



PURDUE
UNIVERSITY®

Program Packet
Operations Executive Program 2.0

September 2026

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Operations Executive Program 2.0

September 2026

Program Concept Overview

What is the Operations Executive Program (Phase 2.0)?

The Operations Executive Program (OEP) is an immersive, in-person experience at Purdue University designed to advance enterprise-level operations leadership. Phase 2.0 builds on foundational capabilities and focuses on integrating strategy, process, data, finance, and AI to drive organizational impact.

Participants step away from daily responsibilities to engage with leading faculty and peers in a highly interactive, cohort-based environment. The program emphasizes practical application, cross-functional alignment, and enterprise leadership, equipping participants to influence across boundaries, lead end-to-end processes, and deliver sustainable outcomes.

Why Purdue?

Purdue University is widely recognized for its strength in operations, engineering, and data-driven disciplines, making it an ideal partner for advancing the next phase of this program. As Phase 2.0 expands the scope to include enterprise leadership, financial strategy, and AI readiness, Purdue's multidisciplinary faculty brings together expertise across business, technology, analytics, and organizational leadership.

The Purdue Executive Education team has a proven ability to design and deliver transformative learning experiences that foster cross-functional collaboration and practical application. By drawing on faculty from diverse disciplines, Phase 2.0 provides participants with integrated perspectives that reflect the complexity of modern operations.

In addition to academic excellence, Purdue offers a dynamic, on-campus experience that reinforces collaboration, reflection, and innovation. This environment supports leaders in developing the mindset and capabilities required to connect strategy to execution and drive impact across their organizations.

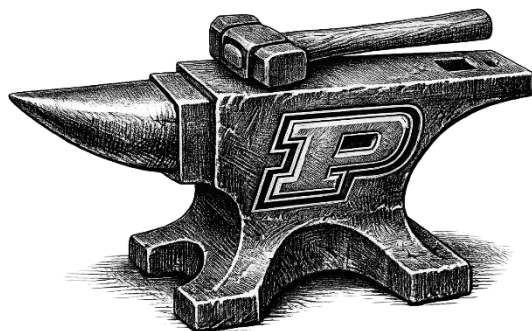
Why These Capabilities Matter

Operations leaders must now operate at an enterprise level, connecting strategy to execution across functions. Leadership influence, financial acumen, AI readiness, data fluency, and end-to-end process ownership are critical to delivering efficiency, innovation, and competitive advantage.

Together, these capabilities enable leaders to break down silos, make informed decisions, and drive consistent, high-quality customer outcomes, positioning the organization for sustained success.

The Learner Experience

Throughout each day, learners will progress through four primary modules spanning more than a dozen sessions. The anvil graphic symbolizes areas of high importance to the executives completing the program. A key to the program is that daily applied exercises and the curation of an implementation plan act as common thread throughout the week.



End-to-End Leadership

This module will empower leaders to influence strategically, align and mobilize process owners, and consider enterprise-wide approaches for people, processes, and projects.

Financial Insight

This module will equip leaders with the skills to analyze market position, make informed P&L decisions, and build compelling business cases that drive strategic and operational success

The AI-Ready Executive

This module will introduce foundational AI concepts and examine how operations leaders can prepare themselves for AI implementation for individuals, teams, and across the enterprise.

Data Interrogation & Fluency

This high-impact module teaches leaders to ask better questions, assess quality of analysis, and build clear, aligned processes.

Fundamental Future of Ops

This module equips participants with modern process leadership skills through sessions on emerging process theory, leading process owners horizontally, and managing end-to-end client journey processes. Learners will gain practical tools to drive cross-functional alignment and elevate process ownership across the organization.

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**Welcome
Back
to
PURDUE!**

OEP Program Participants and Guests,

Welcome back to Purdue University and to the next phase of the Operations Executive Program. It is a pleasure to have you return to campus as we continue this journey together through Phase 2.0.

We are proud to build on the strong foundation established in the first phase of the program. Your continued commitment reflects both the importance of operational leadership within the Bank and the opportunity to further expand your impact at an enterprise level. It is an honor for Purdue to partner with you as you take this next step.

As you re-engage with the program, you will experience an evolved curriculum designed to meet the increasing complexity of today's operating environment. Through collaboration with our multidisciplinary faculty and your peers, Phase 2.0 will focus on strengthening leadership influence, financial decision-making, data and AI readiness, and end-to-end process ownership. As before, the experience is designed to be interactive, practical, and immediately applicable to your organization.

Just as importantly, this phase offers another opportunity to reconnect with your cohort—building on the relationships, perspectives, and shared experiences that are critical to driving meaningful, cross-functional change.

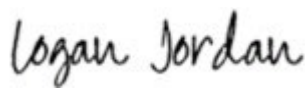
We are excited to welcome you back to campus and look forward to continuing this work together.

Welcome back to Purdue.

Boiler Up!



Mathew Trampski
OEP Program Lead
Executive Director
Purdue Technical Assistance Program



Logan Jordan
OEP Academic Lead
Associate Dean of Administration
Mitchel E. Daniels, Jr. School of Business

Classroom Wi-Fi Connectivity

A guest Wi-Fi network has been made available for the duration of the program. This network is available when located in the classrooms and common areas of the Convergence Center.

Wi-Fi Details

SSID: Convergence WiFi or WiFi Guest

Password: <No Password Needed>

** If you experience any connectivity issues, please contact any of the Purdue support staff for assistance.*

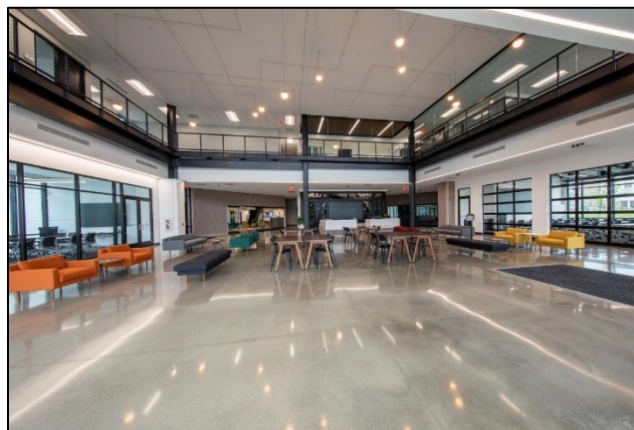
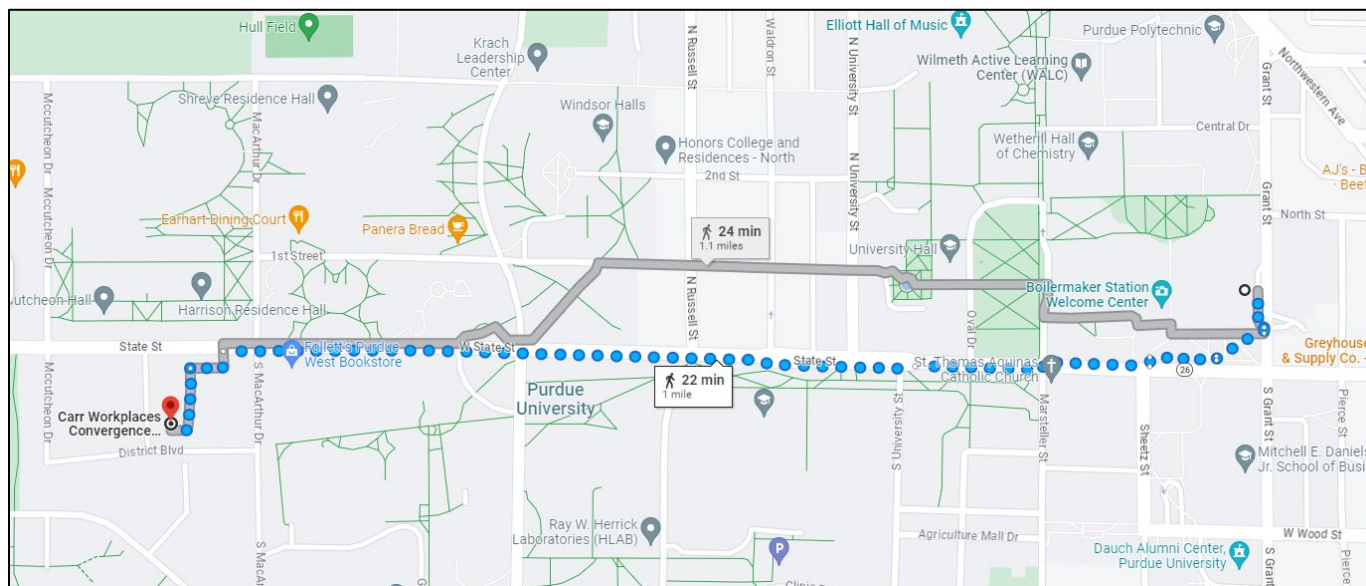
** Please follow separate Wi-Fi instructions for the hotel*

Program Location – Convergence Center

The main program and daily sessions will be located at the Convergence Center for Innovation & Collaboration. The Convergence Center is one mile from the hotel. Daily transportation will be provided before and during the breakfast period each day. Participants are welcome to walk to Convergence if they prefer. Transportation will also be provided at the end of each day.

Address:

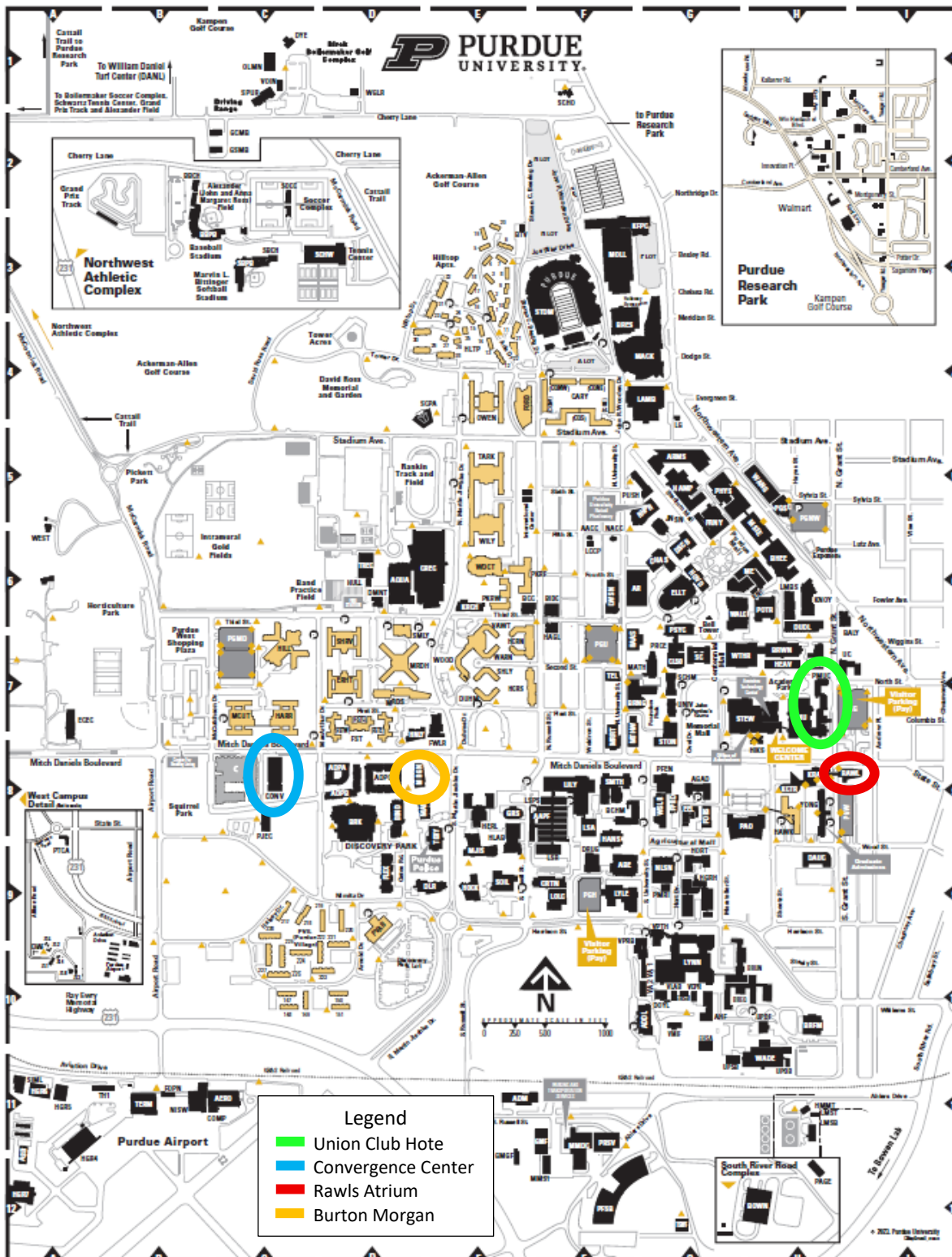
Convergence Center
101 Foundry Dr.
West Lafayette, IN 47906



Purdue Campus Map

Digital <https://www.purdue.edu/campus-map/>

Download: <https://www.purdue.edu/campus-map/graphics/campusmap.pdf>



Free Night Local Suggestions

Eateries:

College-Vibe

- **XXX – Triple X Diner** – Classic Purdue hangout serving legendary burgers and all-day breakfast since 1929.
- **Nine Irish Brothers** – Cozy Irish pub with hearty fare, Guinness on tap, and live music nights.
- **The Tap** – Bustling beer bar featuring dozens of craft brews and elevated pub bites.

