

Beyond the Chatbot

Designing the Human Systems for AI-Powered Health Innovation



DUKE SUMMIT *on*
**AI for HEALTH
INNOVATION**

October 8, 2025

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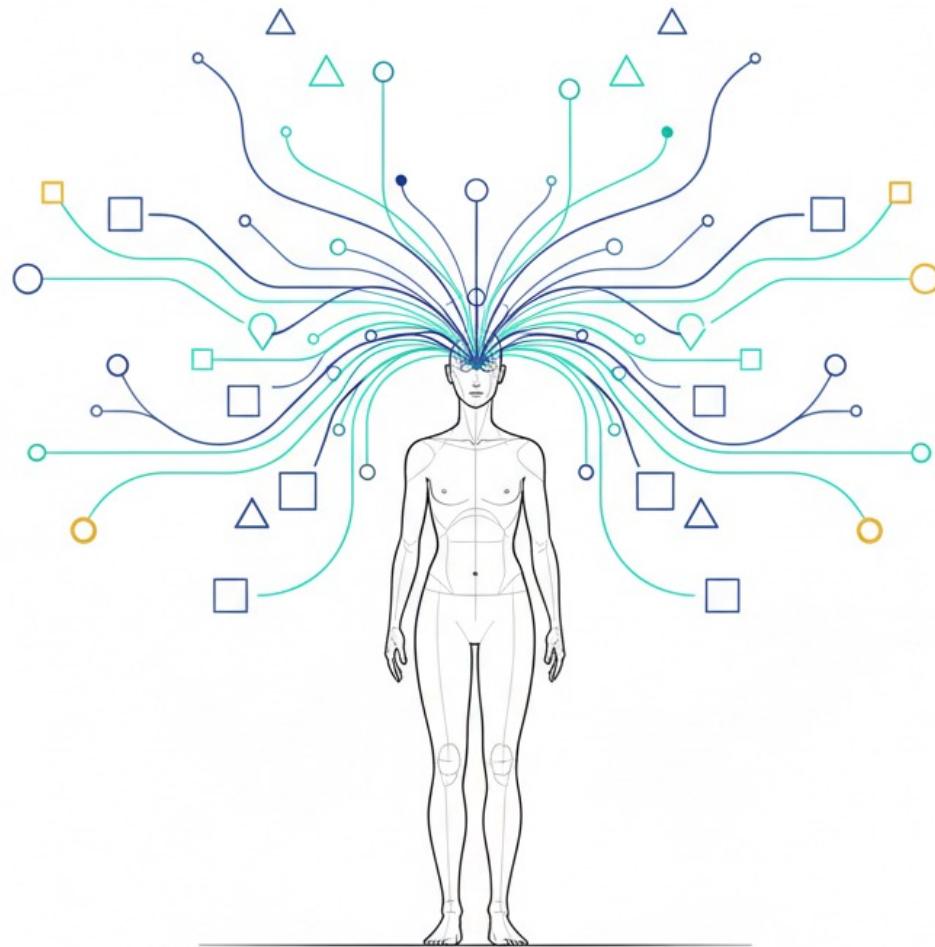
Serve on multiple Data Monitoring Committees for Gilead Sciences, Inc.

Receive research funding through Duke from Sanofi

Use of Artificial Intelligence Tools

This presentation was prepared with the extensive use of multiple large language models, including but not limited to Google Gemini Pro, Microsoft Copilot, ChatGPT, and Anthropic's Claude.

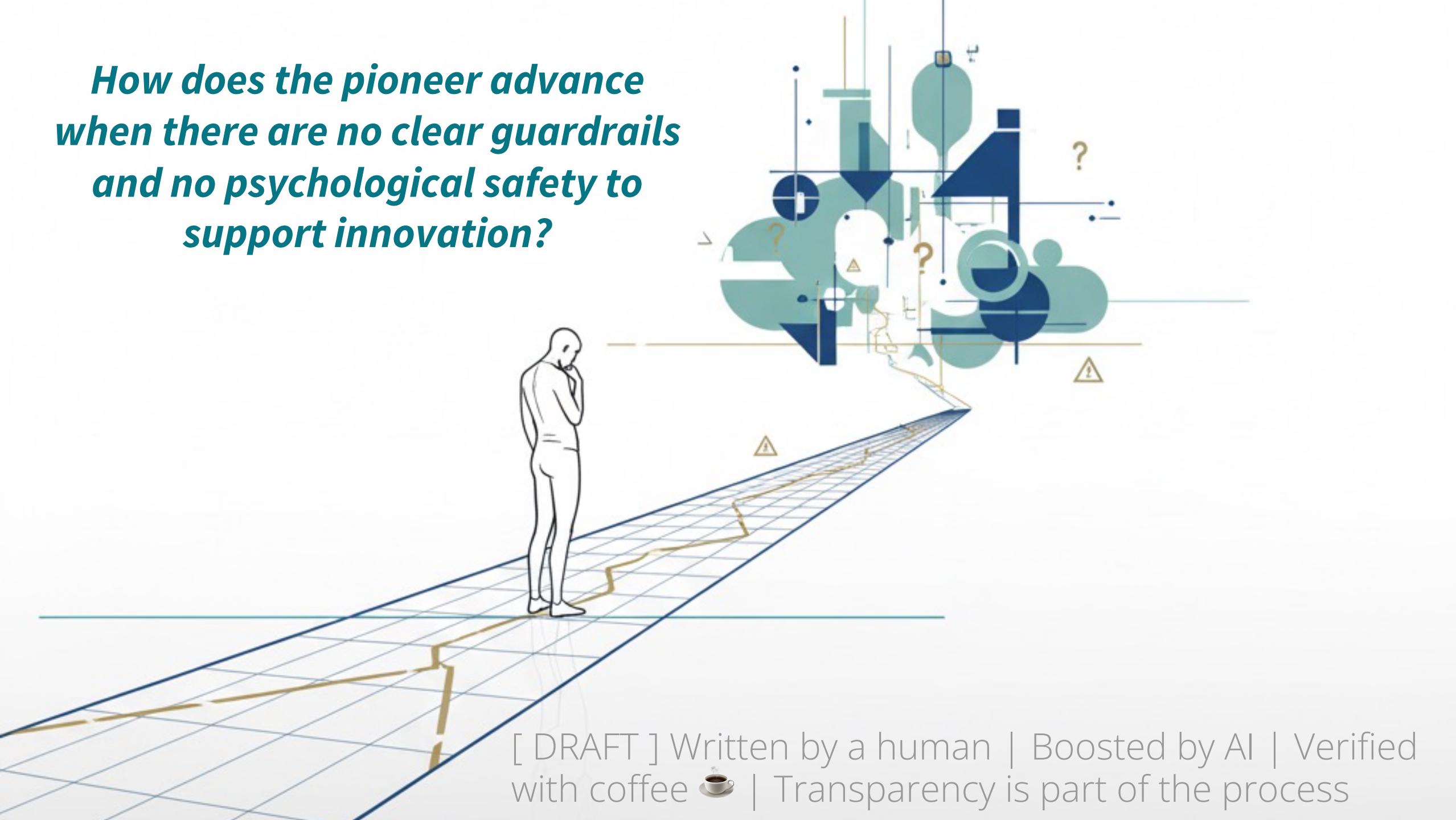
The Vision of "Superagency"



