Welcome!

Generative AI for Managers & Leaders

Fletcher Building

SKILLS DEVELOPMENT GROUP

Prompt:

- *“A painting in the style of Van Gogh of a robot orchestra conductor directing a large group of musicians --ar 2:1.”*

Welcome & Introductions

00 First things first:

1. Introductions, housekeeping, expectations
2. Accessing the class's white board space
3. Accessing the course materials

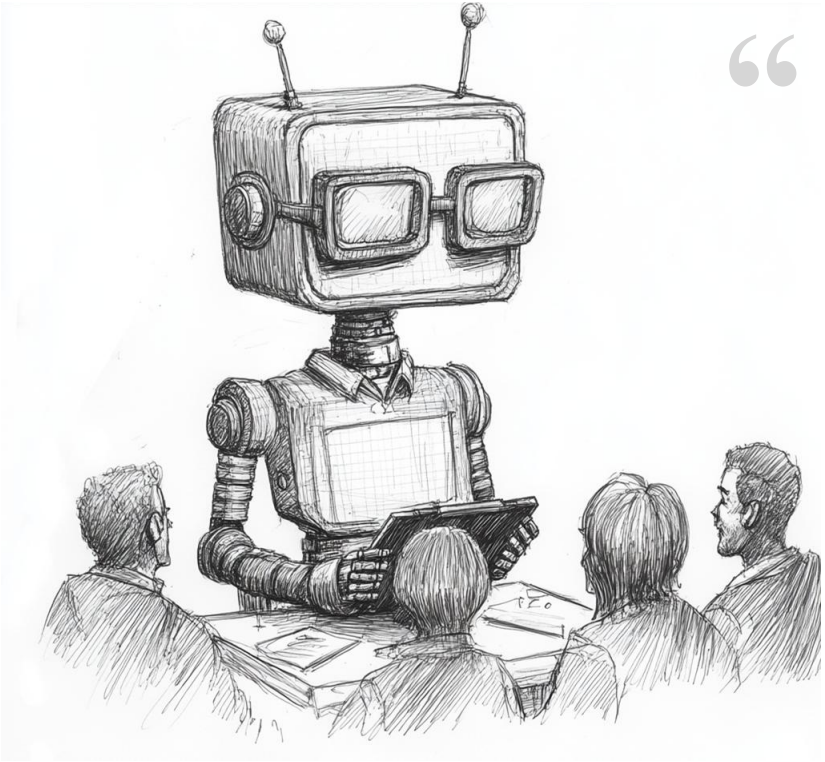
Setting Expectations: What This Time Is About

- Creating a space for discussions and flexibility
- Establishing a working literacy on AI management
- Identifying decisions and management priorities you think are important related to AI
- Confronting hard questions related to managing AI.
- Surfacing the issues that you'll have to work on, and how to prioritize them.
- I'm a resource for you, and a facilitator. There will be things you have to figure out!

Setting Expectations: What This Time Is **NOT** About

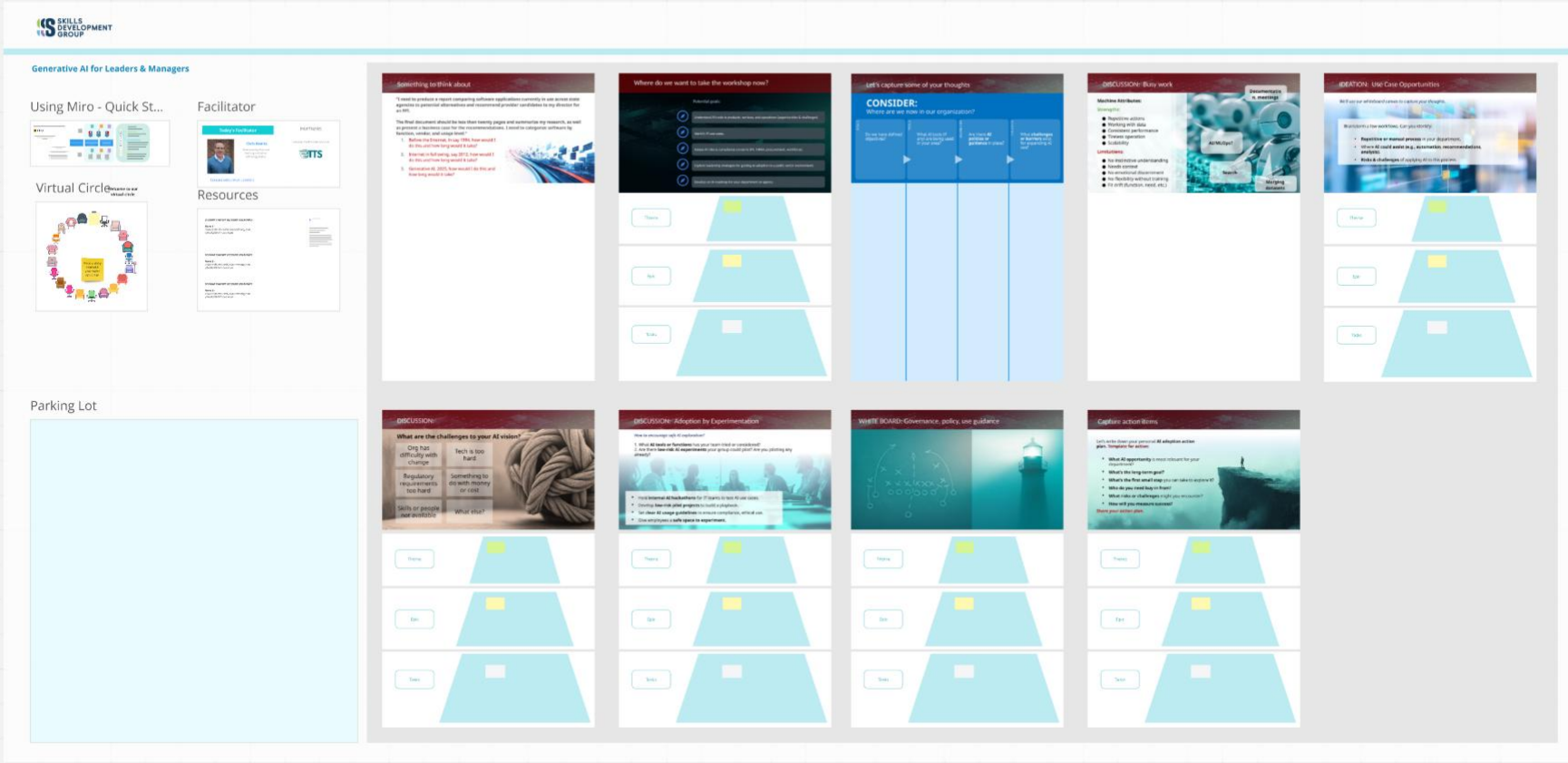
- A prescriptive, one-size-fits all approach
- An exhaustive reference of highly specific or detailed use cases
- Extended technical discussions, deep focus on any specific tool or technology
- Silver bullets, panaceas, perfect solutions, big overnight transformations

Setting Expectations: Final thoughts



> **Powerful and sustained change requires constant communication, not only throughout the rollout but after the major elements of the plan are in place. The more kinds of communication employed, the more effective they are.**
>
> – DeAnne Aguirre

Whiteboarding during this session - Miro



Poll:

How familiar are you with AI tools?
(Check all that apply)

A. Not much
B. Used ChatGPT or other tools some
C. Use AI regularly for my own work tasks
D. Actively implementing some AI usage into workflows or projects

What is AI?

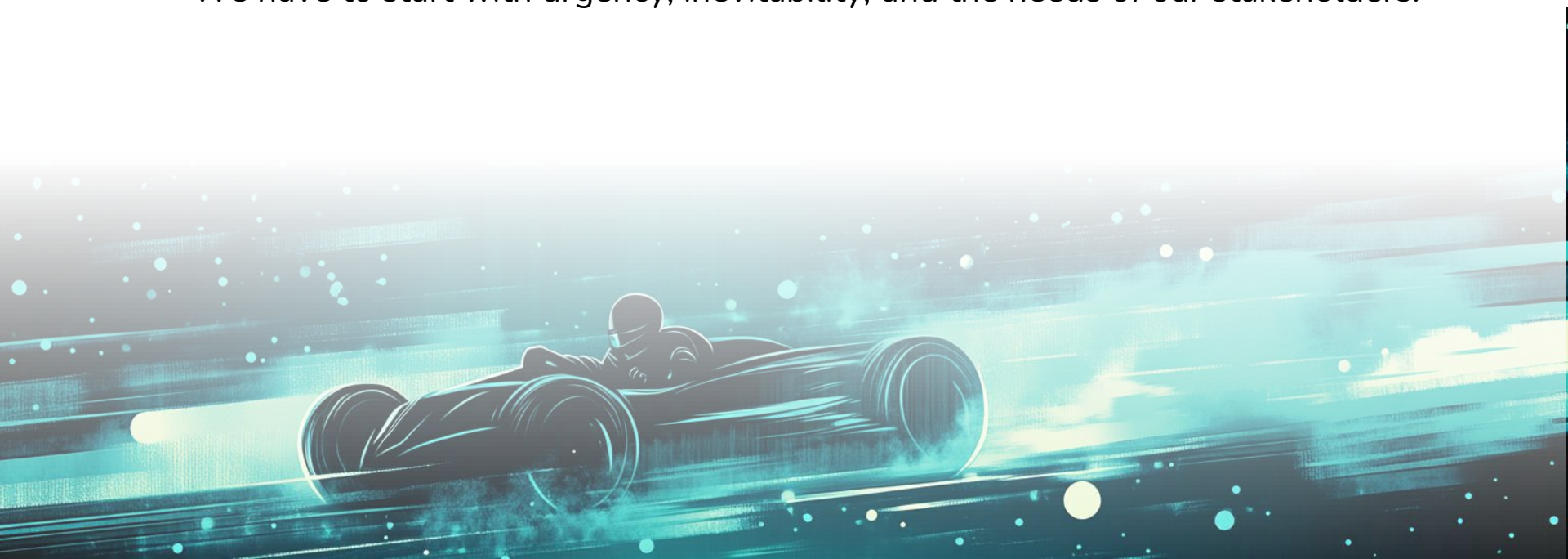
- Computation that mimics **cognitive** functions.
- The science, math, and engineering of making **intelligent machines.**
- In computer science “AI agents” can perceive their environment and take actions to maximize its chance of success at some goal.
- **We are primarily interested in generative AI, but not exclusively.**

Very simply:

- As transformative as the internet or mobile phones.
- It took a while for figure out the most powerful use cases.
- How many use cases were eventually made possible by the internet?

Something to think about

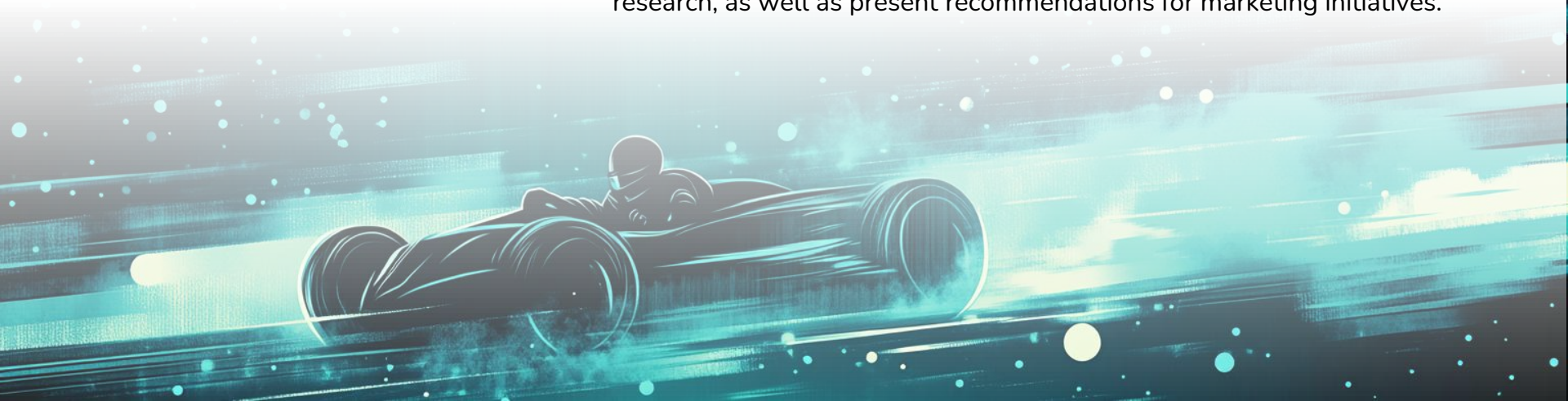
We have to start with urgency, inevitability, and the needs of our stakeholders.



Something to think about

“I need to produce a report comparing the features and price points for my competitors’ products, as well as any published case studies illustrating how their products have been used in large public projects. I then need to present recommendations for how we can present products in our portfolio in a way that positions them competitively for future bidding opportunities which are similar to those in the case studies.

The final document should be less than twenty pages and summarize my research, as well as present recommendations for marketing initiatives.



Something to think about

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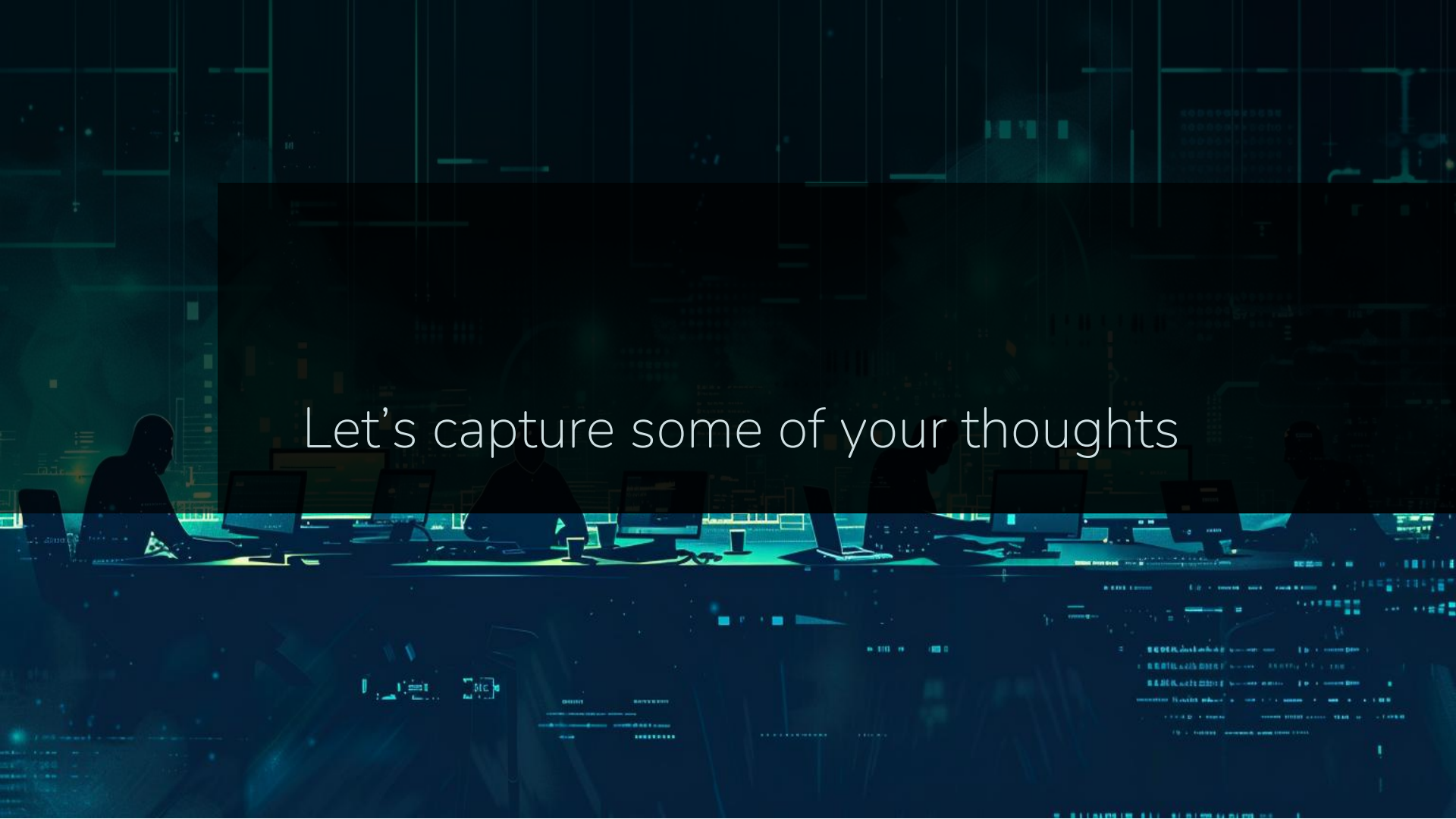
The final document should be less than twenty pages and summarize my research, as well as present recommendations for marketing initiatives.

- Before the Internet, in say 1994, how would I do this and how long would it take?

- Internet in full swing, say 2012, how would I do this and how long would it take?

- Generative AI, 2025, how would I do this and how long would it take?


Let’s capture some of your thoughts

Let’s capture some of your thoughts

CONSIDER:

Where are we now in our organization?

GOALS

Do we have defined objectives?

TOOLS

What AI tools (if any) are being used in your area?

GOVERNANCE

Are there **AI policies or guidance** in place?

CHALLENGES

What **challenges or barriers** exist for expanding AI use?

We’ll use our whiteboard canvas to capture your thoughts.

What is AI?

- Computation that mimics **cognitive** functions.
- The science, math, and engineering of making **intelligent machines.**
- In computer science “AI agents” can perceive their environment and take actions to maximize its chance of success at some goal.
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Our assumptions for leaders

If you agree, it's a basis for our time together. If not, some of our positioning won't work well.

- **As a technology, AI is (at least potentially) transformative.**
- **Defining strategy, making decisions, and providing guidance to our teams are management responsibilities.**
- **Business case first, always. Then tools. Effective adoption depends on defining the need, then applying technology solution to goal.**
- **You are serious about being adaptive to change – or making change – when needed.**

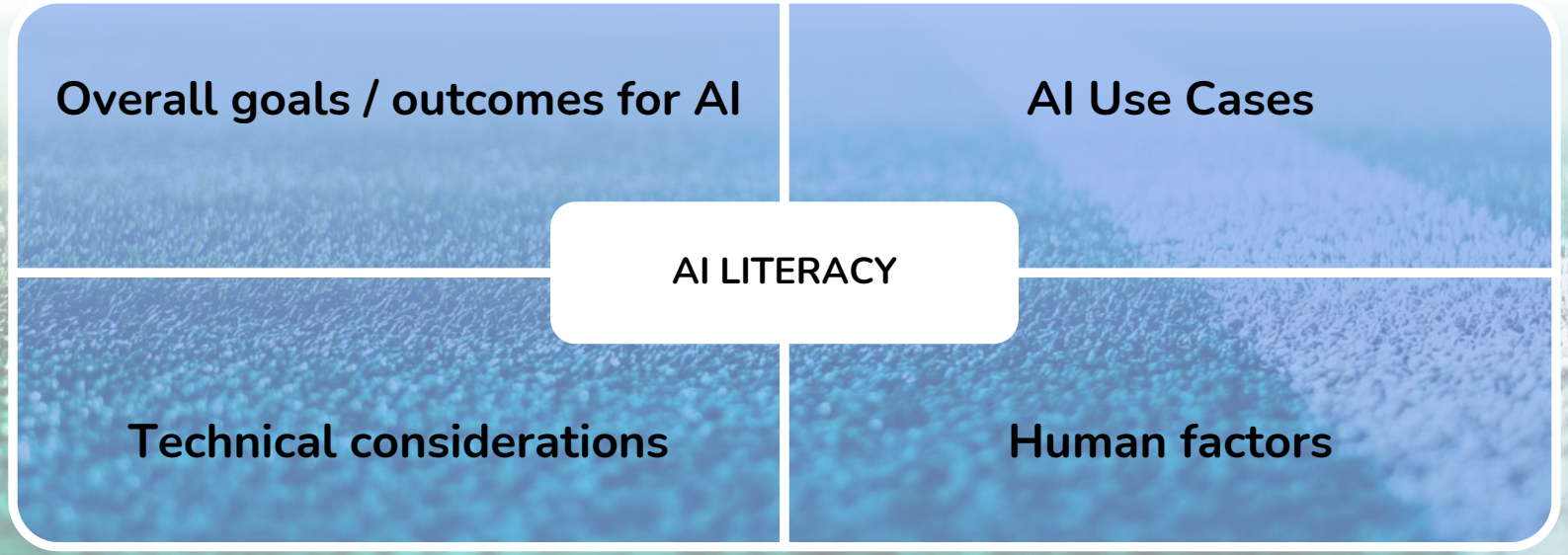
Organizing our thoughts

Important to align on vocabulary

- AI
- Generative AI
- Business Case
- Use Case
- RAG
- LLM
- Internal LLM
- Data
- Training Data
- Model
- People
- Tools
- Agent

Organizing our thoughts

We'll organize our discussion by keeping an eye on these dimensions.



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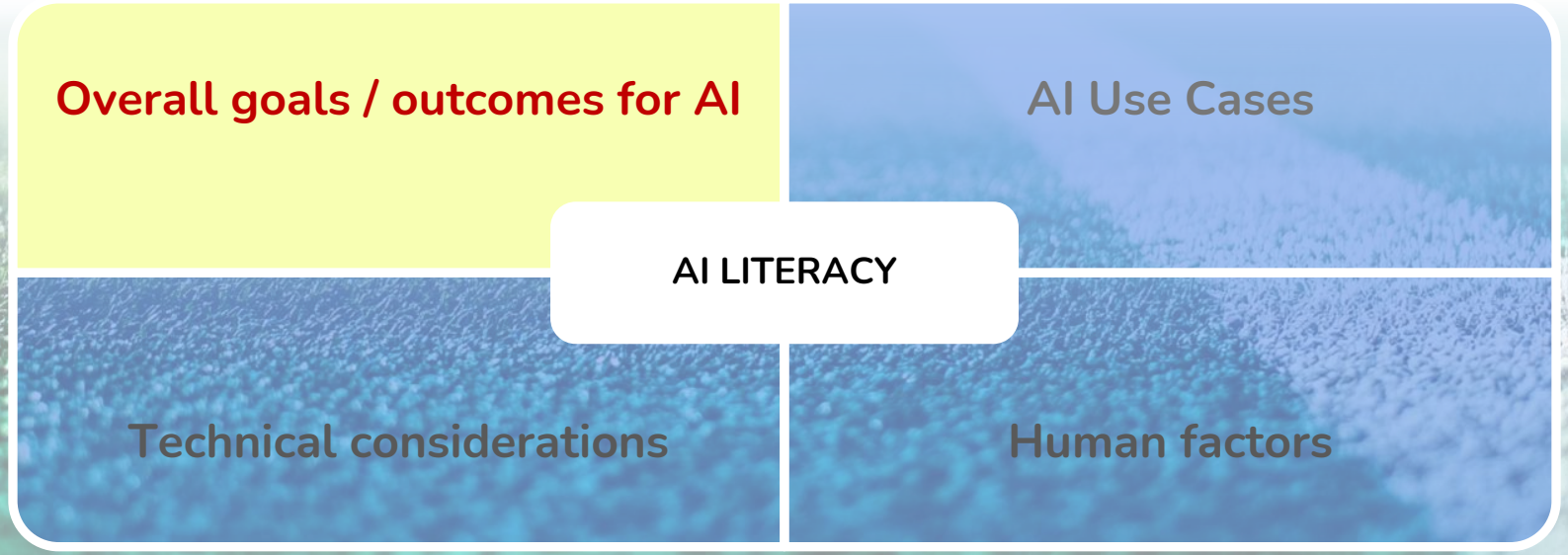

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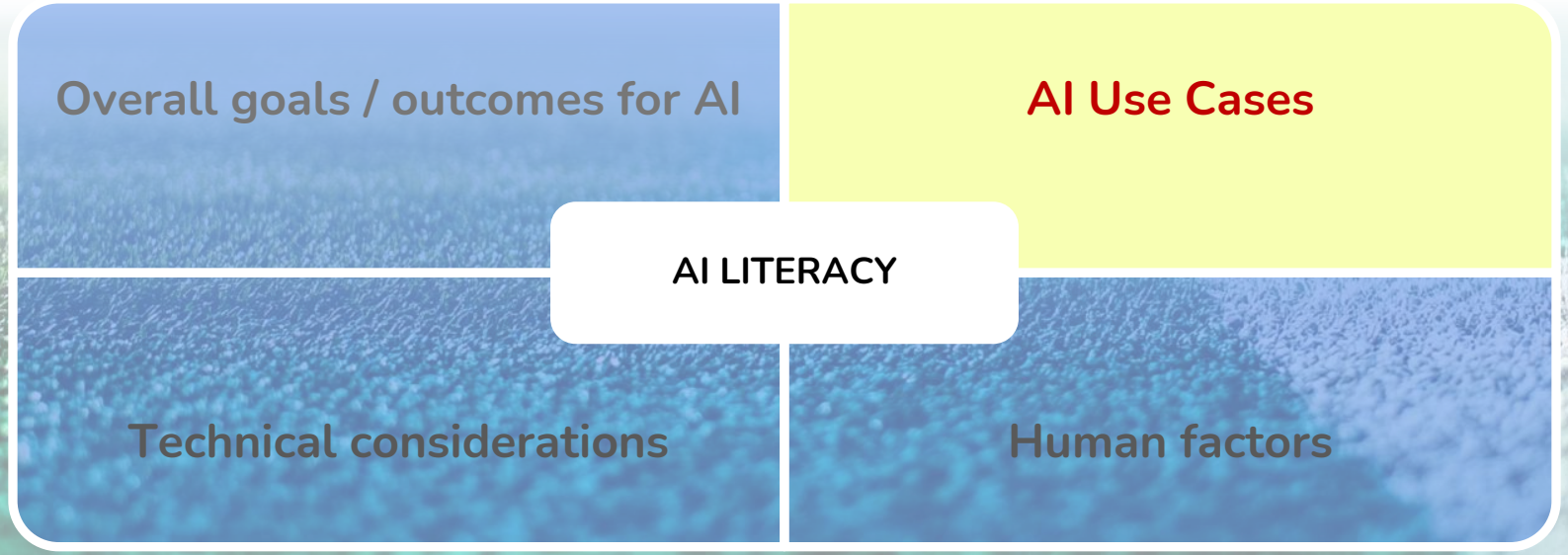
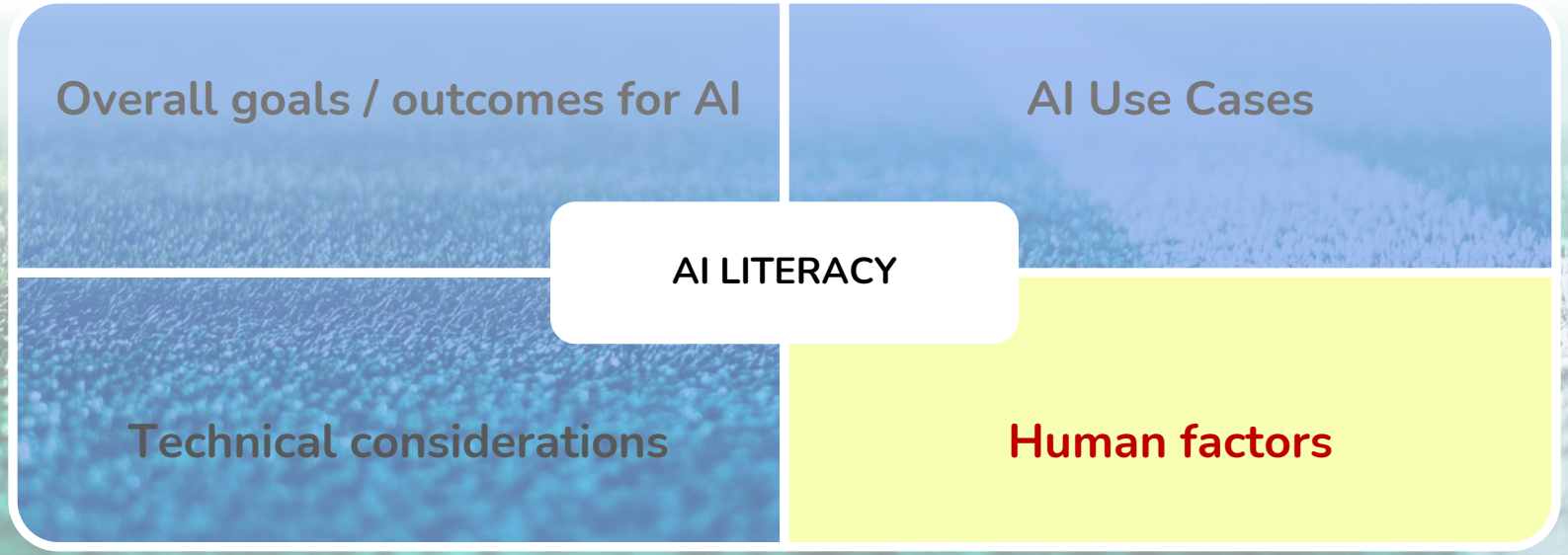