Low-Key

- **Sakanaya Izakaya** – Japanese small plates, sushi, and sake in a relaxed, modern setting.
- **BRU Burger** – Gourmet burgers and craft beers in a casual, family-friendly space.
- **Town and Gown Bistro** – Warm, inviting spot for globally inspired comfort food.

Midscale

- **Ripple & Company** – Seasonal, locally sourced dishes with a neighborhood-friendly feel.
- **East End Grill** – Contemporary American grill known for fresh seafood and craft cocktails.
- **The Bryant Food and Drink Co.** – Upscale-casual dining with inventive American cuisine and a vibrant bar.

Upscale

- **Boilerhouse Prime** – Refined steakhouse experience near campus, steeped in Purdue tradition
- **Bistro 501** – French-inspired fine dining with an intimate, elegant atmosphere.
- **8Eleven Bistro** – Chic bistro blending classic flavors with modern culinary flair.

Night Life:

College Vibe

- **Harry's Chocolate Shop** – Purdue's legendary college bar, famous for strong pours and Boilermaker pride.
- **Neon Cactus/The Vault** – Dance the night away with live DJs, neon lights, and high-energy vibes.
- **Union Rack and Roll** – Bowling, billiards, and bar games paired with a full drink menu.

Low-Key

- **648 Bourbon and Cigar Lounge** – Sophisticated lounge for rare bourbons, fine cigars, and conversation.
- **Boiler Up Bar** – Refined cocktail bar located in the Purdue Memorial Union.

For group activities at any of these locations, or others,
please contact Jim or Mat to arrange group transportation.

Purdue Key Personnel Contact Information

Program Lead	Mat Trampski	mtrampsk@purdue.edu	765-414-8462 (m)
Logistics Lead	Courtney Huckstep	chuckste@purdue.edu	765-418-5382 (m)
Program Support	Leigh Ann Griffin	leighann@purdue.edu	765-562-2693 (m)
Program Support	Jim Stratton	stratton@purdue.edu	217-232-2127 (m)
Academic Lead	Logan Jordan	jordan@purdue.edu	765-494-4370 (o)

Airport Logistics

All airport travel is provided for your convenience. Shuttles and car services have been arranged, and schedules will be communicated directly to participants.

Pick-up and drop-off will be at Indianapolis International Airport Drop and the Purdue Union Club Hotel.

For any questions, travel changes, or concerns:
please contact Leigh Ann at (765) 562-2693

Program Agenda

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Daily Agenda

Day 0 – Sunday, September 27th

<u>Time</u>	<u>Event</u>	<u>Purdue P.O.C.</u>
6:30 PM – Until Concluded	Social Hour (Optional) BoilerUp Bar Union Club Hotel	Courtney Huckstep

Day 1 – Monday, September 28th

<u>Time</u>	<u>Event</u>	<u>Purdue P.O.C.</u>
7:15 AM – 8:00 AM	Shuttles to Convergence Purdue Memorial Union Club Hotel Lobby	Courtney Huckstep
7:30 AM – 8:15 AM	Breakfast and Program Registration Convergence Atrium	
8:30 AM – 8:45 AM	Program Kickoff and Introductions Convergence Center Purdue Opening Remarks	Mat Trampski
8:45 AM – 9:00 AM	SLT Kickoff and Introductions Convergence Center Purdue Opening Remarks	Bank of America
9:00 AM – 10:00 AM	Leadership 1 – Executive Leadership: Putting the “E” in OEP Convergence Center	Brad Alge
10:00 AM – 10:30 AM	Executive Integration Convergence Center	Mat Tramps
10:30 AM – 12:00 PM	AI 1 – Beyond the Buzzword: Math not Magic Convergence Center	Mat Trampski
12:00 PM – 1:00 PM	Lunch Convergence Center Atrium	Courtney Huckstep
1:00 PM – 2:00 PM	AI 1 – Beyond the Buzzword: Math not Magic Convergence Center	Mat Trampski
2:00 PM – 2:30 PM	Executive Integration Convergence Center	Mat Trampski
2:30 PM – 3:30 PM	Foundry – Process Scope, Design & Financials Convergence Center	Mat Trampski
3:30 PM – 3:45 PM	Break	
3:45 PM – 5:00 PM	AI 2 – AI for the Bank: The Internal AI Landscape Convergence Center	Hank Weaver
5:00 PM – 5:30 PM	Executive Integration Convergence Center	Mat Trampski
5:30 PM – 6:30 PM	Break and Travel to hotel Purdue Memorial Union Hotel	Courtney Huckstep
6:30 PM – 6:45 PM	Travel to Purdue Sports Complex Ross-Ade Stadium/Mackey Arena	Courtney Huckstep
6:45 PM – 9:45 PM	Cocktails, Hors D’oeuvres, & Dinner Ross-Ade Stadium/Mackey Arena	Courtney Huckstep

Day 2 – Tuesday, September 29th

<u>Time</u>	<u>Event</u>	<u>Purdue P.O.C.</u>
7:15 AM – 8:00 AM	Shuttles to Convergence Purdue Memorial Union Club Hotel Lobby	Courtney Huckstep
7:30 AM – 8:30 AM	Breakfast Convergence Center Atrium	Courtney Huckstep
8:30 AM – 8:45 AM	SLT Reflection Convergence Center	Bank of America
8:45 AM – 10:15 AM	Finance – Market Analysis Convergence Center	Kevin Koharki
10:15 AM – 10:45 AM	Executive Integration Convergence Center	Mat Trampski
10:45 AM – 11:45 AM	Data 1 – Questions & Elements: Interrogating Data Convergence Center	Jim Stratton
11:45 AM – 12:00 PM	Executive Integration Convergence Center	Mat Trampski
12:00 PM – 1:30 PM	Lunch John Purdue Room	Courtney Huckstep
1:30 PM – 2:30 PM	Foundry 2 – Process Risks, Controls & Measures Convergence Center	Mat Trampski
2:30 PM – 2:45 PM	Break	
2:45 PM – 4:15 PM	Data 2 – Process Intelligence Convergence Center	Elif Elcin Gunay
4:15 PM – 4:30 PM	Break	
4:30 PM – 5:00 PM	Executive Integration Convergence Center	Mat Trampski
5:00 PM – 6:00 PM	Break and Travel to hotel Purdue Memorial Union Hotel	Courtney Huckstep
6:00 PM – 6:30 PM	Travel Ripple & Co.	Courtney Huckstep
6:30 PM – 9:30 PM	Cocktails & Dinner Ripple & Co.	Courtney Huckstep

Day 3 – Wednesday, September 30th

<u>Time</u>	<u>Event</u>	<u>Points of Contact</u>
7:00 AM – 7:15 AM	Check-in Lobby Union Club Hotel for Fair Oaks Bus	Courtney Huckstep
7:15 AM – 8:30 AM	Travel to Fair Oaks Farm	Courtney Huckstep
8:30 AM – 8:45 AM	Breakfast & Coffee Bar	Courtney Huckstep
8:45 AM – 9:00 AM	SLT Reflection Fair Oaks Farm	Bank of America
9:00 AM – 11:30 AM	Process 3 – Client Focused Process Design Fair Oaks Farm	Jennifer Christie
11:30 AM – 12:00 PM	Executive Integration Fair Oaks Farm	Mat Trampski
12:00 PM – 1:00 PM	Lunch Fair Oaks Farm	Courtney Huckstep
1:00 PM – 2:30 PM	Farm History, Innovation & Data Fair Oaks Farm	Jacqueline McCloskey
2:30 PM – 2:45 PM	Break	
2:45 PM – 4:30 PM	Farm Tour Fair Oaks Farm	Jacqueline McCloskey
4:30 PM – 5:15 PM	Executive Integration Fair Oaks Farm	Mat Trampski
5:15 PM – 6:15 PM	Wine and Cheese Tasting Fair Oaks Farm	Courtney Huckstep
6:15 PM – 6:30 PM	Travel to Dinner	
6:30 PM – 9:00 PM	Dinner Fair Oaks Farm Private Clubhouse Cornhole Tournament	Courtney Huckstep

Day 4 – Thursday, October 1st

<u>Time</u>	<u>Event</u>	<u>Purdue P.O.C.</u>
7:15 AM – 8:00 AM	Shuttles to Convergence Purdue Memorial Union Club Hotel Lobby	Courtney Huckstep
7:30 AM – 8:30 AM	Breakfast Convergence Center Atrium	Courtney Huckstep
8:30 AM – 8:45 AM	SLT Reflection Convergence Center	Bank of America
8:45 AM – 10:15 AM	Process 2 – Process Thinking: Emerging Process Theory Convergence Center	Pat Brunese
10:15 AM – 10:30 AM	Break	
10:30 AM – 12:00 AM	Process 2 – Process Thinking Convergence Center	Pat Brunese
12:00 PM – 1:00 PM	Lunch Convergence Center Atrium	Courtney Huckstep
1:00 PM – 1:15 PM	Executive Integration Convergence Center	Mat Trampski
1:15 PM – 2:15 PM	Foundry 3 – Process Efficiency & OEP Learning Summary Convergence Center	Mat Trampski
2:15 PM – 2:30 PM	Break	
2:30 PM – 4:00 PM	Data 3 – The Next Chapter: Advanced Storytelling with Data Convergence Center	Doug Pruim
4:00 PM – 4:15 PM	Break	
4:15 PM – 4:45 PM	Executive Integration Convergence Center	Mat Trampski
4:45 PM – 5:30 PM	Foundry – Speed Sharing Convergence Center	Mat Trampski
5:30 PM – 6:00 PM	Break and Travel to hotel Purdue Memorial Union Hotel	Courtney Huckstep

Day 5 – Friday, October 2nd

<u>Time</u>	<u>Event</u>	<u>Purdue P.O.C.</u>
7:15 AM – 8:00 AM	Shuttles to Convergence Purdue Memorial Union Club Hotel Lobby	Courtney Huckstep
7:30 AM – 8:30 AM	Breakfast Convergence Center Atrium	Courtney Huckstep
8:30 AM – 8:45 AM	SLT Reflection Convergence Center	Bank of America
8:45 AM – 10:00 AM	Process 4 – Tactical Management of Processes & Process Owners Convergence Center	Mike Hyzy
10:00 PM – 10:15 PM	Executive Integration Convergence Center	Mat Trampski
10:15 AM – 10:30 AM	Break	
10:30 AM – 11:30 AM	Operations Foundry Presentations Convergence Center	Mat Trampski
11:30 AM – 12:00 PM	Program Close Convergence Center	Mat Trampski
12:00 PM – 1:00 PM	Lunch (Grab-n-Go) Convergence Center Atrium	Courtney Huckstep
<i>Shuttle to airport from Convergence (GROUP 1) @12:15pm</i>		
<i>Shuttle to airport from Hotel (GROUP 2) @ 1:30pm</i>		

Curricular Material

Learning Modules, Outcomes, & Session Descriptions

Leadership	Driving E2E Continuous Improvement with Enterprise & Ownership Mindset Learning Outcome Drive end-to-end continuous improvement by fostering enterprise thinking, strengthening ownership, and breaking down silos to enable system-wide accountability and collaboration.
Finance	Driving Performance: Financial Insight, Market Analysis, & Intelligent Operations Learning Outcome Enhance performance by applying financial acumen, market and enterprise metrics, and predictive operational tools to optimize efficiency, resource allocation, and competitive positioning
Artificial Intelligence	The AI Ready Executive: AI Fundamentals, Applications, & Strategy Learning Outcome Develop AI readiness by mastering foundational concepts, evaluating use cases, aligning with enterprise strategy, and leading responsible adoption to drive business value.
Data	From Ambiguity to Action: Data Fluency for Executive Decision-Making Learning Outcome Build data fluency by defining problems, asking the right questions, analyzing data-driven insights, and translating findings into clear actions and measurable outcomes.
Process	The Fundamental Future of Ops: Trends and models for E2E Process Design & Leadership Learning Outcome Lead the future of operations by applying emerging technologies, process innovation frameworks, and end-to-end design principles to optimize performance and drive enterprise transformation.