SUPERAGENCY

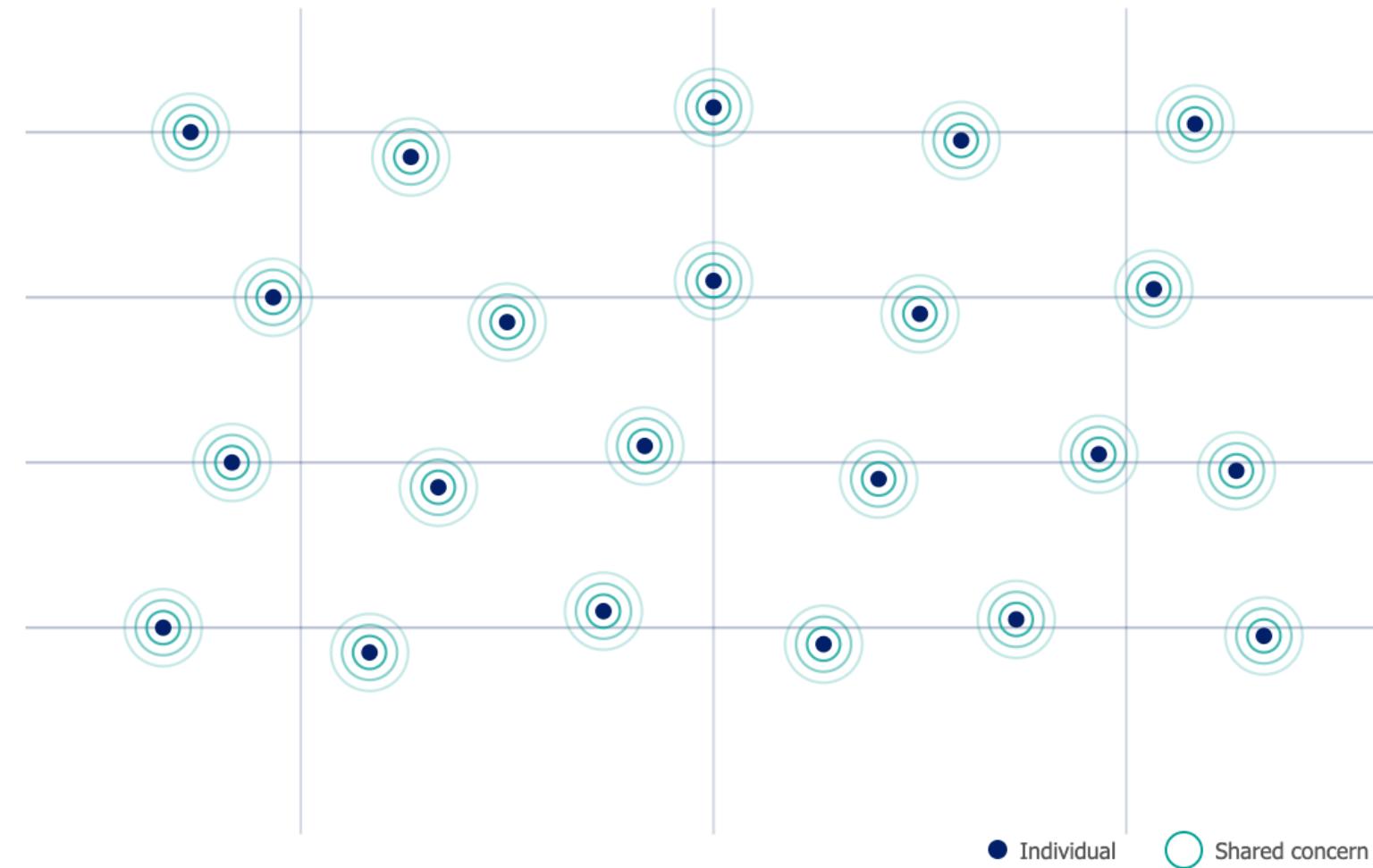
A state where individuals, personally empowered by AI, begin to operate at levels of impact and creativity that were previously unattainable.

