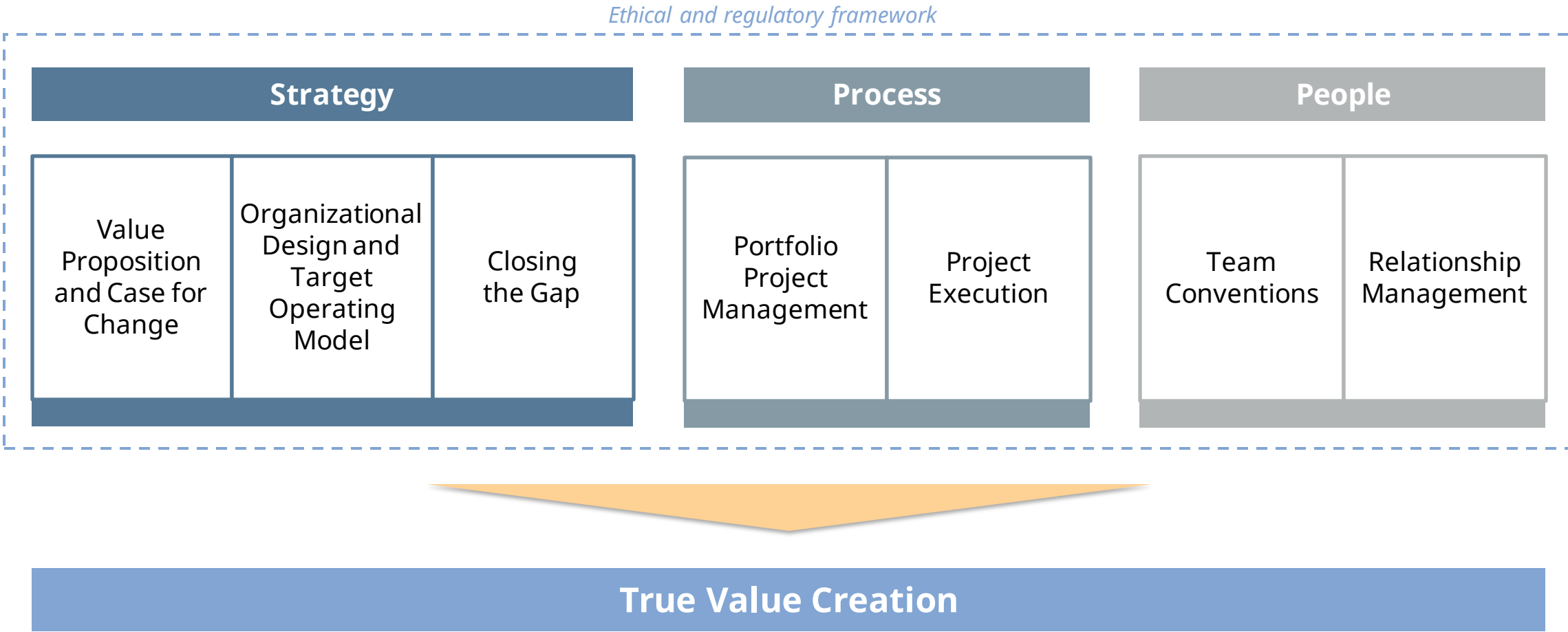
***“8 out of 10 organizations engaged with AI say their **projects have stalled**”** – TechRepublic, 2019*

***“Only **27%** of executives we surveyed described their Big Data initiatives as successful”** – Capgemini, 2014*

***“most organizations report failures in their AI projects, with a quarter of them reporting up to a **50% failure rate**”** – Fast Company, 2020*

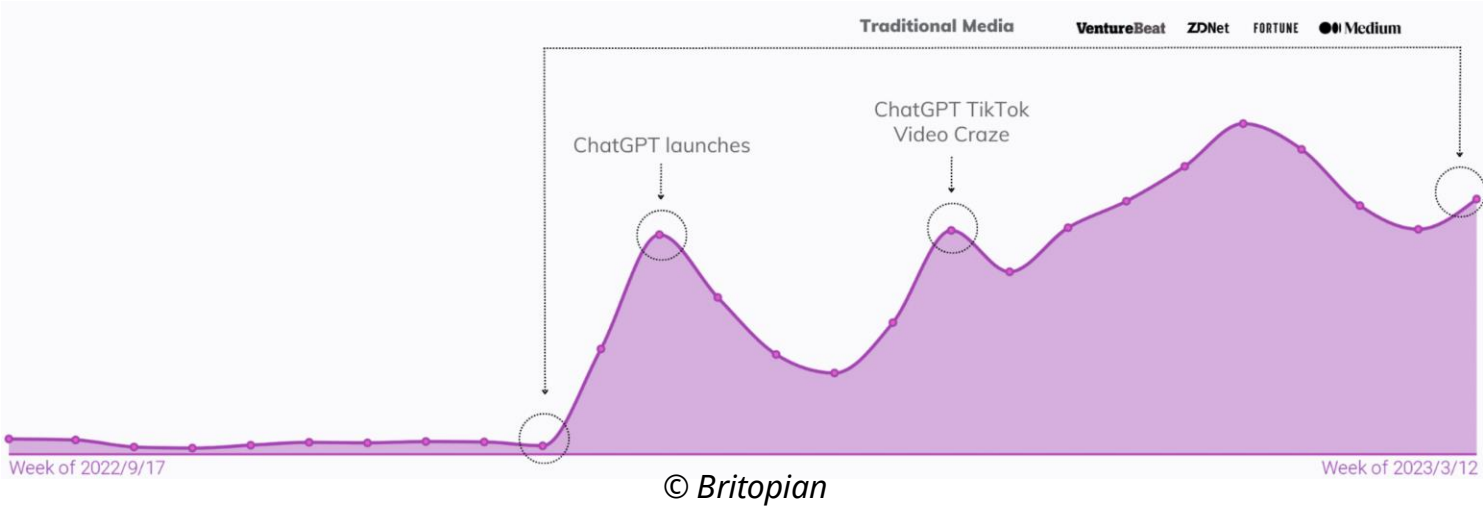
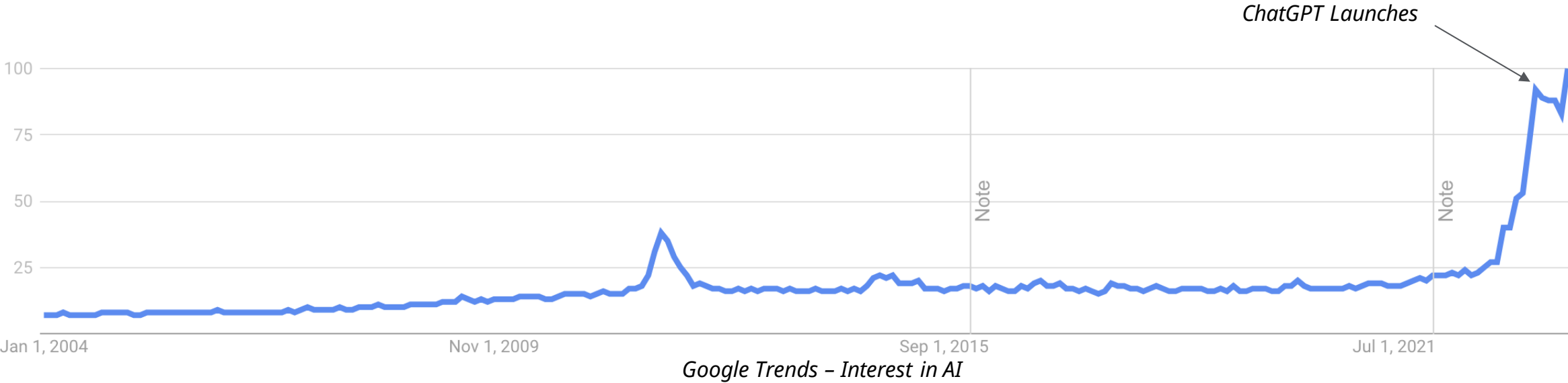
These challenges stem mainly from three foundational gaps