Organizing our thoughts



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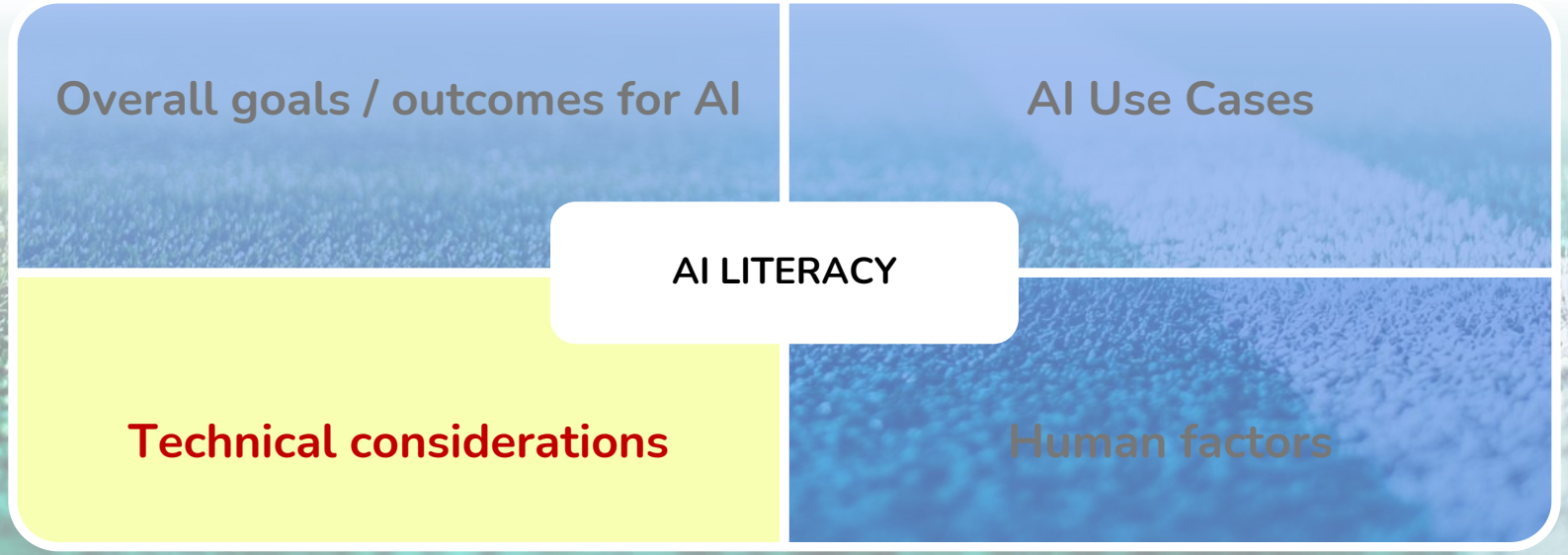

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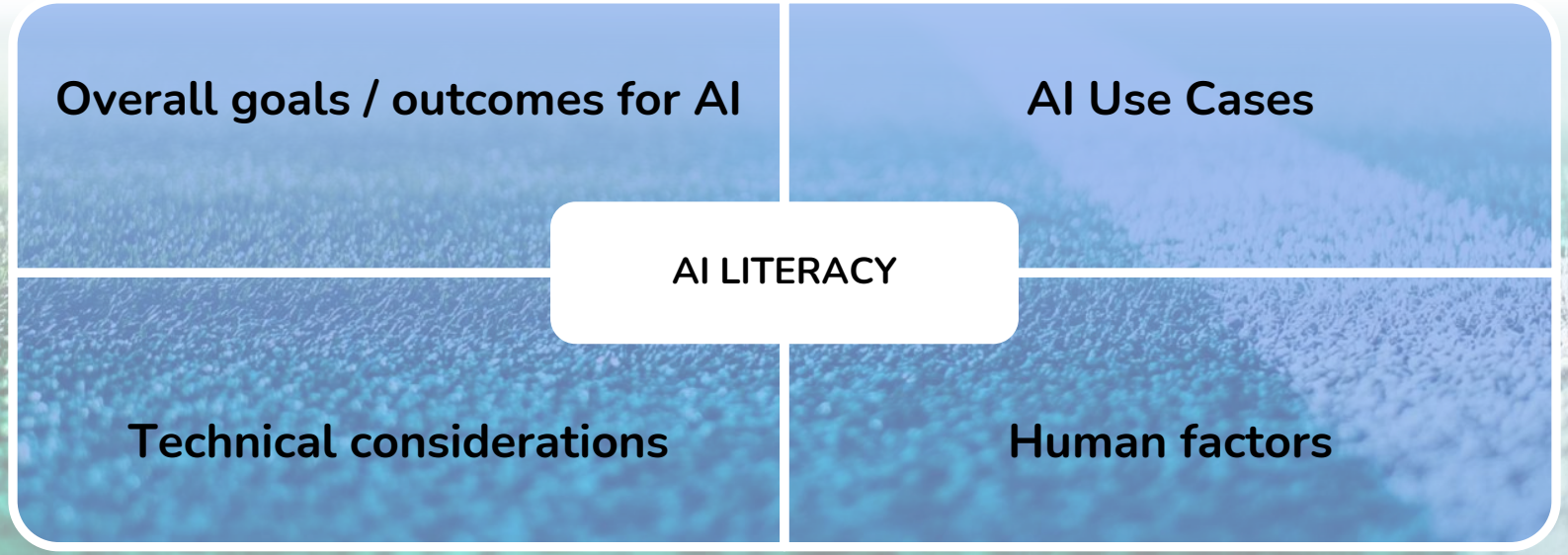
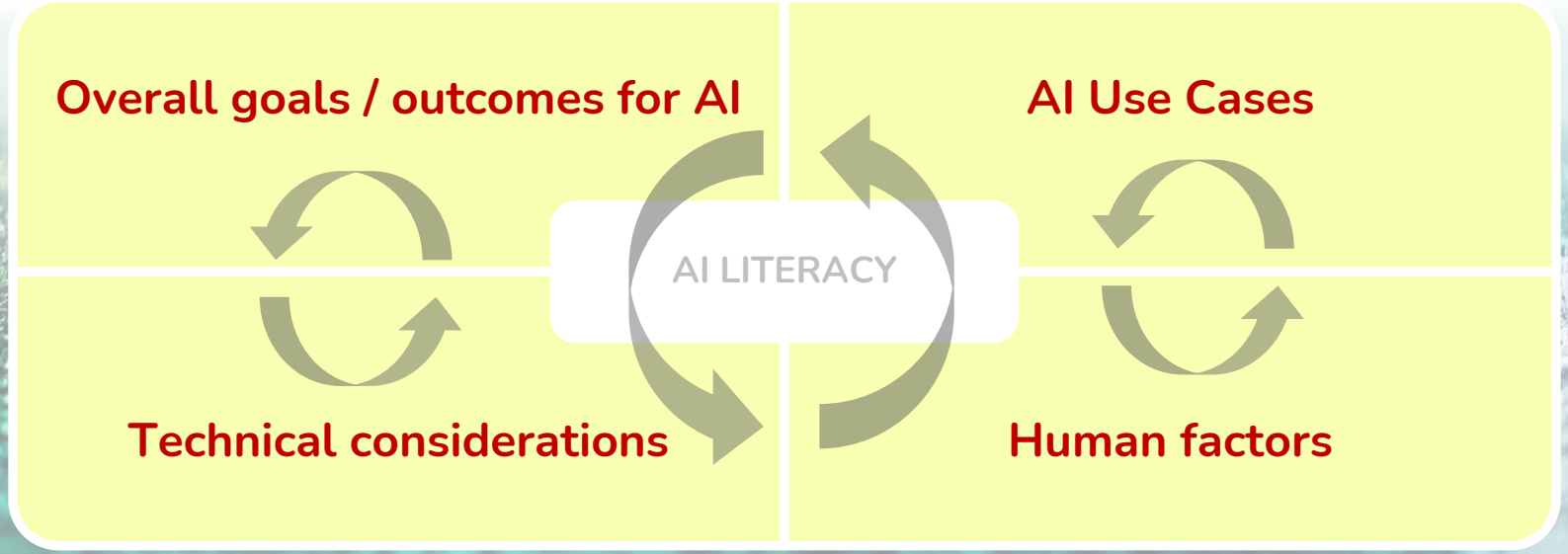


Organizing our thoughts

Of course there are all kinds of relationships across these dimensions.



Organizing our thoughts

End user skills (based on roles)

Technical skills (based on IT projects or products)

Strategic skills (literacy, leadership, visibility, policy awareness)

Tactical skills that fill in the gaps

Policy our organization can implement

Ethical, legal & safety frameworks as the rationale for designing and socializing policy

Culture in the organization that supports the type of strategy, attitudes, processes, and motivations we need

"Normal" IT – infrastructure, tech stacks, applications our dev teams can work with. Oh, and also...integration.

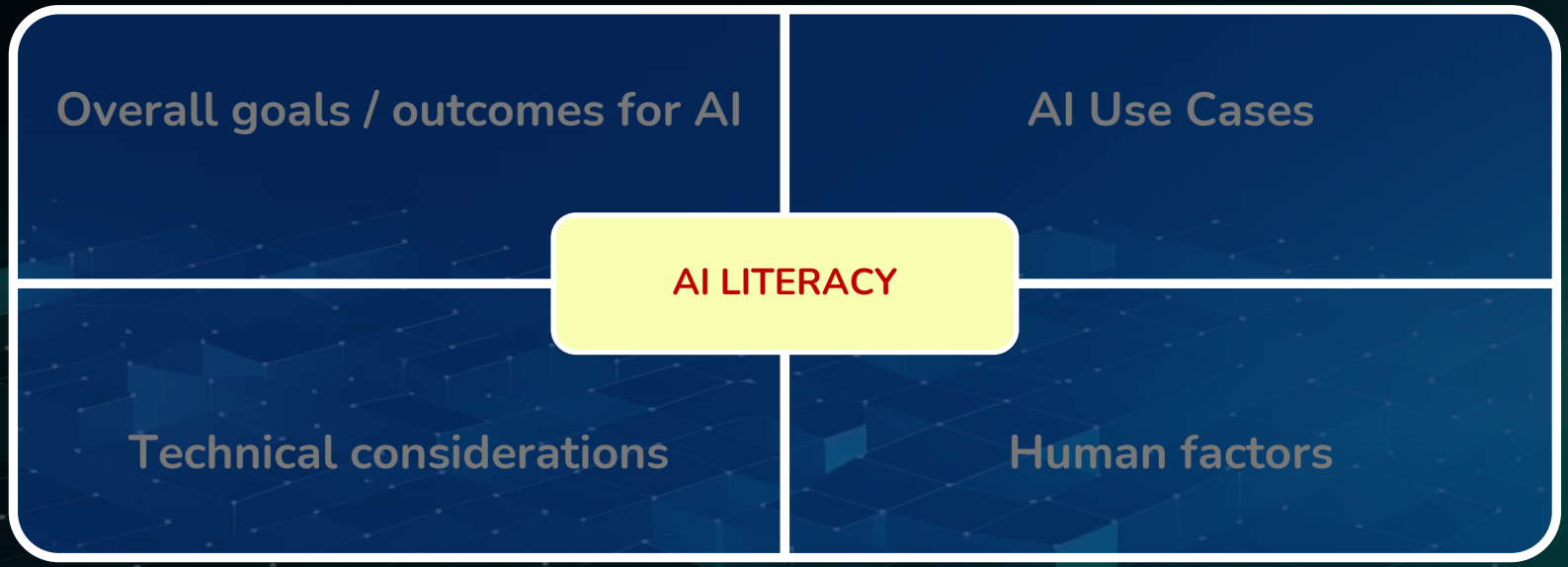
Data science/AI tech – Specialized technical roles enabling integration and the advanced features we need

Security created from the policies, controls, and compliance requirements we need to design for

Business case – ROI explanation, risk breakdown, financials

Value stream – The intentional path to value creation because of the AI component

Organizational capability– It's all meaningless if you can't execute at scale.



Generative AI Overview

Generative AI

OpenAI ChatGPT

Anthropic Claude

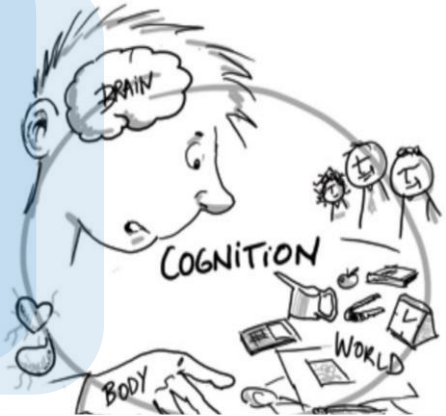
Perplexity AI

Microsoft Copilot

Google Gemini

AI models that generate text, images, and code based on training data.

Generative AI models use neural networks to identify the patterns and structures within existing data to generate new and original content.



Types of tools

Type	Examples
Text-to-image	Midjourney, DALL-E, Stable Diffusion
Text-to-video	Runway, Synthesia, Sora
Text-to-audio	Descript, Resemble.ai
Text-to-text	OpenAI (ChatGPT, CoPilot, Azure AI), Jasper, Grammarly, co:here, Claude, Perplexity
Audio-to-text	Descript, Otter.ai, Whisper

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The best generative AI tools at a glance

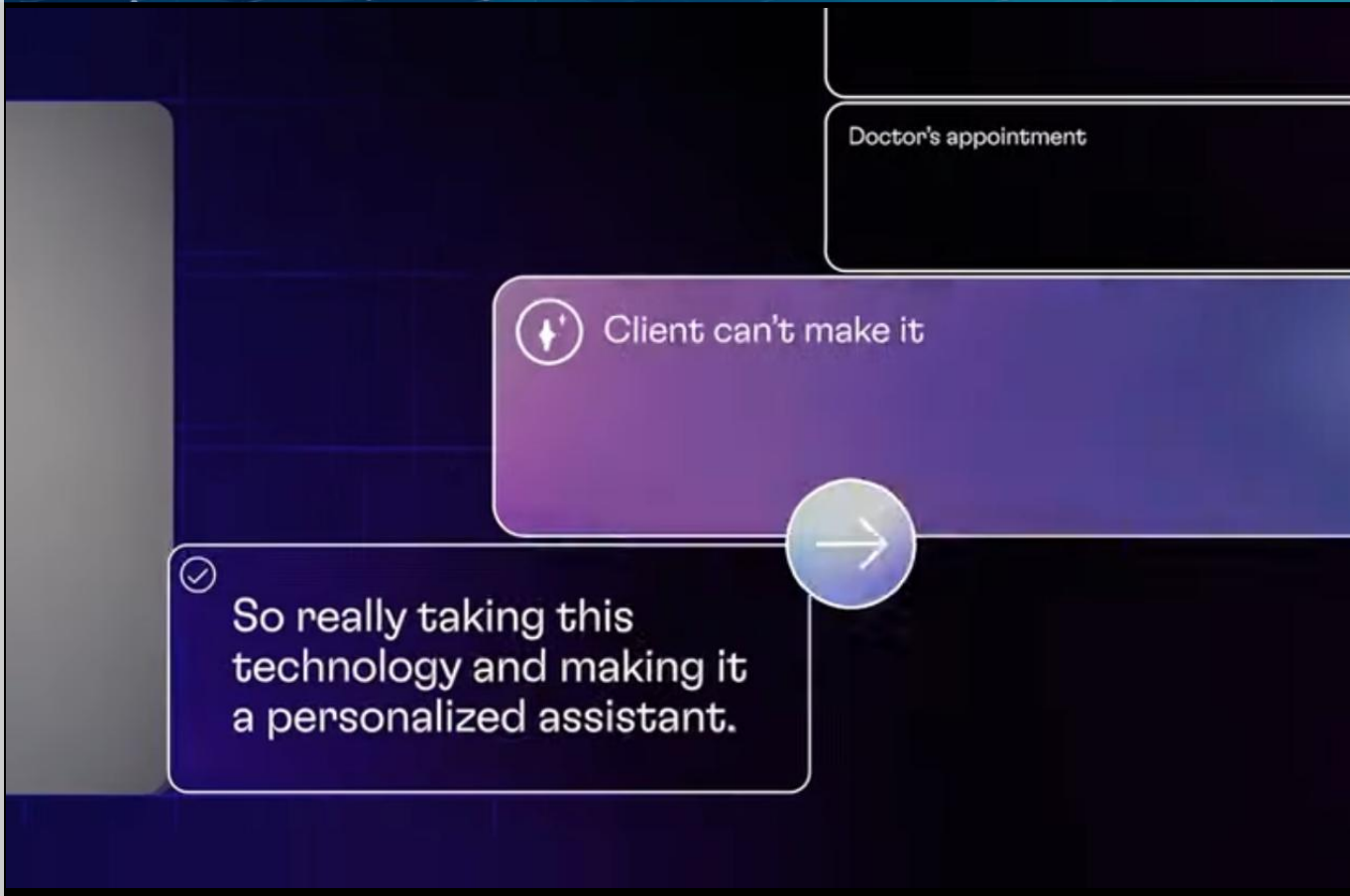
	Category	Best for
Jasper	AI writing generators	Maintaining brand voice
Anyword	AI writing generators	Marketing efforts
Shortwave	AI writing generators	Email assistance
Notion AI	AI notes	Second brain
Mem	AI notes	Organized notes
Runway	AI video tools	Freeform and creative videos
Wondershare Filmora	AI video tools	AI video editing
Midjourney	AI image tools	High-quality images
DALL·E 3	AI image tools	Easy-to-create images
Adobe Photoshop	AI image tools	AI-powered photo editing

The best generative AI tools at a glance

	Category	Best for
ElevenLabs	AI voice and audio	Versatile assets
Suno	AI voice and audio	Creative text-to-audio results
Beautiful.ai	AI presentation apps	Design automation
Pitch	AI presentation apps	Sales decks
Wix	AI website builders	Automated website creation
Framer	AI website builders	AI-powered website design
Microsoft Power Apps	AI app builders	Creating foundations
Pico	AI app builders	Automated app building
ChatGPT	AI chatbots	Versatility
Claude	AI chatbots	Great writing quality
Zapier Chatbots	AI chatbots	Custom-made chatbots

According to Google Cloud

1. Customer service
2. Productivity
3. Marketing



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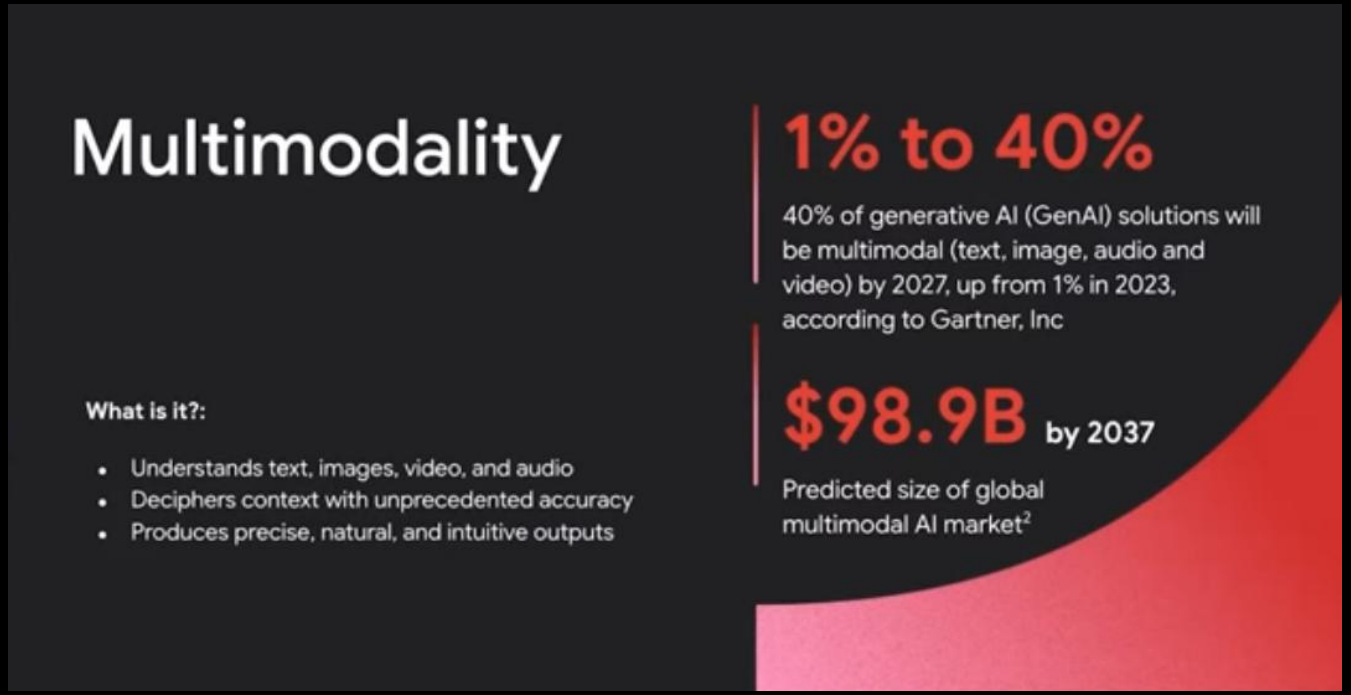


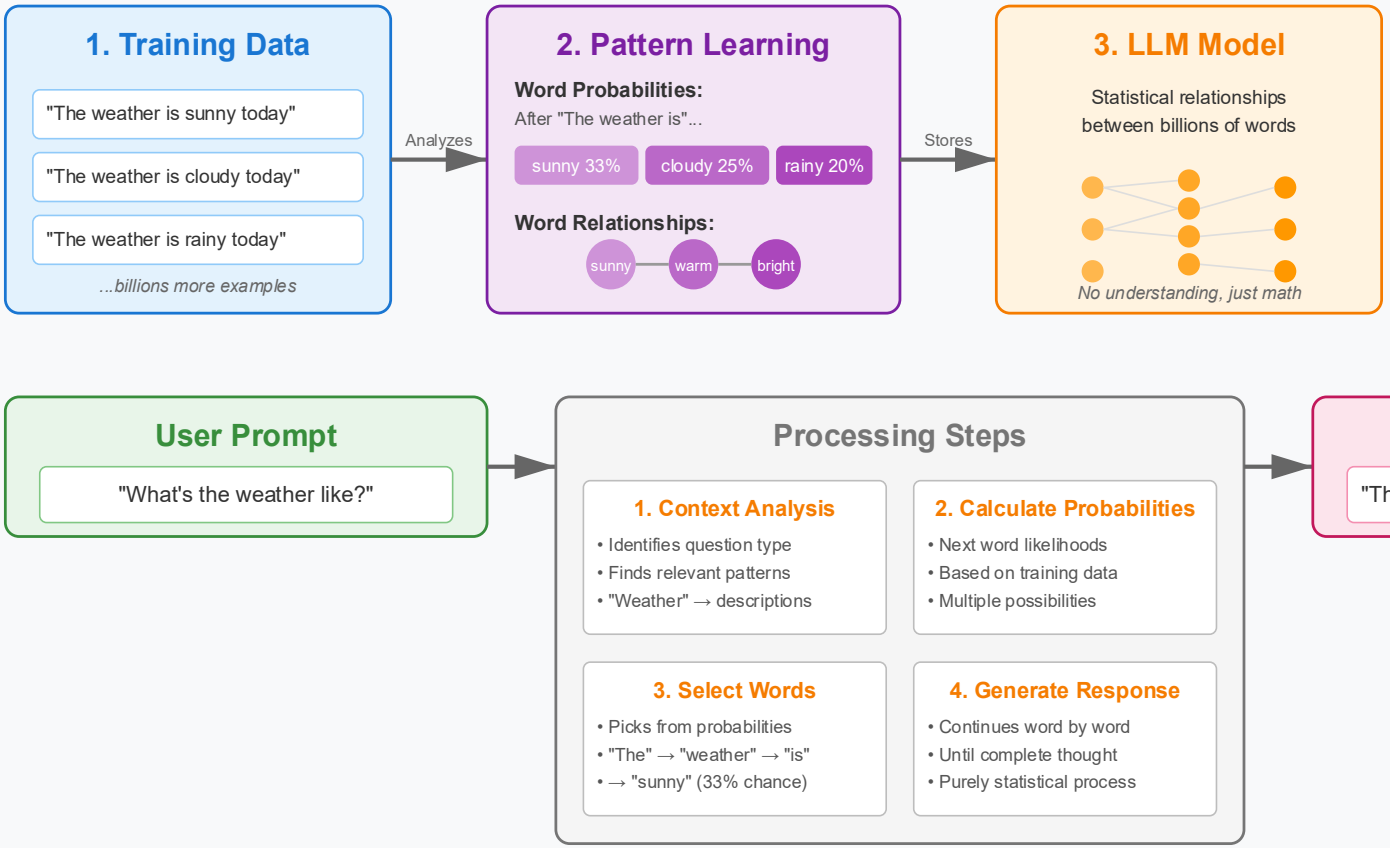
Big caveat: Change is happening in days and weeks

- AI Products
- Features and capability
- Underlying technology
- Legal precedents
- Labor market consequences
- Risks
- New use cases

What is a large language model? (LLM)

- Neural networks trained on extensive collections of text data from the internet, books, articles, etc.
- Learns to “understand” statistical relationships within language.
- Can generate, manipulate, and analyze all sorts of stuff in a very similar way to humans.
- The trick is understanding what it’s good at and where it stinks.
- They can do some math, but language-based data is the key strength.

How LLMs use statistical patterns to generate responses



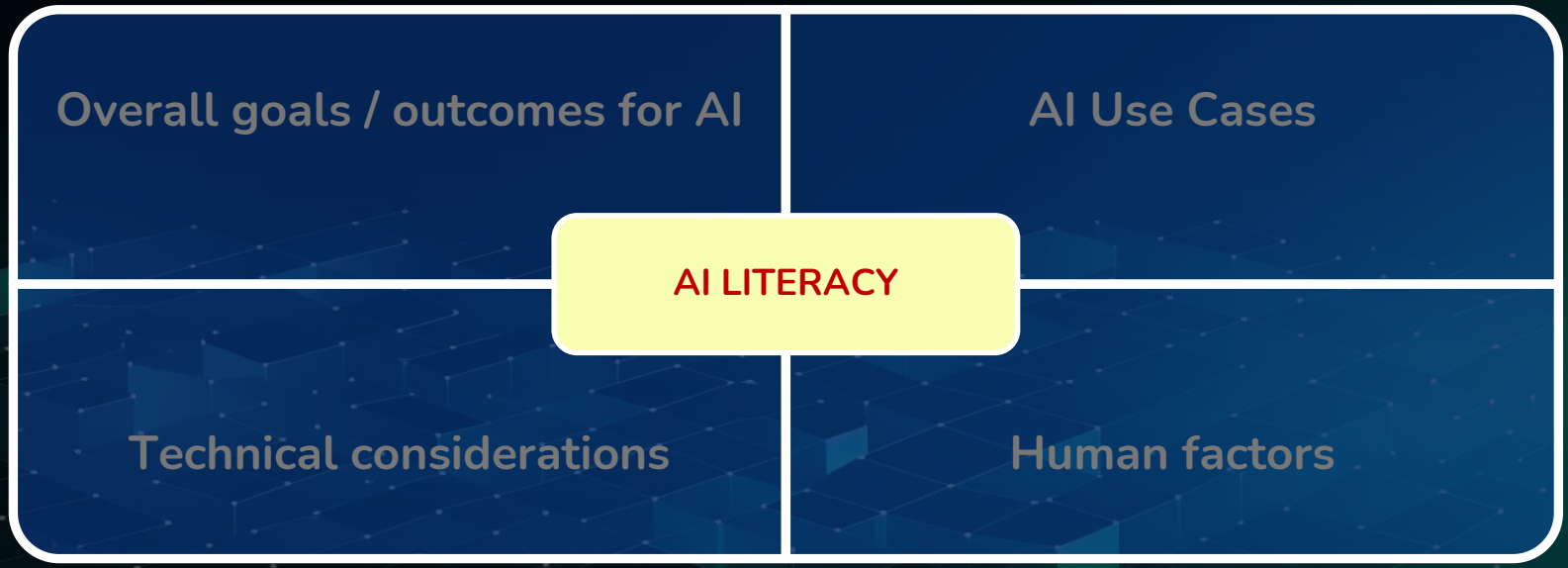
Key Insights for Leaders:

- LLMs predict the most statistically likely next words — they don’t “understand” meaning
- This explains hallucinations: plausible-sounding but potentially incorrect information
- Quality depends on training-data patterns — garbage in, garbage out

- No reasoning
- No facts database
- No truth verification
- Just statistical patterns

What is a large language model? (LLM)

- **AI power users are now people with good language/dialectic skills.**



A bit about prompting...