*How does the pioneer advance
when there are no clear guardrails
and no psychological safety to
support innovation?*



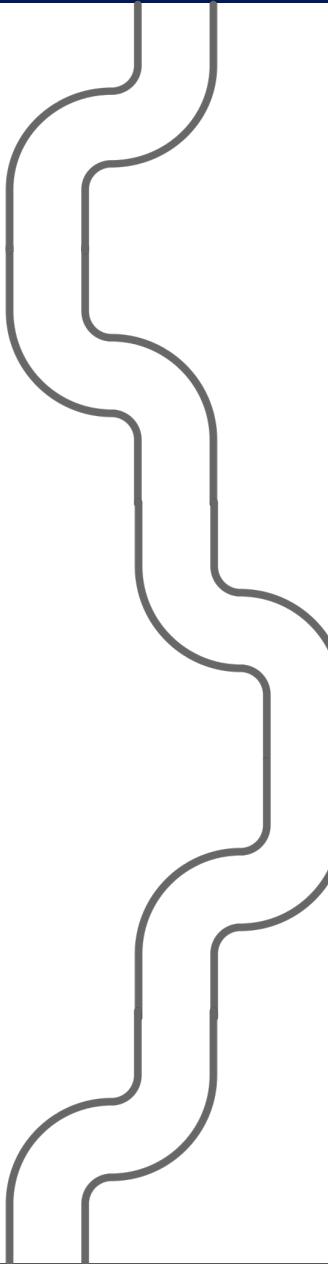
[DRAFT] Written by a human | Boosted by AI | Verified
with coffee ☕ | Transparency is part of the process

An Unspoken, Shared Experience



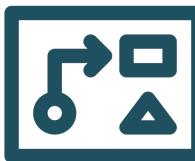
In our recent AI pilots, staff expressed a deep concern about **"getting in trouble"** and a profound uncertainty about the **"guardrails."**