The practice has evolved into a core component and an enabler for all areas of the business



The staggering rise of generative AI

The fastest adoption of a new technology in history



Executives are pushing for adoption

Investors are demanding companies participate

“1072 mentions of AI [in one earnings season]” – Bloomberg (5/5/23)

Generative AI could add the equivalent of \$2.6-4.4T USD across 63 use cases – McKinsey (6/14/23)

In 1H 2023 earnings calls, mentioning AI boosted share price +4.6% against +2.4% for those that did not – Wallstreet Zen

Company	Product	AI Mentions	3 day price change
Nvidia	Tech – hardware	150	26.3%
Sherwin Williams	Paint & home improvement	66	19.9%
Masco	Building products	56	27.0%
Carrier Global	Air conditioning	47	38.1%
Lam Weston	French fries	104	-6.4%
Hershey’s	Chocolate	88	-11.2%

Select results from Wallstreet Zen analysis

Failure to Launch

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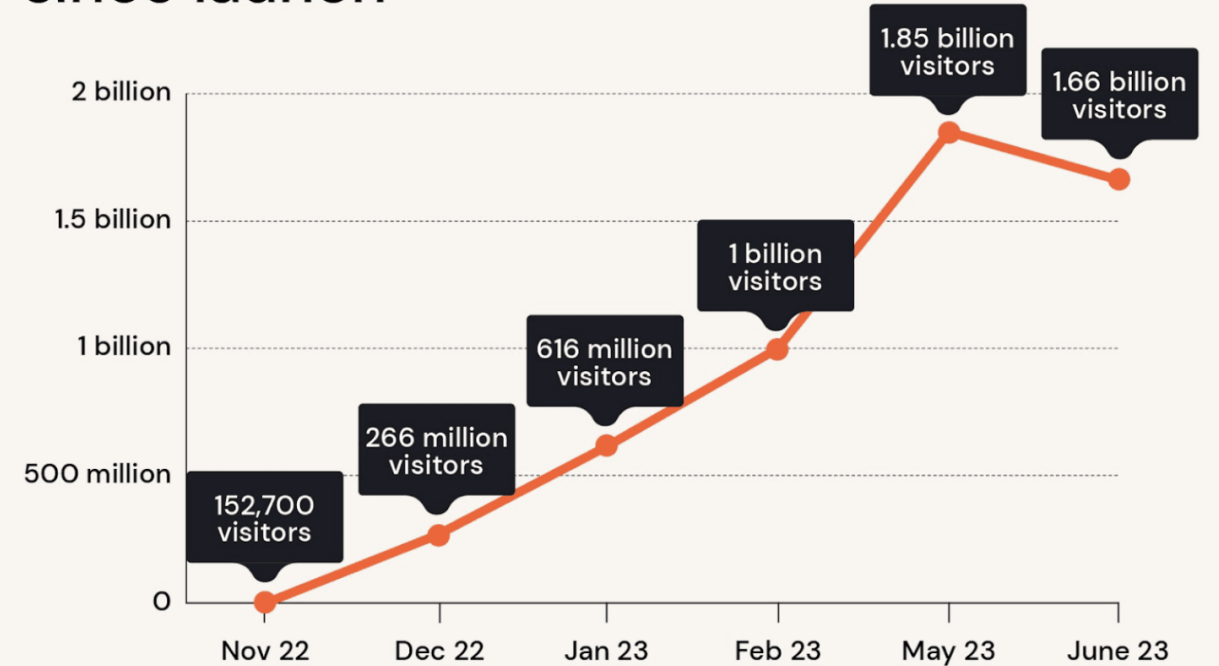
While ChatGPT saw a staggering **577%** increase in website traffic from **November 2022 to April 2023**, the website saw a **drop in monthly visits in the next three consecutive months**.

- ChatGPT's traffic fell from 1.8 billion visits to 1.4 billion by the end of August 2023.
- Similarly, the amount of **time visitors spend** on the website seems to have declined since March 2023 — from an average of **8.7 minutes** to **7 minutes** in August.