What is a “dialectic approach?”

We primarily interact with LLMs using what we’ll call a “dialectic approach,” meaning that we should always approach interaction with an LLM as a conversation, anticipating that we may not get what we need from the AI tool in just one exchange – it will likely require a series of exchanges so we can establish context, help the AI learn what we need, and refine the direction of the conversation as we go. LLM tools don’t just use machine learning to power their core features - they also learn as they go, adapting to our feedback in real time.

Prompting basics in plain English

- Initiate with as much context as possible. Examples, documents, data…
- Provide examples of previous work that shows what you want the AI to do.
- Approach a generative AI interaction is a conversation…you rarely get what you want the first time.
- Build conversation threads focused on one type of task or project, creating feedback loops and more context over time.
- Include details in your query to get more relevant answers
- Ask the model to adopt a persona
- Use good punctuation and “delimiters” to clearly indicate distinct parts of the input, especially in longer prompts.
- Specify the steps required to complete a task: “break it down into parts.”
- Specify the desired length of the output.

Bad Prompts: Examples

Vague Query: Tell me about agile project management.
- Lacks specificity and context.

No Persona Adoption: How do I manage projects?
- Doesn't specify the AI to adopt the role of an experienced project manager.

Unclear Delimiters: What are the risks in project management and how to mitigate them, also tell me about team management.
- Combines multiple questions without clear separation.

No Steps Specified: How do I implement an ERP system?
Lacks detail on the desired process or steps.

No Examples Provided: How do I improve team efficiency?
- Doesn't provide context or examples to tailor the response.

No Output Length Specified: Give me a project report.
- Doesn't specify desired length or detail for the report.

Good Prompts: Examples

Detailed Query: "I'm an agile project manager implementing a new ERP system. What are key considerations for integrating existing customer data into the new system?"

- *Provides specific context and details.*

Persona Adoption: "Act as an experienced agile project manager. What strategies would you suggest for maintaining team morale during the stressful final stages of an ERP implementation?"

- *Directs the AI to adopt a specific role.*

Clear Delimiters: "Identify the top 5 risks in agile ERP implementation | Provide methods to mitigate each risk."

- *Clearly separates two parts of the prompt.*

Steps Specified: "Outline the steps for conducting a sprint retrospective in an ERP project."

- *Asks for a specific, step-by-step process.*

Examples Provided: "Considering challenges like scope creep and resource constraints, which I've faced in previous projects, how can I better manage project scope in my current ERP implementation?"

- *Includes examples for context.*

Specifying Output Length: "List in bullet points, no more than 10, the key metrics I should track during an ERP system implementation."

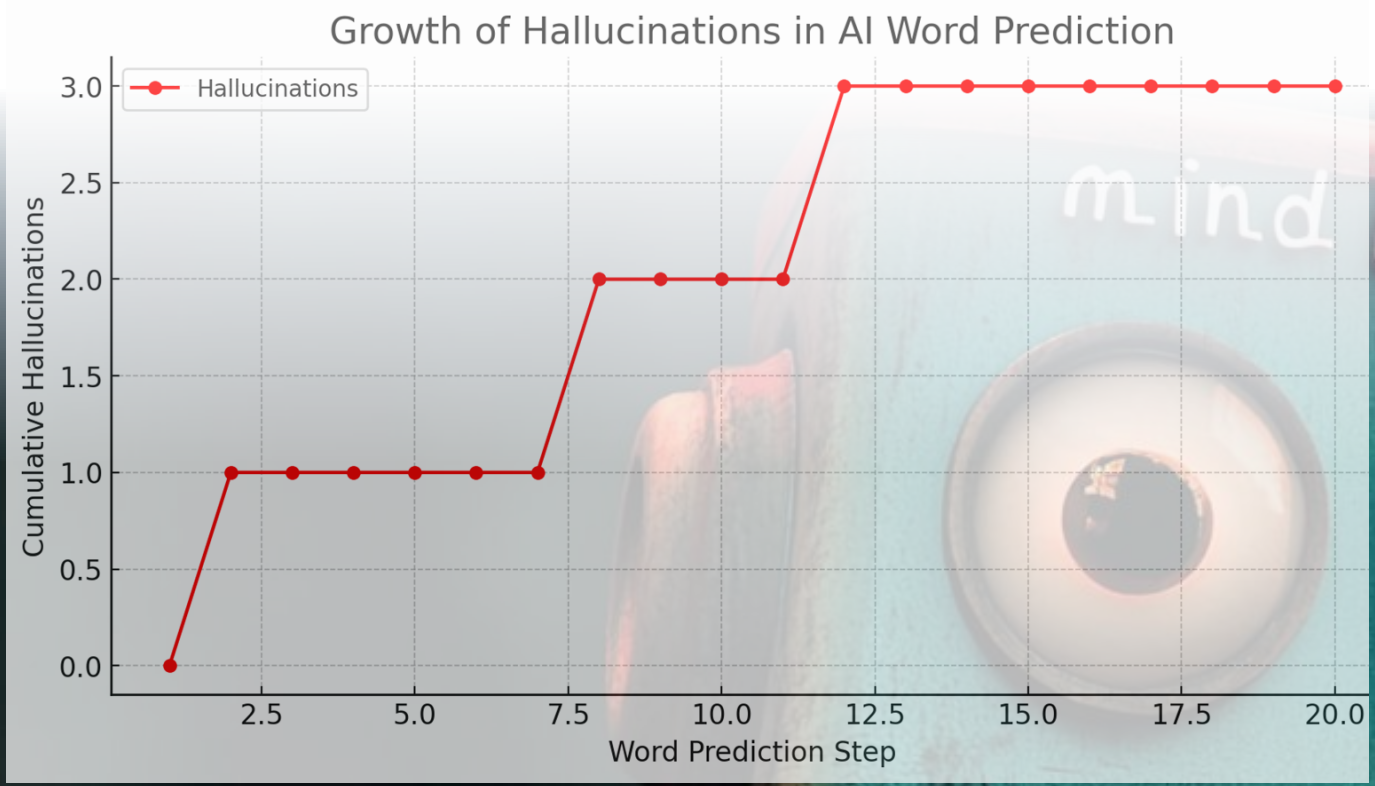
- *Specifies the format and length of the response.*

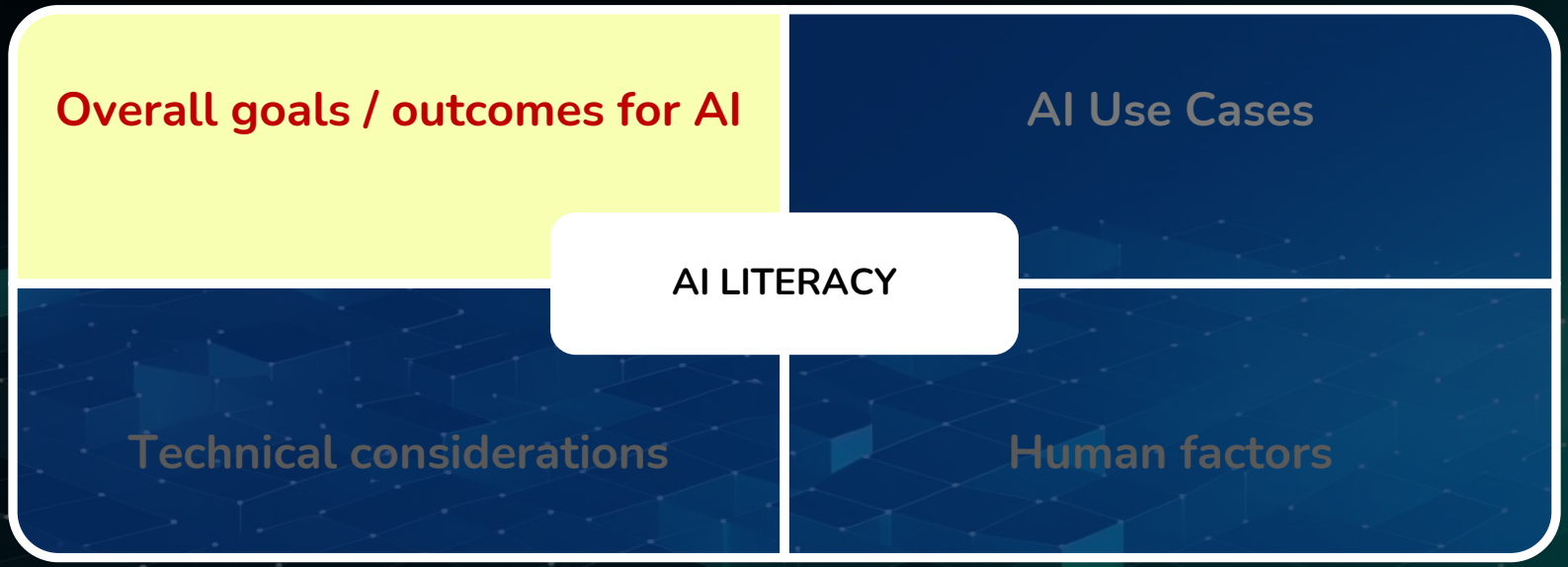
What about other types of AI?

AI Type	Example Use Case
Generative AI	Automating reports, summarizing policies
Machine Learning	Fraud detection, risk analysis
Computer Vision	Analyzing satellite data, cancer detection
Natural Language Processing	Chatbots for public services, contract analysis

There is more to being successful with enterprise AI than just generative AI tools and large language models (LLMs). Other types of AI matter, and technology dependencies do, too.

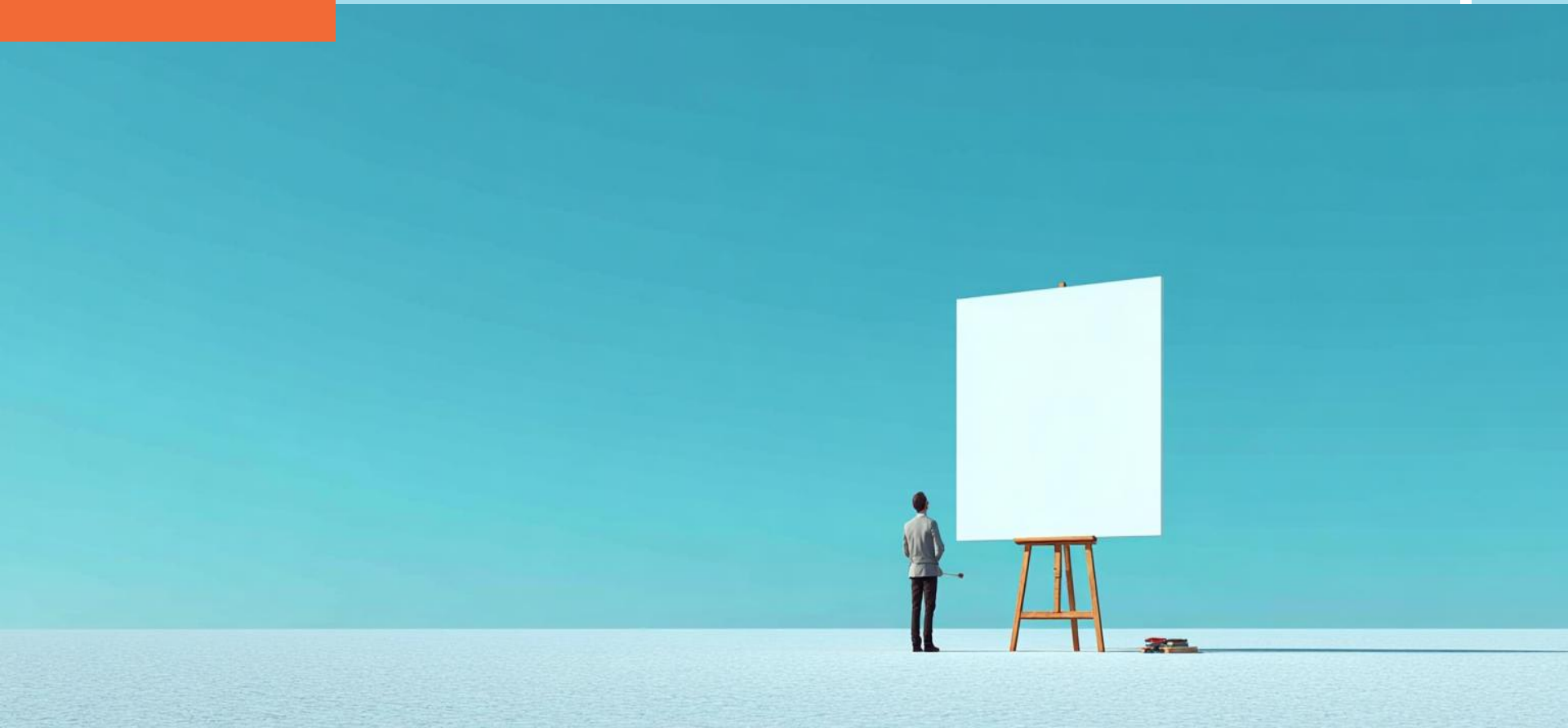
About those hallucinations





What are we really trying to do?

What Do We Want From AI?



Why?

- **Efficiency?**
- **Do something new? New service, new product?**
- **More speed?**
- **Save time?**
- **Save money?**
- **Adoption seems important?**

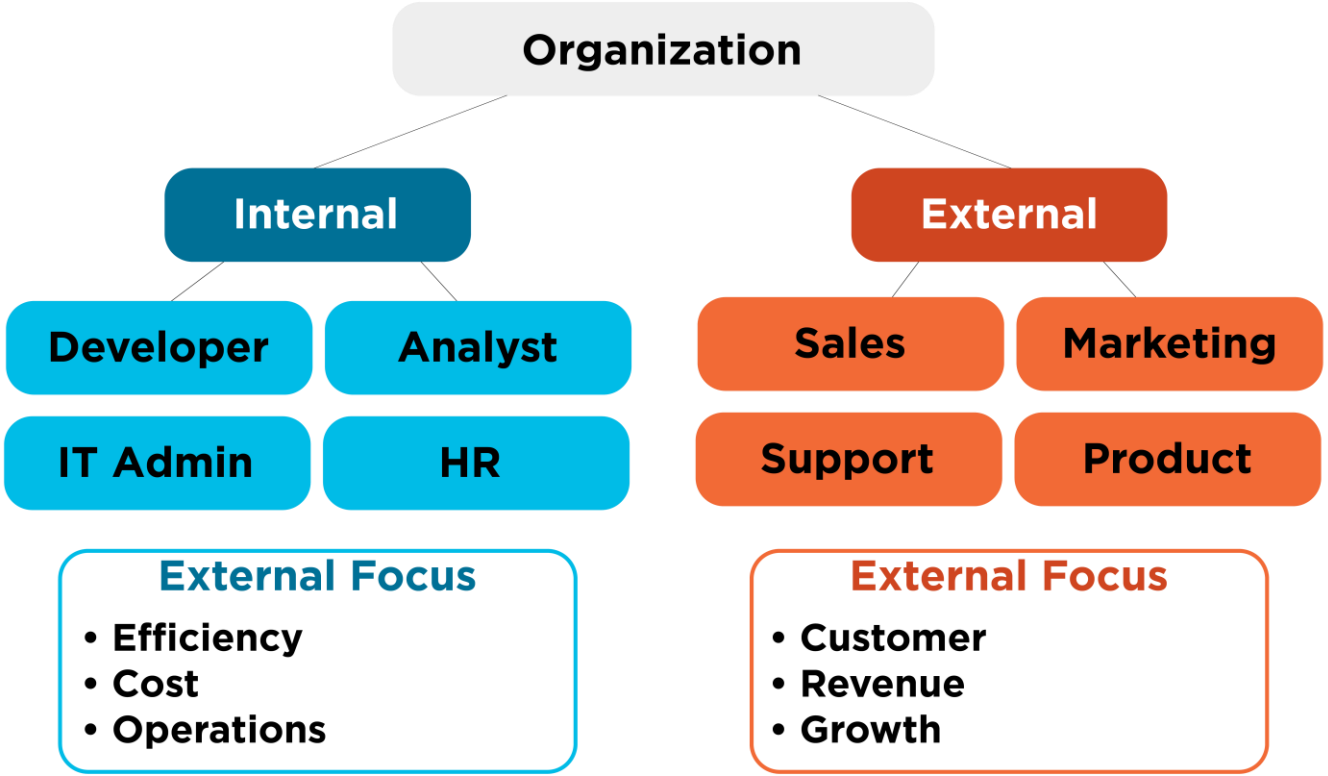
And worth considering…operational or customer-facing?

AI can definitely unlock value, but…

There are some hard conversations. Emergent tech, big change initiatives assume some enterprise prerequisites:

- Good leadership?
- Agility?
- Safe, high-performance culture?
- Good portfolio management practices?
- High innovation performance?
- Tech dependencies?

What Do We Want From AI?



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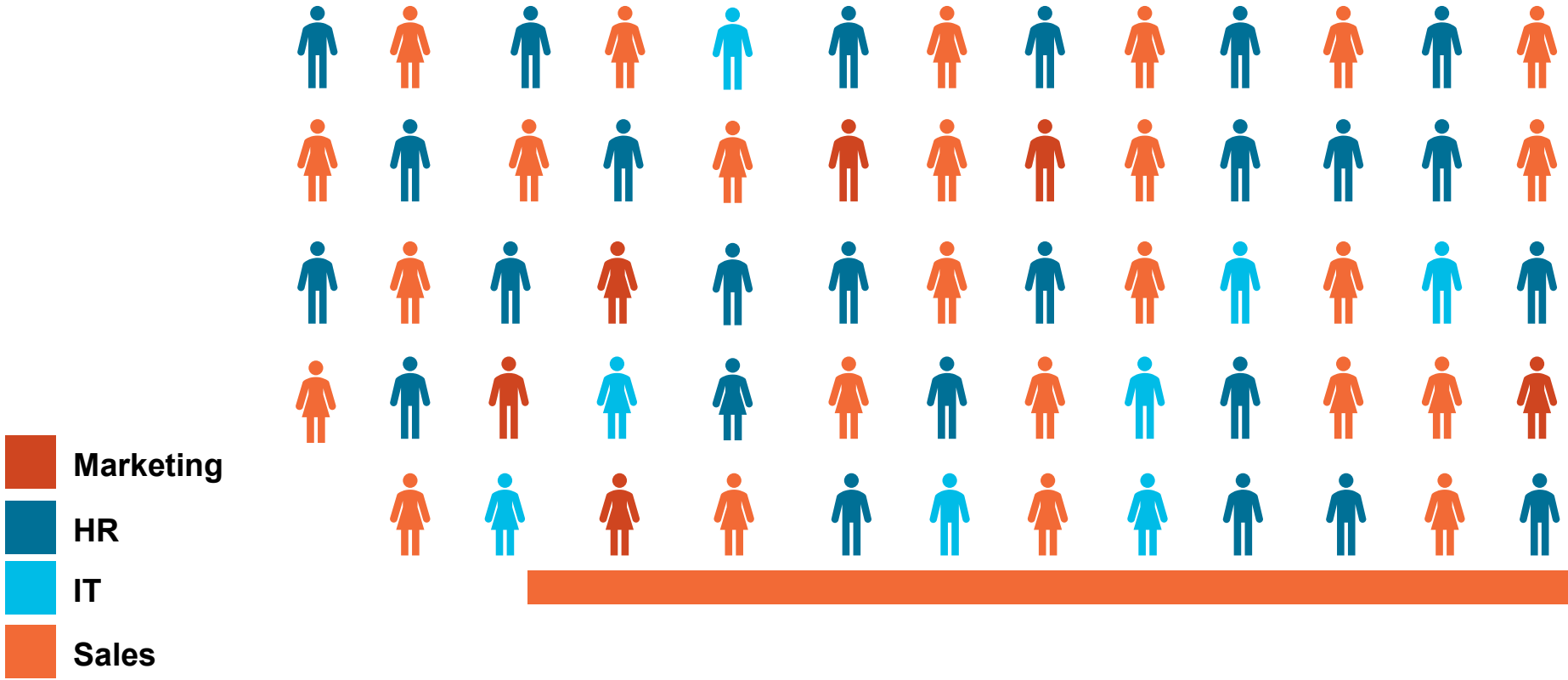


What Do We Want From AI?

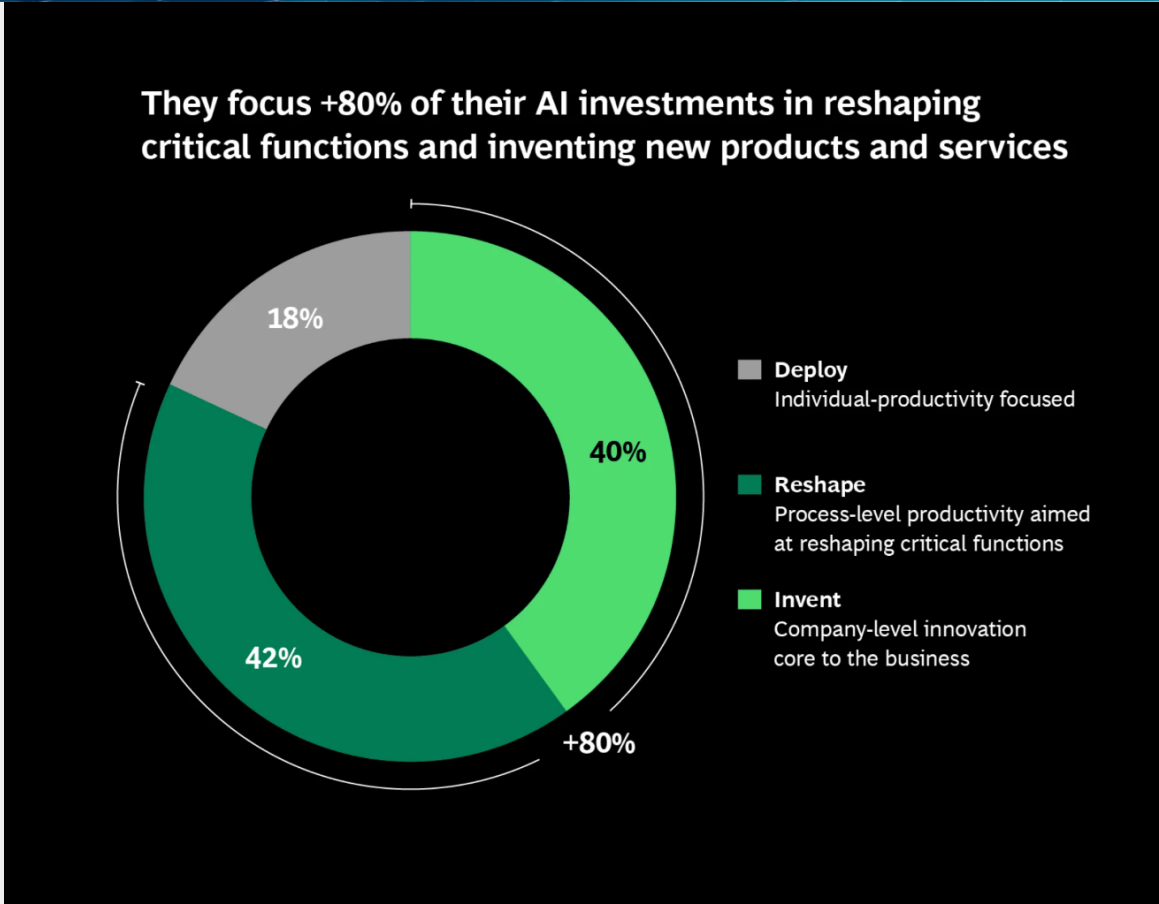
- Marketing
- HR
- IT
- Sales

A template for action

- **What AI opportunity** is most relevant?
- **What's the long-term goal?**
- **What's the first small step** you can take to explore it?
- **Who do you need buy-in from?**
- **What risks or challenges** might you encounter?
- **How will you measure success?**

Research from Boston Consulting Group

- BCG says leading companies go well beyond “deploy”
- “Deploy” in this case is mainly about tactical, employee-level use cases, and tool/tech considerations are pretty straightforward
- “Reshape” and “Invent” get more aspirational and require effective management across the various AI dimensions



Leadership and AI

AI can't lead change — that's your job.

AI Strengths

- Processes massive data quickly
- Automates repetitive tasks
- Identifies patterns & trends
- Supports decision-making

Human Leadership Strengths

- Build trust and team cohesion
- Guide employees through change
- Develop strategic long-term vision
- Coach and mentor employees

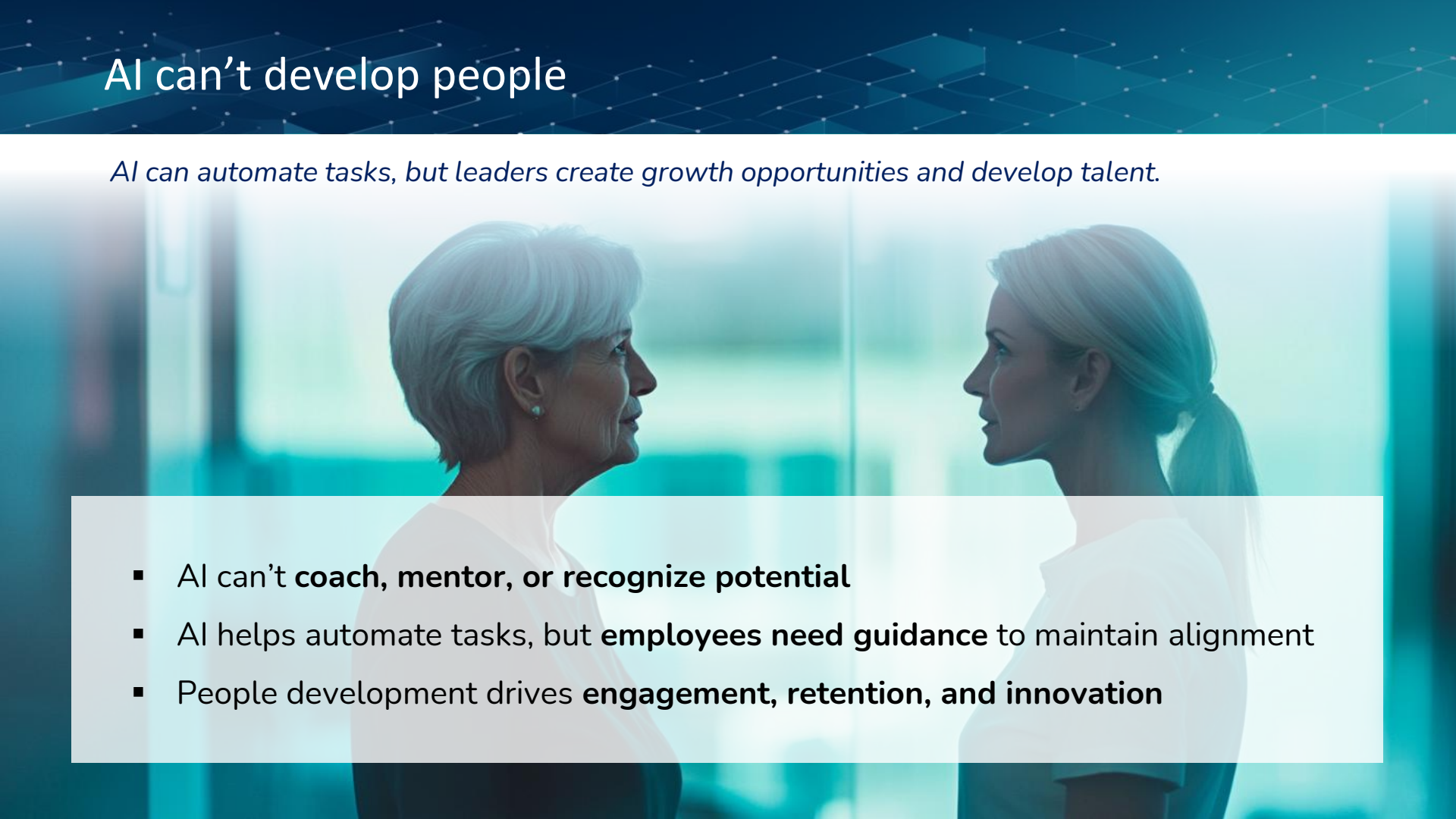
AI can’t think strategically.