A Roadmap for the Path Forward



The Diagnosis

Understanding the Friction Preventing Innovation



The Methodology

A Playbook for Building a New Way of Working



The New Operating System

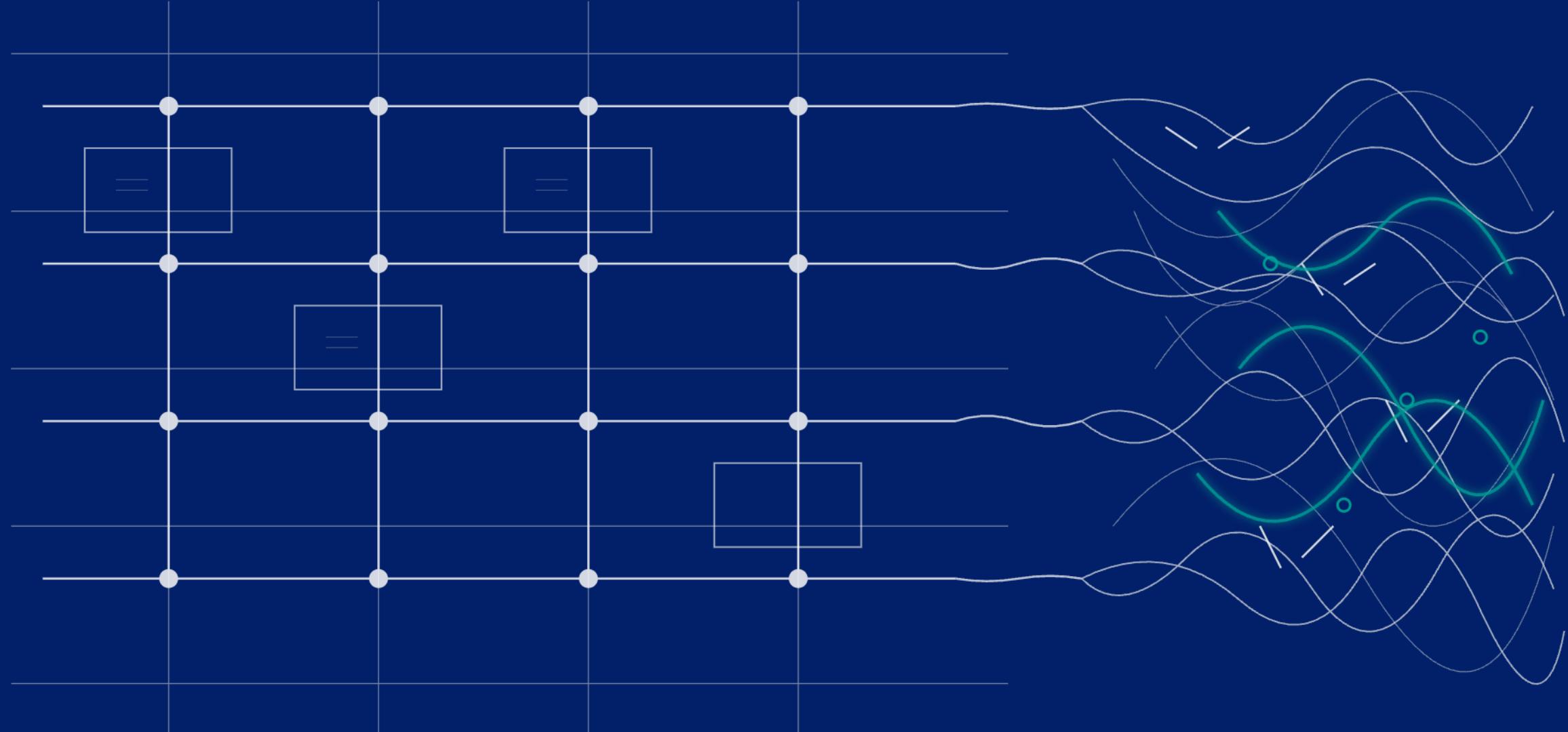
Describing the Transformed Organization



The Conclusion

From Cognitive Dividend to Moral Dividend

Part 1: The Diagnosis



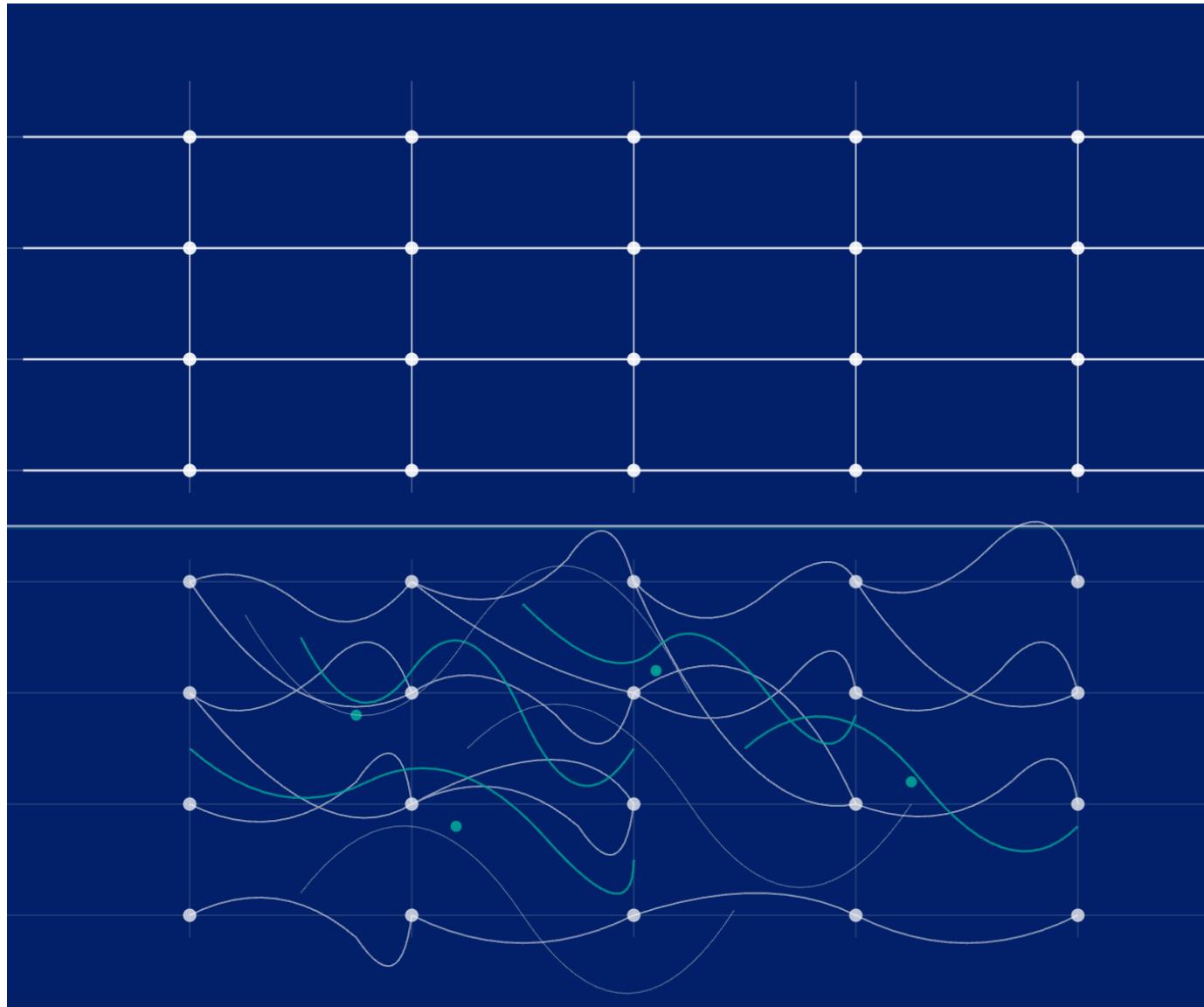
The Friction Preventing Innovation

Two Ways of Seeing: The Mirror Mindset vs. the Machine Mindset

Reveals how work **actually flows**, not just how it's documented.

Makes **tacit knowledge** and unwritten rules visible for the first time.