<https://www.notta.ai/en/blog/chatgpt-statistics>

CHATGPT STATISTICS

Change in ChatGPT website visitors since launch



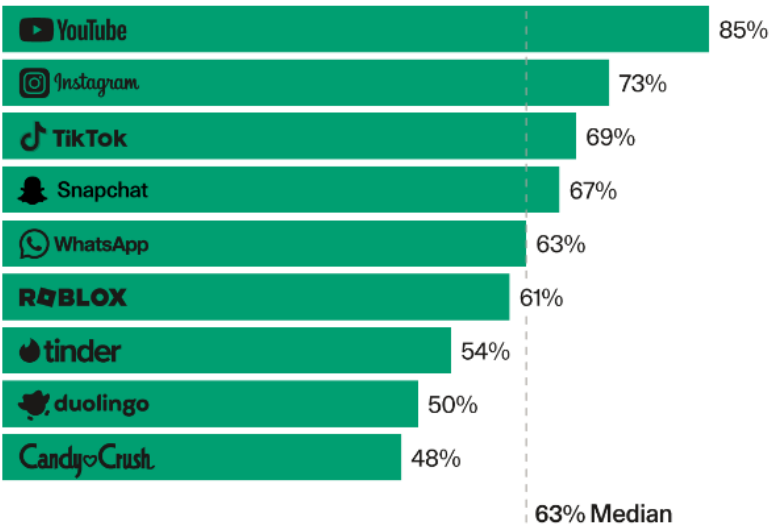
Tooltester.com

Failure to Launch

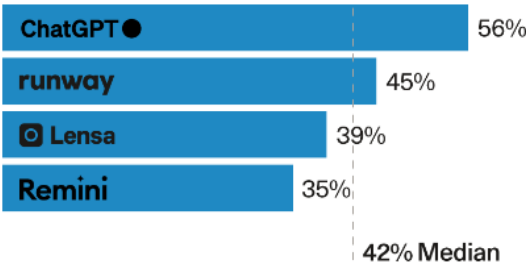
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One Month Retention

Incumbents



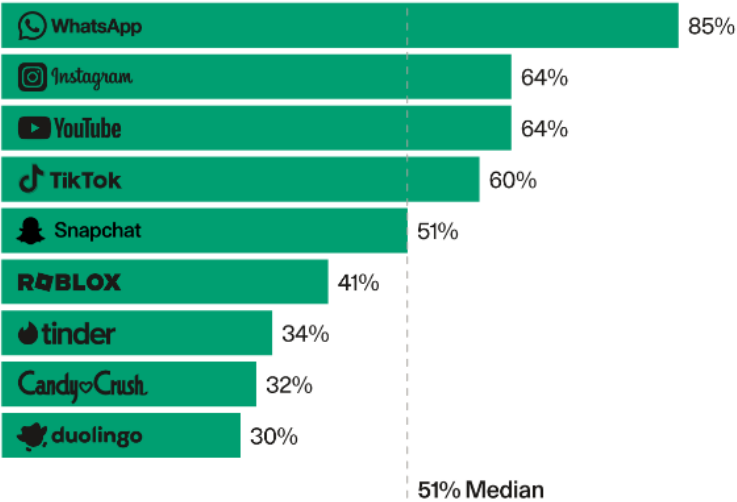
AI-First Companies



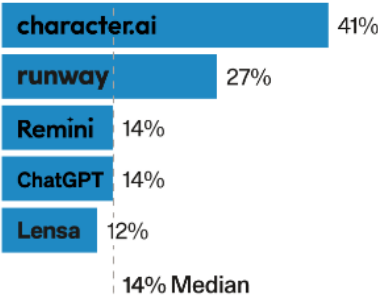
Data from mobile apps only.
Averaged over the past 12 months of cohorts in the US.

DAU/MAU

Incumbents



AI-First Companies



Data from mobile apps only.

Sequoia Capital

Delivering Impactful AI Projects

Orienting ourselves around our customers and stakeholders



Immense Potential

- Undeniable benefit with generative AI
- Improve coding, automate marketing, content generation, etc.
- Synthesize massive amounts of information
- **Manage employee experience**

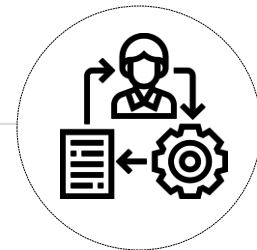
Realize the maximum benefit of the technology



Unrealistic Expectations

- Executives do not understand the limitations
- Public perception is split between anxiety and exuberance
- Investors demand immediate lift
- **Manage public perception**

Manage executive and public expectations



Technology-oriented Practitioners

- Passion leads us to the most advanced use cases
- Aspirations to fine tune or build our own LLMs
- Enjoy the technology, not the output
- **Manage risk**