- AI can identify patterns, but humans interpret meaning & implications.
- Leaders anticipate unintended consequences AI might miss.
- AI can optimize or execute workflows, but leaders ensure alignment with goals.

It’s part of a data story that hasn’t changed.

AI can’t develop people

AI can automate tasks, but leaders create growth opportunities and develop talent.



- AI can’t **coach, mentor, or recognize potential**
- AI helps automate tasks, but **employees need guidance** to maintain alignment
- People development drives **engagement, retention, and innovation**

AI can’t guide change.

AI impacts our people and work.

- **Communicate the "why" behind AI adoption** — connect it to mission, explain the business case
- **Acknowledge uncertainty & resistance** — empathize with concerns.
- **Set a culture of continuous learning** — help teams adapt
- **Normalize change discussions** — make AI a part of onboarding, meetings and reviews

Co-Intelligence / Partnering

How do you think about Co-Intelligence?

1. Partner
2. Shared responsibility
3. Help
4. Offload work
5. Giving up some control
6. Other thoughts?

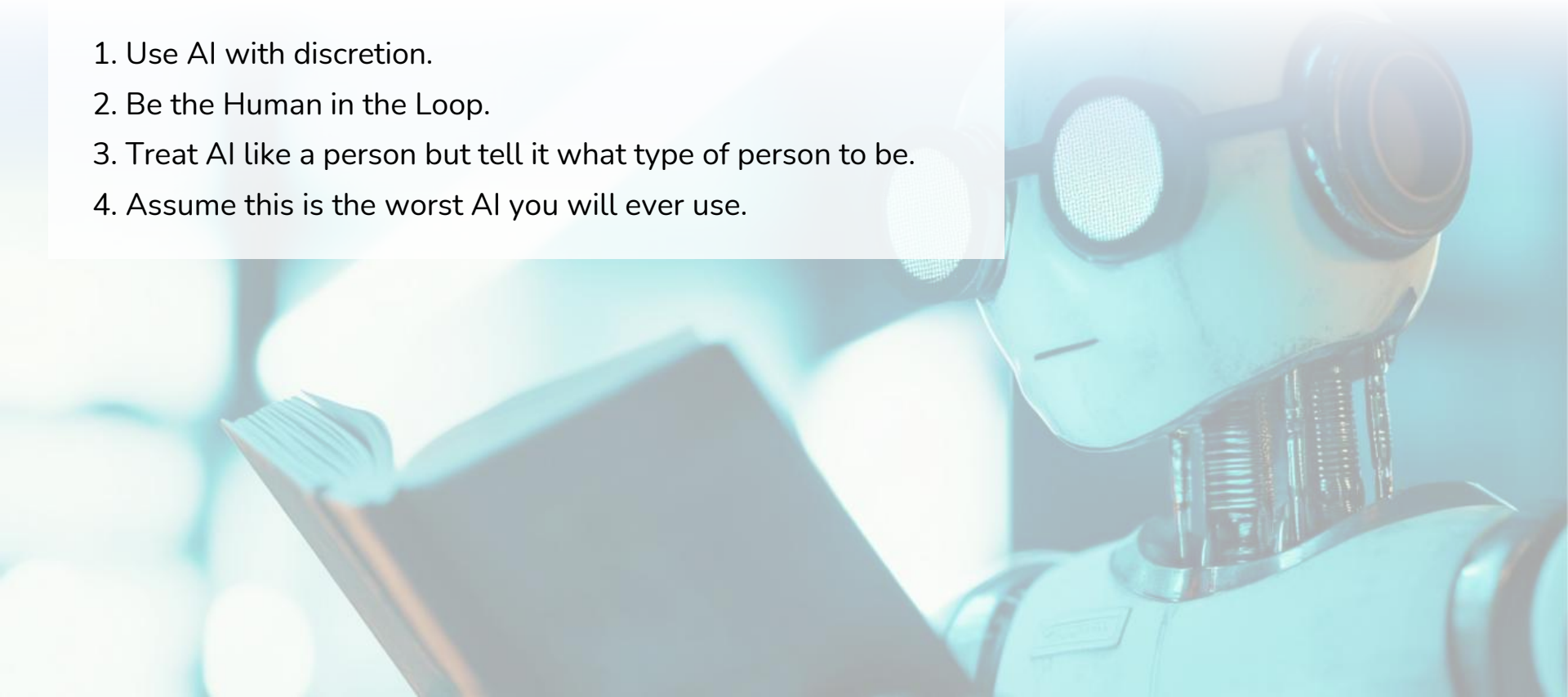
Reminder: How do we best operate?

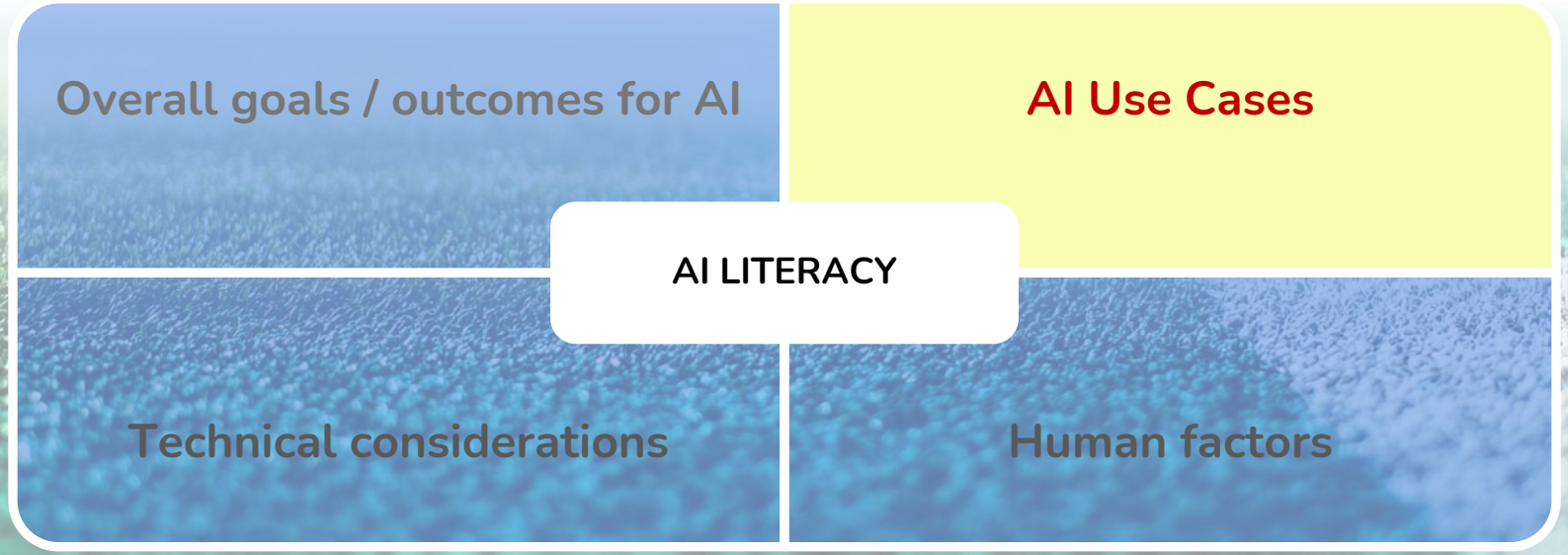
Reminder: How does AI best operate?

Given each's nature how can you see this working?

Four rules to consider

1. Use AI with discretion.
2. Be the Human in the Loop.
3. Treat AI like a person but tell it what type of person to be.
4. Assume this is the worst AI you will ever use.




Overall goals / outcomes for AI
AI Use Cases
AI LITERACY
Technical considerations
Human factors

Practically speaking, what is Generative AI good at, really?

Good at:

- Generating Text
- Answering Questions
- Language Translation
- Mimicking Writing Styles
- Basic problem solving
- Summarizing Information
- Recommending Resources
- Conversational Role-playing
- Providing Programming Help
- Offering Explanations on Concepts

NOT good at

- Analyzing for relevance
- Reading in Emotion and Empathy
- Understanding Context
- Catching copyright issues
- Memory of Past Issues and context
- Fact checking, missing relevance
- Memory of Past Interactions
- Deeper understanding of personality
- Copyright policing
- Catching bias

Practically speaking, what is Generative AI good at, really?

IDENTIFY

Finding specific elements

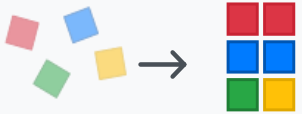
SUMMARIZE

Condensing into key piece

MERGE

Combining separate elements

ORGANIZE

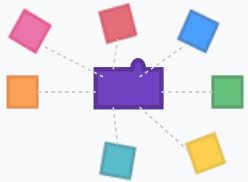


Arranging into categories

DRAFT

Framework before completion

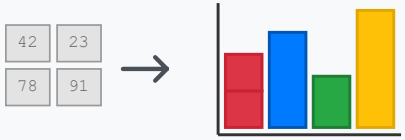
BRAINSTORM



Generating multiple options

Practically speaking, what is Generative AI good at, really?

VISUALIZE



Transforming data into charts

COMPARE

Highlighting differences

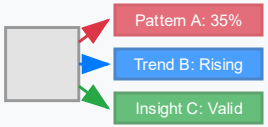
EXTRACT

Pulling out specific data

TRANSFORM

Changing format/structure

ANALYZE



Breaking down patterns

VALIDATE

Checking data quality

Automation: big “A,” small “a.”

Machine Attributes:

Strengths:

- Repetitive actions
- Working with data
- Consistent performance
- Tireless operation
- Scalability

Limitations:

- No instinctive understanding
- Needs context
- No emotional discernment
- No flexibility without training
- Fit drift (function, need, etc.)

Human Attributes:

Strengths:

- Instinctive judgment
- Creativity
- Emotional perception
- Context-sensitive
- Versatile

Limitations:

- Fatigue
- Scale limits
- Errors
- Hates monotony

DISCUSSION: Busy work

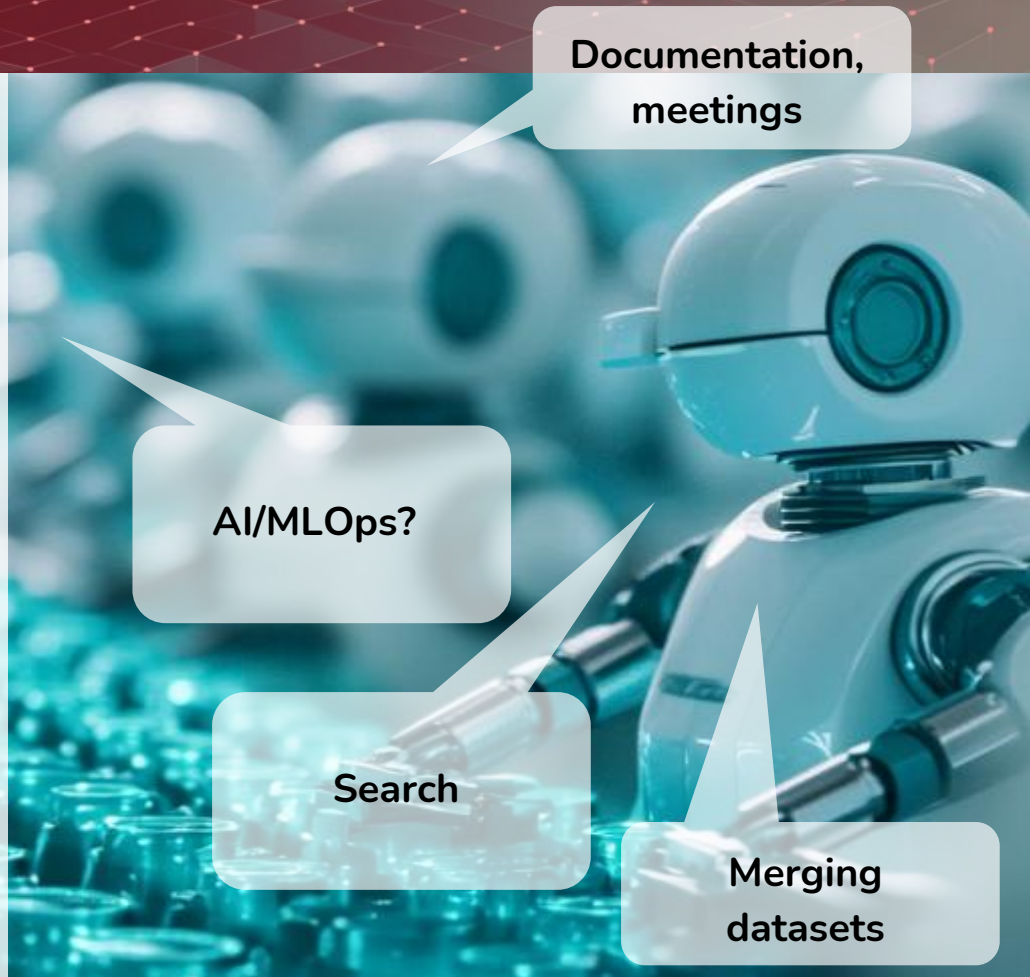
Machine Attributes:

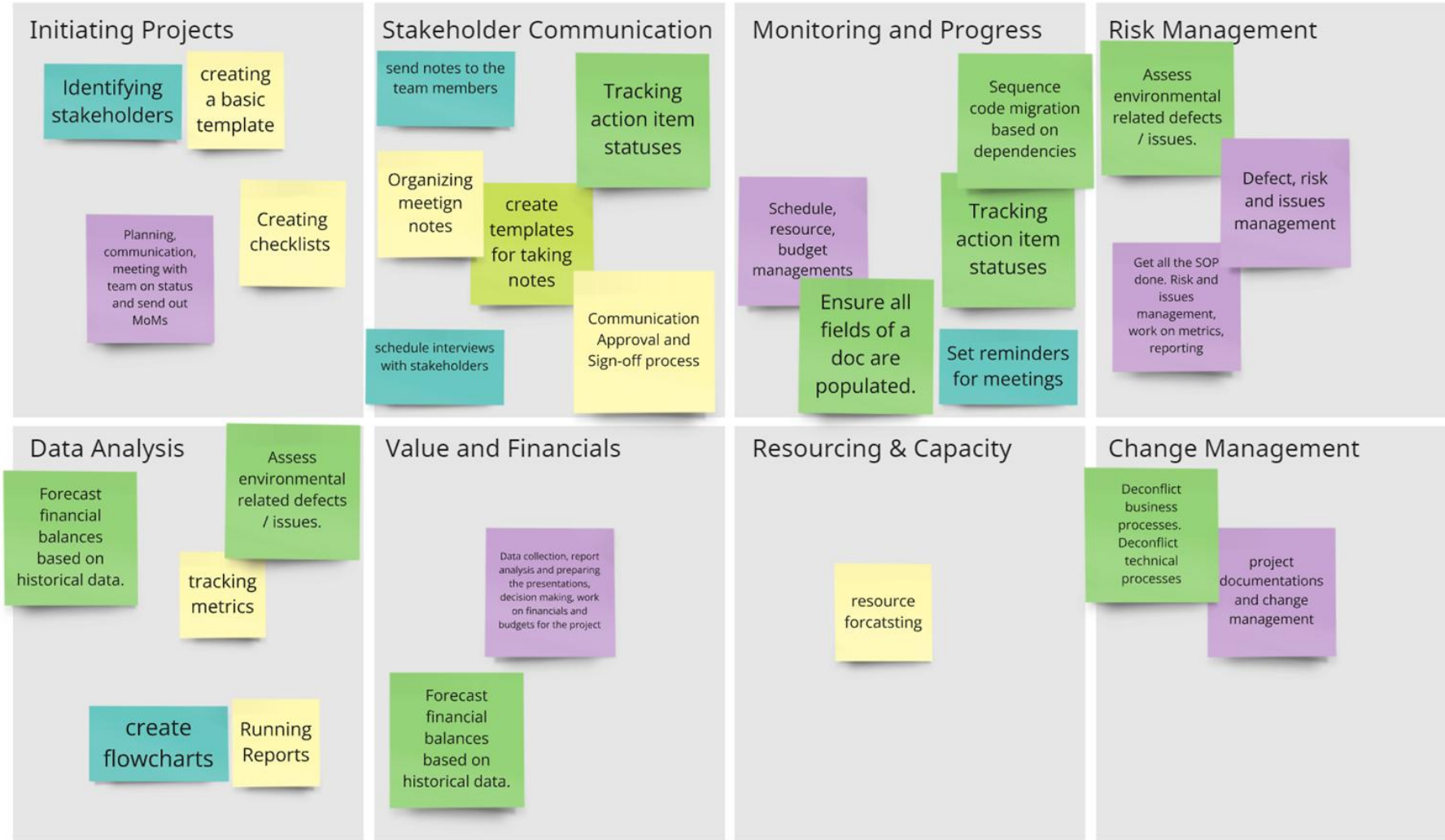
Strengths:

- Repetitive actions
- Working with data
- Consistent performance
- Tireless operation
- Scalability

Limitations:

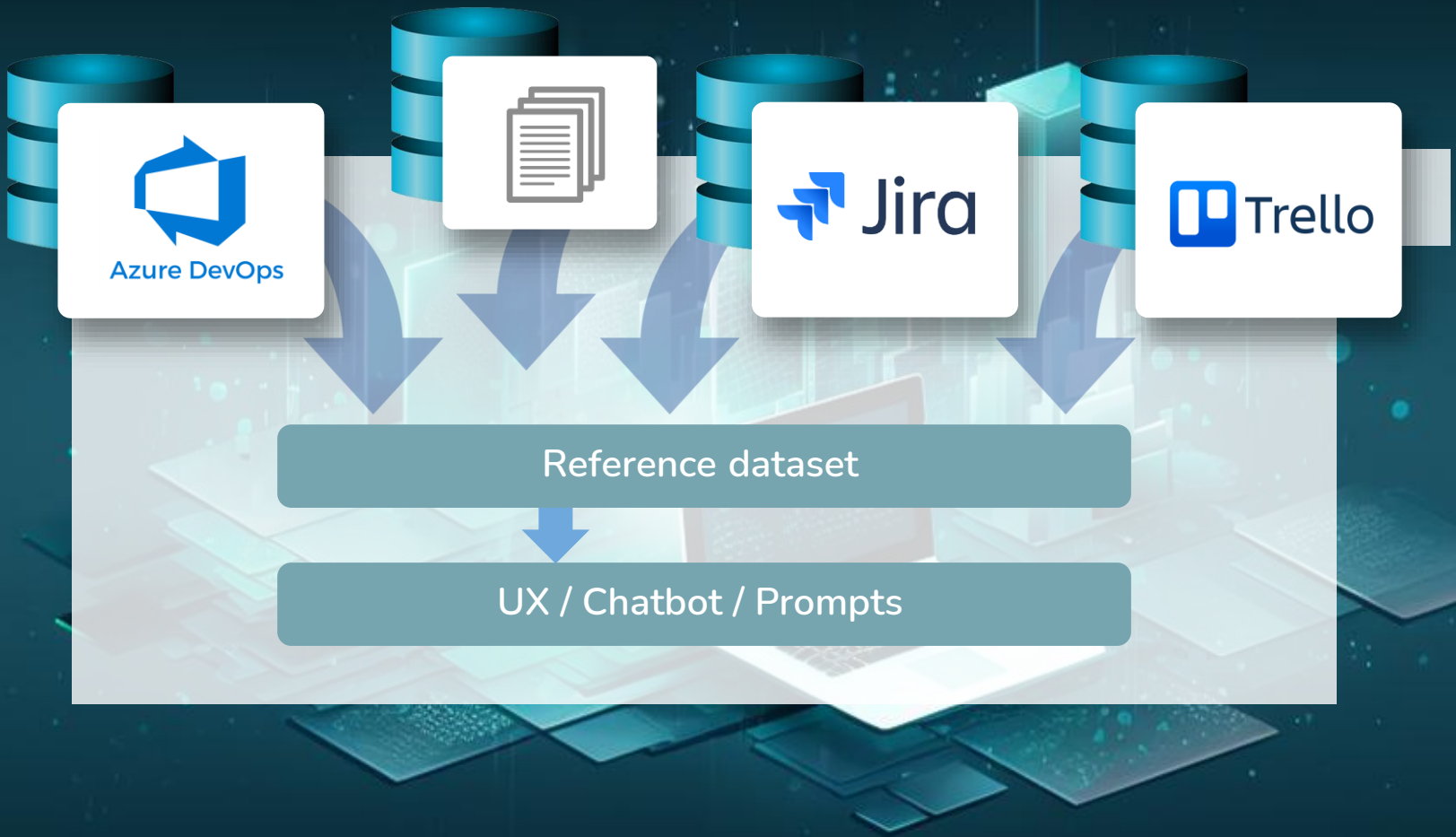
- No instinctive understanding
- Needs context
- No emotional discernment
- No flexibility without training
- Fit drift (function, need, etc.)




Initiating Projects
Identifying stakeholders
creating a basic template
Planning, communication, meeting with team on status and send out MoMs
Creating checklists
Stakeholder Communication
send notes to the team members
Tracking action item statuses
Organizing meetign notes
create templates for taking notes
schedule interviews with stakeholders
Communication Approval and Sign-off process
Monitoring and Progress
Sequence code migration based on dependencies
Schedule, resource, budget managements
Tracking action item statuses
Ensure all fields of a doc are populated.
Set reminders for meetings
Risk Management
Assess environmental related defects / issues.
Defect, risk and issues management
Get all the SOP done. Risk and issues management, work on metrics, reporting
Data Analysis
Forecast financial balances based on historical data.
Assess environmental related defects / issues.
tracking metrics
create flowcharts
Running Reports
Value and Financials
Data collection, report analysis and preparing the presentations, decision making, work on financials and budgets for the project
Forecast financial balances based on historical data.
Resourcing & Capacity
resource forcatsting
Change Management
Deconflict business processes. Deconflict technical processes
project documentations and change management

DEMO: Project Data Exports & Imports

Data Sources:

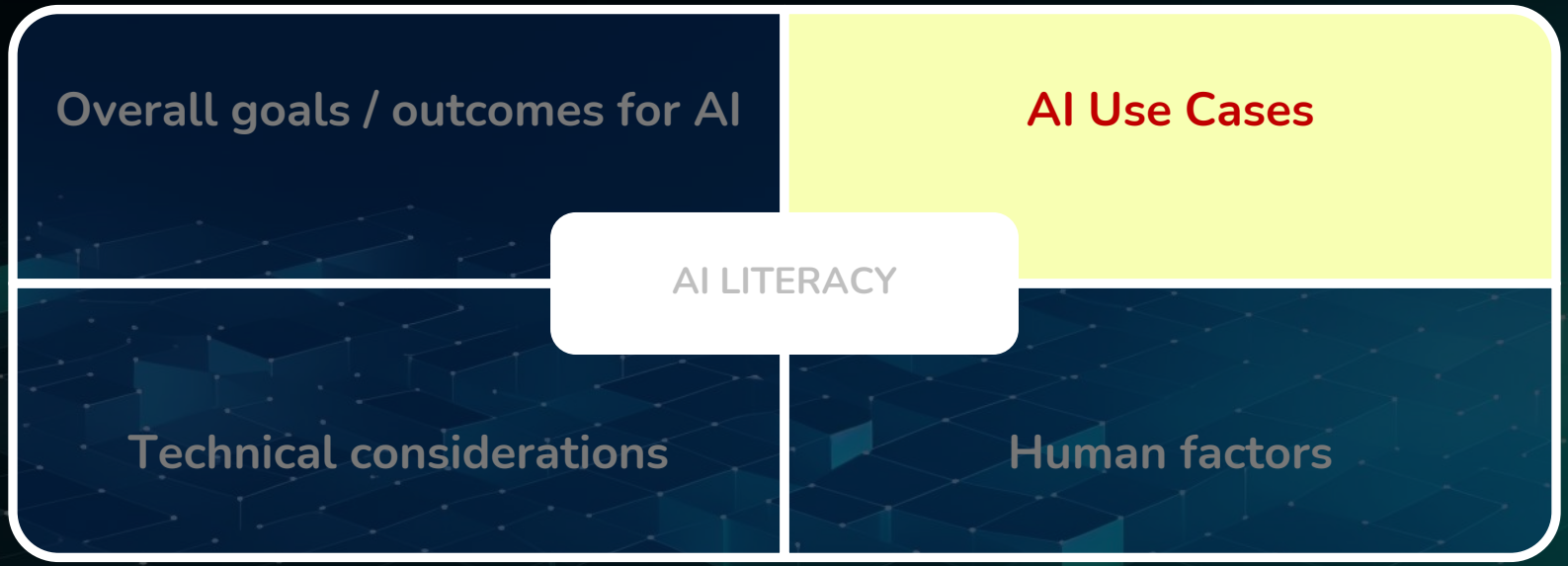


DEMO: Stakeholder Sentiment Analysis

Activity

Practice:

Sentiment Analysis



Tactical use, strategic use, acceptable use

Why?

- **Efficiency?**
- **Do something new? New service, new product?**
- **More speed?**
- **Save time?**
- **Save money?**
- **Adoption seems important?**

And worth considering…Operational or customer-facing?

Tactical use cases are usually about saving time.

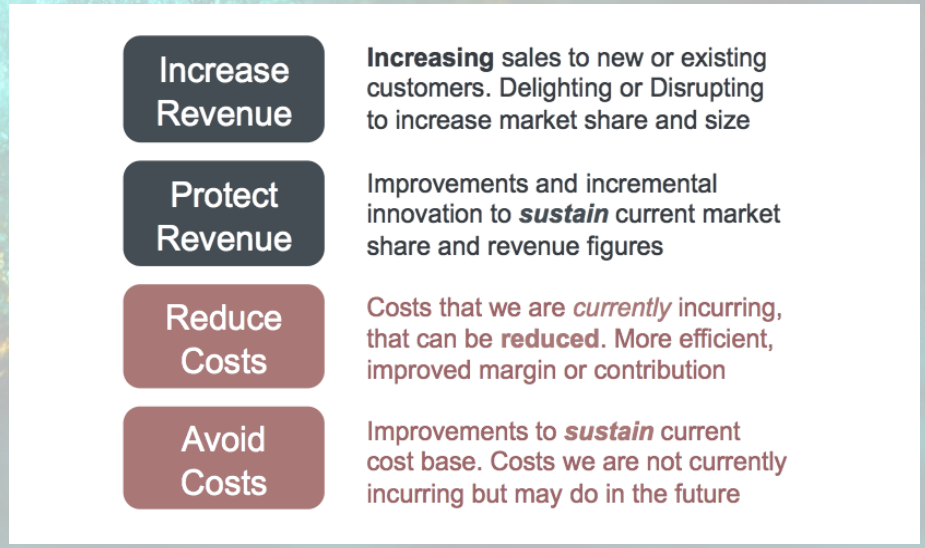
Customer (internal or external) use cases are about creating value.