Session Descriptions

Driving E2E Continuous Improvement with Enterprise & Ownership Mindset

Leadership 1

Description:

Empower teams to own their work, strengthen cross-functional collaboration, and align processes to deliver consistent business results.

Session Objective(s): Define your leadership role to empower team ownership, recognize and overcome barriers to enterprise thinking, and implement strategies and action plans that foster system-wide accountability, cross-functional collaboration, and value-added executive impact.

Faculty Lead: Dr. Brad Alge

BofA Video: Tom Scrivener

Driving Performance: Financial Insight, Market Analysis, & Intelligent Operations

Finance 1

Description:

Assess your institution's competitive standing, explore the economics of innovation and AI adoption, and weigh the risks and rewards of acting, or waiting, in a shifting market.

Session Objective(s): Differentiate the bank's competitive position by analyzing operating leverage and efficiency ratios, apply and evolve key enterprise metrics such as ROTCE, and leverage forecasting, capacity planning, and predictive tools to optimize resource deployment.

Faculty Lead: Dr. Kevin Koharki

The AI Ready Executive: AI Fundamentals, Applications, & Strategy

Artificial Intelligence 1

Description:

Understand core AI concepts, explore real-world use cases and governance, and apply design thinking to integrate AI into processes for smarter, more effective operations.

Session Objective(s): Build foundational AI literacy by understanding core concepts, terminology, and use cases, critically evaluating outputs for quality and risk, and establishing a practical framework for responsible and effective AI adoption.

Faculty Lead: Mr. Mat Trampski

The AI Ready Executive: AI Fundamentals, Applications, & Strategy

Artificial Intelligence 2

Description:

Understand the needs, applications, and implementation goals for AI that fits the Bank's strategic goals.

Session Objective(s): Understand how to responsibly leverage AI to amplify strengths without over-reliance, align with the bank's vision for AI and Copilot adoption, and foster a culture that embraces and sustains AI-driven ways of working.

Bank of America Lead: Mr. Hank Weaver

From Ambiguity to Action: Data Fluency for Executive Decision-Making

Data 1

Description:

Learn to define clear problem statements, craft the right questions, and evaluate data outputs to drive informed, high-impact decisions.

Session Objective(s): Identify and define problems by asking targeted questions to gather the right data, develop data-driven solutions, and evaluate outcomes using clear success metrics and performance measures.

Faculty Lead: Dr. Jim Stratton

From Ambiguity to Action: Data Fluency for Executive Decision-Making

Data 2

Description:

Explore how to simplify and standardize complex processes, uncover inconsistencies, and leverage AI for smarter, faster workflows.

Session Objective(s): Assess processes for ambiguity and consistency while identifying opportunities to apply AI and critically analyzing outputs to drive improvement.

Faculty Lead: Dr. Elcin Gunay

From Ambiguity to Action: Data Fluency for Executive Decision-Making

Data 3

Description:

Expand on prior storytelling with data techniques to better craft and communicate complex ideas up- and downstream within the organization with interactive exercises.

Session Objective(s): Develop advanced storytelling skills with data by transforming complex analysis into clear, compelling narratives that drive insight, influence decisions, and align stakeholders through effective visualization and communication.

Faculty Lead: Dr. Doug Pruim

The Fundamental Future of Ops: Trends and models for E2E Process Design & Leadership

Process 1

Description:

Use design thinking to reframe problems, uncover customer insights, and co-create innovative practical solutions that work at scale.

Module Objective(s): Apply design thinking to enterprise challenges by using client-centered approaches and journey mapping to uncover pain points, reframe problems, and drive innovative solutions.

Faculty Lead: Mrs. Jennifer Christie

The Fundamental Future of Ops: Trends and models for E2E Process Design & Leadership

Process 2

Description:

Explore the latest advances in process thinking and how they reshape modern organizational workflows.

Session Objective(s): Obj: Recognize how emerging and cutting-edge technology can influence process theory.

Faculty Lead: Dr. Pat Brunese

The Fundamental Future of Ops: Trends and models for E2E Process Design & Leadership

Process 3

Description:

Learn practical strategies for influencing and guiding process owners across functional boundaries.

Session Objective(s): Think beyond siloed ownership to evaluate and implement process improvements across upstream and downstream impacts, while understanding horizontal effects and confidently interrogating processes to drive system-wide optimization.

Faculty Lead: Dr. Pat Brunese

The Fundamental Future of Ops: Trends and models for E2E Process Design & Leadership

Process 4

Description:

Understand how to tactically lead processes and process owners to create a seamless, end-to-end client journey experience.

Module Objective(s): Develop the ability to tactically manage processes and process owners by driving accountability, optimizing performance, and ensuring alignment with operational goals and enterprise priorities.

Faculty Lead: Mr. Mike Hyzy

Leadership

Executive Leadership: Putting the “E” in OEP

Dr. Brad Alge

EXECUTIVE LEADERSHIP (L1)

PUTTING THE “E” IN OEP

Dr Brad Alge

Daniels School of Business

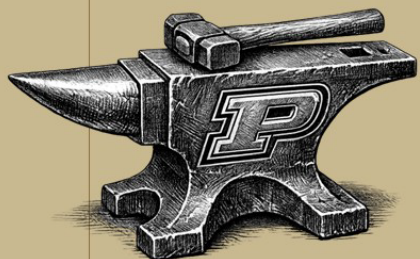
Global Operations Executive Program

9/17/2026

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LEARNING OBJECTIVES

Executive Leadership: Putting the “E” in OEP



Description:

This session is designed to help you empower your teams to own their work, strengthen cross-functional collaboration, and align processes to deliver consistent business results.

Objective(s):

- Define your leadership role and empower your team to take ownership.
- Define end-to-end leadership and its impact on customer experience, operational efficiency, and business outcomes.
- Recognize barriers to enterprise thinking and apply strategies to shift from siloed to system-wide accountability.
- Understand the fundamental strengths and contributions of a value-add executive.
- Develop action plans to reinforce a culture of ownership and cross-functional collaboration.

“E” in OEP

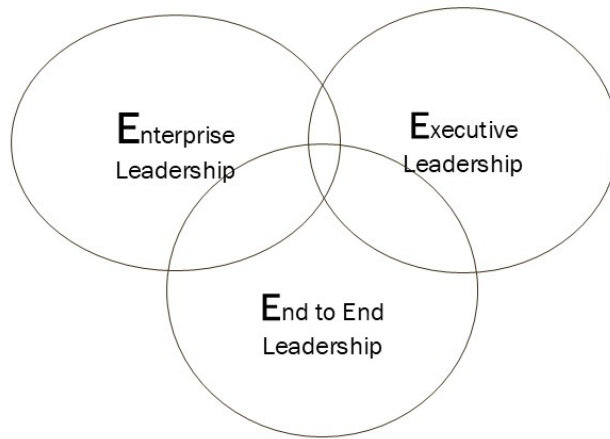
- What does putting the “E” in OEP mean to you?
- What differentiates “Executive Leadership” from “Leadership”?

Success Driver? Global Operations in 10 Years

“Ten years from now, if you were describing the success of our company, what specifically will you be saying about Global Operations’ contribution and the people who created this success, that is different from today?”

Tom Scrivener
Chief Operations Executive

"E" in Executive Leader



What is End-to-End Leadership?

One who sees the big picture, takes ownership of the operation (or process), builds relationships across the operation, removes barriers that impede the operation, is committed to improving and optimizing the operation, and builds leaders to ensure operational success in the future; puts organization ahead of self.

What are the benefits of end-to-end leadership?

Executive Leadership

Survey of top global business executives

79%

said it was extremely important to have leaders who act on behalf of the entire organization and not just their units.

65%

Expect at least half of their midlevel to senior level managers to behave as enterprise leaders

Leadership Skills for Operational Excellence

Fundamental strengths of value-added executive leader – unlocking barriers to enterprise thinking

- **Enterprise Mindset** – care about others and company, putting others (org) ahead of myself; recognizes the integration and interdependency of every function; improving whole system
- **Sound Decision Making** – seek full information, know where expertise lies
- **Intellectual Curiosity** – asking the curious questions, inquiry mindset
- **Desire to Improve** – dissatisfied with status quo; persistent pursuit of growth and excellence
- **Perspective:** Depth (my team, area) and breadth (external environment, beyond boundaries) – know what lies within, know what lies beyond, spanning boundaries
- **Communication** – knowing how to communicate to audience; clarity, influence, curiosity, encourage multi-way
- **Servant Leadership** – care about others and company; putting others ahead of myself

An Enterprise Mindset and Servant Leadership

- To think at an enterprise level requires checking your own ego and self-interest in favor of others (your team, other areas in the company, the company overall)
- This is why servant leadership becomes so important.

Greenleaf Definition:

“Servant leadership begins with the natural feeling that one wants to serve, to serve *first*. Then conscious choice brings one to aspire to lead. . . . The difference manifests itself in the care taken by the servant—first to make sure that other people’s highest priority needs are being served. The best test . . . is: do those served grow as persons; do they, *while being served*, become healthier, wiser, freer, more autonomous, more likely themselves to become a servant? *And*, what is the effect on the least privileged in society; will they benefit, or, at least, will they not be further deprived?”

Servant Leadership in Practice

Serving others first, even if self-sacrifice is required

Putting your people first

Making it clear that your people come first; putting interests of your teams ahead of your own self-interest.

Helping followers grow/succeed

Demonstrating genuine concern for others’ career growth and development by providing support and mentoring.

Empathy

Showing sensitivity to other people and their personal and work concerns.

Behave ethically

Fair, open, honest, authentic

Empowering

Encouraging and facilitating others, especially immediate followers, in identifying and solving problems. Build capability in others. Give control/ownership.

Creating value for the community

A conscious, genuine concern for helping the community

Conceptualizing

Possessing the knowledge of the organization and environment to be in a position to effectively support and assist others, especially immediate followers. Are you in tune with what is going on within and outside the org?

*In Volatile, Uncertain, Complex, Ambiguous
Environments...We Face Many Tensions As Leaders*

*Leadership is a journey to
irrelevance,

but if journey is successful, you
will become more relevant*

*In Volatile, Uncertain, Complex, Ambiguous
Environments...We Face Many Tensions As Leaders*

*We must learn to give
up control....

....to regain control*

*In Volatile, Uncertain, Complex, Ambiguous
Environments...We Face Many Tensions As Leaders*

How do we make decisions in a tension-filled VUCA landscape?

Leadership Tension

2026 Harvard Business Impact Study Survey of 1,139 senior executives:

Key Insight:

Leaders must improve performance today while reinventing for tomorrow

Where do you see or feel tension as a leader?

Consider your process owners. What tensions do your team
leaders experience?

How do you help them manage these tensions?

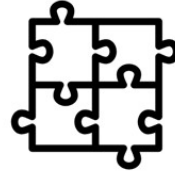
How Can I Help My Process Owners Manage Tension?