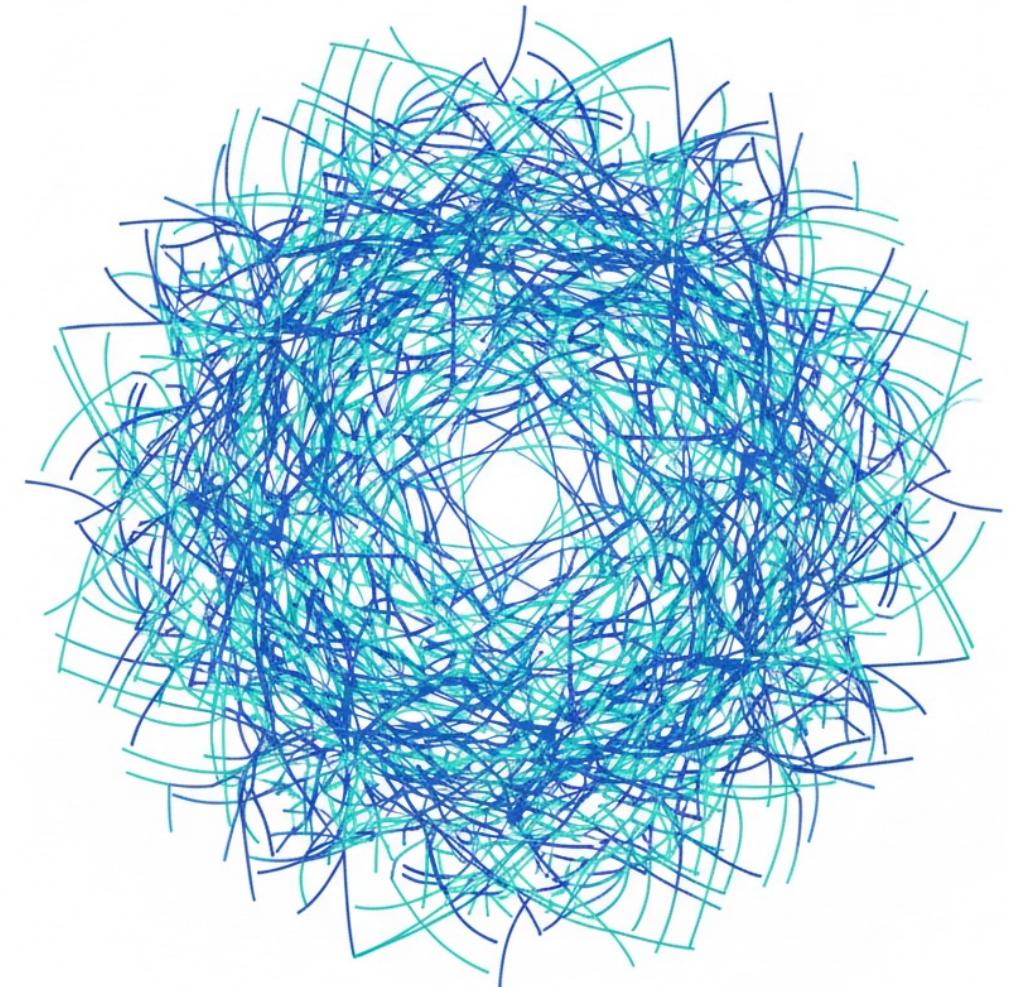
Amplifies process flaws, turning small frictions into major risks.



Foundational Chaos

"When you are trying to understand process and workflow, if you layer AI on top of chaos you end up amplifying it."

Michael Pencina
former Duke Health Chief Data Scientist



The Strategic Cost: When Friction Becomes Unsustainable

The Cost to Deep Work: Friction fragments attention, making sustained focus impossible.

The Cost to Talent: Top performers don't tolerate broken systems — they leave or work around them.

The Evidence: “Shadow AI” isn’t defiance — it’s a signal that official processes are becoming intolerable.



The Chaos Audit

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 **Mentimeter**



The Chaos Audit

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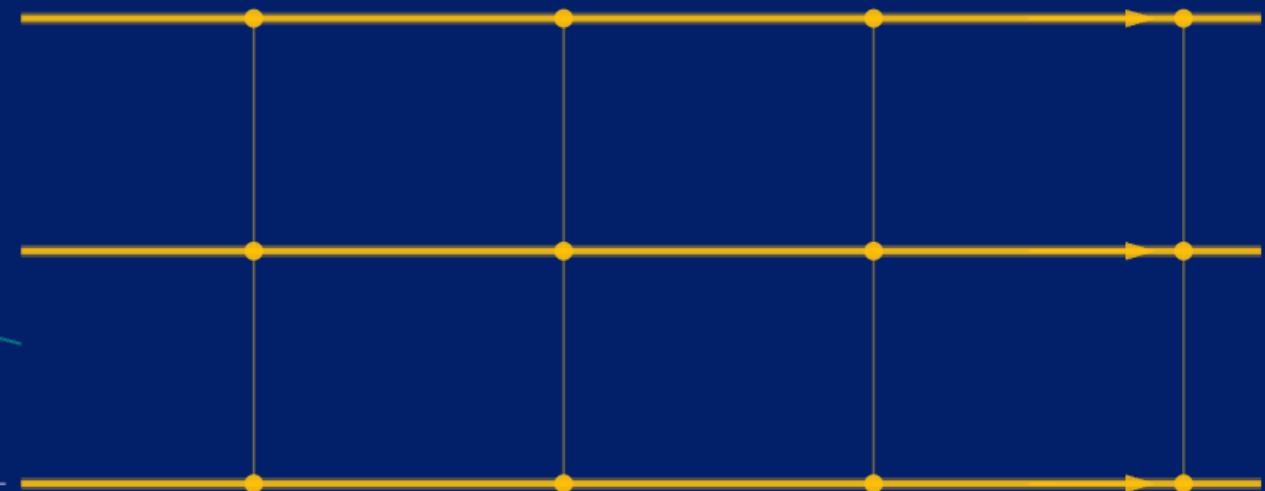