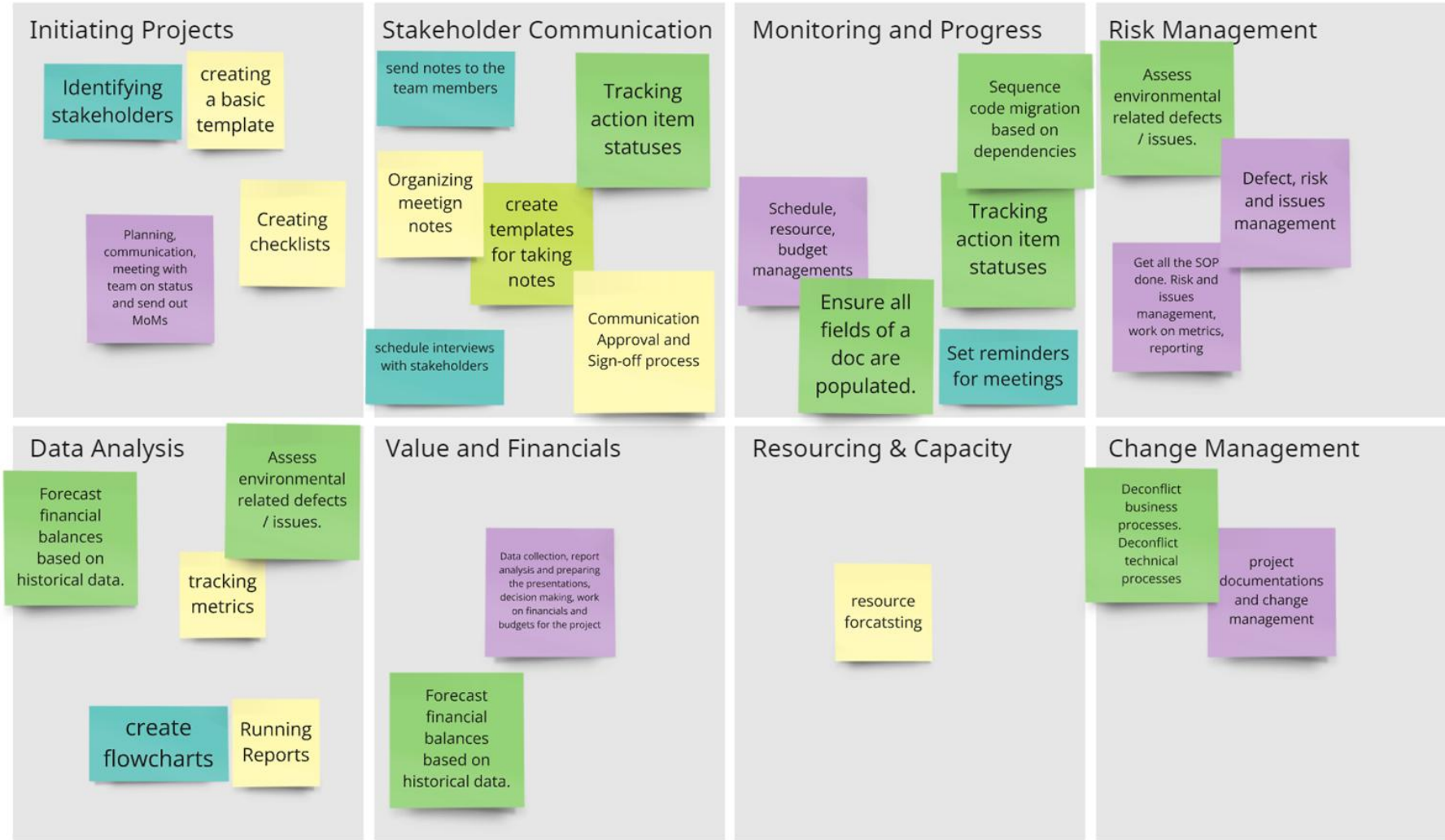
AI can’t understand your framework for value.

Our approach to AI has to align with how we communicate our “why” and definition of value.

- Mission driven?
- Profit-driven?
- Do we take a portfolio approach?
- Do our people optimize for local or system-wide value?
- Product P&L?

Example:

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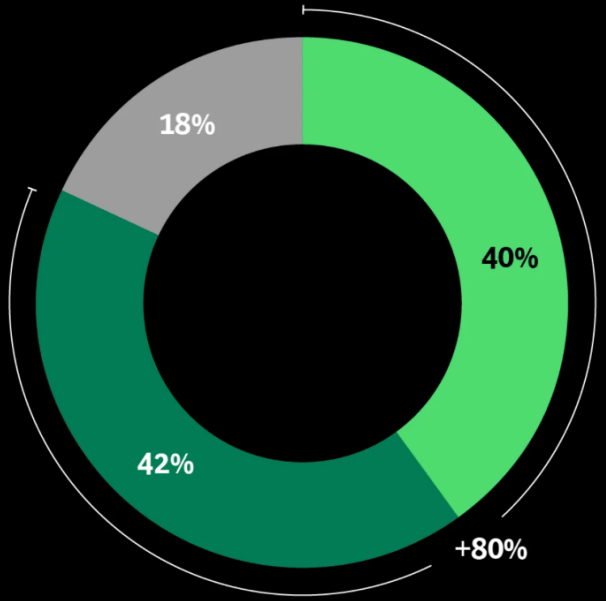
BCG – Applying the Digital Acceleration Index

Deploy AI in everyday tasks to realize 10% to 20% productivity potential

Reshape critical functions for 30% to 50% enhancement in efficiency and effectiveness

Invent new products and services to build long-term competitive advantage

They focus +80% of their AI investments in reshaping critical functions and inventing new products and services



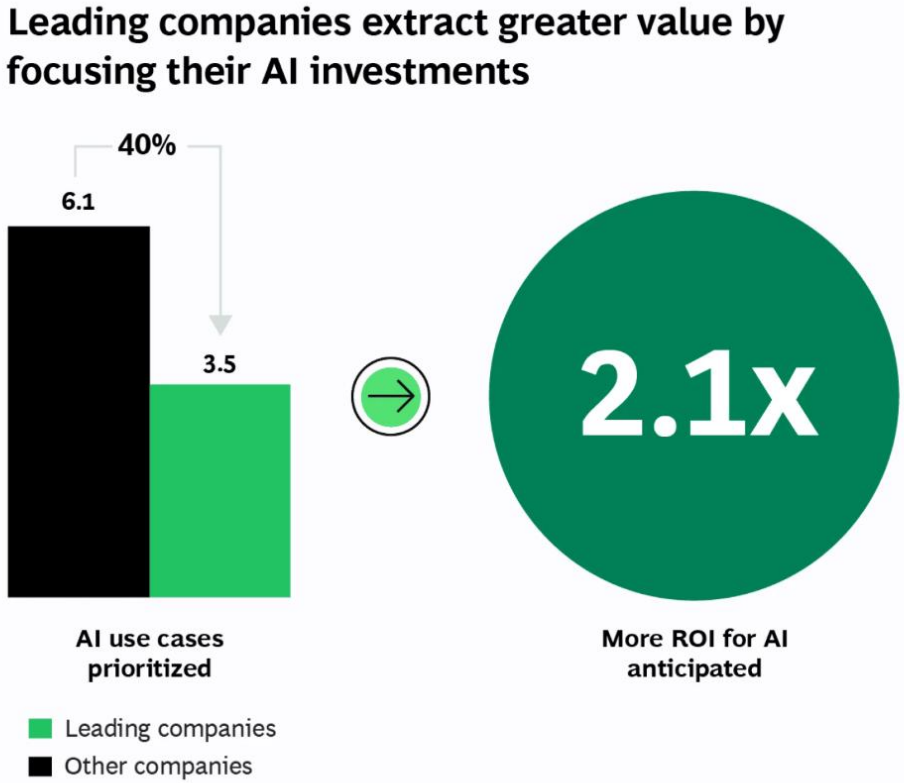
Deploy
Individual-productivity focused

Reshape
Process-level productivity aimed at reshaping critical functions

Invent
Company-level innovation core to the business

BCG – Applying the Digital Acceleration Index

- BCG says in reality, companies go too broad and dilute their efforts across multiple pilots and initiatives
- Lower ROI as a result



Organizing our thoughts – use case examples

Customer-facing value

- Optimized search, NLP search
- Scanning and finding insights in data
- Customer chatbots & virtual assistants
- Adaptive billboards & ads
- Real-time translation

Employee-facing value

- Content generation
- Notetaking, calendar, productivity integration
- Data merge, analytics, visualization
- Drafting documents
- Platform integration

Application-oriented value

- Evaluating project prioritization
- Application development assistance
- Code base analysis
- Debugging
- Documentation
- Personalized coding suggestions

Data-oriented value

- Recommendations
- Automated analytics
- Insights, analytics, visualizations
- Streamlining data-dependent business process
- Streamlined research
- Mapping solutions to problems

So many kinds of work to think about!

Employee agents

Team/user level retail AI use for work

- Should tie to employee use case
- Should save employees time
- Should translate to efficiency and speed value propositions
- May not need much development

Internal Generative AI platforms

- General use private LLMs
- May be a customized Azure or OpenAI environment
- May be a managed service vendor
- Development project, integration project, or both

Customer agents

- Specifically Gen AI powered
- NLP abilities for products and features
- May tie to the internal GenAI tool
- Needs a development project
- Designed to produce business value

Other types of AI

- Other ML applications
- Machine vision
- Data extraction tools
- Algorithmic AI
- Internally developed AI products

Use case example: IT ticketing & troubleshooting

AI has the potential to improve IT support and service management dramatically.

- **Classify and route tickets faster** – Reduced response times for internal IT requests
- **Instant answers from knowledge bases** – Suggest **relevant articles** before human intervention.
- **Predict common IT issues** – Analyze patterns in service requests.

📌 **Case Study: New York City's 311 AI Chatbot**

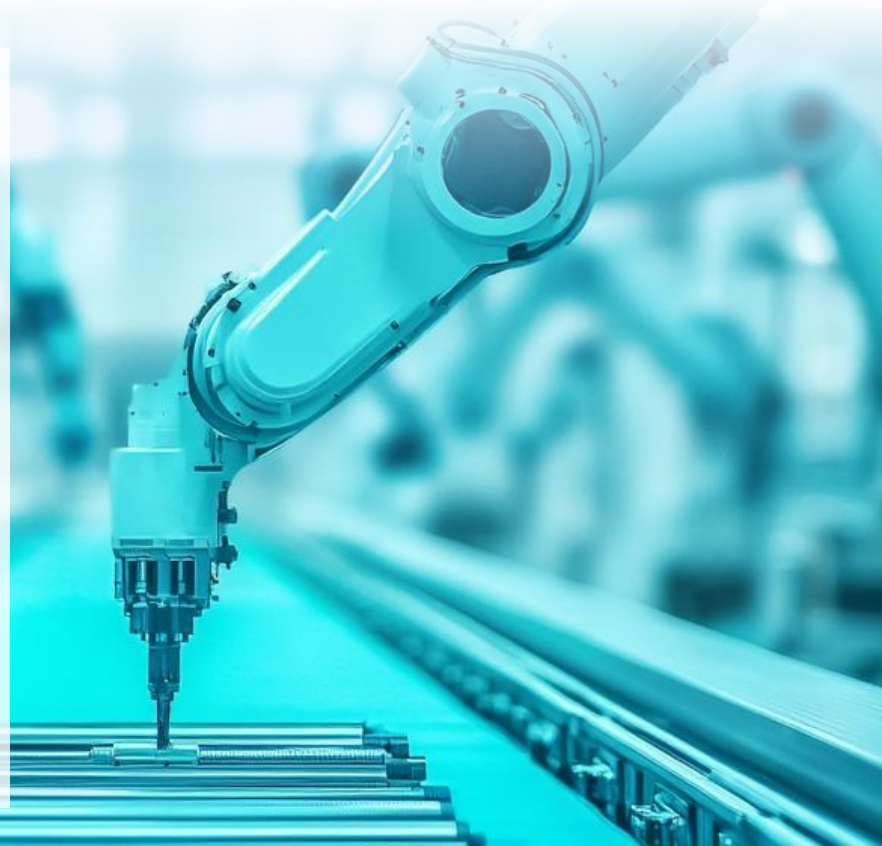
AI filters & prioritizes inquiries before human response. Reduced call volume, faster responses.

Where can AI improve workflows?

Adding value with AI

A few more examples:

- **Helpdesk & IT support, ticketing** – Chatbots, help desk response time.
- **Project management assistance** – AI-generated meeting summaries, risk tracking, reporting.
- **Troubleshooting & service management** – Classification & knowledge base improvement. SLA automation, agent actions.
- **Documents, compliance, reporting** – Contract analysis, FOIA request processing.



Project Documentation & Reporting

- **Meeting minutes, summarization** – AI can extract action items from project discussions.
- **Documentation assistance** – AI can help format reports for audits.
- **Automation for policy & risk assessments** – AI can cross-reference policies to detect compliance gaps.

Example: AI tools like **Microsoft Copilot** and **Google Gemini** are being widely used already.

Non-Negotiables

- **We start with business case / outcome** – We have to start here, always. What it is it we want to achieve in our team, unit, or organization?
- **Data governance & stewardship** – Fundamental for any base of value which relies on organizational data, which our AI practices will.
- **Understand our use cases** – Think of this as a portfolio hierarchy. We must define strategic use cases as well as individual role use cases, and some in between.
- **Change Management** – The technology is moving quickly. Adaptive, agile work patterns and continuous learning has to be baked into our playbook.
- **Policy and governance** – Will they let us use it? Will I let them use it? How will we use it? Do my people know?
- **Adoption** – Who needs to use the AI? What education/enablement is needed?

A template for action

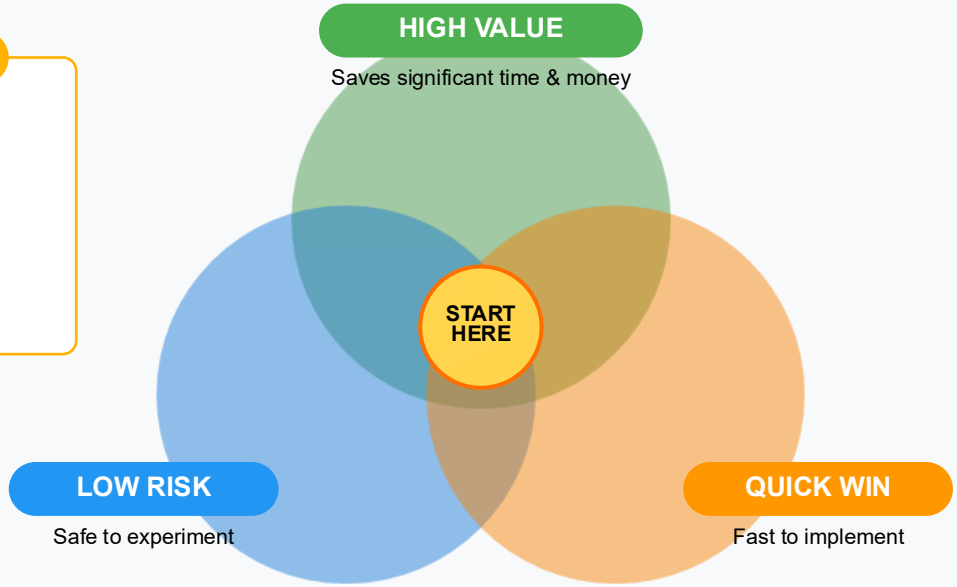
- **What AI opportunity** is most relevant?
- **What's the long-term goal?**
- **What's the first small step** you can take to explore it?
- **Who do you need buy-in from?**
- **What risks or challenges** might you encounter?
- **How will you measure success?**

Finding a realistic AI sweet spot

The best pilots sit at the intersection of value, safety, and speed

Sweet Spot Examples

- Meeting summaries
- Report first drafts
- Email templates
- Process documentation
- Training materials
- FAQ responses



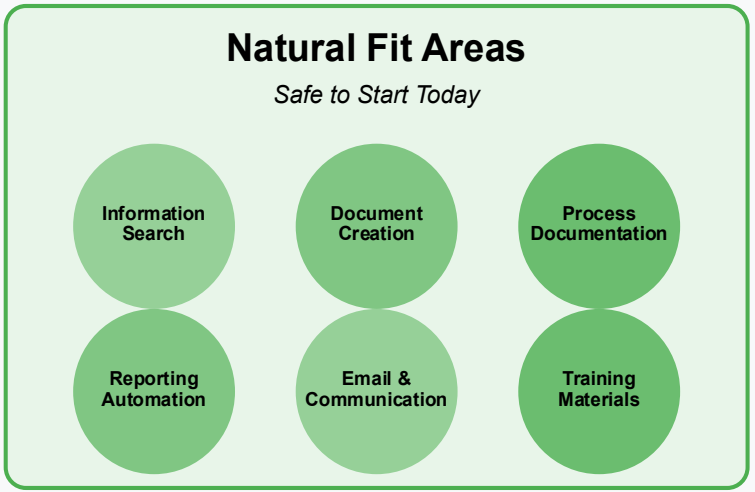
"Start where you're frustrated, not where you're regulated"

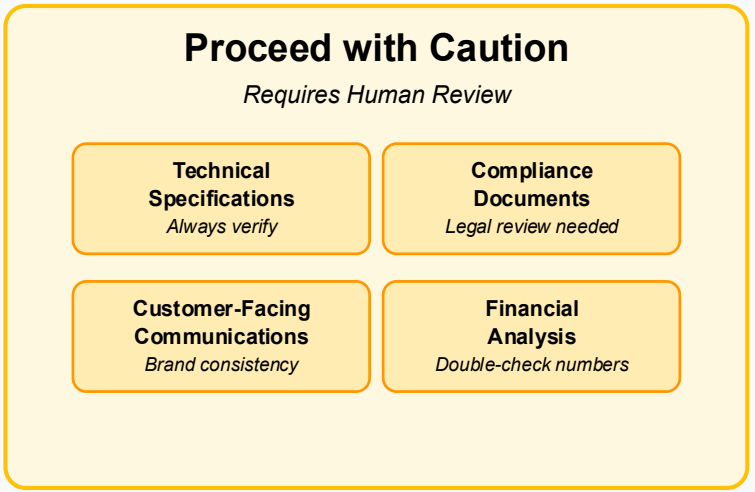
Questions to ask yourself

- What repetitive tasks take up most of your team's time?
- Where do errors or inconsistencies frequently occur?
- Which processes could benefit from faster information retrieval?
- What requires accuracy that only humans can verify?
- Where would mistakes have serious consequences?

Focus on augmenting human capability, not replacing human judgment

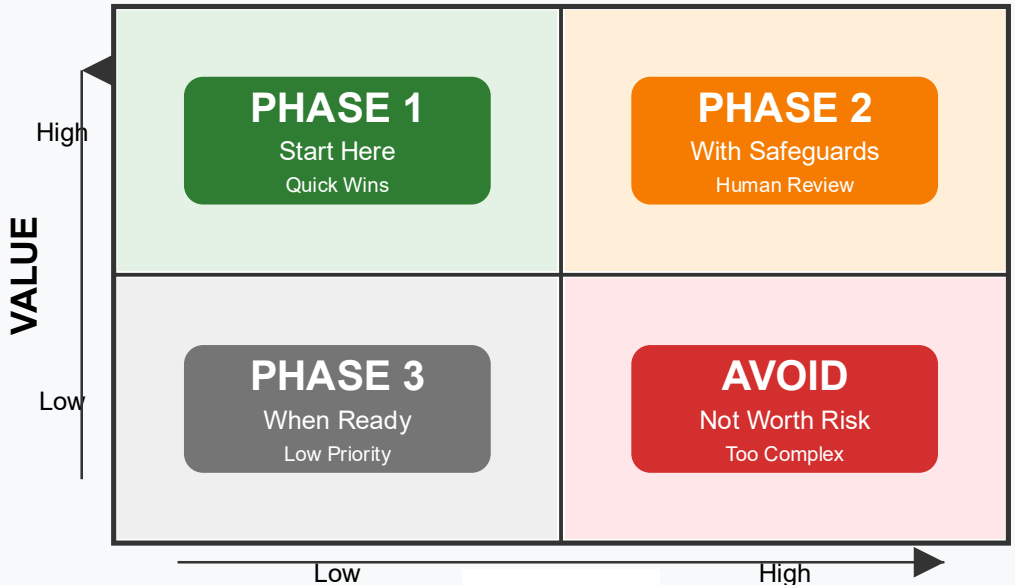
Thinking about AI opportunities





Prioritizing AI opportunities

Start in the high-value, low-risk quadrant



Set up pilots and use cases for success

DO THIS

- **Start with volunteers**
  Find enthusiasts who want to experiment
- **Provide clear guidelines**
  Set boundaries for safe experimentation
- **Celebrate small wins**
  Share successes to build momentum
- **Build internal community**
  Create forums for sharing learnings
- **Document everything**
  Track what works and what doesn't

AVOID THIS

- **Don't mandate adoption**
  Force creates resistance and fear
- **Don't start mission-critical**
  High stakes increase failure risk
- **Don't skip human review**
  AI outputs always need validation
- **Don't ignore user feedback**
  Early concerns prevent big problems
- **Don't rush to scale**
  Prove value before expanding

Remember: AI adoption is a journey, not a race
Each team moves at their own pace - and that's okay

Set up pilots and use cases for success

SAMPLE

IDENTIFY

- Map repetitive tasks
- Estimate time spent
- Check data quality
- Find pain points

Week: 1-2 ?

EVALUATE

- Score value/risk/speed
- Select 1-2 pilots
- Define success metrics
- Get IT partnership

Week: 3-4 ?

PILOT

- Start with individual tools
- Document process
- Gather feedback
- Measure results

Week: 5-8 ?

DECIDE

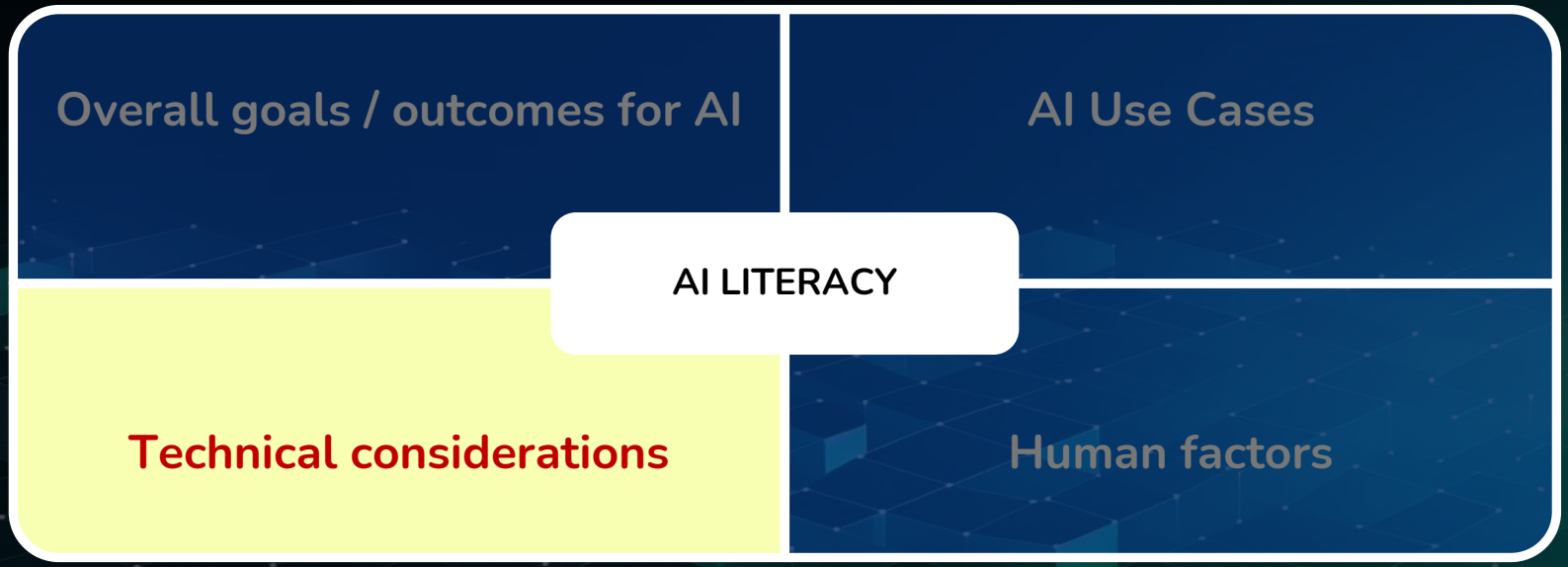
- Review results
- Plan next steps
- Share learnings
- Scale or pivot

Week: 9-10 ?

Back to our whiteboard

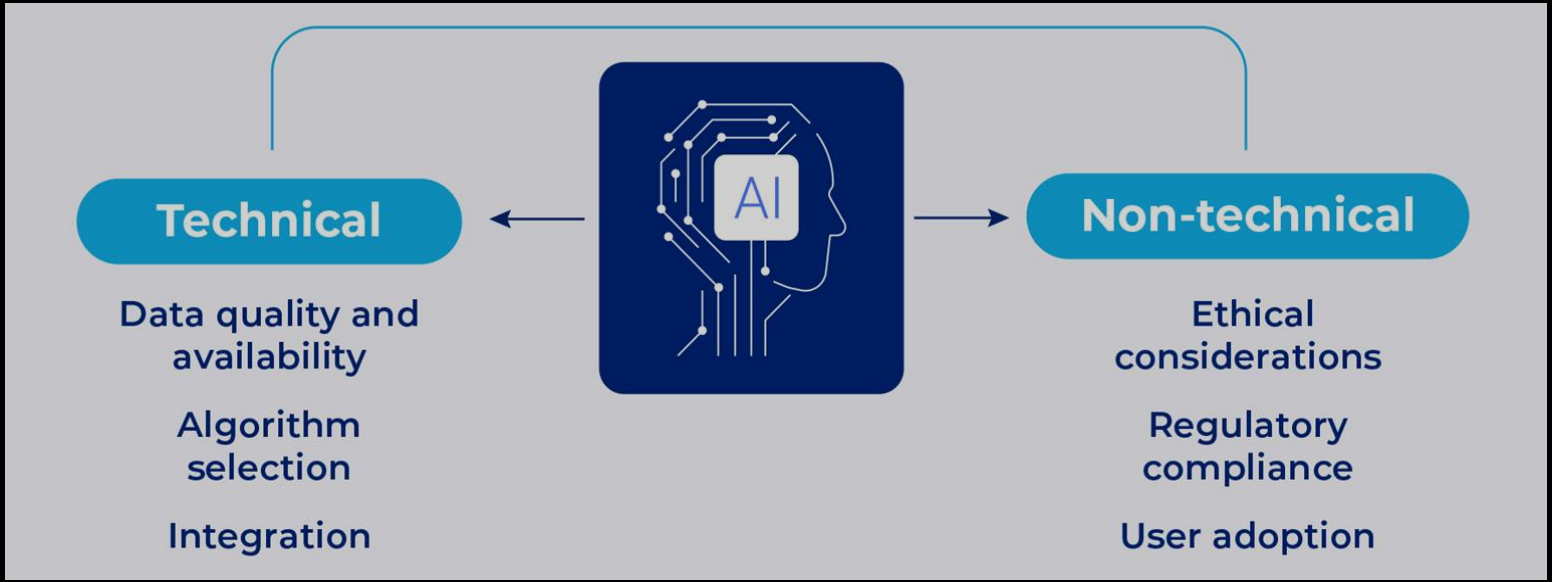
Starting with our automation ideas from yesterday, can we brainstorm a few workflows? Can you identify:

- **Repetitive or manual process** in your department.
- Where **AI could assist (e.g., automation, recommendations, analysis)**.
- **Risks & challenges** of applying AI to this process.



Tools and stacks

Types of AI Challenges



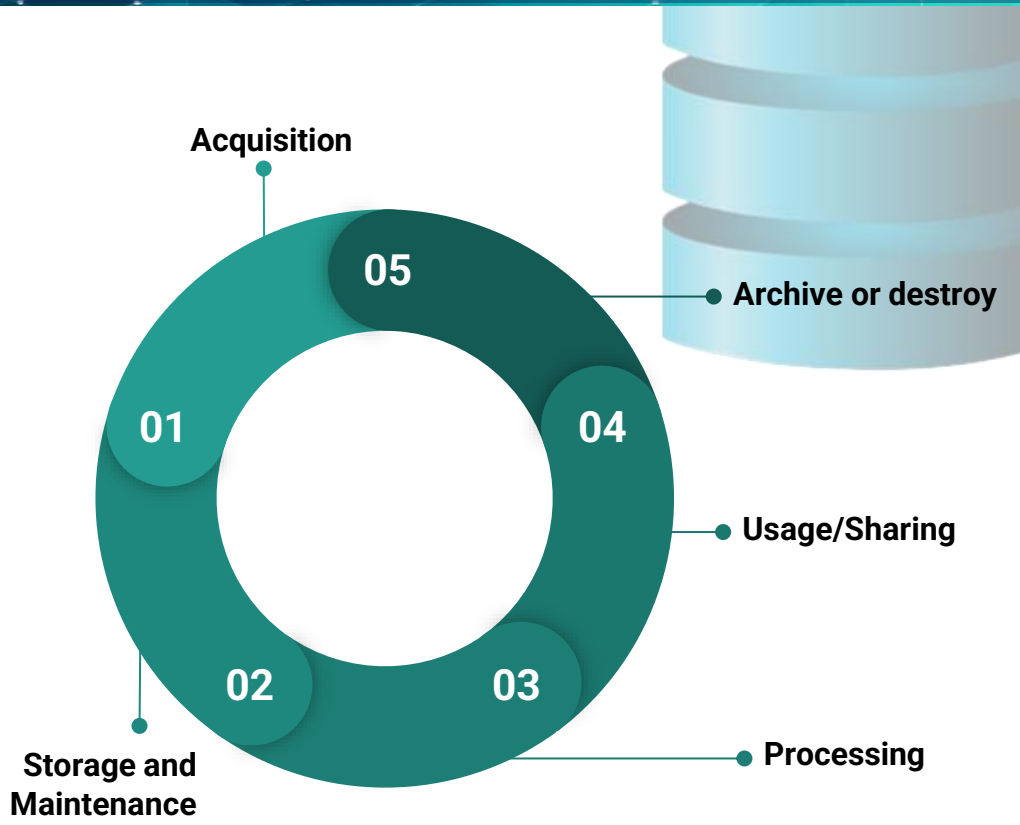
It’s only as good as the data

How do organizations ensure quality, secure data?"