**Unlearn the Scripts
That Limit Adaptability**



**Develop Architects of
Inquiry vs. Owners of
Expertise**



**Practice Complexity
Thinking to
Complement Systems
Thinking**



**Lead at the
Intersection of
Technology and
Culture**

How Can You Help Your POs

“Asking the right questions is one of the most powerful actions a leader can take. That’s because good questions don’t just help you find answers—they open up your thinking and help you see your choices from new perspectives.”

Cheryl Strauss Einhorn, “In Uncertain Times, Ask These Questions Before You Make a Decision,” HBR.org

Curious Questions To Ask Before a Critical Decision

1. What decision today will make sense one year from now?
2. If, in a year, this decision was used as an example of our leadership, what would it teach?
3. What if this isn't the storm? What if it is the climate?
4. What is the cost of waiting? What would happen if we do nothing?
5. What could make us regret this decision?
6. What alternatives did we overlook?
7. How will we know if it was the right decision?
8. Is this decision reversible?

Decision Making

A QUICK EXERCISE

■ The Parking Lot

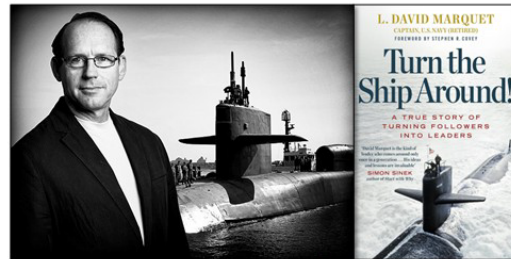
Executive Leadership is Empowered Leadership

- Leadership is communicating to people their worth and potential so clearly that they are inspired to see it in themselves. One of the things that limits our learning is our belief that we already know something. If you want people to think, give them intent, not instruction.
- “....On another submarine there was one guy in charge, one guy giving orders, one guy thinking, and 134 people doing what they were told. I don't care how smart you are. On my submarine I got 135 thinking, active, passionate, creative, proactive, taking initiative people. It's a tidal wave. You don't stand a chance!”

~David Marquet

“Great leaders give control,
they don't take it”

“If you want people to think,
give intent, not instruction”



Problem: Leader-follower Solution: Leader-leader

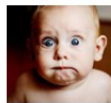
Old
Military
Command-Control



Leader



Follower



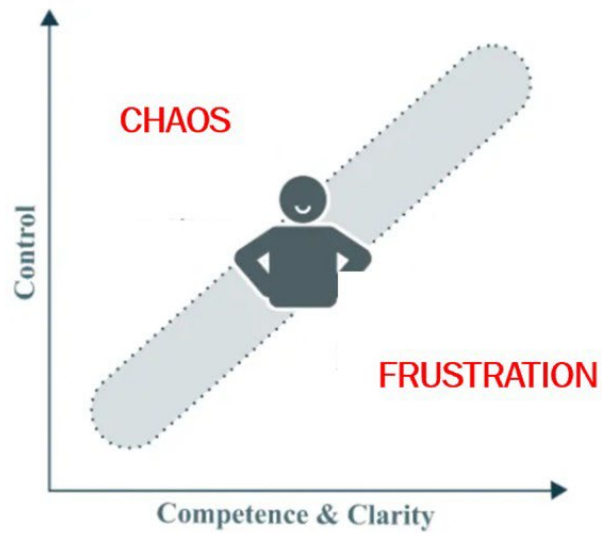
Don't do this...	DO THIS...
Think short term	Think long term
Protect information; administrate	Share information; informate & transformate
Question with doubt	Be curious
Have meetings	Have conversations
Focus on things	Focus on people
Take control (power)	Give control (empower)
Give orders/tell	Avoid giving orders /collaborate
Increase monitoring and control	Reduce monitoring and control
Efficiency—do what's safe	Effective – do what's right
Want to be missed when you depart	Comfortable with irrelevance, not being missed
Stay at home	Expand boundaries

Contemporary
Empowered

Leader ↔ Leader



Empowered Leadership Relationship Of The 3 “C”s

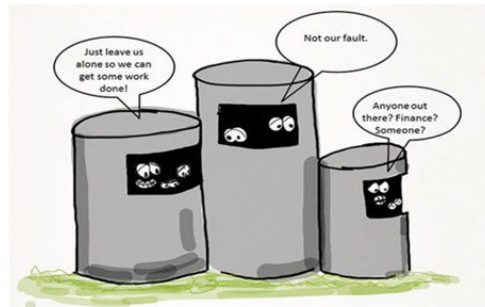


Intentionality

Bias for Action – Build of a culture or team with intention

I intend to...

COST OF SILOS



Silo mindset

Silos That Impede E2E Excellence

- Product Silos
- LOB Silos
- Channel Silos
- Data & Technology Silos
- Functional Silos

Leads to

- Less E2E ownership
- Less collaboration
- Inconsistent customer experience
- Less efficient (duplication of effort, slow response to customer)
- Inconsistent voice: messaging, confusion, lack of clarity
- Higher friction (conflict); disparate goals
- Less trust (esp. with other areas)

Quote

A partner at a professional accounting services firm..

"We need to focus on big projects that call for integration across our practices...that is where our greatest distinctive value is developed..."

...But most of us constrain ourselves to smaller projects, within our practice area, that we can handle"

Quote

A partner at a global consultancy.



"You know you should swim farther, to catch a bigger fish, but it is a lot easier to swim in your own pond and catch a bunch of smaller fish"



Poor (Absent) E2E Leadership

The silo mind will focus on more redwork, less blue work

More **REDWORK**

Less **BLUEWORK**

E2E Leader Must Manage: Innovations Versus Operations

INNOVATION
ACTIVITY

**“Work on
Business”**
(explore/
transform)

**“Work in
Business”**
(exploit/
perform)

OPERATION
ACTIVITY

How It Looks

Working in Business

Working on Business

REDWORK <i>Doing</i>	vs	BLUEWORK <i>Thinking</i>
Avoid Variability		Embrace Variability
Prove		Improve
Do		Decide
Individual		Team
Performance		Planning
Compliant		Creative
Narrow Focus		Broad Focus
Steep Hierarchy		Flat Hierarchy

E2E Opens Up More Bluework

Where do you spend your time and attention?

E2E Leadership
= More
INNOVATION
ACTIVITY

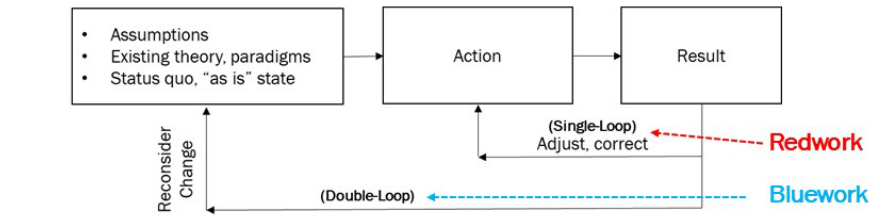
**"Work on
Business"
(explore)**

**OPERATION
ACTIVITY**

**"Work in
Business"
(exploit)**

Adapting to A Constantly Moving Target

Single vs double loop learning



Single Loop	Double Loop
Accepts "as is" state (just need to adjust)	Questions 'as is' state (e.g., underlying assumptions, goals, policies, systems)
Reactive: making corrections to current system to meet standards & goals; Solve immediate problems	Proactive: consider new standards/goals, new frameworks, new systems
Put out fire	How can we prevent future fires
Short term (what needs to be adjusted now?)	Long term (what could be?)

Breaking Horizontal Boundaries

- Build a strong team, with cultural brokers (super connectors)
- Develop and deploy cultural brokers (bridging & binding)
- Encourage people to ask the right questions
- Get people to see the world through others' eyes & broaden employee vision

Leveraging And Growing Your Network

Leveraging (your current team)

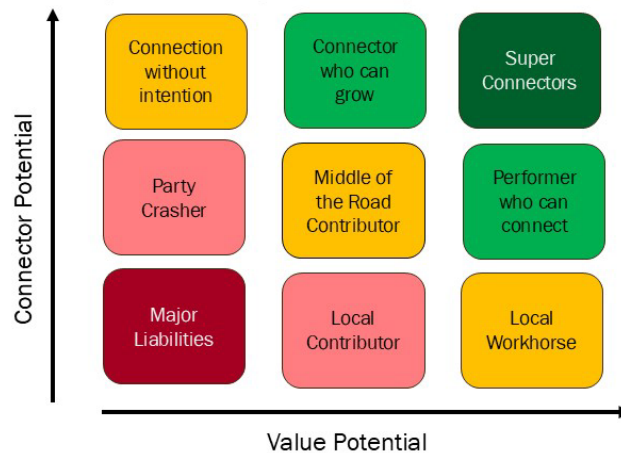
- Who in your team (internal network) brings value?
- Will others, not on your team, see value in those people?
- What does 'value' look like today? What should it look like?

Growing (end to end & external network)

- Who in your team sees the big picture? Who does not?
- Who in your team steps outside the team and engages others not in the team?
- Who in your team tries to see things from different vantage points?
- Who in your team possess strong emotional intelligence and communication skills?

Your Network 9-box

Exercise: Who are the super-connectors (cultural brokers) in your network? Describe their value to your team? What do they value (need)? How do you develop more super-connectors?



*Extreme Ownership:
Which Boat (Team) Are You In?*



**No Bad Teams,
Only Bad Leaders**



Take Aways

- Enterprise mindset is a servant mindset
- VUCA and tension is reality. Be comfortable with it
- Give control, don't take it
- Shift to intention-based leadership
- Identify and grow your super connectors
- Enterprise problems will not be solved within silos
- Ownership is modeled and it starts with you

THANK YOU

9/17/2026

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Finance

Market Analysis: Understanding Market Position and the Cost of Inaction

Dr. Kevin Koharki

MARKET ANALYSIS, UNDERSTANDING MARKET POSITION, AND THE COST OF INACTION

Kevin Koharki MBA, PhD
Accounting

Operations Executive Program

9/16/2026

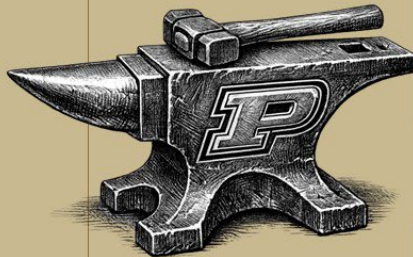
1

LEARNING OBJECTIVES

The Good and Potentially Bad Regarding AI Investments

Description:

The ability to accurately assess AI investments is vital for long-term success, particularly given recent market dynamics.



Objective(s):

We will develop an understanding of the following:

- What are current concerns with AI generally?
- What are the hidden risks associated with AI investments?
- Does AI investment require more “fluid thinking”?
- How can our actions potentially impact BAC’s P&L?

How is the Industry Utilizing AI?

- Offering more personalized experiences for customers, even, or perhaps especially, for smaller customers
- Deepening customer relationships
- Expanding headcount in key areas while reducing it in others
- Acquiring more profitable clients
- Reducing unit costs in a time of intense competition for customer dollars

How is the Industry Utilizing AI?

Token costs are collapsing again amid cheaper compute, more efficient systems and pricing pressure from cheaper open-weight models. Lower prices and more sophisticated uses are fuelling adoption, even if the economics of some of the expensive frontier models may be tested



[Silicon Data LLM Token Expenditure Index](#)



Source: Bloomberg Finance LP, Deutsche Bank, Last update Sep 7

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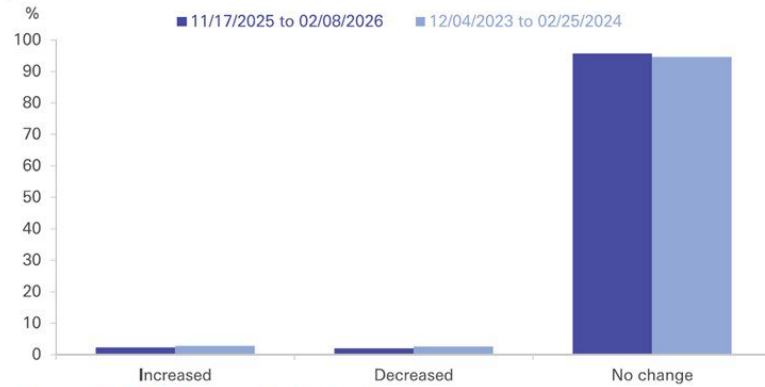
Deutsche Bank
Research Institute

How is the Industry Utilizing AI?