Orient ourselves to meet stakeholder and customer needs

Welcome to the peak of inflated expectation

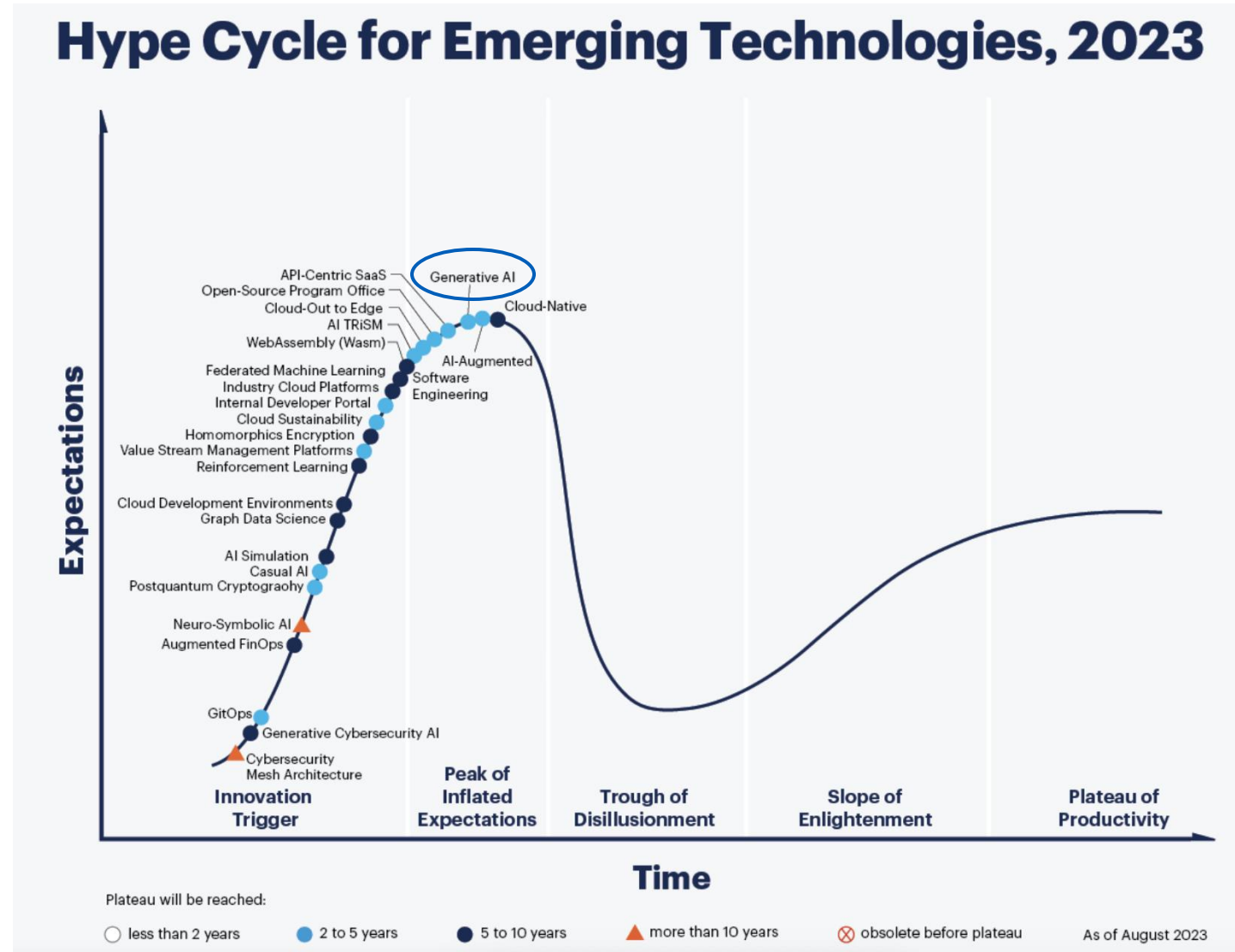
We need to separate the hype from the near-term possibilities

Some recent use cases:

- Suggest the next best vehicle
- Recommend a neighbourhood in a new city
- Recommend a career path
- Life coach
- Parenting advice
- Provide legal and tax advice

Dangerous, hyper-personalized, and **immediately discredited**.

Thin application built on an existing model. **Recall LED app with iPhone launch.**



Gartner

Choose defensible projects that add value

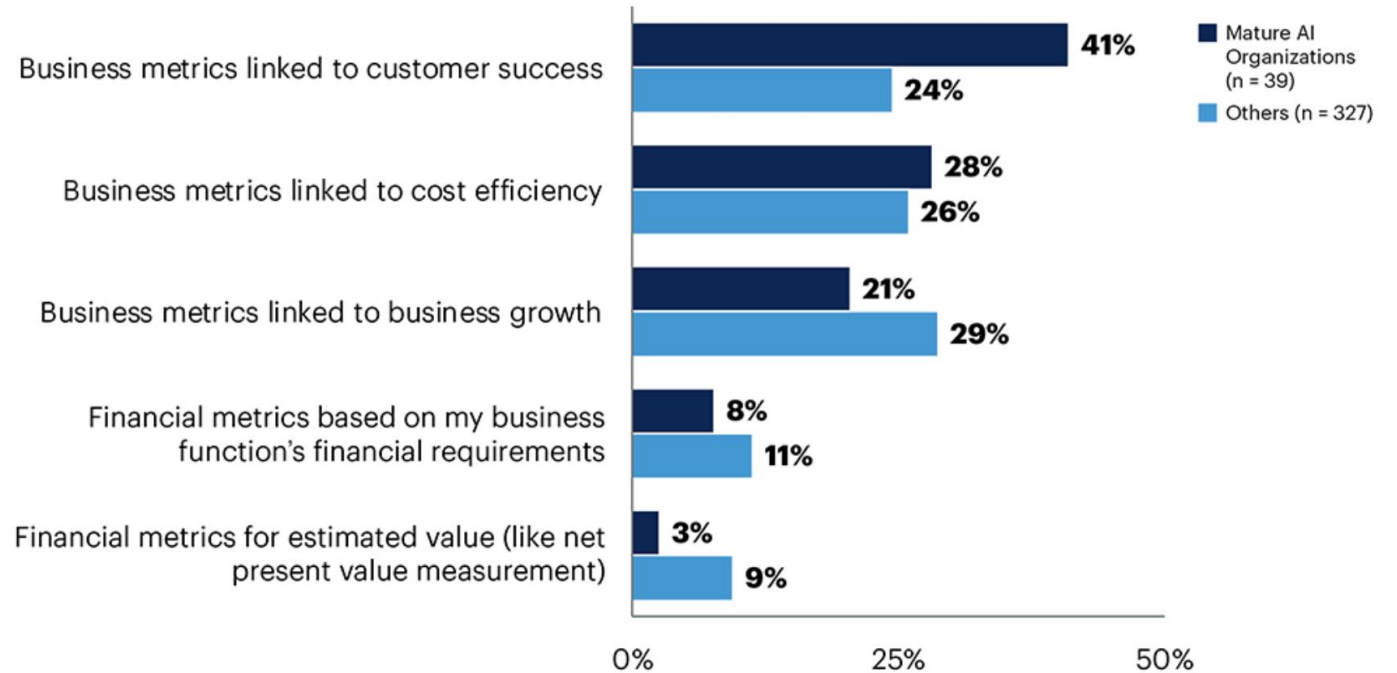
Generative AI needs to be attached to a business metric

Executives know they want AI, but do not know how or where. Practitioners need to choose realistic projects that contribute to the bottom line.