Public tools address some, not all, of these concerns. These statements assume a decision to adopt a private, integrated enterprise AI environment. Does that apply to your situation?

The Importance of Data Governance

- Ensures **Data Quality** and Integrity
- Facilitates **Compliance** with Regulations
- Enhances **Data Security**
- Supports **Ethical AI Use**
- Enables Effective **Data Management**
- Builds **Stakeholder Trust**
- Promotes Data **Transparency** and Accountability



It’s only as good as the data

How do organizations ensure quality, secure data?"

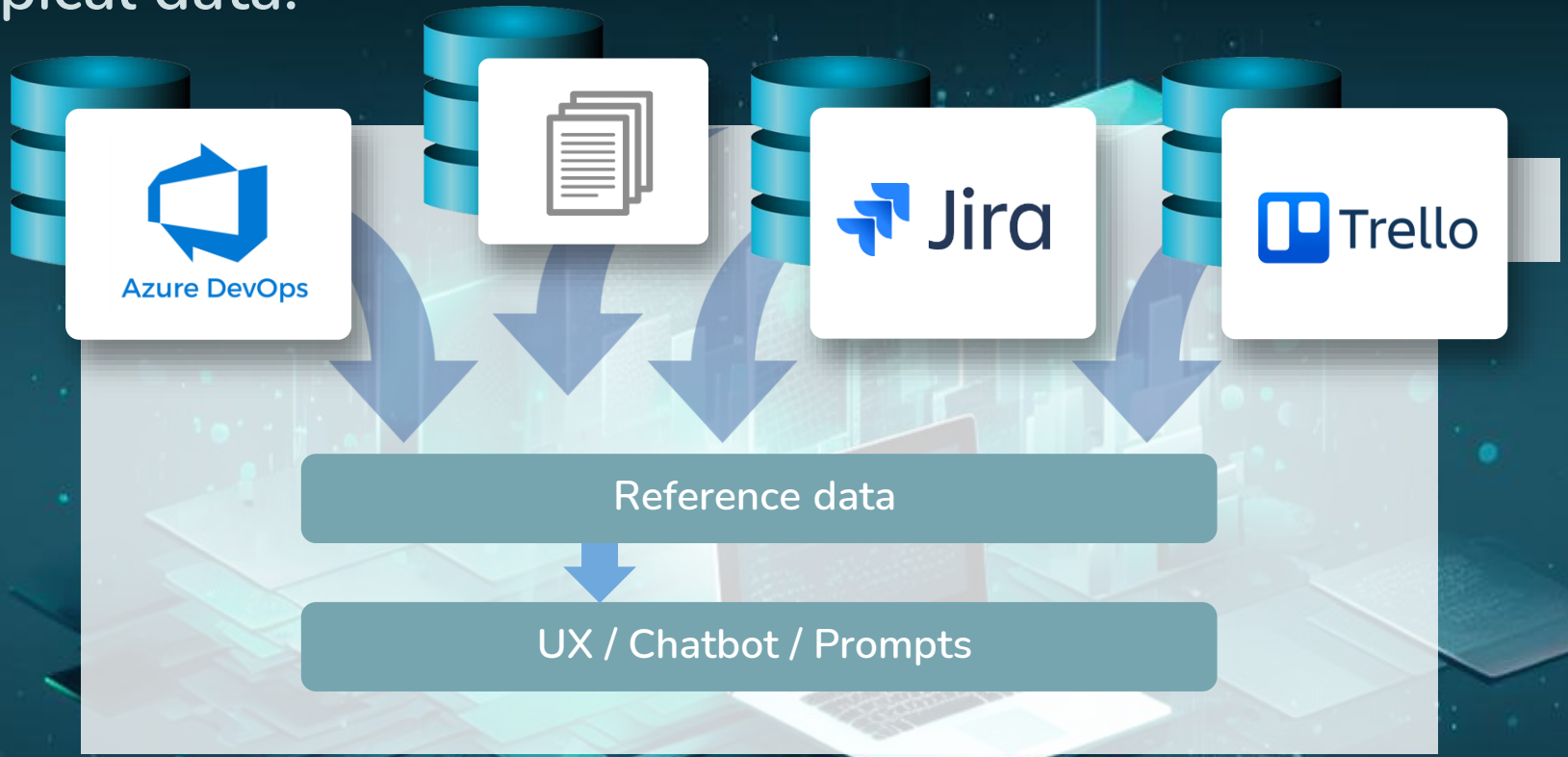
Public tools address some, not all, of these concerns.

The following statements assume a decision to adopt a private, integrated enterprise AI environment. Does that apply to your situation?

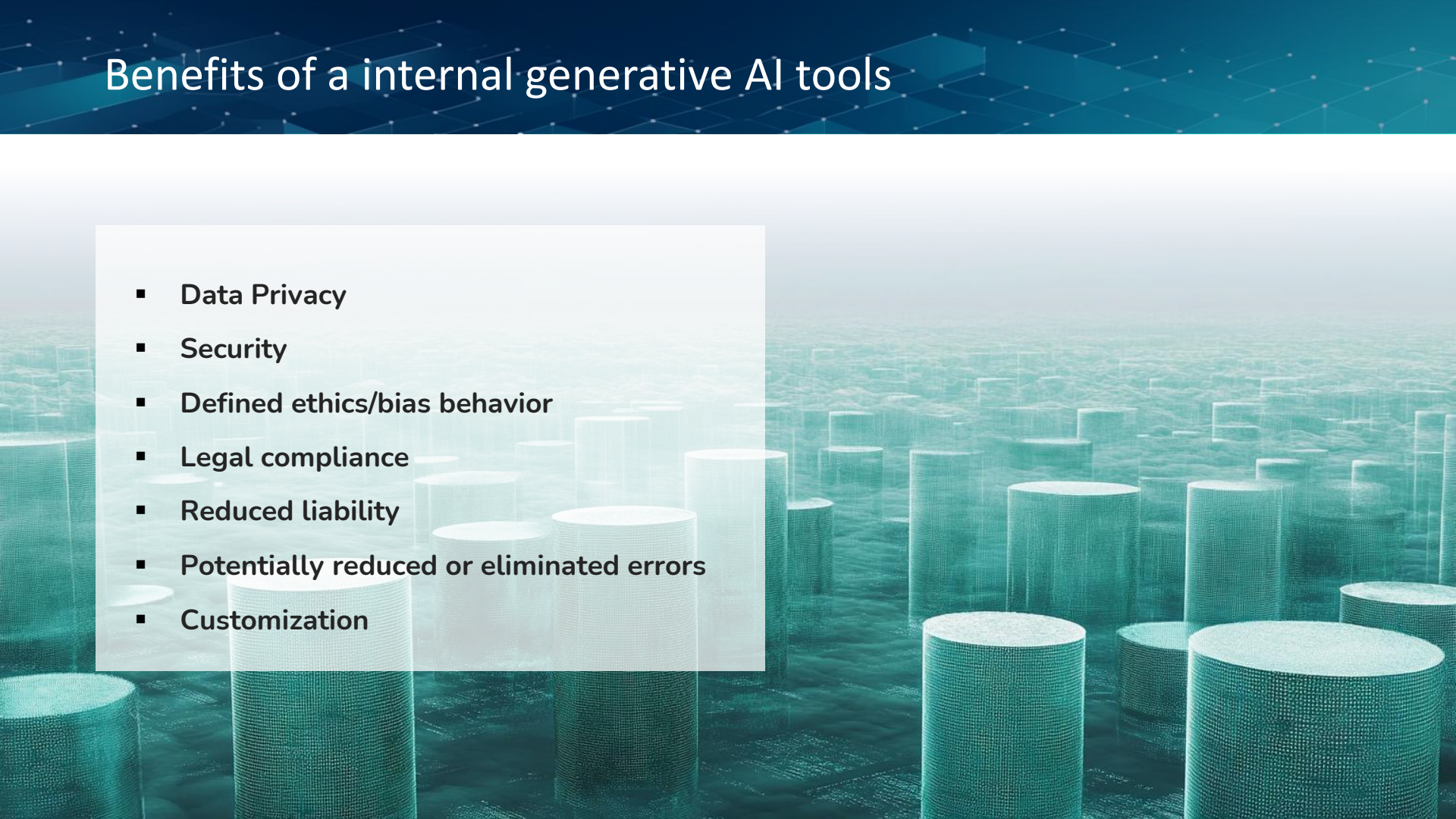
Either way, these statements are true:

- Many have data silos that limit AI’s effectiveness.
- AI works best when trained on high-quality, structured data.
- Data governance & privacy must be in place before deploying AI models.
- Leaders must balance data security with insight/utility

Typical data:

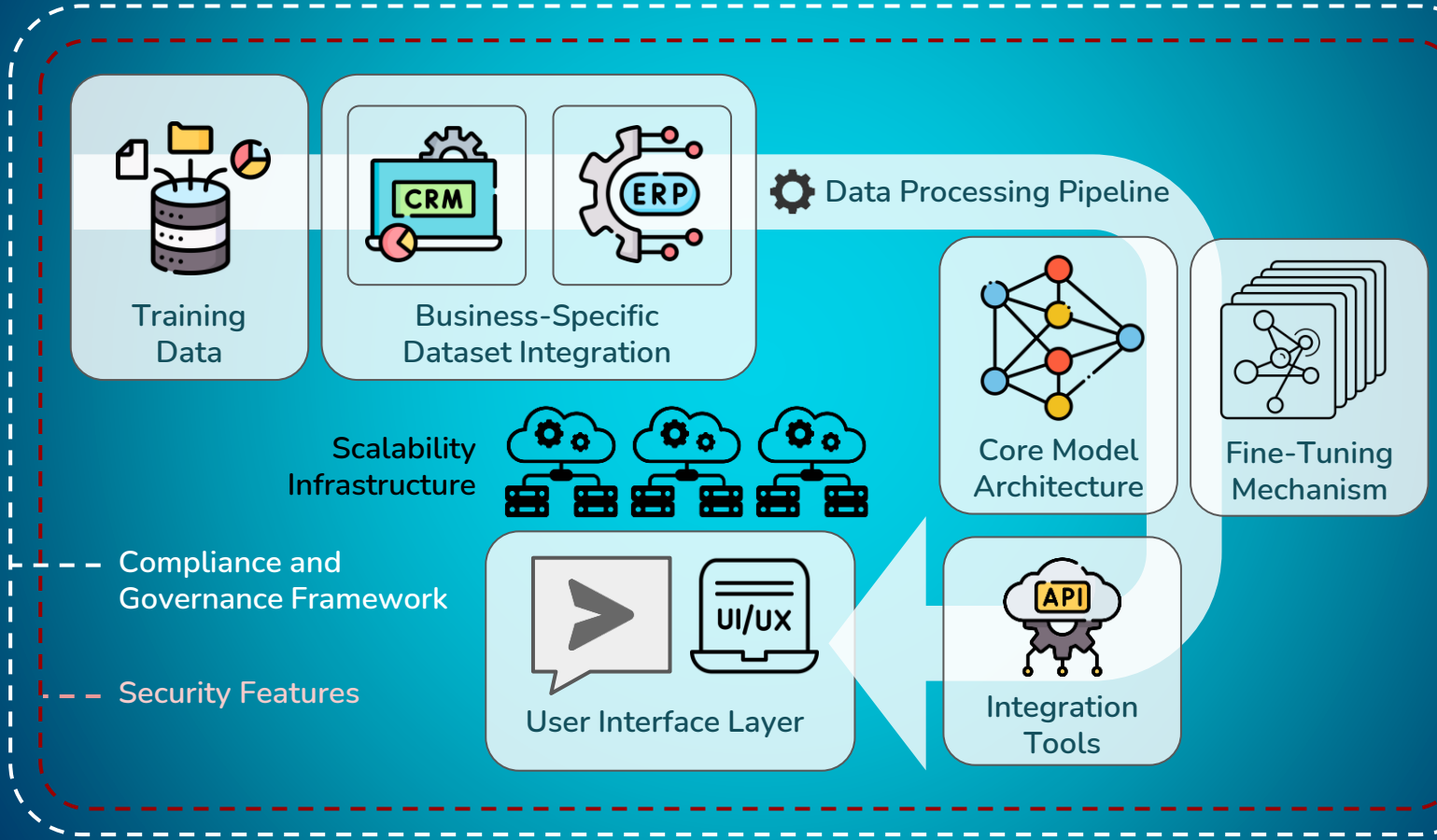


Benefits of a internal generative AI tools

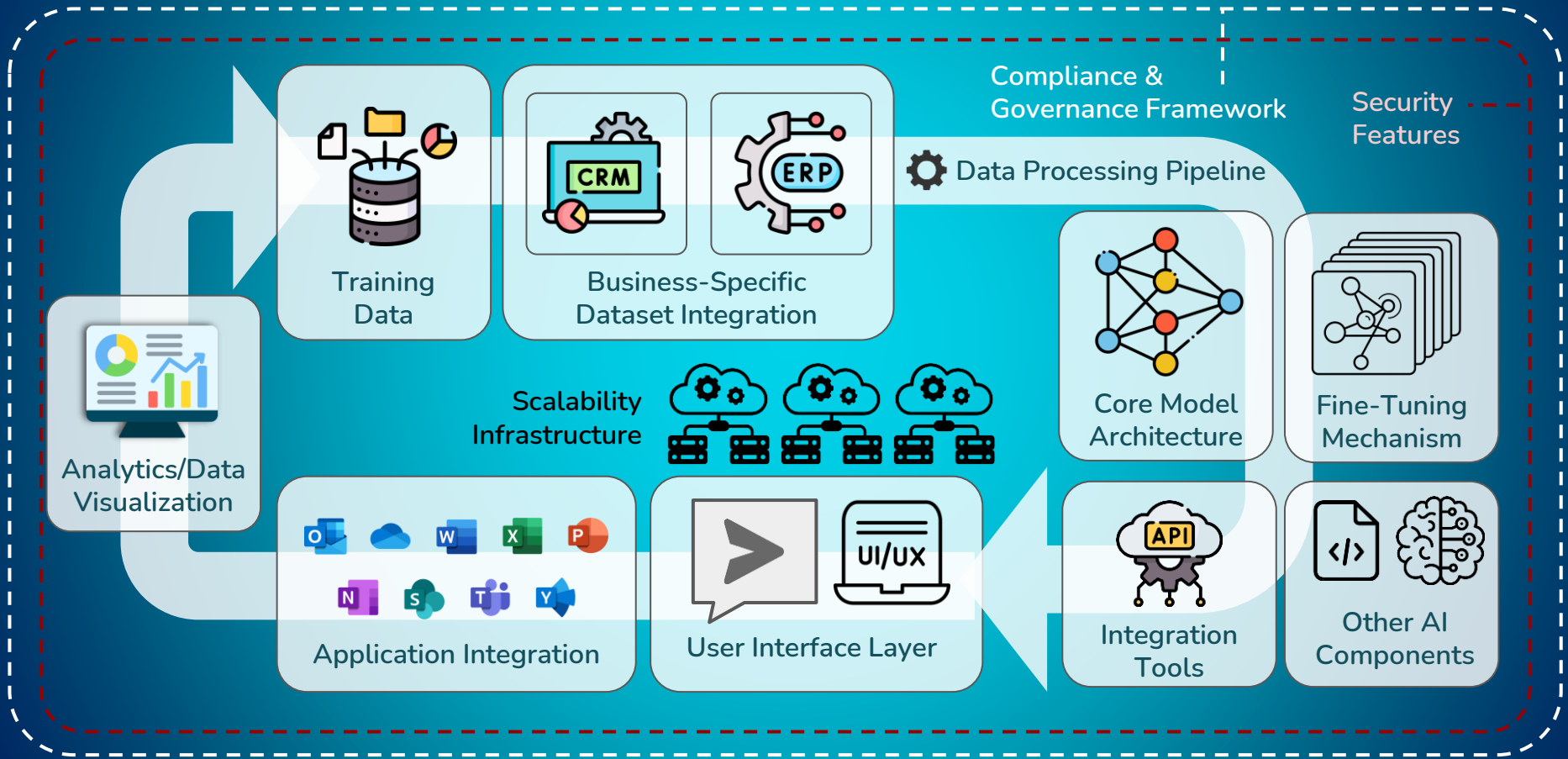


- Data Privacy
- Security
- Defined ethics/bias behavior
- Legal compliance
- Reduced liability
- Potentially reduced or eliminated errors
- Customization

Private LLM Core Components



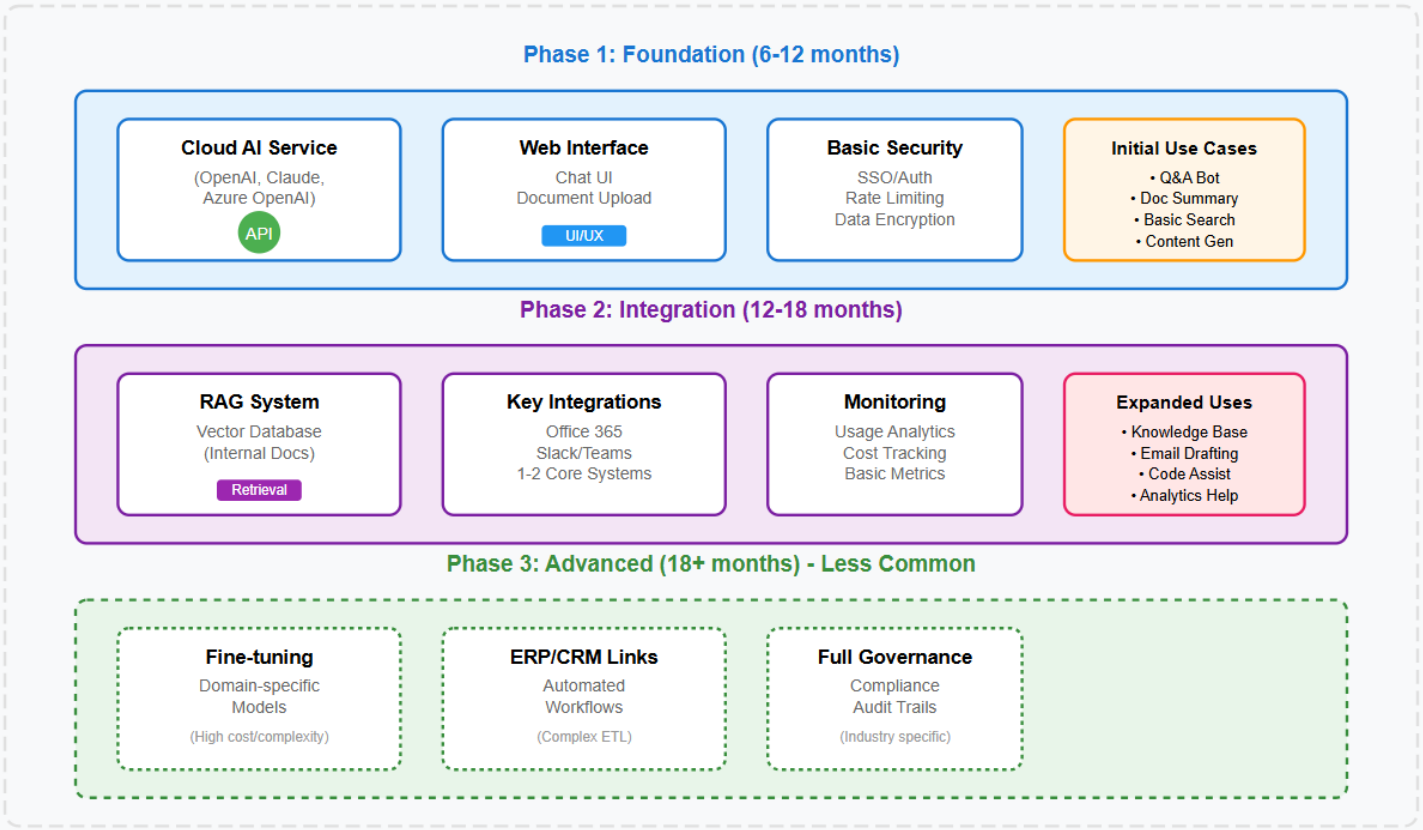
Additional Considerations & Broader Strategy



Private LLM solution range

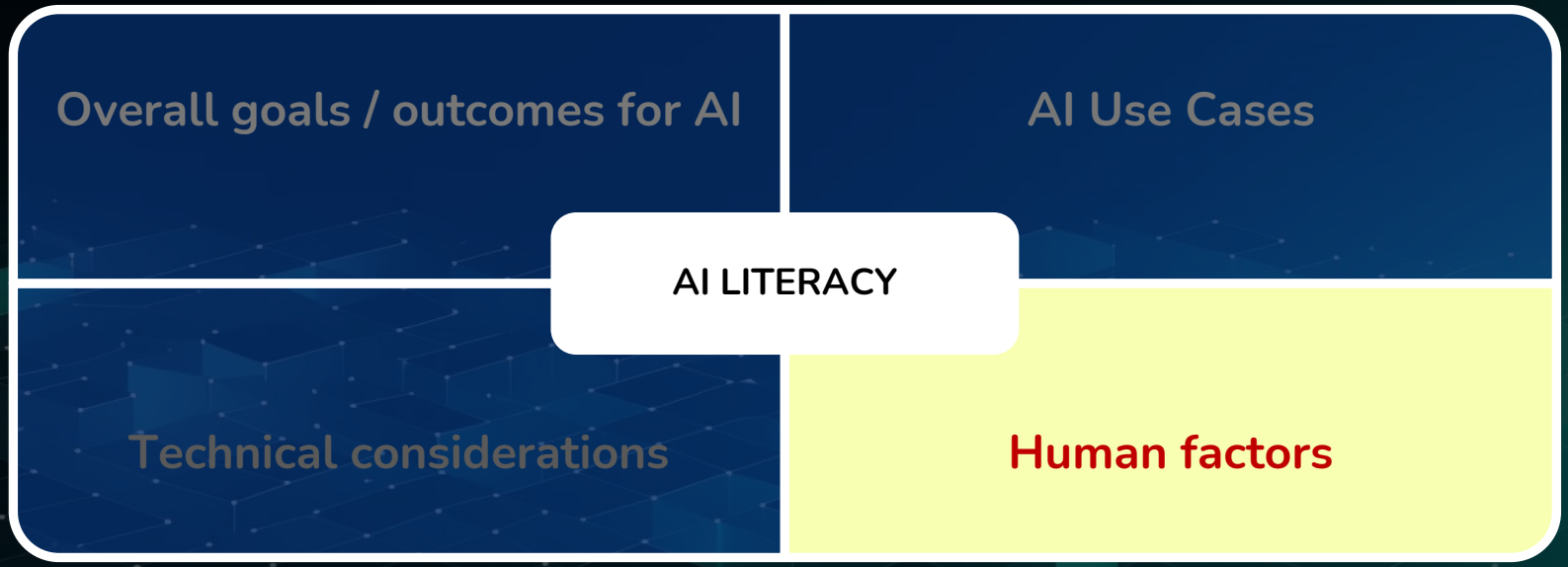
Consideration	Lightweight Solution	Enterprise-Scale Solution
Costs	**$10,000 to $50,000**	**$100,000 to $500,000 or more**
Advantages	• Easier to implement • Less resources • Smaller teams, less complexity	More features, Better integration More support Training resources
Disadvantages	• Lack of features • More manual work • Less integration	Investment Complexity Needs more (machine) training
Timeframes	**1 to 3 months**	**6 to 18 months or more**
Examples	• Huggingface • Ollama	C3AI NVidia Nemo Thomson Reuters' Legal Tracker

Enterprise AI Architecture, Common Implementation Pattern



Key Reality Check

- 80% of enterprises stop at Phase 1 with basic chatbot functionality
- Integration complexity and data quality issues are the main barriers to Phase 2 | ROI must be proven in Phase 1 before additional investment



Adoption, skills, governance, use

The most important thing a leader can do to enable AI adoption…

What is the most important thing a team needs in order to use AI effectively?

The most important thing a leader can do to enable AI adoption…

Clear communication and guidance.

The most important thing a leader can do to enable AI adoption…

Clear communication and guidance.

- **What's the org's vision for AI here?**
- **What's the plan?**
- **What's expected of us?**
- **What tools we can use**
- **What's OK, and what's not?**
- **Where can I find the skills, resources, and guidance I need?**

The most important thing a leader can do to enable AI adoption…

Clear communication and guidance.

- In short, what's the official policy here, and what are the acceptable use guidelines – including resources – that I need to feel confident I'm using AI in the right way.

Poll:

What are your biggest AI concerns?

(Check all that apply)

- ❑ Missing an opportunity to use AI for positive impact
- ❑ Security & data privacy risks
- ❑ Compliance & legal challenges
- ❑ Misinformation & accuracy issues
- ❑ Workforce displacement concerns
- ❑ Lack of leadership or strategy for AI adoption
- ❑ Something else

We can enable effective AI use, but…

There are some hard conversations. Emergent tech, big change initiatives assume some enterprise prerequisites:

- Good leadership?
- Agility?
- Safe, high performance culture?
- Good portfolio management practices?
- High innovation performance?
- Tech dependencies?

Adoption considerations you can help with

To leverage AI and mitigate risks, HR teams should help our organizations navigate acceptable use guidelines, resource availability, and training/enablement.

- **Collaborative tool, not labor replacement**. *(with exceptions)*
- **Experimentation** for solution development
- You need **guardrails**—privacy, security, compliance
- Think about AI investments as **R&D**

Teams & roles

What team do you need?

Teams & roles

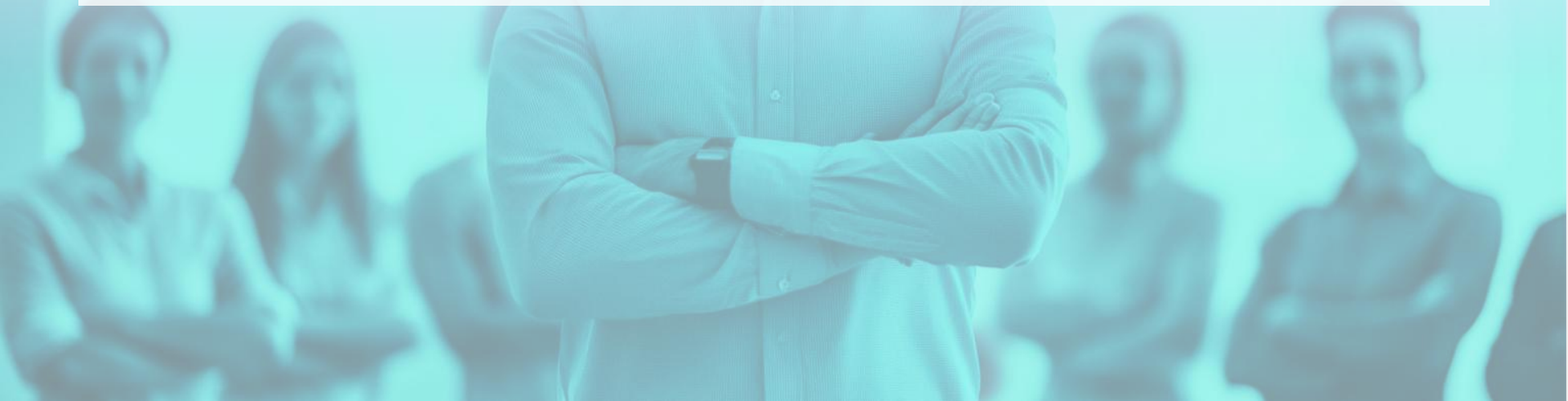
Example: standing up an internal LLM tool

Function	Stakeholder
Data Science	Lead Data Scientist
Data Engineering	Data Engineer
Software Development	Integration Developer
	Frontend Developer
Quality Assurance	QA Engineer
Security	Security Analyst
Compliance	Compliance Officer
Change Management	Change Manager
	Training Coordinator
User Experience	UX Designer

Change management & buy-In

Why teams may resist adoption:

- **Job displacement** – Worry AI will replace roles
- **Unclear AI policies** – Unsure how they are allowed to use it
- **Lack of training & understanding** – Don’t know how to integrate it
- **Concerns over accuracy & trust** – Hallucinations make us hesitant to rely on it



Change management & buy-In

Why teams may resist adoption:

- **Job displacement** – Worry AI will replace roles
- **Unclear AI policies** – Unsure how they are allowed to use it
- **Lack of training & understanding** – Don't know how to integrate it
- **Concerns over accuracy & trust** – Hallucinations make us hesitant to rely on it

We must:

- Communicate the role of AI here: An enhancement, or a replacement?
- Develop clear AI guidelines for staff.
- Provide hands-on AI training to build confidence.
- Encourage early experimentation in low-risk areas.