While AI adoption grows, a significant percentage of enterprises have not altered their workforce size as a direct result. We're still a long way from a revolution...



In last 6 months, how did use of AI affect business employment?



Source: BTOS, Census, Deutsche Bank

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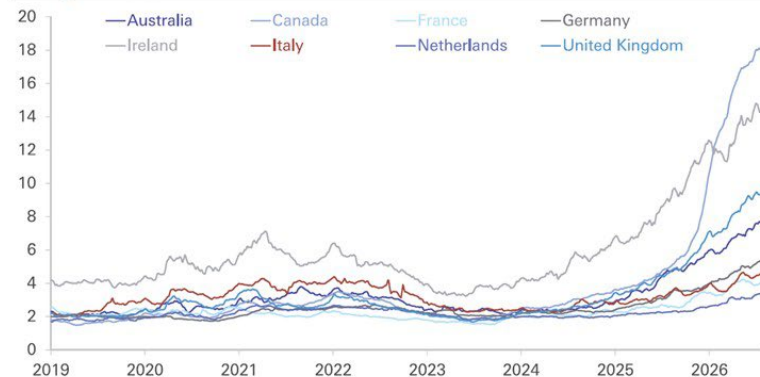
Deutsche Bank
Research Institute

How is the Industry Utilizing AI?

The share of job postings referencing AI is rising across countries. Is AI actually creating job openings rather than seeing them disappear?



Indeed AI Tracker: Share (%) of job postings on Indeed containing Artificial Intelligence (AI) terms



Source: Indeed Hiring Lab, Deutsche Bank

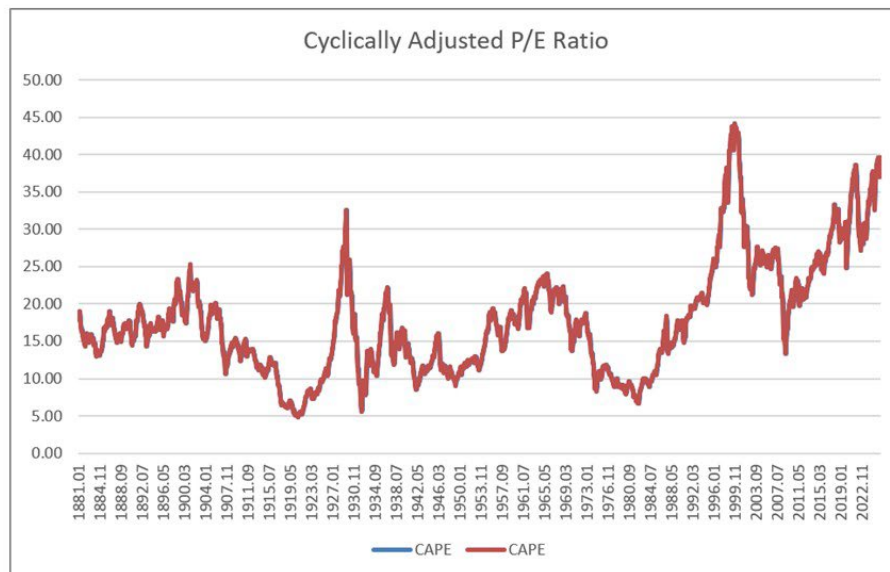
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Research Institute

What Are the Hidden Risks of AI?

- It is never just about what it costs today: **life cycle cost is key!**
 - Remember Philip Morris or Johns Manville?
- The investment required is so large and the operating expenses potentially so high: **Can we accurately measure the true cost of investing in, maintaining, and operating AI?**
- “Staying in the game” when it is obvious an investment is a mistake only compounds the problem: **Fail fast, learn, and move on**
 - ROI is still paramount, but measurement requires deeper analysis and understanding
- Younger generations may despise AI: **Be careful in how you message the benefits of AI, train employees for advancement**
 - I can't think of a client who isn't worried about this

To Bubble or Not to Bubble...



To Bubble or Not to Bubble...

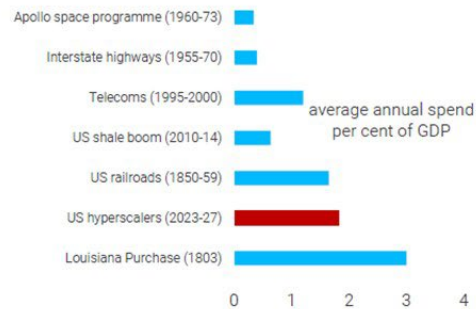
Chart 1: The stock market's fate is tied to the sustainability of AI capex



Source: DataStream, TS Lombard

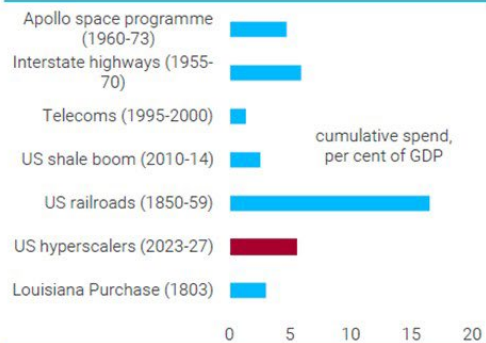
To Bubble or Not to Bubble...

Chart 4: One way to compare capex booms



Source: WSJ, TS Lombard

Chart 5: A better way to compare capex booms



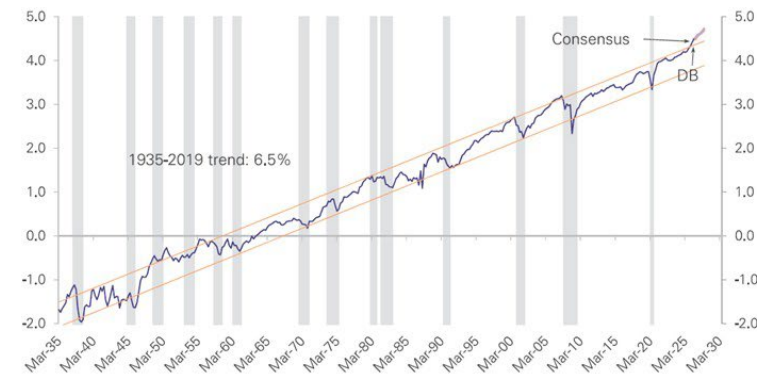
Source: WSJ, TS Lombard

To Bubble or Not to Bubble...

US earnings are breaking out of a 90-year channel.... On the upside which is incredible when you consider the high growth periods of the past.... The debate will rage on as to whether this is a sustainable new plateau or an artificial period of AI related elevated earnings...



S&P 500 quarterly EPS seasonally adjusted (log)



Source: Bloomberg Finance LP, Deutsche Bank Asset Allocation

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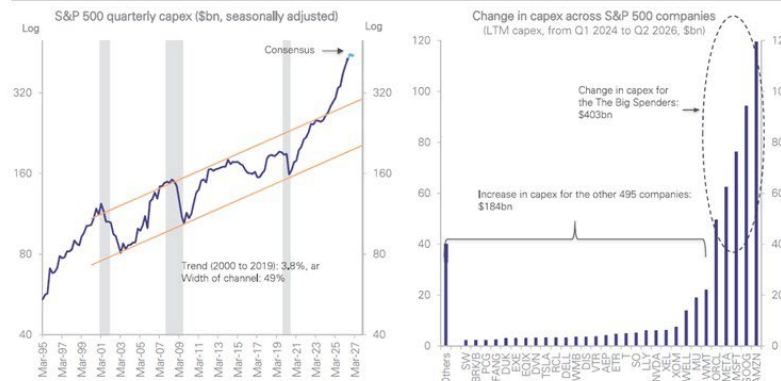
11

To Bubble or Not to Bubble...

We are clearly in an AI Capex boom. The top 5 capex spenders are spending more than double that of the remaining 495 in the S&P 500



S&P 500 Capex spending...



Source: Bloomberg Finance LP, Deutsche Bank Asset Allocation

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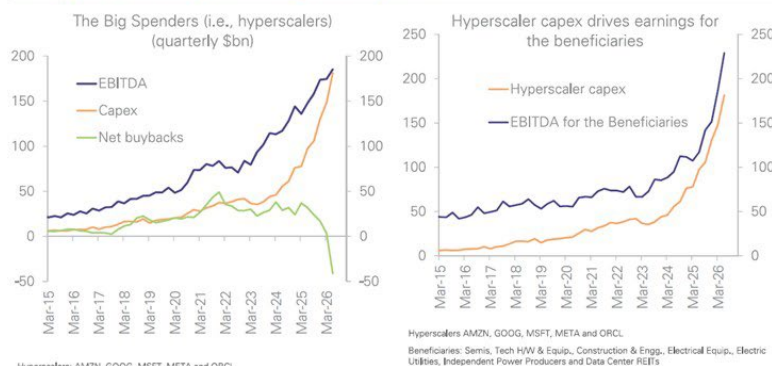
12

To Bubble or Not to Bubble...

Buy-backs have turned into issuance for the hyperscalers but their spending is massively helping the AI food chain...



US Hyperscaler Capex, earnings and buybacks



Source: Bloomberg Finance LP, Deutsche Bank Asset Allocation

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Recent Commentary for Perspective

“With analysts now forecasting hyperscale CapEx to exceed \$1 trillion in 2027 and agentic AI beginning to proliferate all industries, AI infrastructure spending is on track to reach \$3 trillion to \$4 trillion annually by the end of this decade.” – Nvidia CFO Colette Kress, Q1 2027 Earnings Conference Call

Just how much is \$3 - \$4 trillion?

U.S. GDP is ~\$31 trillion: 10 – 13%

Anthropic recently stated it believes the AI market can achieve \$30T in revenue!!!

Global IT spend is ~\$6 trillion: 50 – 67%

S&P 500 cumulative profits are ~\$2.3 trillion: 150 – 200% of profits

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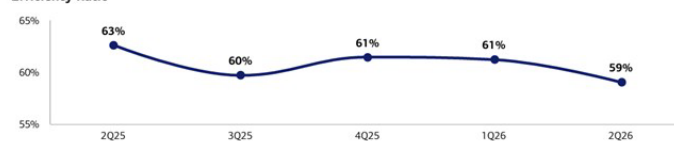
Recent Efficiency Ratio Performance

Expense and Efficiency

Total Noninterest Expense (\$B)



Efficiency Ratio



- Efficiency ratio of 59% improved 359 bps from 2Q25 and 220 bps from 1Q26
- Operating leverage of 6.6% in 2Q26 and 4.7% in 1H26
- 2Q26 noninterest expense of \$18.6B
 - Increased \$1.4B, or 8%, from 2Q25, driven equally by revenue-related expenses and investments in people, brand, and technology
 - Increased \$0.1B from 1Q26, as higher revenue-related expenses and marketing costs more than offset the absence of 1Q seasonally-elevated payroll taxes



Overview of BAC's P&L

Bank of America Corporation and Subsidiaries

Consolidated Statement of Income

(In millions, except per share information)

	2025	2024	2023
Net interest income			
Interest income	\$ 138,566	\$ 146,607	\$ 130,262
Interest expense	78,470	90,547	73,331
Net interest income	60,096	56,060	56,931
Noninterest income			
Fees and commissions	39,402	36,291	32,009
Market making and similar activities	12,014	12,967	12,732
Other income (loss)	1,585	538	1,097
Total noninterest income	53,001	49,796	45,838
Total revenue, net of interest expense	113,097	105,856	102,769
Provision for credit losses	5,675	5,821	4,394
Noninterest expense			
Compensation and benefits	42,346	40,182	38,330
Information processing and communications	7,453	7,231	6,707
Occupancy and equipment	7,448	7,289	7,164
Product delivery and transaction related	3,924	3,494	3,608
Professional fees	2,580	2,669	2,159
Marketing	2,204	1,956	1,927
Other general operating	3,772	3,991	5,960
Total noninterest expense	69,727	66,812	65,845
Income before income taxes	37,695	33,223	32,530
Income tax expense	7,186	6,250	6,225
Net income	\$ 30,509	\$ 26,973	\$ 26,305
Preferred stock dividends	1,454	1,629	1,649
Net income applicable to common shareholders	\$ 29,055	\$ 25,344	\$ 24,656
Per common share information			
Earnings	\$ 3.86	\$ 3.23	\$ 3.07
Diluted earnings	3.81	3.19	3.05
Average common shares issued and outstanding	7,521.9	7,855.5	8,028.6
Average diluted common shares issued and outstanding	7,680.9	7,935.8	8,080.5

Time for Discussion

- 1) What is our influence on BAC's P&L?
- 2) How will AI potentially help us better manage our tasks to improve P&L performance?