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Part 2: Paving the Cowpaths



A Bootstrapper's Playbook for Transformation

An Opportunity for a New Perspective

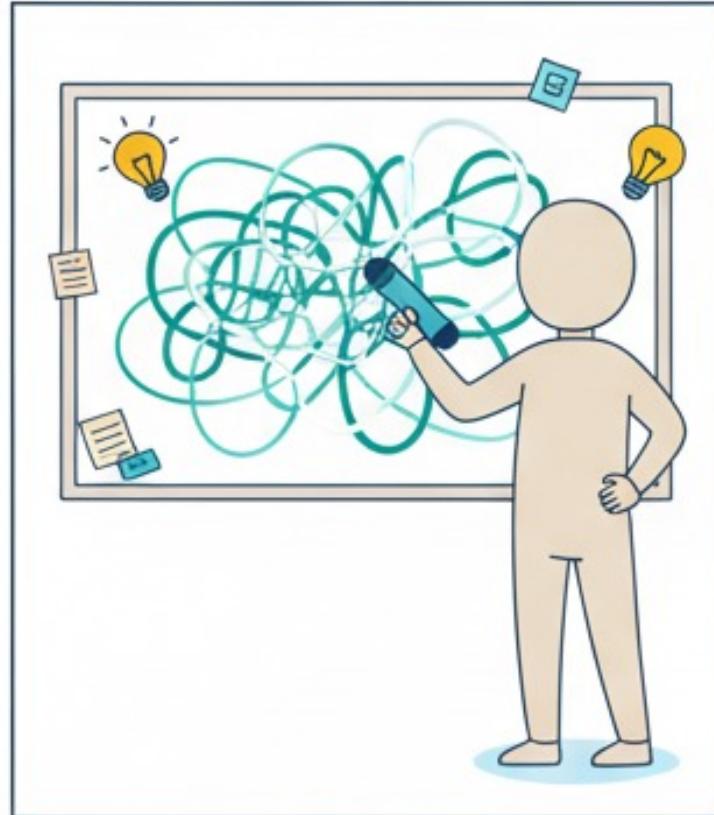
With a strong foundation for algorithm governance now established, our next great opportunity is to empower the human systems that drive the entire innovation lifecycle.