What do we need to get done?

EASIER, FASTER

HARDER, MORE COMPLEX

ADOPTION & USAGE

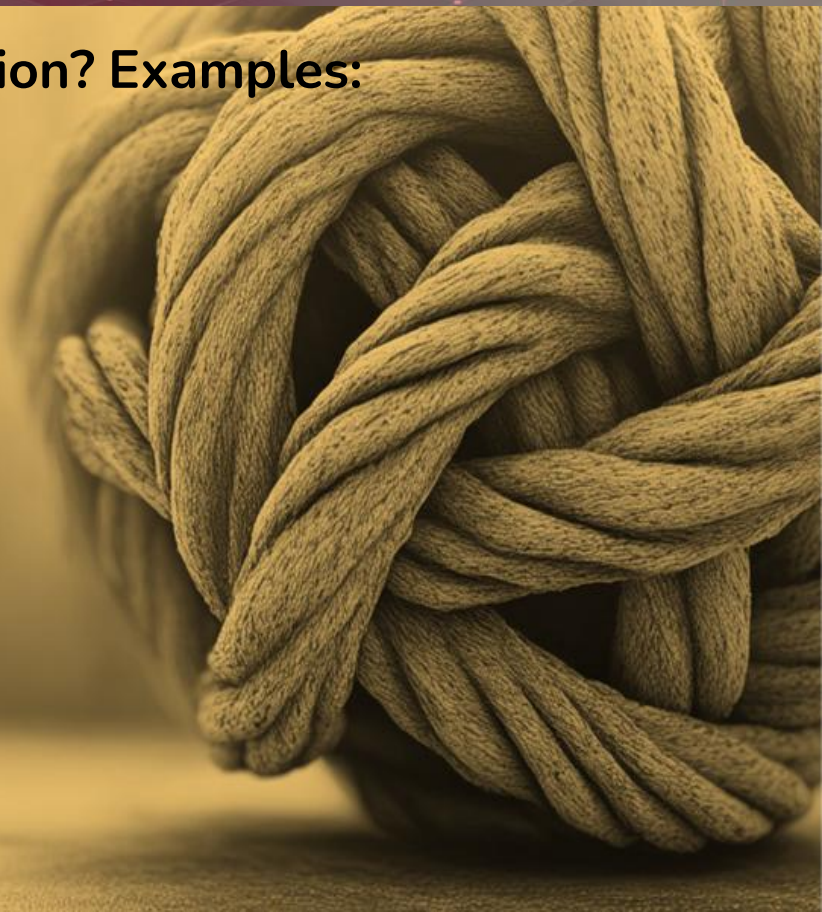
IC-level use cases using subscription tools	**Pilots** and **projects,** well-defined scope	Product/ portfolio approach. COE?	**Progressing** the AI portfolio	Strategic, compliant **AI strategy** executed at scale
IC and team training & enablement	Addressing **resistance to change**	**Acceptable use** policy, structured communication	**Integration** with tech environment	Widespread adoption, integration, metrics & data governance

INTEGRATION & CHANGE MANAGEMENT

We had this discussion:

What are the challenges to your AI vision? Examples:

Org has difficulty with change	Tech is too hard
Regulatory requirements too hard	Something to do with money or cost
Skills or people not available	What else?



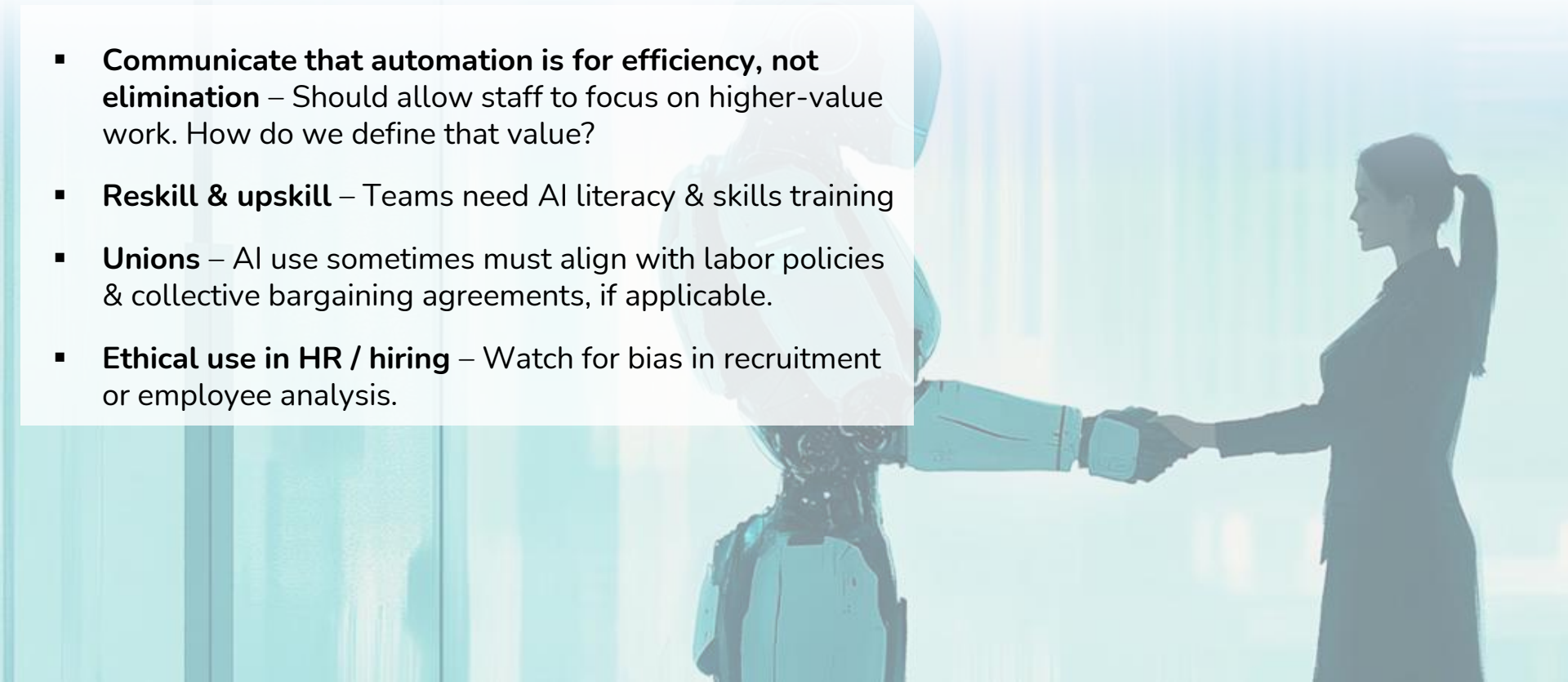
How to address obstacles?

Common barriers:

- Leadership hesitation
- Tools
- Strategy not defined
- Unclear guidance
- Guidance not communicated well
- Procurement
- Employee skills
- Policy/compliance uncertainty
- Security, data privacy
- Misinformation, hallucinations
- Trust & transparency

Addressing some employee concerns

- **Communicate that automation is for efficiency, not elimination** – Should allow staff to focus on higher-value work. How do we define that value?
- **Reskill & upskill** – Teams need AI literacy & skills training
- **Unions** – AI use sometimes must align with labor policies & collective bargaining agreements, if applicable.
- **Ethical use in HR / hiring** – Watch for bias in recruitment or employee analysis.



Learning & training can enable change

- **AI literacy training** – So staff broadly understand and align on AI use, tools, & limitations.
- **Experiment –** Encourage low-risk pilot projects.
- **Communicate & explain policy** – Figure out privacy & compliance. Communicate the guidance on use so people can implement.
- **Daily AI workflows** – Encourage & enable the tactical use, Recognize & socialize the successful examples.

Tools and acceptable use

We immediately run into governance needs. Publicly available tools are powerful, but not compatible with many organizations' policy. How to leverage generative AI tools acceptably?

- **Data risks**
- **IP concerns**
- **Corporate restrictions**
- **Privacy & security**
- **Risk & compliance**
- **Integration with current controls**
- **Private LLM solutions**

Tools and acceptable use

EASY & CHEAP

HARD & EXPENSIVE

Individual accounts on public services (i.e. ChatGPT 4)

Enterprise subscriptions (CoPilot, ChatgGPT Claude)

API Integration: Internal projects on name-brand services

Custom/internal development: Starts involving all the things

Private LLMs

AI Investments

Key considerations

- **Enterprise AI vs. Public AI Models** – Should your agency **buy, build, or integrate** AI tools?
- **ROI & Efficiency Gains** – What **time & cost savings** justify AI procurement?
- **Pilot Programs Before Full Deployment** – Start small, then **scale successful AI applications**.
- **Evaluating Vendor AI Claims** – Ensure vendors **demonstrate transparency, security, and bias mitigation**.

Can we treat AI as an R&D investment?

It's an investment in new long-term capabilities, not just immediate efficiency gains.

Reasons why:

- AI adoption, like any emergent technology, **requires a multi-year strategy to realize substantial value.**
- AI models and tools **improve over time**, requiring ongoing refinement and training.
- Measuring ROI should include a range of value propositions: quick **efficiency gains, service improvement, risk reduction, etc.**

Procurement challenges

- **Strict RFP/vetting processes** – AI adoption can require vendor vetting & regulatory approval.
- **Enterprise AI licensing, or open-source?** – Limited state-approved vendors
- **Budget & cost** – Justify with clear ROI
- **Data residency & cloud restrictions** – AI. models must comply with NY state IT infrastructure policies
- **Regulatory & Ethics Reviews** – AI procurement often requires additional approval layers due to bias risks.

Case Study: AI procurement in state agencies

(Details in notes)

Metrics, OKRs, ROI

Examples

- **Cost savings & efficiency Gains** – Reduction in labor hours for manual processes.
- **Response time improvements** – Faster IT ticket resolution, help desk response, or document processing.
- **Error reduction & accuracy** – Fewer compliance violations, data entry mistakes, or risk misclassifications.
- **Satisfaction & service delivery** – Fewer complaints, faster responses, and greater transparency.
- **New products or value streams**

Example: AI-driven **help desk automation** in a city government led to **30% faster response times** and **20% reduction in manual processing costs.**

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DISCUSSION: Adoption by Experimentation

How to encourage safe AI exploration?

1. What **AI tools or functions** has your team tried or considered?
2. Are there **low-risk AI experiments** your group could pilot? Are you piloting any already?

- Hold **internal AI hackathons** for IT teams to test AI use cases.
- Develop **low-risk pilot projects** to build a playbook.
- Set **clear AI usage guidelines** to ensure compliance, ethical use.
- Give employees a **safe space to experiment.**

Risks & governance

Security & Data Protection

In regulated environments…

AI must comply with **federal/state security mandates**.

CONCERNS:

- **Prompt injection & AI exploits** – AI systems can be manipulated
- **Data residency & sovereignty** – AI tools must store & process data within state-approved infrastructure.
- **AI in cybersecurity monitoring** – AI can detect threats, but also introduces new vulnerabilities.

Example: In 2023, AI-powered **government chatbots** leaked sensitive information due to weak controls. *(Details in notes)*

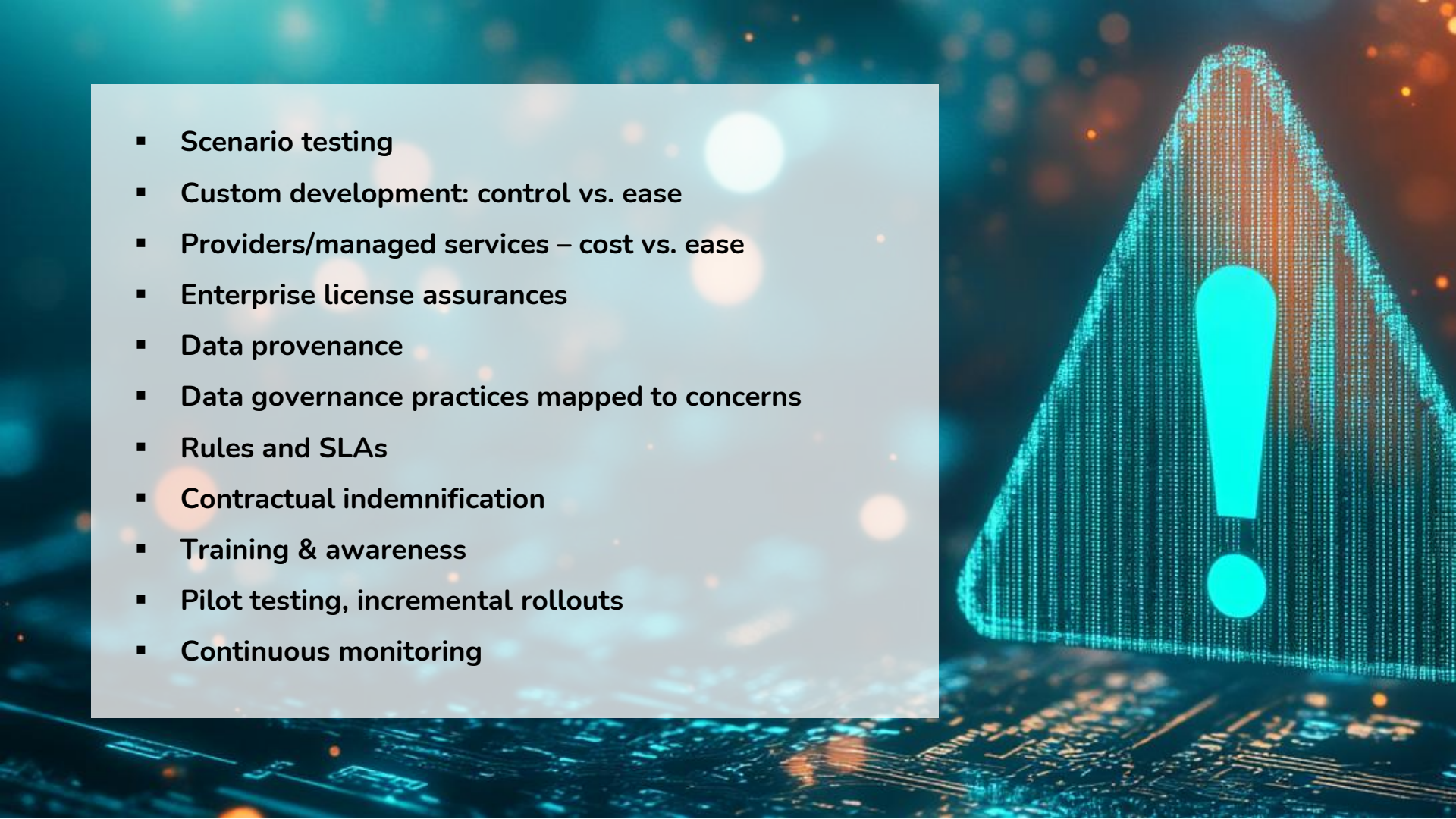
Transparency

Tensions between AI and trust – automation vs. accountability

- Depending on the audit environment, AI may need to be explainable – Black-box AI models might not be acceptable.
- In some jurisdictions public sector AI use must be auditable – Agencies must document AI decisions & provide justification.
- Automation can't eliminate human oversight.

Example: AI in Benefits Processing - Welfare eligibility assessments increased efficiency but faced public backlash due to opaque decision-making processes.

- Scenario testing
- Custom development: control vs. ease
- Providers/managed services – cost vs. ease
- Enterprise license assurances
- Data provenance
- Data governance practices mapped to concerns
- Rules and SLAs
- Contractual indemnification
- Training & awareness
- Pilot testing, incremental rollouts
- Continuous monitoring



Governance platforms:
Potential tools:

Platforms like IBM OpenPages or Microsoft Purview provide centralized tools for managing compliance, risk assessments, and governance policies.

Co-Intelligence: Combine automated scoring with human oversight for final decisions

Explainable AI (XAI):
Potential tools:

SHAP: machine learning explainability tool based on Shapley values from game theory.

Tools like **LIME** (Local Interpretable Model-Agnostic Explanations) complement SHAP by providing localized explanations for individual predictions

Stakeholder engagement:

Involve diverse groups in designing and testing the system to identify potential risks early.

Transparency & fairness frameworks:
Examples:

OECD AI Principles or **NIST AI Risk Management Framework** responsible AI development and use.

AI Governance & Use Guidelines

- **Clear AI policies** – Define where AI can and cannot be used
- **Human oversight** – AI-generated recommendations must be reviewed by humans.
- **Auditability & explainability** – How and where do things need to be traceable for public accountability?
- **Security & compliance** – Tools must align with legal & compliance requirements.

WHITE BOARD: Governance, policy, use guidance

Wrap up

WHITE BOARD: action items

Let’s write down personal **action items**

Template for action:

- **What AI opportunity** is most relevant for your department?
- **What’s the long-term goal?**
- **What’s the first small step** you can take to explore it?
- **Who do you need buy-in from?**
- **What risks or challenges** might you encounter?
- **How will you measure success?**

Share your action plan.

What’s still on your mind?

Thank You!

Chris Knotts, Principal Consultant

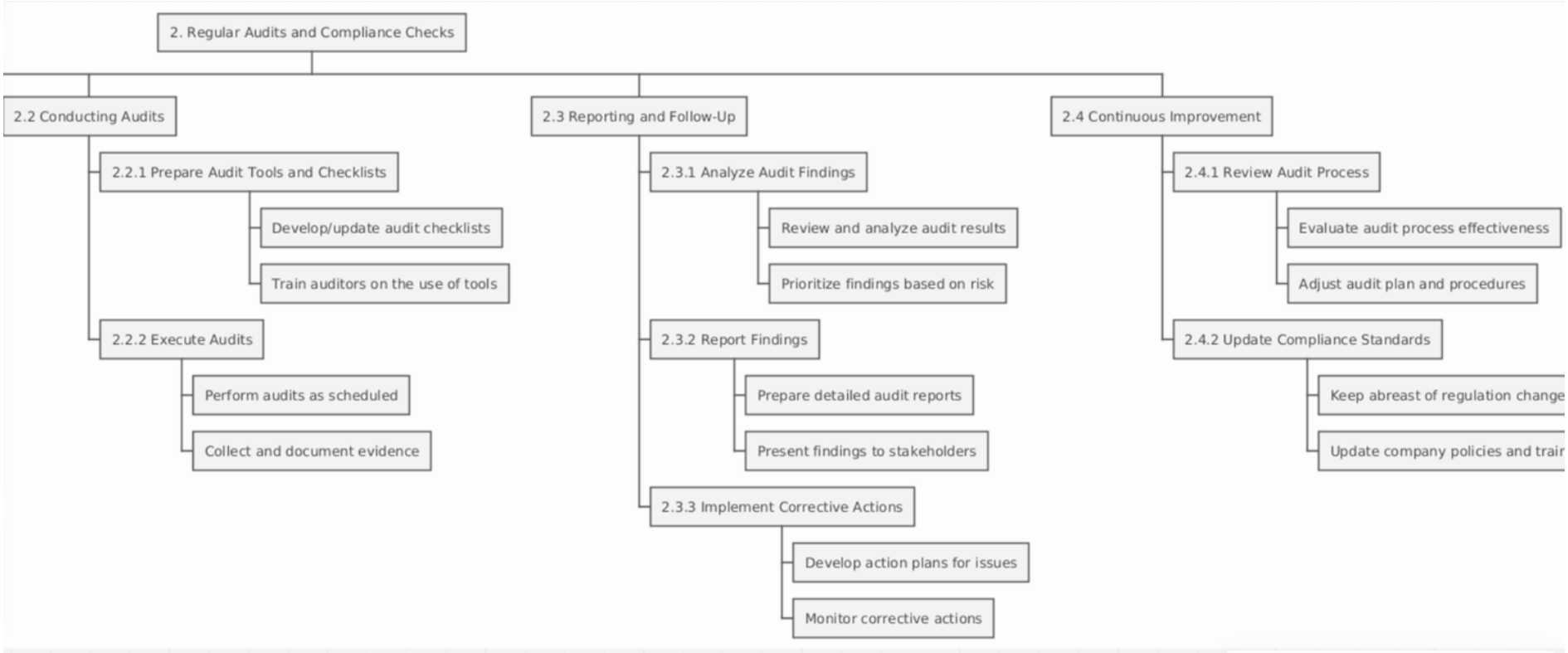
APPENDIX 1

Demos

DEMO: Image Generation

DEMO: Project Data Exports & Imports

DEMO: Work Decomposition & WBS



DEMO: Ports of the World

DEMO: Stakeholder Sentiment Analysis

APPENDIX 2

Legality and liability considerations

Main things

- Lack of data governance will erode trust and open up legal/audit risks
- AI has a black-box problem
- Datasets always...ALWAYS...have biases baked in - evaluate the source (IP, demographic data, domain bias, source bia, cultural bias)
- Legal precedents barely exist - it's the wild west. Be bold to embrace the technology, but cautious when it comes to legal consequences.
- Most generative AI tools either claim IP rights to the content created, or the content is public domain, or they don't explicitly specify
- Generative AI learns from a large corpus of training data- at least some of that data usage is being challenged by the original content creators
- Watch the space closely, it's unfolding in real time

Many issues start with the training data

Generative AI models require a LOT of data in order to learn how to do what they do.

A lot of this data comes from open-source datasets provided for the training.

Where Does the Data Come From? GPT models

Common Crawl dataset	410 billion tokens - 60% weight in the training
Webtext2	19 billion tokens - 22% weight in the training
Books1	12 billion tokens - 8% weight in the training
Books2	55 billion tokens - 8% weight in the training
Wikipedia	3 billion tokens - 3% weight in the training

From *Language Models are Few-Shot Learners* discussing GPT3 training.

Where Does the Data Come From? Diffusion model Image Generators

LAION dataset	• Large-scale Artificial Intelligence Open Network) • 400 million image-caption pairs
Some big problems	• Private data • Sensitive data • Inappropriate images • In some cases illegal images • Images scraped without rights usage

Considerations

Free doesn’t mean “no license” or that there aren’t any rights associated with use.

Business users will continue to adopt generative al at a breakneck pace because of the immediate benefits.

IP and Copyright

- What is a derivative work? Precedents will likely be set based on interpretation of existing fair use doctrine.
- When is AI-generated content “sufficiently transformative?”
- One of few existing precedents stems from Google’s successful defense of scraping the content of books for its search service. They were successful. Will this precedent hold?

Mitigation

- Businesses could be liable for willful infringement if courts find training datasets using unlicensed content isn’t fair use
- Providers of AI tools should be asked if models were trained with unprotected data
- Terms and licensing should be worked into contracts, whether for services you provide using AI, or for any AI service that you use.
- Avoid integrating providers and services into your offerings if licensing or open-source rights can’t be documented.

US Developments

Currently, there isn't a comprehensive federal law governing AI or data privacy in the United States, resulting in a fragmented landscape of regulations that could affect AI. This includes a variety of state-level data privacy and AI-specific regulations, as well as the regulatory authority of the FTC and similar consumer protection agencies.

Mitigation

- Adopt internal policies aligned with stringent state regulations.
- Stay updated on and adapt to changing state laws.
- Set up a compliance team for regulatory navigation.
- Exceed baseline standards to enhance consumer trust.

Patents - US

- The US Patent and Trademark Office stipulates that only humans can “invent” something
- USPTO has clarified that works created by AI cannot be patented or copyrighted
- USPTO says works created with the assistance of AI **CAN** be patented or copyrighted
- Where to draw the line?

GDPR and EU Developments

- Italian DPA's temporary ban on ChatGPT led to OpenAI's privacy updates, restoring service in Italy.
- GDPR roles for AI use involve distinguishing between data controllers and processors.
- Key GDPR challenges include lawful data processing, transparency, data collection for AI training, and conducting DPIAs.
- Unresolved issues include dataset transparency ("black box"), consent validation, and managing data subjects' rights in AI datasets.
- Upcoming EU AI Regulation may introduce risk-based scrutiny for generative AI applications.

Mitigation

- Testing for compliance
- Feedback mechanisms for accountability
- Figuring out explainability/transparency for audits and reporting
- Proactively protecting against unresolved legal rulings

Mitigation - General Considerations

- Thorough due diligence - assurance from service providers and data sources
- Robust monitoring
- Work indemnification into contracting so you're protected
- Thorough employee training - just like security hygiene or cybersecurity awareness training we all have to take.
- Proactively get creative for strategies around risk-free training data

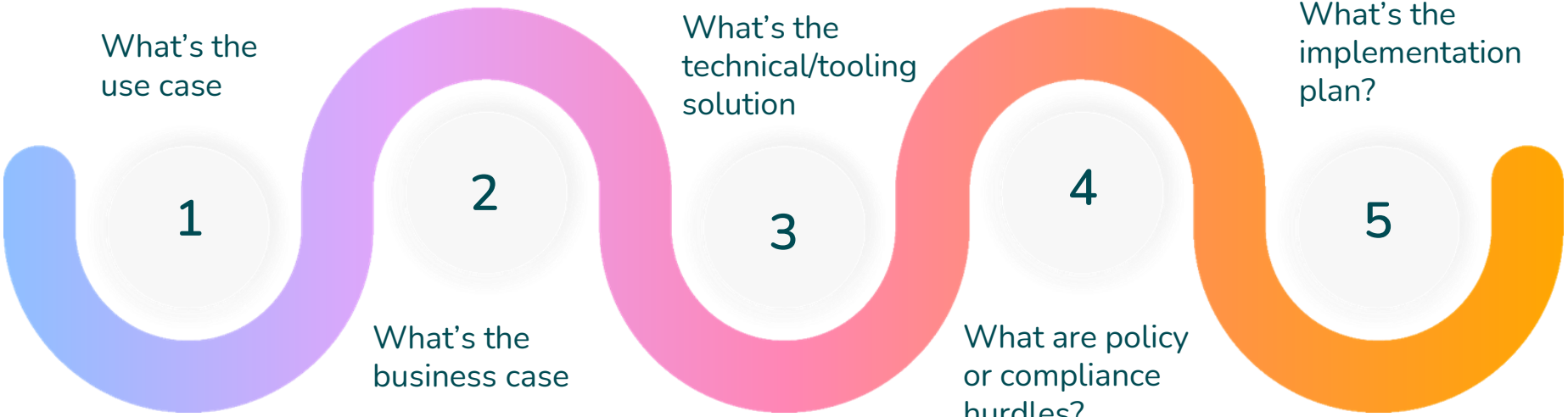
Overarching Mitigation

- **Prioritize ethical AI principles** (transparency, fairness, responsibility, accountability, reliability) and establish a practice to operationalize these in product development.
- **Address generative AI risks by ensuring accuracy** (train AI on own data, communicate uncertainty), safety (mitigate bias, protect privacy), honesty (respect data provenance, consent), empowerment (AI as an assistant, respect content creators), and sustainability (minimize model size for lower energy use).
- **For AI integration, use zero-party or first-party data** for training to ensure accuracy and trust. Regularly update and curate training data to remove biases and inaccuracies.
- **Maintain human oversight** to review AI outputs for accuracy and bias, considering generative AI as a tool to augment human capabilities rather than replace them.
- **Implement continuous testing and feedback mechanisms** for AI systems, including ethical AI training for staff and feedback channels for reporting concerns, to navigate the evolving landscape of generative AI responsibly.