What Are Some Reasons BAC May Not Match Competitors?

FIGURE 2. BAC Targets vs. Peers

Ticker	ROTCE	Efficiency	CET1 Ratio
BAC	16-18%	55-59%	10.5%
C	10-11%	<60%	12.8%
GS	15-17%	60%	11.9-12.4%
JPM	17%	55%	13.5%
MS	20%	70%	NA
TFC	mid-teens	NA	10.0%
USB	high-teens	mid- to high-50%	10.0%
WFC	17-18%	NA	10-10.5%

Includes Cat I/II/III banks excluding Trust Banks and PNC (PNC doesn't provide targets)
Source: Barclays Research and Company Reports

Peer Valuation Comparison

Company / Ticker	Recent Price	52-Week Change	Market Value (billion)	2026E P/E	P/B Ratio*
Goldman Sachs Group /GS	\$1,092.61	82.3%	\$335	18.4	3.2
Bank of America / BAC	54.17	22.1	384	12.1	1.9
JPMorgan Chase / JPM	310.89	17.7	833	13.9	2.9
Morgan Stanley / MS	218.27	70.3	344	18.3	4.2

Note: *Price-to-tangible-book ratio; E=estimate
 Sources: Bloomberg, company reports

THANK YOU

Kevin Koharki MBA, PhD
 Associate Professor of Accounting

Artificial Intelligence 1

AI for All: Beyond the Buzzword – Math no Magic

Mat Trampski

OEP 2.0 - AI MODULE

BEYOND THE BUZZWORD: MATH, NOT MAGIC

Mat Trampski
Technical Assistance Program

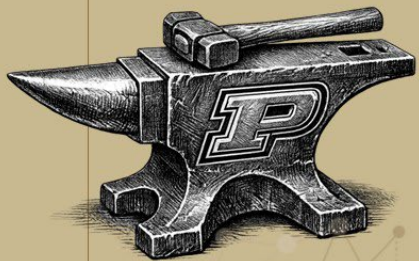
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1

LEARNING OBJECTIVES

Beyond the Buzzword: Math, Not Magic



Description:

This 90-minute session is designed to help operations executives better understand core AI concepts, explore real-world use cases at various levels of the organization, and apply AI concepts to leadership, operations, and process management.

Objective(s):

- Differentiate between what AI is and what AI isn't.
- Compare and contrast a set of AI related terms.
- Describe AI possibilities for personal productivity, team-level applications, and enterprise-wide implementation
- Apply AI concepts to leadership, operations, and process management.

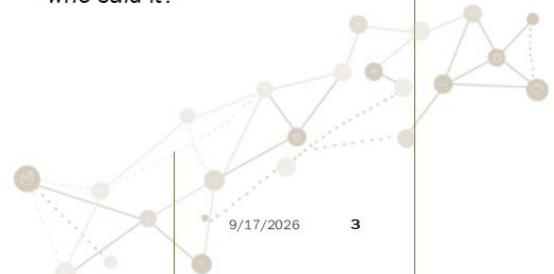


Beyond the Buzzword: Math, Not Magic

Renowned AI scholar and philosopher once said,

*“We are smart enough to invent AI,
dumb enough to need it,
and so stupid we can’t figure out
if we did the right thing.”*

- who said it?



Beyond the Buzzword: Math, Not Magic

Initial Thought Exercise

Prompt #1



Take 5 minutes to write down 1 – 2 opportunities or challenges in your “everyday” role where an AI solution might be leveraged for some improvement.

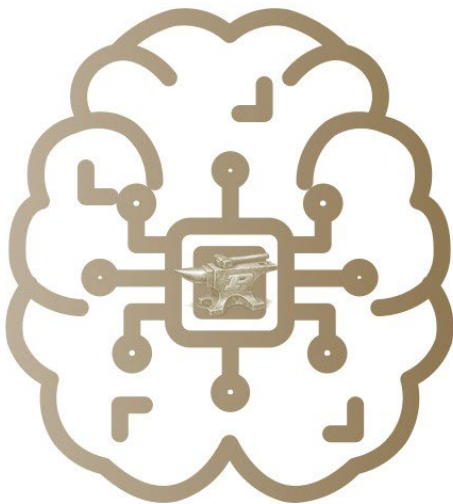
**We will revisit these concepts later

Part 1

smart enough to invent AI

Part 1 – Smart enough to invent AI

AI Defined



*How would you
define AI?*

Part 1 – Smart enough to invent AI

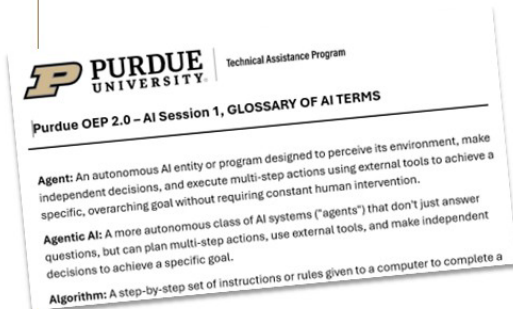
AI Defined

- Artificial, *adj* – made or produced by human beings rather than occurring naturally, especially as a copy of something naturally occurring.
- Intelligence, *noun* – the ability to acquire and apply knowledge and skills

Artificial Intelligence (AI) is computer software that utilize data and machine learning to perform tasks that typically require human intelligence, such as recognizing patterns, solving complex problems, and making autonomous decisions.

Part 1 – Smart enough to invent AI

Glossary of Terms



- See Executive Integration Packet
- Spend a few minutes looking through the terms
- Not comprehensive, but it's a start
- Why is it important?



Objective: Compare and contrast a set of AI related terms.

Part 1 – Smart enough to invent AI

Differentiate between what AI is and what AI isn't.



What AI is

- Machine-simulated intelligence
- Advanced Statistics/Inference
- High-Dimensional Probability
- Thinking Partner
- Data-driven machine learning
- Automated problem solving

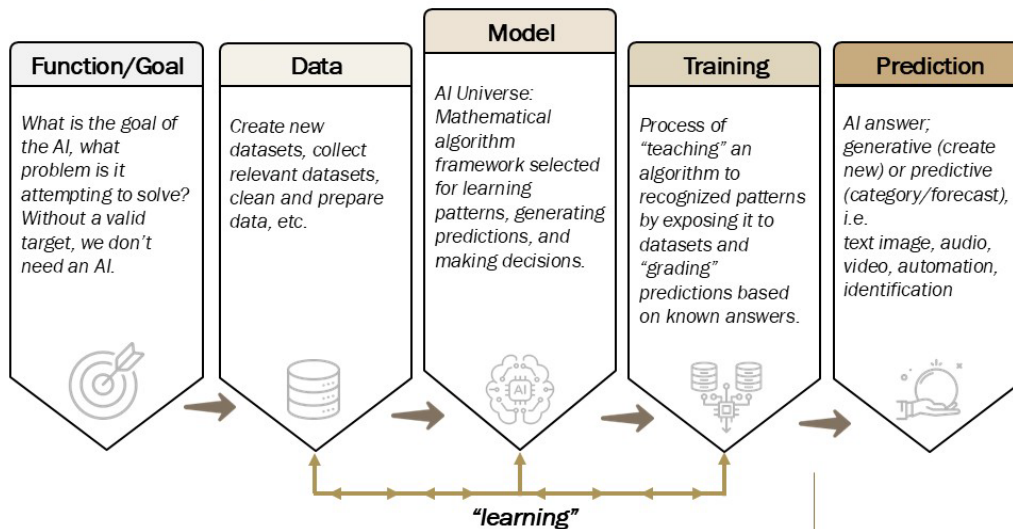
VS

What AI is not

- A conscious mind
- Infallible source of truth
- Rule-based deterministic
- Substitute for responsibility
- Intentionally malicious
- Magical quick fix / answer to every question

Part 1 – Smart enough to invent AI

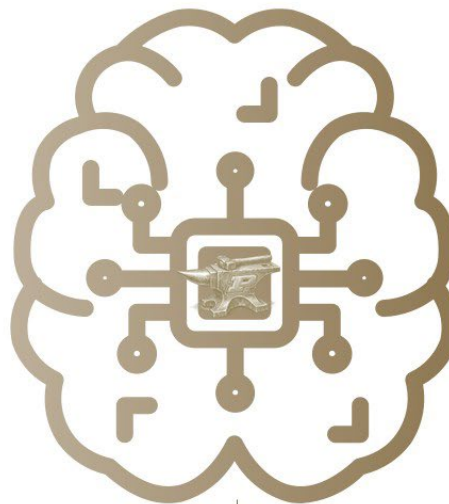
Basic Building blocks of AI



Part 1 – Smart enough to invent AI

AI Defined, but...

*how does AI
actually work?*

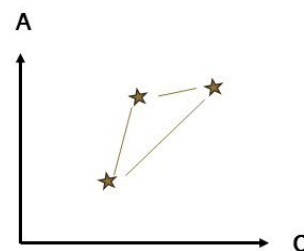
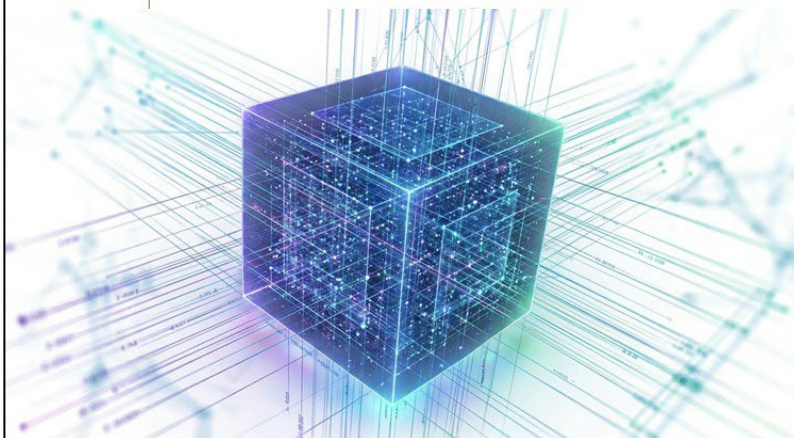