- Develop low-value copy material
- Augmentation tool for developers
- Ad hoc synthesis of large reports
- Text analysis and summary

Primary Business Metrics Developed to Estimate Return on AI Investment by Level of Maturity

Percentage of Respondents



n = varies; asked only respondents using essentially business metrics and/or combination of technical and business metrics (Q14 = 2 or 3); excluding "not sure."

Q: What kind of business metrics has your organization primarily developed to estimate the return on your AI investment?

Source: 2022 Gartner AI Use-Case ROI Survey

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Gartner

The 'cool factor' fades quickly

Build applications and processes that become part of operations

Application	Value added	Human touch	Risk	Defensible
Next best vehicle	Minimal	Required	None	No
Neighborhood recommendation	Minimal	Required	None	No
Life coach	High	Required	Medium	No
Parenting advice	Medium	Required	High	No
Legal and tax advice	High	Required	High	No
Prescription interactions	Low	No	High	No

Most practitioners are focusing on **unique transformational applications** without deeply interrogating the business value. **Focus on time to value** and seek projects with a **clear, measurable, and transparent value proposition**.

Summary

Putting it all together

The **commercial application** of generative AI requires use cases that are **aligned to business metrics**. While some use cases may be compelling on the surface, if they **do not contribute** to improved revenue, reduced cost, or help manage risk, they will **not stand up to scrutiny by stakeholders**.

Practitioners need to always be **focused on value**.

*Be a taker,
not a maker*

- Use what's available. Don't fine tune models unless it is worthwhile.

Prioritize value

- Look at the cost benefit of each project and connect with end users.

Augment operations

- Before moving to new opportunities, seek to augment existing processes for a low-risk debut.



Cultural forces stimulate demand

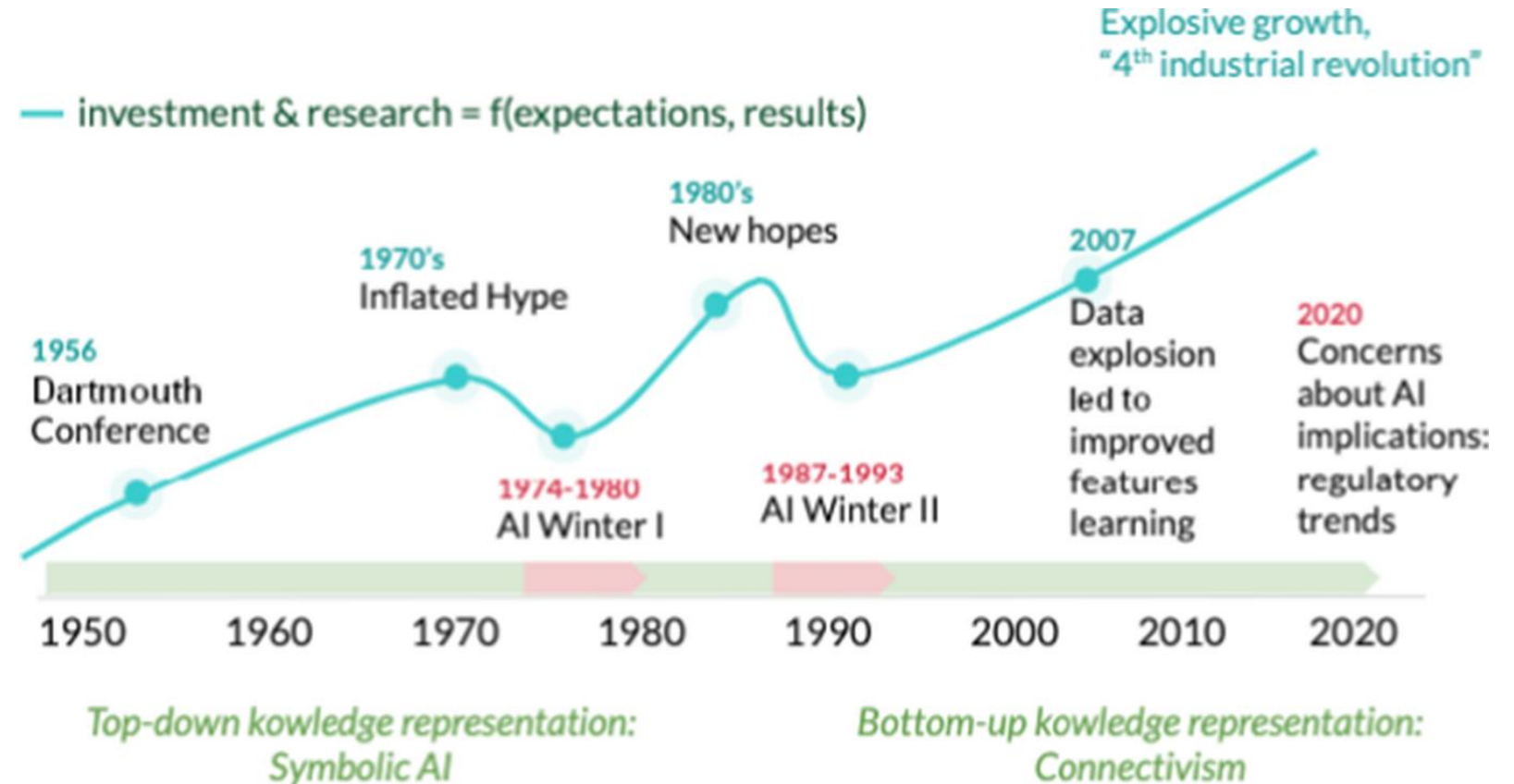
New technologies enable, but imagination spurs and sustains

Late 70's early 80's

- **Neural networks**
- Blade Runner
- Star Wars
- Alien
- Reagan's SDI

Late 90's

- **ML & hardware**
- Tamagotchi
- AI wins in chess
- Furby
- Roomba
- DARPA challenge



Francesconi, E. The winter, the summer and the summer dream of artificial intelligence in law. *Artif Intell Law* 30, 147–161 (2022).