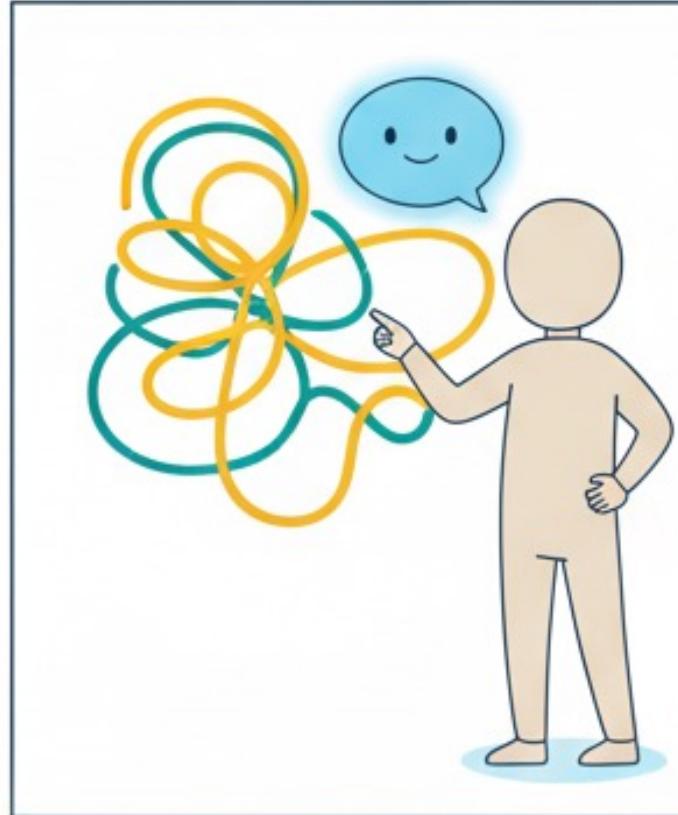
The "Pave the Cowpaths" Methodology

A Three-Phase Journey to Optimized Workflows

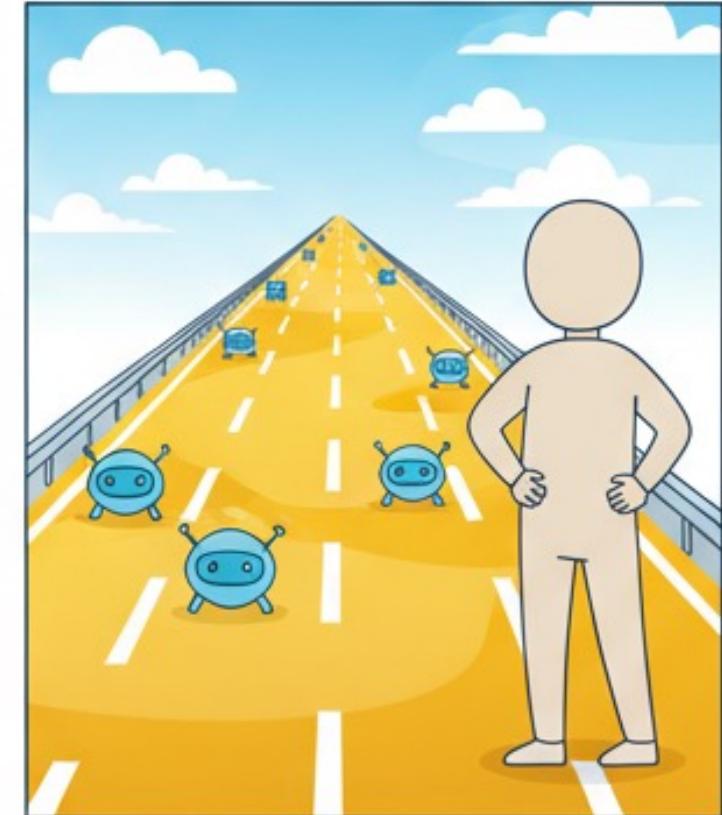
Manual Discovery & Augmentation



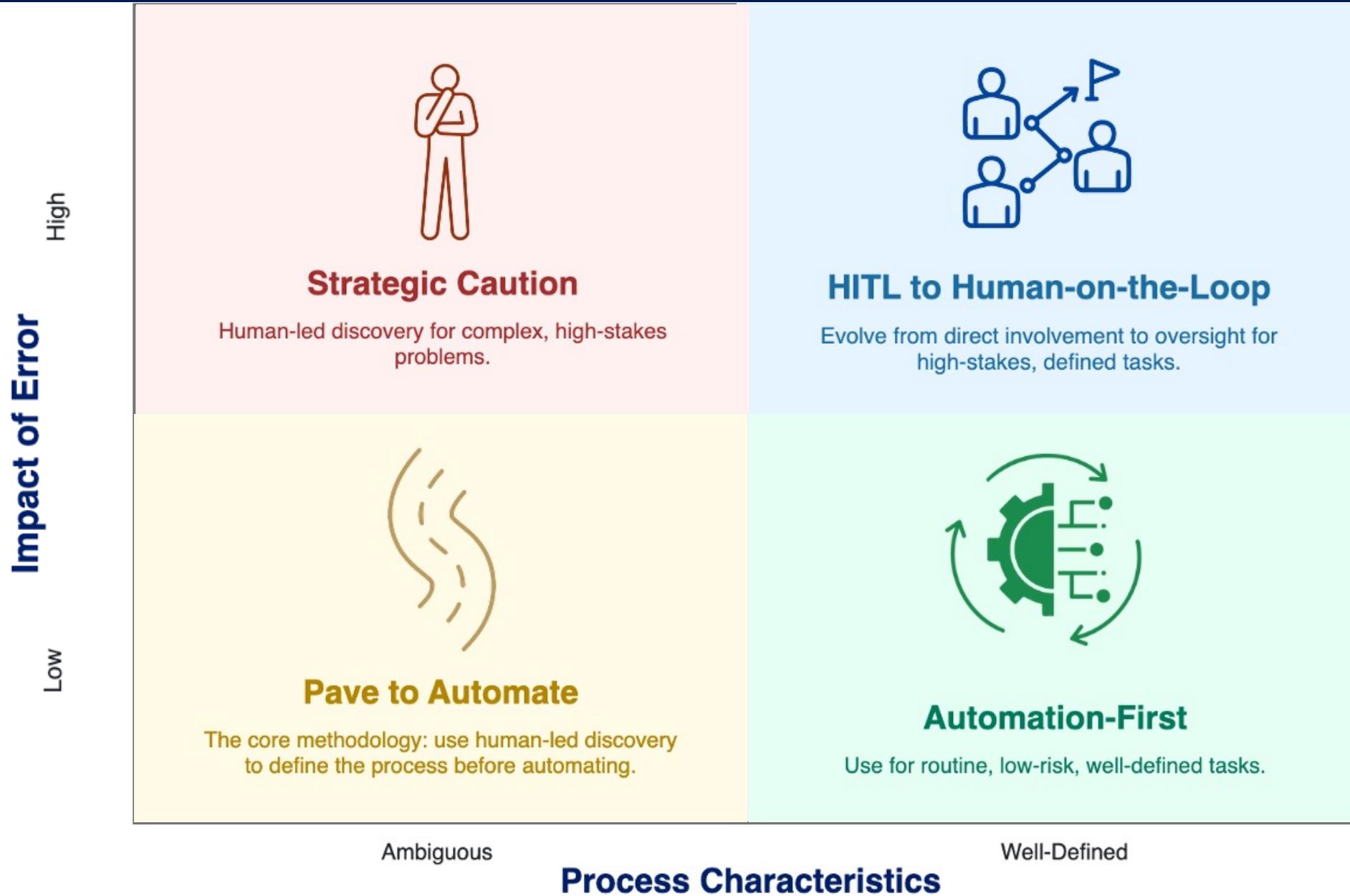
Human-in-the-Loop Refinement



Scaled & Integrated Automation



A Decision Framework for Leaders



The Bootstrapper's Playbook

A Three-Stage Journey to AI Maturity

Stage 1: Foundational Skills

Build a **Portable AI Brain** to amplify your personal capability and achieve '**Superagency**'.

Stage 2: Systemic Practice

Adopt systematic team workflows to turn AI collaboration from a **liability** into a trustworthy **shared asset**.

Stage 3: Scaled Automation

Convert proven practices into **agentic workflows** to unlock the '**Innovation Dividend**' and fuel new discovery.

Stage 1: The Portable AI Brain

A stateless architecture for creating an expert assistant on any platform.

Lean Master Prompt

Defines your role, the specific goal, and the context for the current session.

Universal Knowledge, Personas, & Tools

Your stable, reusable library of principles, personas, and tools that define *how* you work.

Project-Specific Knowledge

The transient data, files, and context for the current task.



Expert Assistant Created

Key Principle in Action

Structured Reflection: The AI is instructed to "think out loud" in a `<thinking>` block before answering, making its reasoning transparent and auditable.