APPENDIX 3

Labor impact research

Evaluating & Planning for GenAI



- *Start with high-potential use cases*
- *Apply the lens of AI strengths and weaknesses*

- *Put need above tool*
- *What really needs to be done?*

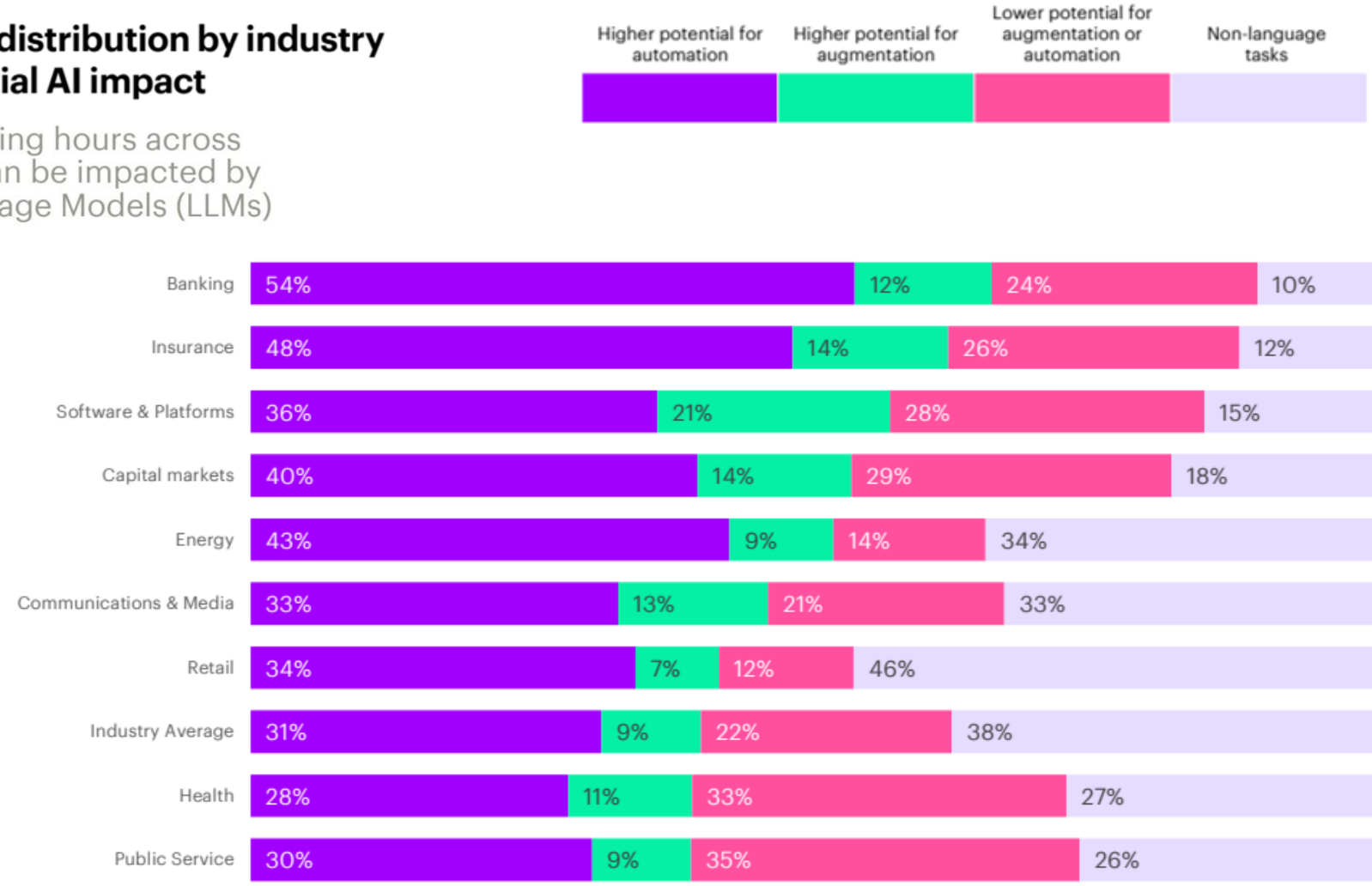
- *Scope the solution*
- *Focus on meeting the need*
- *Figure out the costs*

- *How can you get there?*
- *Whose sponsorship do you need?*
- *How can you affect change?*

- *Revisit business case*
- *What are the costs?*
- *What's the ROI?*
- *How to measure?*

Work time distribution by industry and potential AI impact

40% of working hours across industries can be impacted by Large Language Models (LLMs)



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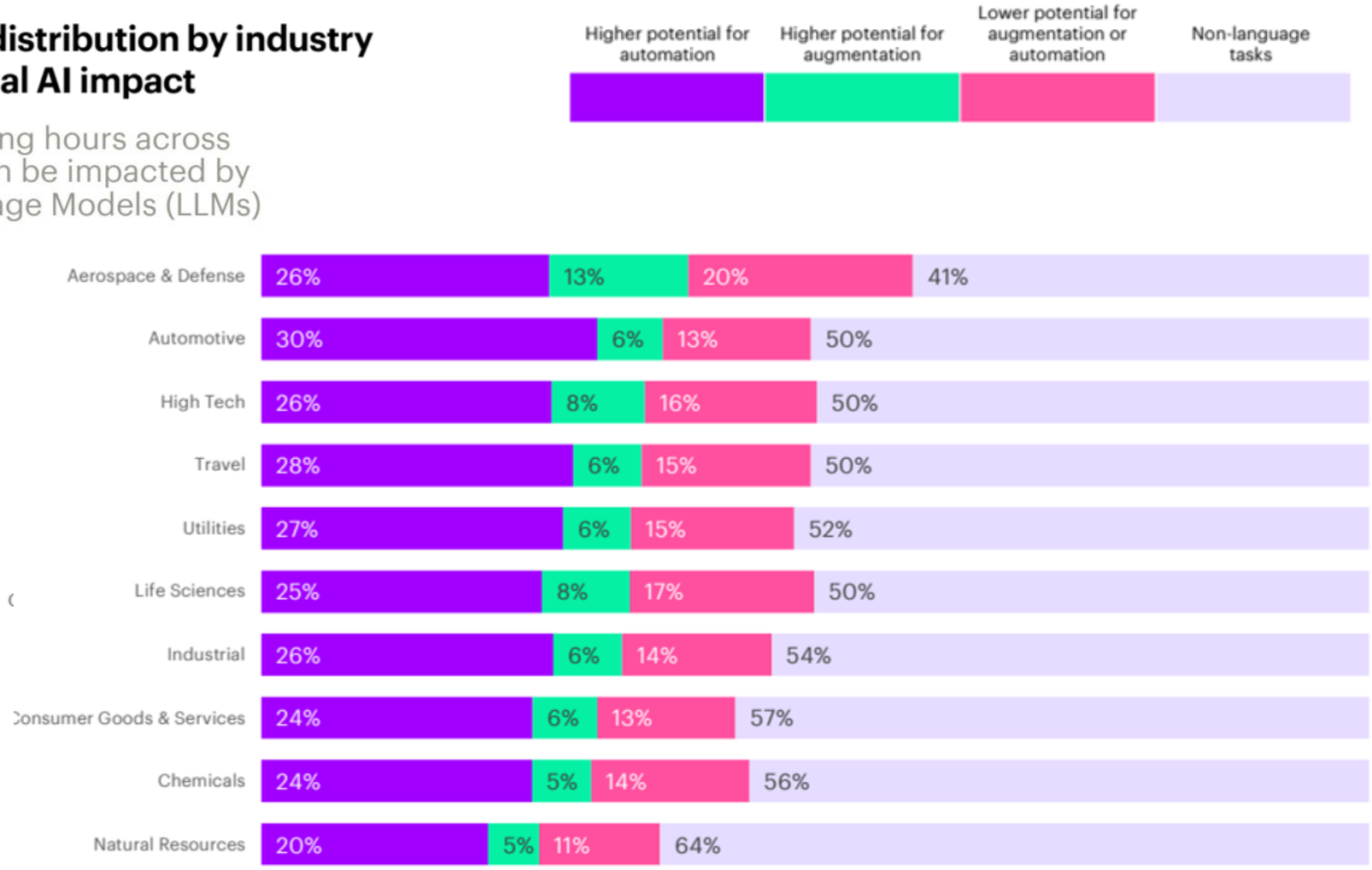


APPENDIX 4

Prompting

What is a “dialectic approach?”

We primarily interact with LLMs using what we’ll call a “dialectic approach,” meaning that we should always approach interaction with an LLM as a conversation, anticipating that we may not get what we need from the AI tool in just one exchange – it will likely require a series of exchanges so we can establish context, help the AI learn what we need, and refine the direction of the conversation as we go. LLM tools don’t just use machine learning to power their core features - they also learn as they go, adapting to our feedback in real time.

Prompting basics in plain English

- Initiate with comprehensive context to guide the AI's understanding and responses.
- Provide examples
- Employ iterative refinement to hone in on precise information, leveraging the AI's initial outputs to refine subsequent queries.
- Establish feedback loops to improve the AI's accuracy and relevance over time.
- Include details in your query to get more relevant answers
- Ask the model to adopt a persona
- Use delimiters to clearly indicate distinct parts of the input
- Specify the steps required to complete a task
- Specify the desired length of the output

Bad Prompts: Examples

Vague Query: Tell me about agile project management.
- Lacks specificity and context.

No Persona Adoption: How do I manage projects?
- Doesn't specify the AI to adopt the role of an experienced project manager.

Unclear Delimiters: What are the risks in project management and how to mitigate them, also tell me about team management.
- Combines multiple questions without clear separation.

No Steps Specified: How do I implement an ERP system?
Lacks detail on the desired process or steps.

No Examples Provided: How do I improve team efficiency?
- Doesn't provide context or examples to tailor the response.

No Output Length Specified: Give me a project report.
- Doesn't specify desired length or detail for the report.

Good Prompts: Examples

Detailed Query: "I'm an agile project manager implementing a new ERP system. What are key considerations for integrating existing customer data into the new system?"

- *Provides specific context and details.*

Persona Adoption: "Act as an experienced agile project manager. What strategies would you suggest for maintaining team morale during the stressful final stages of an ERP implementation?"

- *Directs the AI to adopt a specific role.*

Clear Delimiters: "Identify the top 5 risks in agile ERP implementation | Provide methods to mitigate each risk."

- *Clearly separates two parts of the prompt.*

Steps Specified: "Outline the steps for conducting a sprint retrospective in an ERP project."

- *Asks for a specific, step-by-step process.*

Examples Provided: "Considering challenges like scope creep and resource constraints, which I've faced in previous projects, how can I better manage project scope in my current ERP implementation?"

- *Includes examples for context.*

Specifying Output Length: "List in bullet points, no more than 10, the key metrics I should track during an ERP system implementation."

- *Specifies the format and length of the response.*

The COSTAR Prompt Framework

Try using the COSTAR prompt framework:

1. **Context (C):** Provide essential background information or setting for the task. This helps the LLM understand the specific scenario or domain it is dealing with, leading to more relevant responses.

2. **Objective (O):** Clearly articulate the goal or purpose of the prompt. Specify what you want the LLM to accomplish, ensuring that its focus remains on achieving this particular aim.

3. **Style (S):** Define the desired style of the response. This could range from imitating the writing style of a specific profession, like a scientist or journalist, to emulating the narrative tone of certain genres, such as formal reports or creative fiction.

4. **Tone (T):** Determine the emotional or attitudinal coloring of the response. Whether it's formal, casual, enthusiastic, or empathetic, setting the tone ensures the LLM's response aligns with the intended sentiment.

5. **Audience (A):** Identify the target audience for whom the response is intended. Tailoring the content and complexity of the LLM's response to suit the audience, such as experts, beginners, or a general readership, ensures better comprehension and engagement.

6. **Response Format (R):** Specify the format in which you want the response. This could be a list, a structured report, a JSON object, a narrative, etc. Defining the format helps in generating responses that are suitable for your subsequent use, whether it be for analysis, presentation, or further processing.

The COSTAR Prompt Framework - **Tell AI to create the prompt**

Try using the COSTAR prompt framework (continued):

1. Break down complex tasks into a sequence of simpler prompts in an interactive conversation.
2. Employ affirmative directives such as `do,' while steering clear of negative language like 'don't'.
3. Implement example-driven prompting (Use few-shot prompting).
4. Use following phrases: "Your task is" and "You MUST".
5. Always use leading words like writing "think step by step".
6. Assign a role to the model i.e. "you are an expert ___"
7. Repeat specific words or phrases multiple times within a prompt.
8. Try to induce Chain-of-thought (CoT) when possible, guiding the LLM to do dive in deeper to each step
9. Use output primers, which involve concluding your prompt with the beginning of the desired output. Utilize output primers by ending your prompt with the start of the anticipated response.
10. To write an essay /text /paragraph /article or any type of text that should be detailed: "Write an ultra-detailed [essay/text /paragraph] for me on [topic] in detail by adding all the information necessary".

More Sophisticated Prompt Techniques

- System Message
- Repeating the instructions
- Priming the output
- Clear Syntax
- Few shot learning
- Chain of thought (or Auto-Generated Chain of Thought)
- Shuffle Ensemble (and choice shuffle)

Initial Prompt: The “System Message”

The **system message** sets the stage for the interaction with the model by providing context, instructions, or relevant information tailored to the specific use case. It can outline the assistant's personality, stipulate the scope of the model's responses, and establish response formats.

Example: “Here’s your system message: You are an AI assistant designed to help answer questions related to adult learning principles. If unsure about a query, ask for more details."

Repeating the Instructions

AI powered by LLMs are subject to **recency bias,** so information positioned at the end of a prompt often wields greater influence on the output. This phenomenon suggests that reiterating critical instructions or guidelines towards the prompt's conclusion could enhance the model's adherence to desired response parameters.

Therefore, especially in longer prompts, restate key instructions or objectives at the end of a prompt to ensure the generated advice or analysis aligns closely with the requirements.

Priming the Output

Introducing specific words or phrases at a prompt's conclusion can effectively "prime" the model to deliver responses in a desired format. For instance, hinting at the expected structure, like "Provide a step-by-step guide:", encourages the model to format its response accordingly.

Example:

- **"You are an AI that offers concise instructional design evaluations. End each response with a brief summary."**

Clear Syntax

Using clear syntax for your prompt — including punctuation, headings, and section markers — helps communicate intent and often makes outputs easier to read. In the example below, separators (--- in this case) have been added between different sources of information or steps. This allows the use of --- as a stopping condition for generation. In addition, section headings or special variables are presented in uppercase to differentiate them.

System Message: You'll read a paragraph, and then issue queries to a search engine in order to fact-check it. Also, explain the queries.

PARAGRAPH INPUT
Ivan Rodriguez is married to Claudia Rodriguez. They have three children, and Ivan works at Microsoft and Claudia works for Pinterest. What search queries should I use to fact-check this?

QUERIES

Few-Shot-Learning

Few-shot learning is a machine learning technique in which several examples are provided in the initial prompt which establish a precedent for how the AI processes our query. This enables AI models to make accurate predictions even when provided with a very small number of labeled examples.

Example Prompt: "Consider three past corporate training programs with identified challenges: 1) Training Program Alpha struggled with low engagement due to lack of interactive content, 2) Training Program Beta had poor completion rates due to misalignment with employee schedules, and 3) Training Program Gamma received negative feedback due to outdated material. Given the upcoming Training Program Delta is designed for similar audiences as Beta but aims to incorporate more interactive content like Alpha, predict potential engagement challenges and suggest mitigation strategies based on these examples."

Auto-Generated Chain of Thought

"Auto-Generated Chain of Thought" as a prompting technique allows us to get more sophisticated and accurate output from AI models, particularly in complex problem-solving domains. AGCOT asks the AI to articulate its reasoning process in a series of logical, interconnected steps, much like a human expert would when tackling a multifaceted issue.

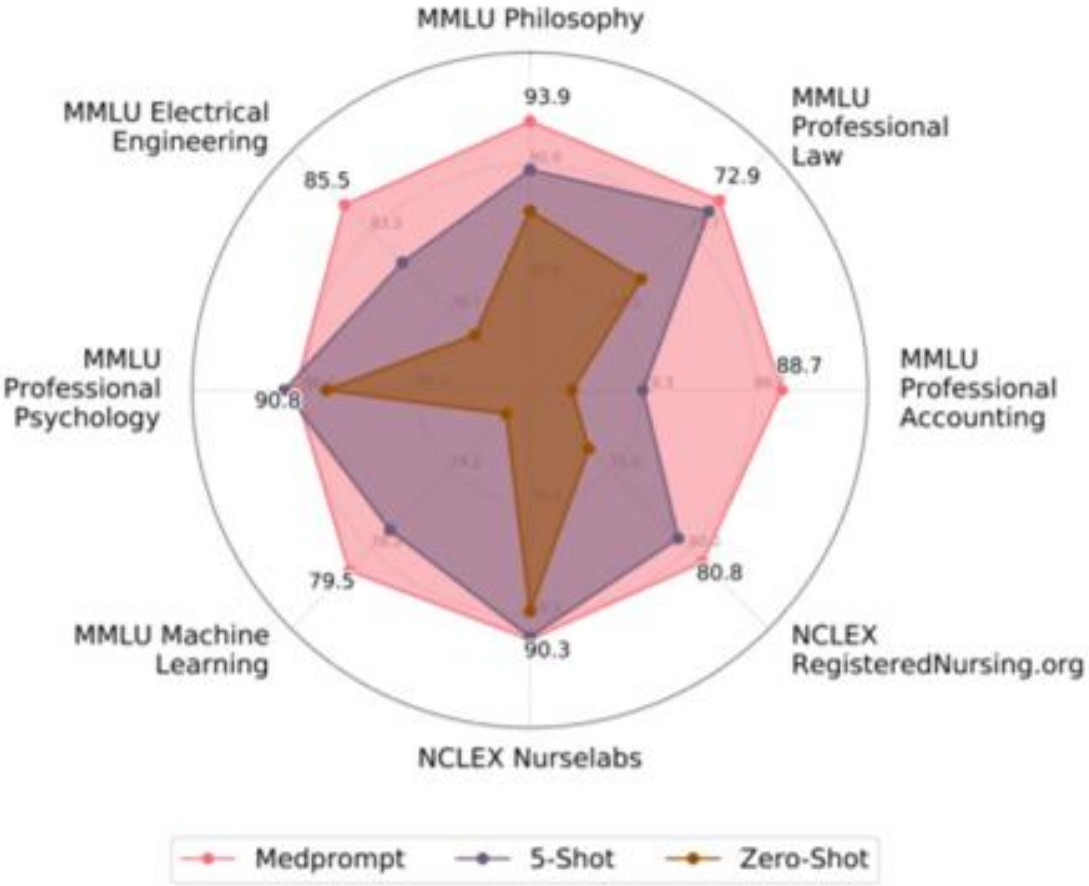
Example Prompt: "Given the following criteria for selecting a vendor: cost efficiency, reliability, past performance, and delivery timelines, along with the following vendor options: Vendor A, Vendor B, and Vendor C, break down the decision-making process. Consider Vendor A has the lowest cost but average reliability, Vendor B has excellent past performance but longer delivery timelines, and Vendor C offers a balance between cost and reliability but with limited past performance data."

Ensemble Approach

"Ensembling" is a prompting approach to enhance decision-making in AI reasoning. The AI is presented with a set of potential choices answers the same question multiple times. The AI then compares it's choices, sees what was reasoned as correct the most, and more heavily weights that answer. This increases the quality and accuracy of the answer.

Additionally, we can change the order of the options each time the AI answers the same question. This introduces randomness and reduces bias. This is known as "choice shuffle ensemble."

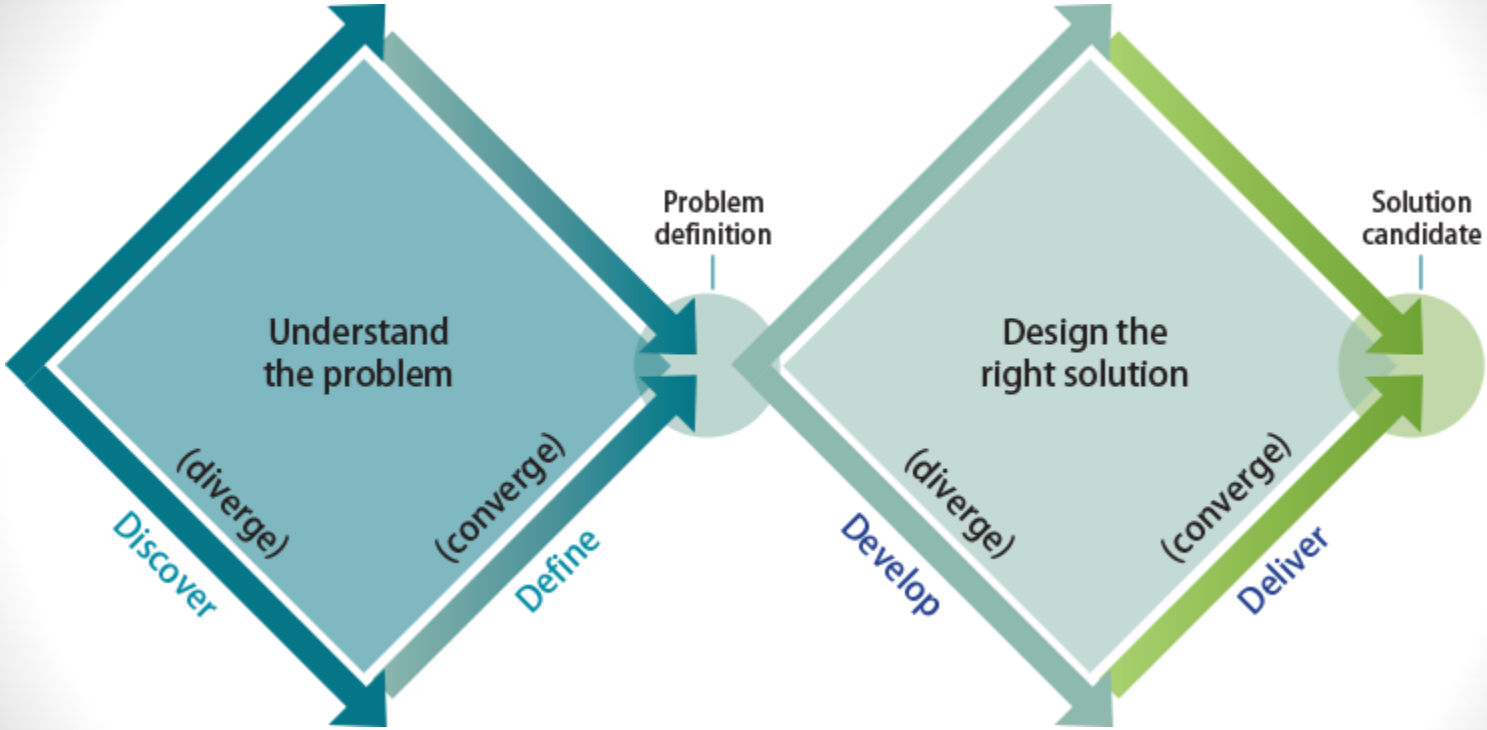
Example Prompt: "Our team is upgrading the LMS, and the new system needs to integrate with legacy systems, and be highly customizable. Consider evaluating four learning management systems for our organization's needs: LMS A is highly customizable, LMS B integrates well with existing systems, LMS C is user-friendly, and LMS D offers robust analytics features. Shuffle these options, answer the same question four times, and provide an ensemble analysis on which LMS might best suit our needs for customization, integration, user experience, and data-driven decision-making."


MMLU Philosophy
93.9
MMLU Professional Law
72.9
MMLU Professional Accounting
88.7
NCLEX RegisteredNursing.org
80.8
NCLEX Nurselabs
90.3
MMLU Machine Learning
79.5
MMLU Professional Psychology
90.8
MMLU Electrical Engineering
85.5
Medprompt
5-Shot
Zero-Shot

Thank You!

Chris Knotts, Principal Consultant

SKILLS DEVELOPMENT GROUP


Understand
the problem
(diverge)
Discover
(converge)
Define
Problem
definition
Design the
right solution
(diverge)
Develop
(converge)
Deliver
Solution
candidate

What is a Token

- In the context of generative AI, especially models like GPT (Generative Pre-trained Transformer) and similar language models, a "token" refers to the smallest unit of data that the model processes.

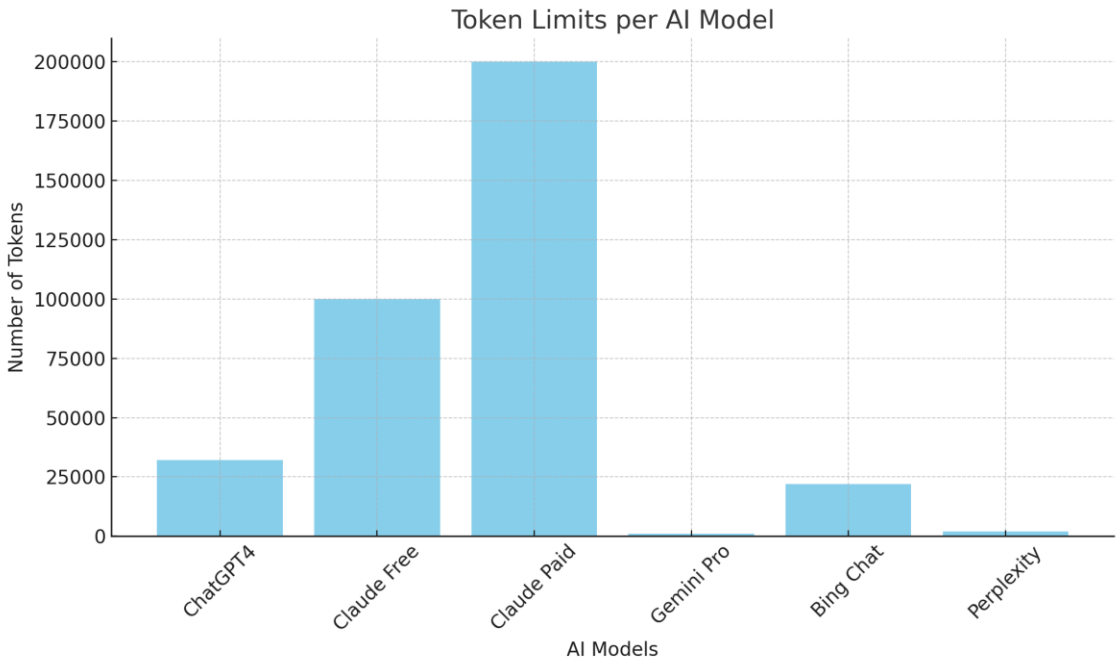
- Tokens can be words, parts of words (like syllables or subwords), characters, or even byte-pair encodings (BPEs), depending on the model's design and the granularity of the input text processing

- Think of it as a unit of measurement

Tokens Used in Open Systems

You

Here is the data for tokens per model: ChatGPT4 32k, Claude Free 100k, Claude Paid 200k, Gemini Pro 1k, Bing Chat 22k, Perplexity 2k



Energy Consumption

- Charging an IPhone 14 that is completely dead: It takes approximately 59,875 joules of energy to fully charge an iPhone 14 from a completely depleted state, considering a charging efficiency of 75%. This calculation is based on an estimated battery capacity and nominal voltage, and actual values may vary slightly depending on the specific device characteristics and charging conditions

- Creating one Image using ChaptGPT 4: Based on these assumptions, generating an image with an AI model like DALL·E on a GPU that consumes 200 watts of power would use approximately 1000 joules of energy for a process taking about 5 seconds. This is a rough estimate and actual energy consumption can vary based on the specific hardware and operational efficiency

Just tested, the next image you see took 1 min to create and so it consumed roughly 12,000 to 15,000 Joules of energy. Roughly 5 image “engagements” equal the energy of charging an IPhone. And it screwed up the image

Considerations

1. Think of it as a very smart **junior assistant** that can make major mistakes
2. It is made to provide output so It can make major mistakes
    - it is very easy for the AI to “hallucinate” and generate plausible facts
    - ***It is programmed to provide output regardless of accuracy***
3. It must be supervised (Supervised AI)
4. It can LEARN, it does LEARN, and it is scary how well it learns
    - You can give it lots of information it will learn
        - Writing voice
        - Your company trends
        - Your team’s trends
        - How you like information given to you
5. You need to know the age of the datasets it is using
6. If you are not sure it is private, it isn’t
7. Different tools do different things
    1. You have the interface (each do different things)
    2. You have the LLM (pool of useable information)