The roulette ball has not landed

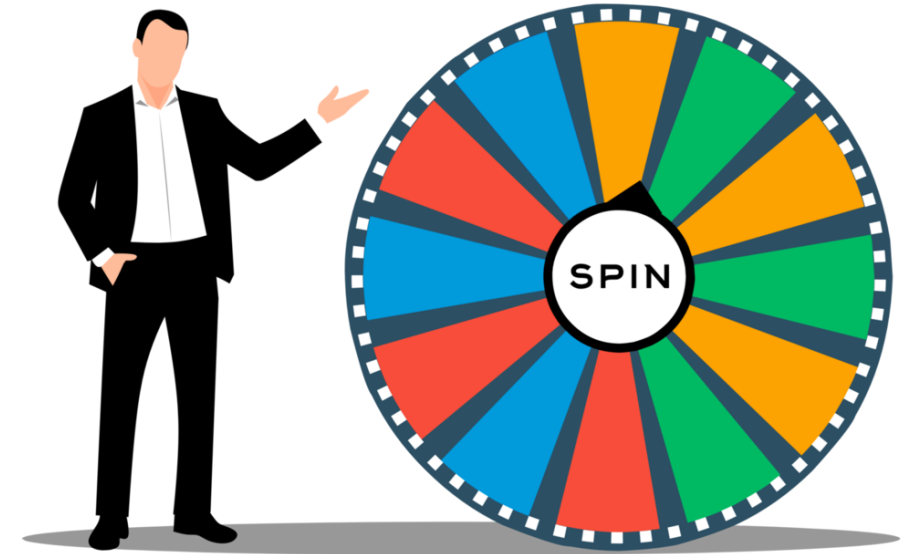
Regulations surrounding AI have yet to be developed

Canada

- Bill C-27 & AIDA
 - Incoming "AI Minister" will monitor company compliance and order audits
 - Criminal prohibitions incoming for reckless use of AI
 - Leaves door open to provincial supplementation
- Guide on the use of Generative AI (internal usage)
 - Will erode capabilities of public servants
 - May not be used to make decisions – only ideation
 - Source of greenhouse gas emissions, full of bias, IP theft, etc.

United States

- Blueprint for an AI Bill of Rights
 - Algorithmic decision making needs to be explainable
 - Users must be able to opt out, interact with a human
- Dozens of state-specific laws proposed and enacted
- International voluntary compliance with an "AI code of conduct"



European Union

- Transparency obligations – data used to train and content
- No biometric surveillance that classifies by political or religious belief
- Penalty is up to 7% of global revenue
- Effective 2025 at the earliest

“Can we” or “should we”?

Questions to consider when building generative AI capabilities

Accountability - Who decides whether something is an appropriate use?

- How sensitive is this to legislation?
- How sensitive is this to cultural shifts?
- Is this consistent across our geographies?

Risk - What is the plan if something goes wrong?

- Legislative changes
- PR issues with vendor
- Opt-out requests, decision explanations
- “Right to be forgotten” evidence requests

Ethics - Are we treating the original content creators fairly?

- Are we profiting unfairly on the work of others?
- Are we presenting copywritten work as our own?

Public Relations - Will this erode trust in our organization?

- Are we vicariously exposed (propaganda, bias, etc.)?
- Are errors treated differently from an LLM than an employee?

Governing internal usage

If practitioners do not take ownership over regulation, other business functions will

Most organizations already have people leveraging generative AI. **Users will not obey bans, and a lack of policy is tacit approval.**

Create a simple usage policy to guide internal users and direct their attention towards the risks.

Suggested Policies

- Do not enter any customer PII
- Do not enter any company IP
- Do not enter any sensitive information
- Turn off history if possible
- Monitor outputs for bias and hallucinations

Src: Andrew Ng – Opportunities in AI 2023 (YouTube)



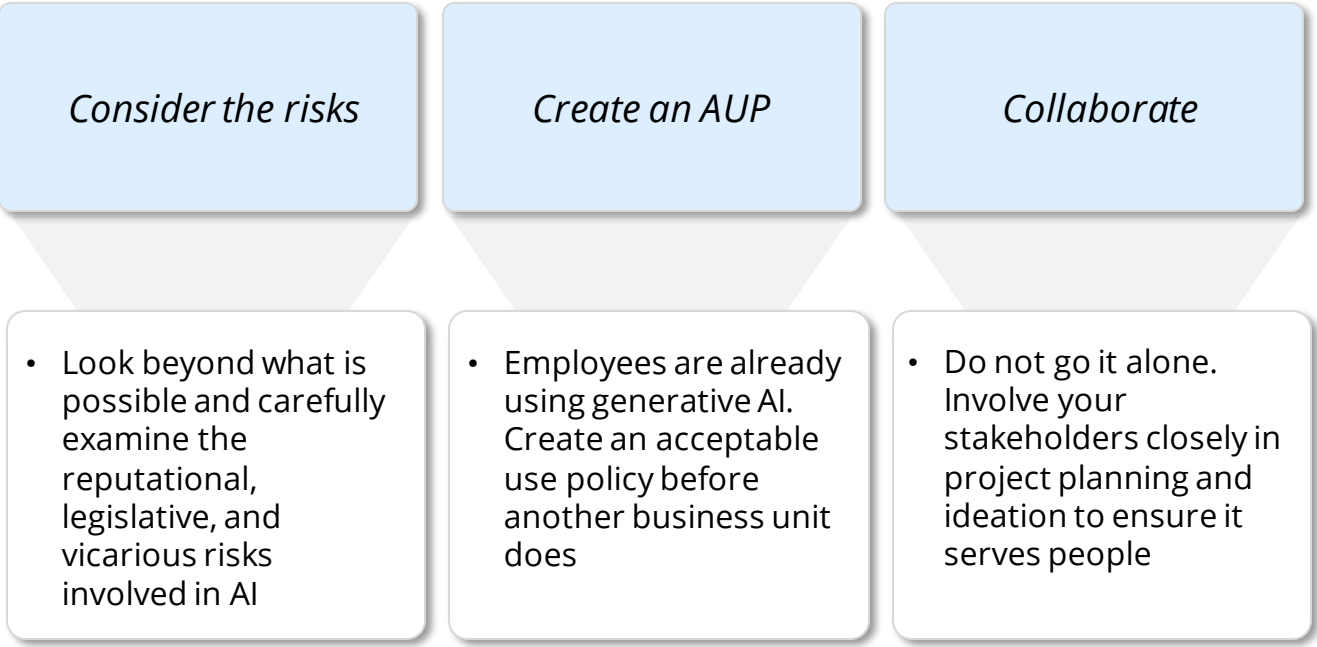
Summary

Putting it all together

With the vast potential of AI it is easy to lose focus. With such a **fluid environment**, regulations and public perceptions can change quickly.