Key Persona in Action

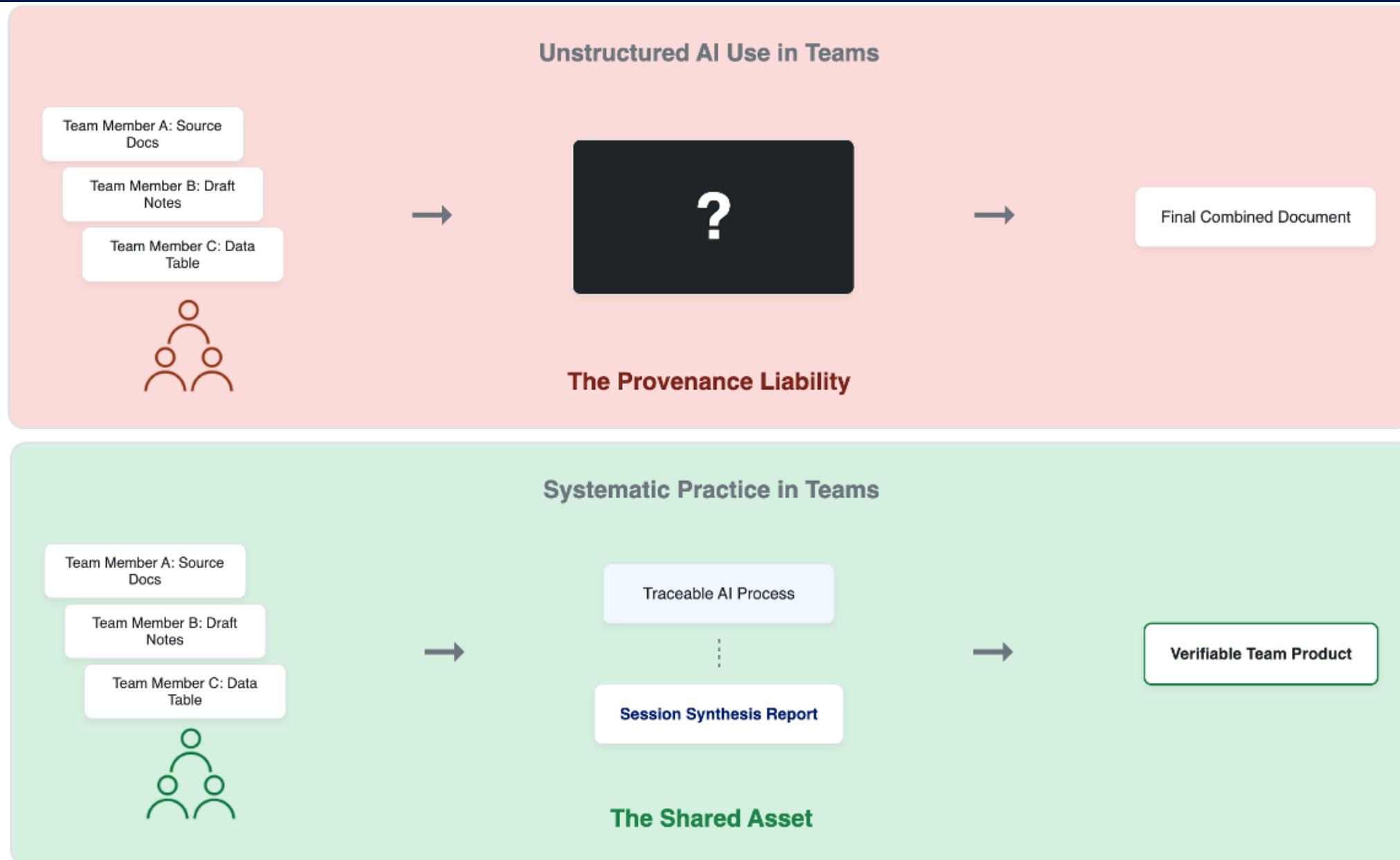
The Audacious Muse: This persona is invoked to challenge assumptions and reframe a problem, turning a good idea into a transformative one.

Key Tool in Action

Session Synthesizer: At the end of a task, this tool is called to process the entire chat and produce a clean, structured summary for your records.

This portable context block can be pasted into **any chat, on any platform**, to instantly create your expert assistant.

Stage 2: Systematic Practice - From Liability to Asset.



Stage 3: Scaled Automation



Reliability at Scale

Agentic workflows execute proven tasks with perfect fidelity, reducing errors and ensuring consistent, high-quality output across the organization.



Superagency at Scale

The entire institution's capability is amplified, creating a true learning organization that operates at a higher, more integrated level.



The Innovation Dividend

Cognitive surplus is unlocked and reinvested in high-value human work like strategy, mentorship, and creative discovery.



A New Asset: Process Intelligence

The collection of automated workflows becomes a new, analyzable dataset about how your organization works, revealing insights for continuous improvement.

**Validated Team Workflows
(Shared Assets from Stage 2)**

Your Bootstrapper's Playbook

Scan to Get Started

This QR code will take you to the *live companion site* with:

- ✓ A concise, one-page summary of the 3-stage Playbook.
- ✓ Actionable templates for your first “Portable AI Brain.”
- ✓ A link to download these presentation slides.
- ✓ A preview of *Process Provenance* — showing how this talk was built.

(URL: <https://duke.is/bootstrappers-playbook>)



Part 3: The New Operating System in Action



Unlocking the Innovation Dividend

Unlocks
INTEGRITY:
Makes Us Safe



Unlocks
TALENT:
Makes Us Better



Unlocks
CAPABILITY:
Makes Us Smarter



THE FOUNDATIONAL PRACTICE: **PROCESS PROVENANCE**

The “Science Flight Recorder” for Our Work

The Flight Recorder

This Presentation Has a Flight Recorder

For purposes of illustration, this presentation includes a small sample of documentation that demonstrates how AI and human collaboration were combined to design, refine, and deliver this presentation.

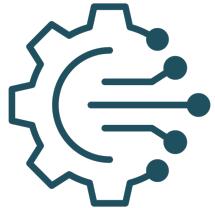
✓ Included in the Repository

A small collection of provenance files, narrative notes, and design artifacts from the creation process.

*(Scan the QR code or visit:
<https://duke.is/playbook-repo>)*



From Cognitive Dividend to Moral Dividend



The Cognitive Dividend

The time and mental energy saved through the automation of routine, repetitive tasks.



The Moral Dividend

The reinvestment of that cognitive surplus into uniquely human-centric work: **empathy**, stewardship, and **profound connection**.



Your First Step Next Monday Morning

CRAWL

Start by building your own **Portable AI Brain**. Begin documenting your personal workflows using the principles of **Process Provenance**.

WALK

Introduce the practice to your immediate team. Create a shared **Session Synthesis Report** for a single, low-stakes project to build a verifiable shared asset.

RUN

Advocate for these practices at the organizational level to build institutional capacity for a new, **human-centric operating system**.



Thank You!

If AI is our mirror, then how we use it reflects who we're becoming.

It's time to stop prompting AI – and start prompting ourselves.



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