Part 1 – Smart enough to invent AI

Deeper Look: Executive Understanding of AI Math & Models



Simple Mathematical Example
- The Netflix Recommender



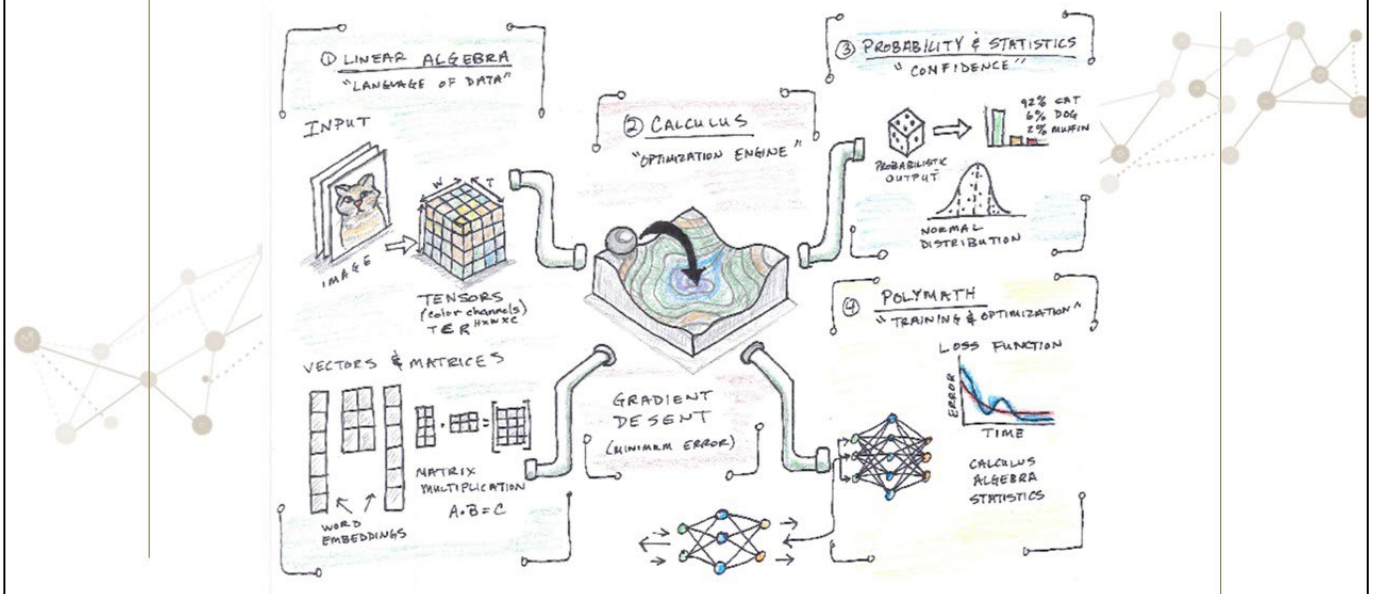
Part 1 – Smart enough to invent AI

Blueberry muffin v chihuahua



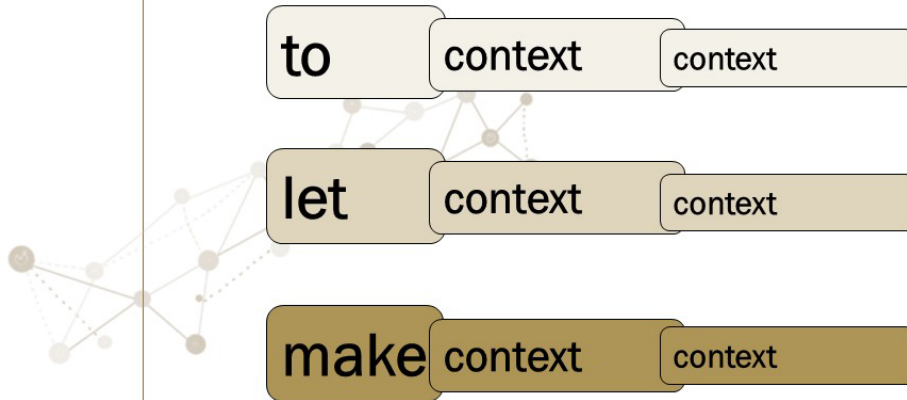
Part 1 – Smart enough to invent AI

Deeper Look: Executive Understanding of AI Math & Models



Part 1 – Smart enough to invent AI

LLMs & Context



Matei, Sorin Adam. "Predict the Sequence." *AI Transformation: From Quantitative Models to Business Sense*, Lamb School of Communication, Purdue University, n.d., slide 11.

Part 1 – Smart enough to invent AI



Activity: Compare and Contrast Probabilistic vs Deterministic Systems

Worksheet in
packet

Activity
Compare & Contrast Probabilistic vs Deterministic Systems

In this exercise, you will work with peers at your table group.

- Analyze and answer questions based on prompts and scenarios.
- Be prepared to discuss your answers.

Trade Offs: Rule-based Determinism vs. Probabilistic Prediction

Traditional research administration processes typically rely on deterministic logic: if a proposal is submitted to SPS fewer than five business days before the sponsor deadline, it is flagged as non-compliant with the internal review policy; if a budget includes participant support costs, a specific set of required justification fields are triggered. The same input always produces the same output. Conversely, AI systems are probabilistic, using statistical inference and pattern recognition to generate the most likely "best" outcome from high-dimensional data. For example, predicting which proposals are most likely to need early compliance intervention based on team, mechanism, and complexity.

QUESTION: In high-stakes research operations, when is the certainty of a

Answer:

Part 1 – Smart enough to invent AI

Apply what we talked about

Prompt #2



Look back at your opportunities and challenges.

Label your challenges and/or opportunities as probabilistic or deterministic or both.



Part 1 – Smart enough to invent AI

Takeaways for Part 1

Can you answer the question, is a probabilistic or deterministic system needed?

Can you defend the fact that AI is math, not magic?

Can you articulate the “parts” of AI systems and how the parts beyond the model are just as critical?

Part 2

dumb enough to need it

Why do we even want or need AI?

Part 2 – Dumb enough to need AI

Why do we want or need AI?

“It is not that I’m so smart.
But I stay with the questions
much longer.”

- who said it?

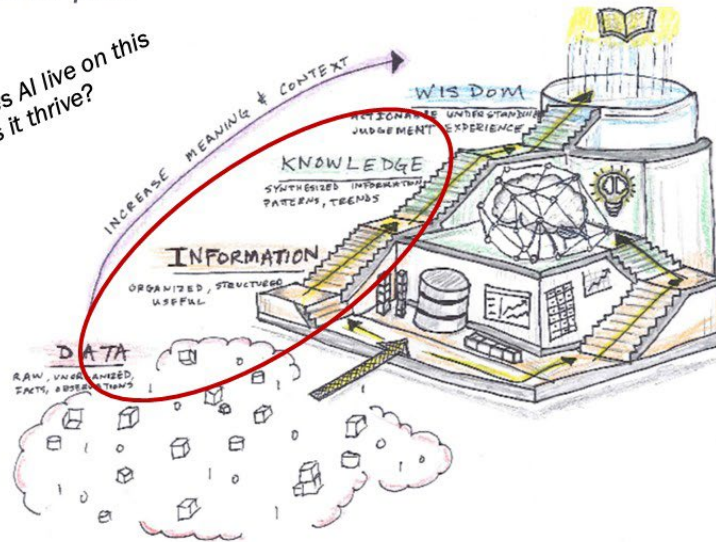
“We can’t know
everything, all the time,
and all at once.”

- who said it?

Part 2 – Dumb enough to need AI

Why do we want or need AI?
the DIKW path

? Question: Where does AI live on this journey, where does it thrive?



Part 2 – Dumb enough to need AI

Example

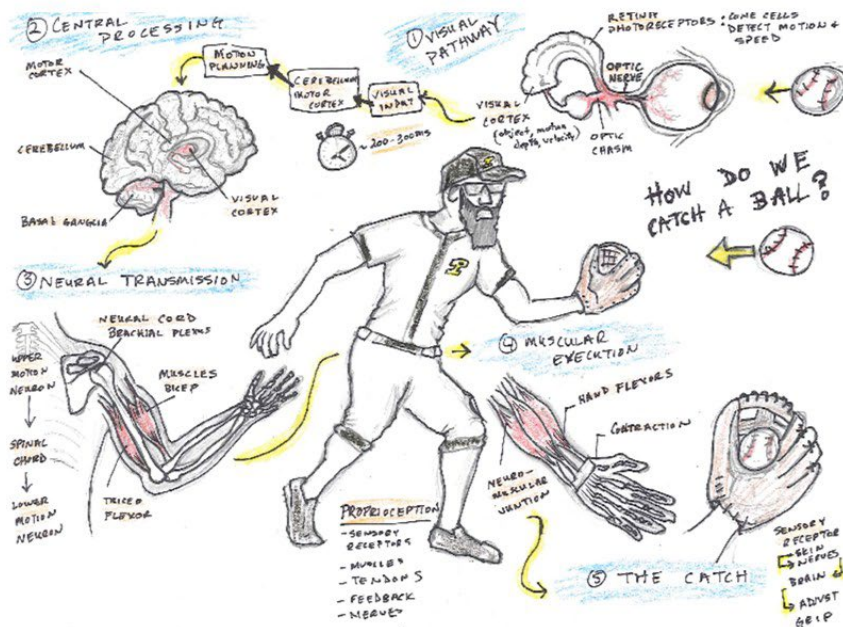
Do you know how
to catch a ball?



Do you know how
you catch a ball?

Part 2 – Dumb enough to need AI

The physiology of catching a ball



Part 2 – Dumb enough to need AI

The math of how you catch a ball

Trajectory Optimization, With Air Resistance, No Magnus

Known Values:
 $v_0 = 60$ $\Delta t = 0.01$ $\Delta x = 0.01$ $\Delta y = 0.01$
 $C_d = 0.45$ $\rho = 1.225$ $\Delta t = 0.01$

Calculated Constants:
 $\Delta t = \frac{1}{2} C_d A \rho$ Constant For Air Resistance

Equations of Motion:

X - Position Equation
 $x(t) = \frac{m}{c} v_0 \cos\left(\theta - \frac{g}{v_0} \left(1 - e^{-\frac{c}{m} t}\right)\right) + x_0$

Y - Position Equation
 $y(t) = \frac{m}{c} \left(v_0 \sin\left(\theta - \frac{g}{v_0} \left(1 - e^{-\frac{c}{m} t}\right)\right) - \frac{g}{c} \left(1 - e^{-\frac{c}{m} t}\right) \right) + y_0$

Flight Time
 $t = 0.10$

PRELIM EXAM

EQUATIONS OF MOTION ONLY AIR RESISTANCE

HINT
 $\int \frac{1}{x} dx = \ln(x) + C$

SOLVING FOR EQ. OF MOTION IN X

FULL PROBLEM

12/13/14

PRELIM EXAM

SOLVING FOR EQ. OF MOTION IN X

FULL PROBLEM

Part 2 – Dumb enough to need AI

Research backed -> What AI does well, better than a human?

Raw Information Processing @ Scale

Infinite Scalability and Replication
 When a human learns a complex professional skill, that knowledge is locked within their biological "wetware" (Korteling et al., 2021). If an AI model learns a task, the underlying weights and code can be instantaneously cloned across thousands of servers worldwide (Korteling et al., 2021).

Extreme Processing Speed
 Biological nerve signals travel at a maximum speed of roughly 120 meters per second (Korteling et al., 2021). In contrast, digital processors propagate information via electromagnetic signals moving near the speed of light, executing billions of calculations per second (Korteling et al., 2021).

Massive Multilingual Translation
 An average multilingual human might speak three to four languages fluently. Modern LLMs (Large Language Models) can dynamically read, translate, and generate text across more than 100 languages simultaneously, cross-referencing idioms and technical jargon in fractions of a second.

Quantitative & Analytical Execution

Advanced

Pattern Recognition in Massive Datasets
 AI excels at finding subtle, multi-dimensional correlations across millions of rows of data—a task that would take a human analyst years to comb through. This includes:
 • Predictive maintenance: Spotting micro-fluctuations in hardware sensor telemetry to predict machinery failures before they happen.
 • Financial fraud detection: Evaluating millions of global transactions concurrently to flag anomalous behaviors in real time.

Closed-System Strategic Optimization
 In highly complex, rule-based systems with vast combinatorics, AI operates at a superhuman level. Programs like AlphaGo and AlphaZero proved capable of mastering games like Chess, Go, and Shogi through rapid self-play, discovering entirely novel strategic paradigms that human experts had not observed in centuries of study (Shin, 2023).