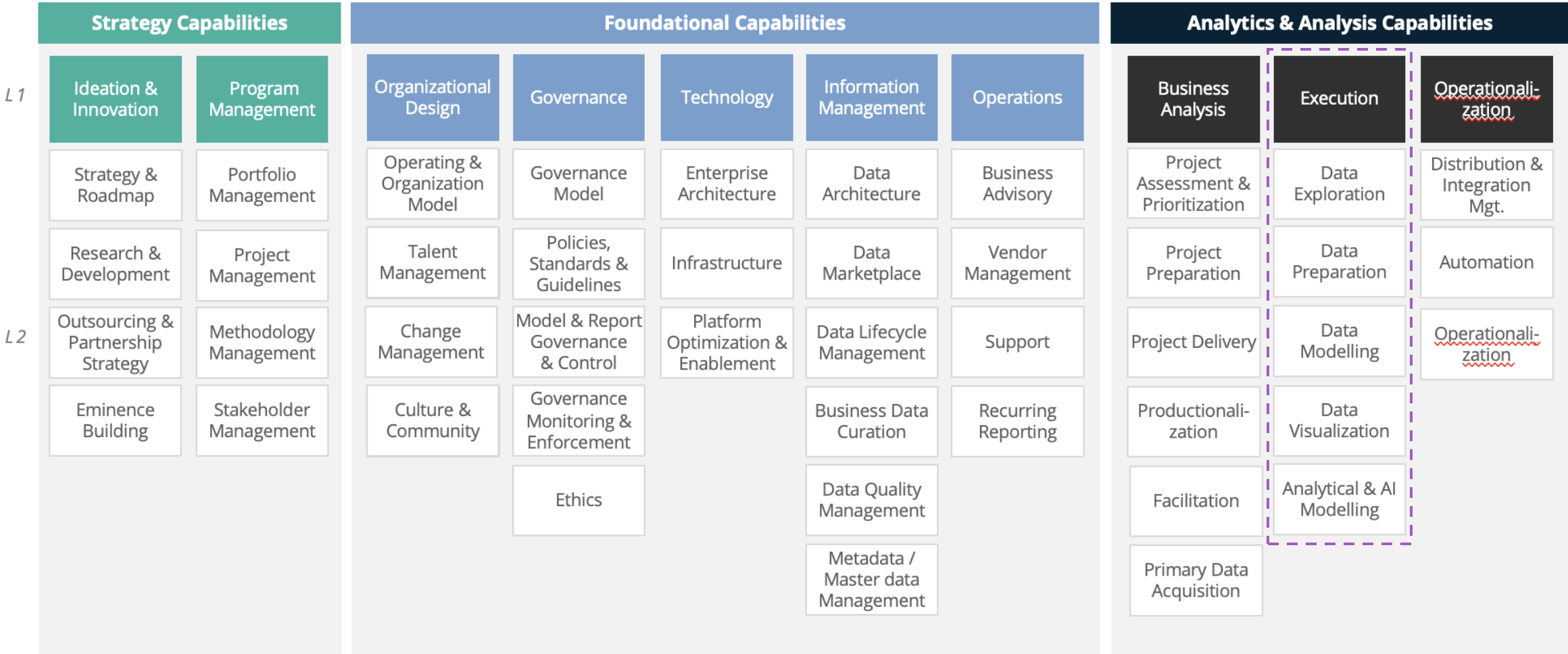
Taking a **human-centric approach** to AI deployment can help mitigate the risks and reduce the likelihood of **significant reputational damage**.

Generative AI is only effective when it **helps people**.



Expect more than technical proficiency

Professional myopia can make it difficult to tell if we are on the right path



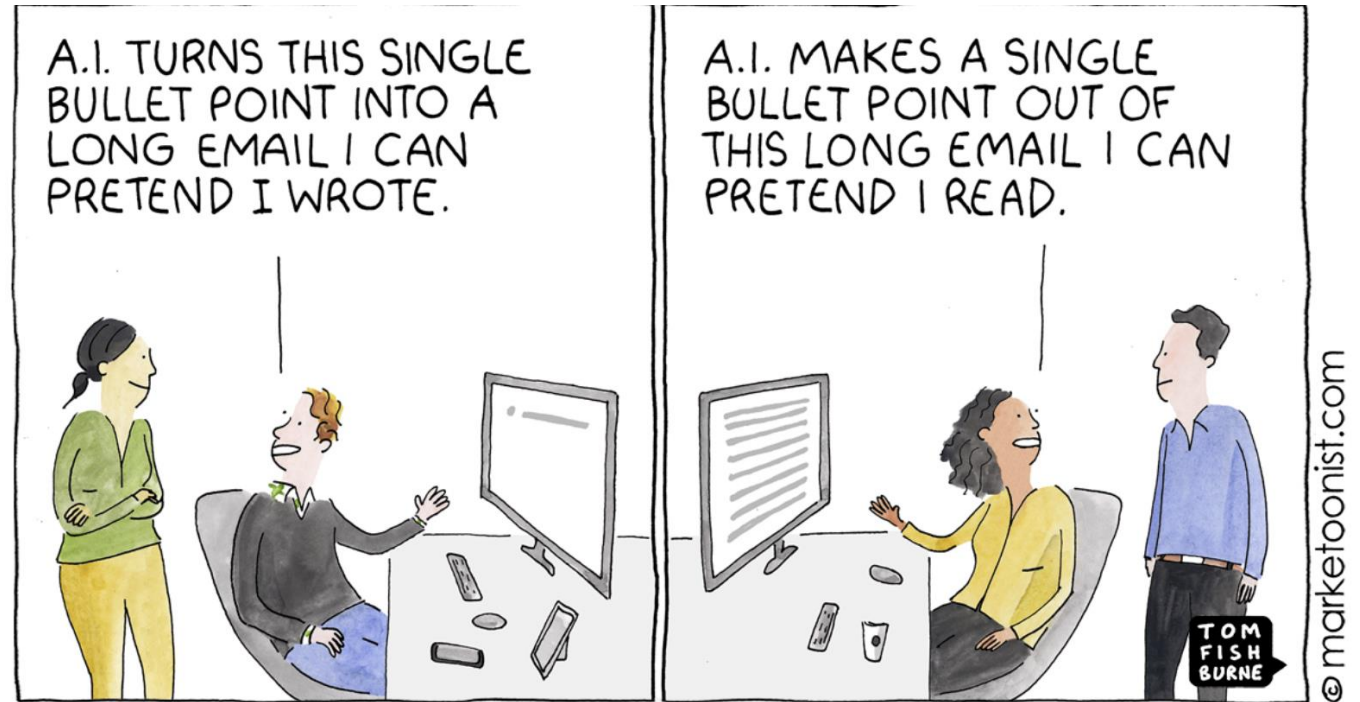
Have a trusted partner

Professional myopia can make it difficult to tell if we are on the right path

Often, we can have trouble looking objectively at our project. Personal interest can **cloud our perceptions** and we become a **hammer looking for a nail**.

Include stakeholders in project ideation to ensure that value is created for the end user. Before approaching stakeholders, **consult your trusted peers** for a sanity check.

Example – Year end reviews



Get your house in order

Generative AI ambitions depend on healthy and well-governed data

Takers use APIs

Shapers fine tune existing models

Makers build foundational models

Shapers and makers need a healthy data environment to be able to execute sophisticated generative AI projects.

Unfortunately, **72%** of leading organizations say that **data management is already their main challenge** in scaling AI use cases.

(McKinsey Data & AI Summit, 2022)

Data

- Unstructured metadata
- Significant preprocessing
- PII masking/cleansing

Capabilities

- Prompt engineering
- LLM integration
- Legal compliance

Organizational

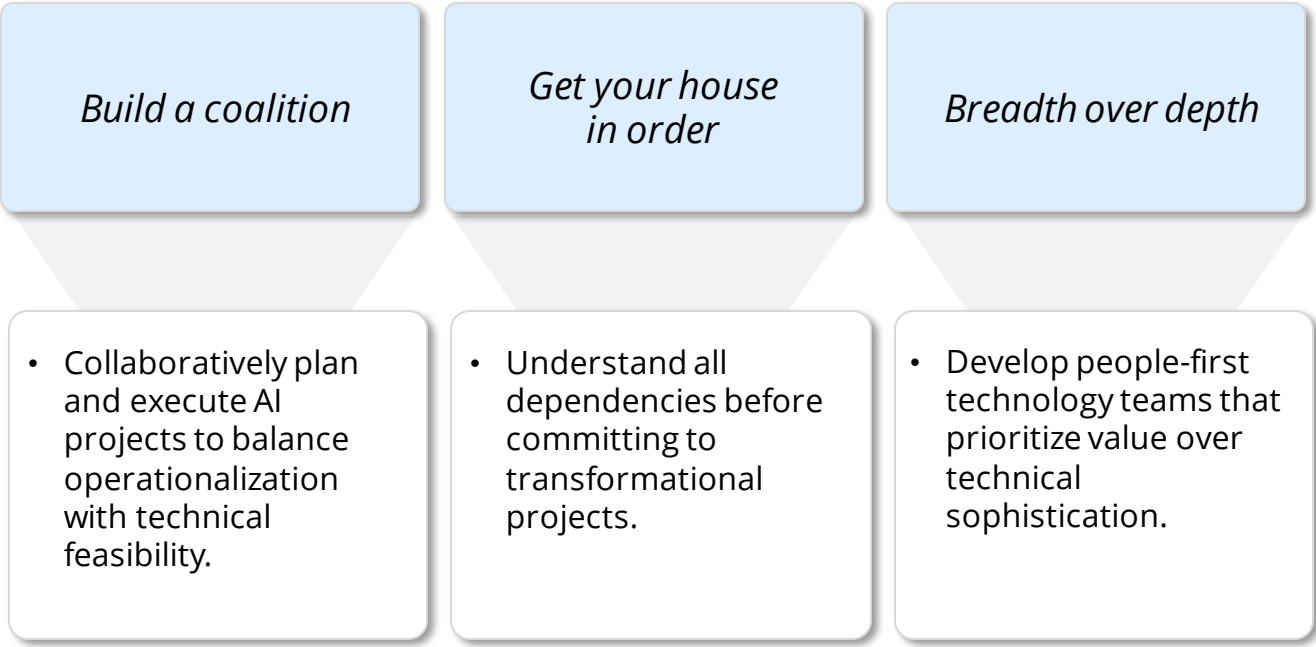
- D&A operating model
- Change management

Summary

Putting it all together

Without a high functioning AI practice that leverages portfolio project management best practices, attempts to undertake generative AI projects will expose structural weaknesses.

Practitioners need to have a **productive partnership with stakeholders**, established project **delivery models**, and **healthy data**, to realize the most benefit from this new technology.



Summary

Putting it all together

Focus on Value

- **We are at a point of irrational exuberance**
- We need to manage the expectations of our stakeholders
- **Choose projects that have a clear value proposition**

Manage Risk

- Understand and communicate the risks
- **Be conservative – the regulatory environment remains fluid**
- Develop an Acceptable Use Policy

Build a foundation

- **Develop an empathetic technology function**
- Get your data (ware)house in order before attempting transformative projects
- **Do not go it alone – build a partnership**

GEEKS WITH EMPATHY



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Thank You!