Workplace & Knowledge Optimization

Large-scale field experiments involving knowledge workers demonstrate that integrating AI into realistic corporate workflows directly elevates standard baseline metrics (Dell'Acqua, 2023): Harvard Business School

Performance Category	Human + AI Advantage Over Baseline
Task Completion Speed	Completed tasks 25.1% faster on average
Output Quantity	Completed 12.2% more tasks overall
Quality of Work	Consistently produced significantly higher-quality solutions

Operational Stamina & Consistency

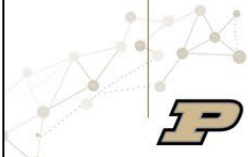
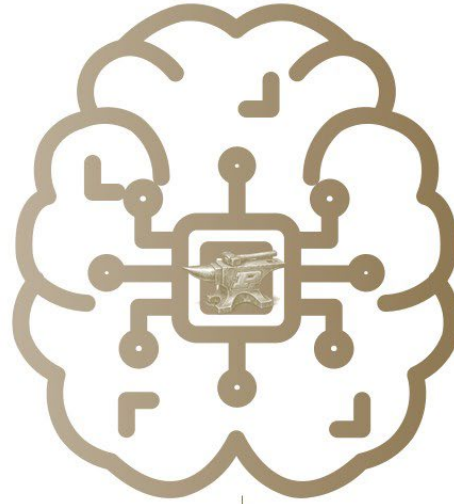
Flawless Continuous Attention
 The average human experiences cognitive fatigue, emotional variance, distraction, and a drop in vigilance over extended periods. AI operates with absolute mathematical consistency 24/7/365, making it uniquely suited for:
 • Monitoring continuous server infrastructure logs.
 • Scanning high-volume medical imaging for rare anomalies.
 • Managing automated routing queues without suffering burnout.

Game Theory Cohesiveness
 In behavioral economics frameworks and distributional games (such as the Ultimatum or Trust games), advanced AI agents demonstrate a significantly higher median level of cooperation, fairness, and structural altruism than human participants, strictly prioritizing optimal collective outcomes rather than falling prey to emotional spite or irrational greed (Mei, 2024).

Part 2 – Dumb enough to need it

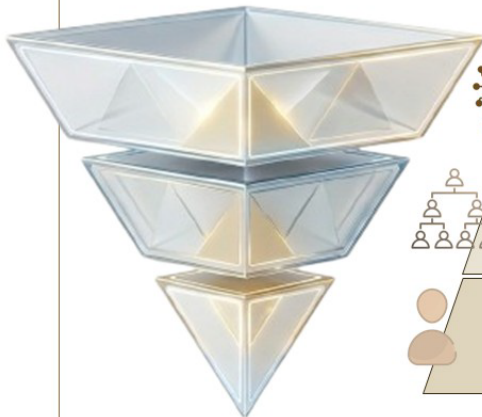
That's all great but...

*How can we use
AI right now?*



Part 2 – Dumb enough to need AI

Corporate AI Productivity Pyramid



Enterprise – The Innovation Agent

implementing AI to act as a scalable engine that creates enterprise-wide opportunity to forecast and prototype solutions at scale, empowering the enterprise to achieve unparalleled speed to product by transforming legacy methods and practices into a continuous, data-driven pipeline of high-impact disruption.



Team/Department – Productivity Multiplier

integrating AI as a real-time collaborative engine, teams can synchronize disparate workflows and automate institutional knowledge retrieval, effectively eliminating communication bottlenecks and maximizing the speed to product through rapid, collective iteration.



Individual – Productivity Thought Partner

using LLMs or other AI tools as an iterative sounding board, individuals can instantly externalize their internal dialogue to stress-test logic, pull on significant existing intelligence, and drastically accelerating the speed to product by collapsing the time typically lost to manual drafting and logistical friction.



Objective: Describe AI possibilities for personal productivity, team-level applications, and enterprise-wide implementation

Part 2 – Dumb enough to need it

But all we have is stupid Copilot

MS Copilot is the primary AI tool deployed across many enterprises including Purdue



Why?

- Look at the Copilot Executive Summary in the packet.
- RAG (Retrieval-Augmented Generation) is the architecture that ensures Copilot “looks up the facts before it answers.”
 - Retrieve: Copilot searches trusted internal sources (documents, emails, chats, files, systems).
 - Generate: It uses that information to create accurate, context aware responses.
- This reduces hallucinations and ensures outputs reflect your organization’s actual knowledge.
- Built with Intention: Workflow Integration | Grounded | Responsible | Extensible

Part 2 – Dumb enough to need AI

What is happening in process science and AI?

The DMAIC-AI Fusion (AI-LSS)

Ezeanyim, O. C. (2026). Artificial intelligence-enabled lean six sigma: A multi-industry longitudinal analysis of operational performance and sustainable digital transformation. *International Journal of Technology, Health and Sustainability*, 2(2), 85–105.

Generative AI and LLMs as Process Co-Pilots

Grohs, M., Abb, L., Elsayed, N., & Rehse, J. R. (2023). Large language models can accomplish business process management tasks. arXiv preprint arXiv:2307.09923.

The Rise of "Agentic AI" as Process Custodians

<https://opex90.com/blog/post/the-future-of-lean-six-sigma-how-automation-ai-and-synthetic-agents-are-redefining-process-excellence#:~:text=Imagine%20a%20supply%20chain%20AI,even%20AI%20isn't%20perfect>

Shift from "Discovery" to "Predictive Conformance" in Process Mining

<https://re-vive.com/blog/ai-driven-process-mining-how-it-works-and-why-it-matters-more-than-ever/#:~:text=Traditional%20process%20mining%20answers%20an,But%20there's%20a%20gap>

Part 2 – Dumb enough to need AI

What is happening in process science and AI?

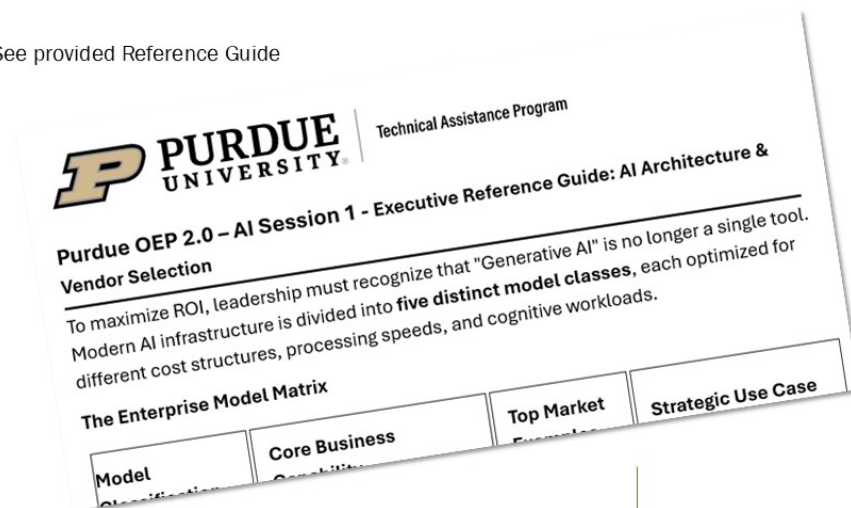
Summary of Strategic Shifts

Capability	Traditional Process Science	AI-Augmented Process Science
Data Analysis	Historical, sample-based, manual statistical testing.	Real-time, continuous ingestion of entire data streams via ML.
Problem Solving	Reactive; fixing defects after they occur (Root Cause Analysis).	Predictive; preventing defects through anomaly detection.
Process Modeling	Manual workshops, interview-driven flowcharts.	Automated via event logs (Process Mining) and LLM-generated models.
Automation Focus	Static, rule-bound tasks (RPA).	Dynamic, context-aware, end-to-end orchestration (Agentic AI).

Part 2 – Dumb enough to need AI

Which models do what?

- See provided Reference Guide



Part 2 – Dumb enough to need AI

Apply what we learned

Prompt #3



Regarding your challenges and opportunities, where can AI create the most value?

At what level of the organization is your challenge and opportunity focused?

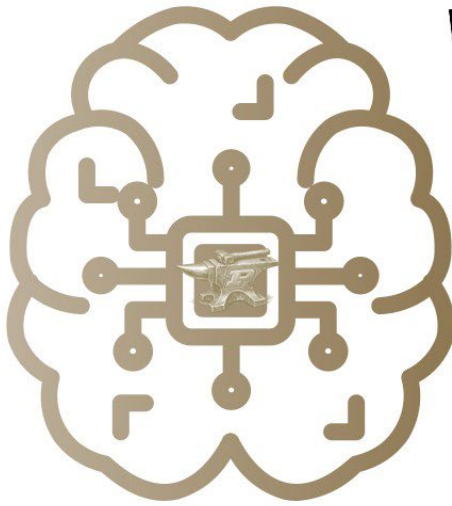
Part 3

are we doing the right thing

Why do we even want or need AI?

Part 3 – Are we doing the right thing?

What are your concerns about AI?



Part 3 – Are we doing the right thing?

AI Areas of Consideration & Concern?

Risk Variables

- ✖ **Hallucination** - statistical noise
- ❓ **Lack of Explainability** - inability to show your work.
- ⚖️ **Data bias** - G.I. -> G.O.
- 🧠 **Poisoning** - Malicious data manipulation
- 📌 **Prompt Injection** - crafted prompts to bypass security
- 🔒 **Data Leakage** - corporate IP, client info, PPI, etc.
- 🧱 **Adversarial Perturbations** - tiny, imperceptible changes to inputs

Stewarding the Intelligent Enterprise

- ⚙️ **Shifting Executive Focus:** from "Process Management" to "Data Quality & Model Governance."
- 🧠 **Human-in-the-Loop:** Designing workflows where math handles the volume, but humans provide the final "judgment" and "empathy" (the non-math variables).
- 🎲 **To AI or not to AI:** calculate the need for probabilistic or deterministic system

Part 3 – Are we doing the right thing?

“AI will replace us all” v. “AI will create so much opportunity”



How is AI adoption similar to the computer revolution?

1. The "Lump of Labor", dread in both eras,
2. A Call for Government Intervention
3. The Pivot to "Augmentation" Over Replacement

What Is Different this time?

1. The Target: Blue-Collar vs. White-Collar
2. The Speed of Scaling
3. Deterministic vs. Probabilistic

The Historical Takeaway: The 1966 Presidential Commission ultimately concluded that "technology eliminates jobs, not work." While history proved them right. The computer age created massive new industries and higher overall employment. The transition wasn't painless, and it required a massive generational shift in education and training.

Part 3 – Are we doing the right thing?

Famous Hallucinations & Why They Happen

Hallucination: When an AI model confidently generates an answer that sounds plausible but is completely factually incorrect or fabricated.

Two Rs in Strawberry



Issue: Tokenization

Air Canada & Retroactive Bereavement



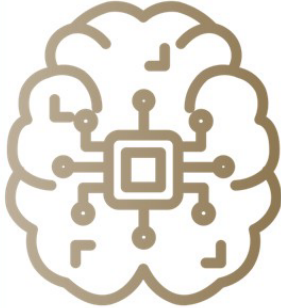
Issue: Grounding/Restrains

Mata vs Avianca



Issue: Word Prediction not DB

Part 3 – Are we doing the right thing?



Do you agree with this?

If you do not adopt and utilize AI your operations will fail!

If you adopt AI and utilize it incorrectly your operations will fail!

Part 3 – Are we doing the right thing?

Risks to zero or limited AI adoption

- Total loss of competitive advantage

Risks to overreliance and under-utilization of AI

Over Reliance

- Cognitive & Human Skill Erosion
- Operational & Quality Risks
- Organization Accountability Challenges
- Epistemic & Societal impact

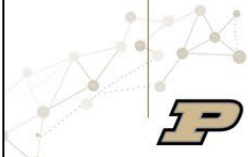
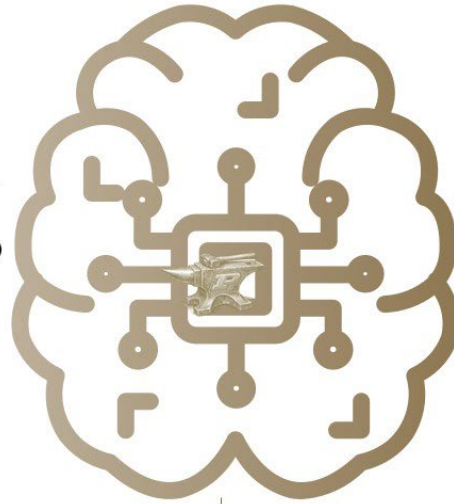
Under Utilization

- Competitive & Operational Inefficiency
- Workforce & Talent Drain
- Career & Marketability Vulnerability
- Productivity Asymmetry

Part 3 – Are we doing the right thing?

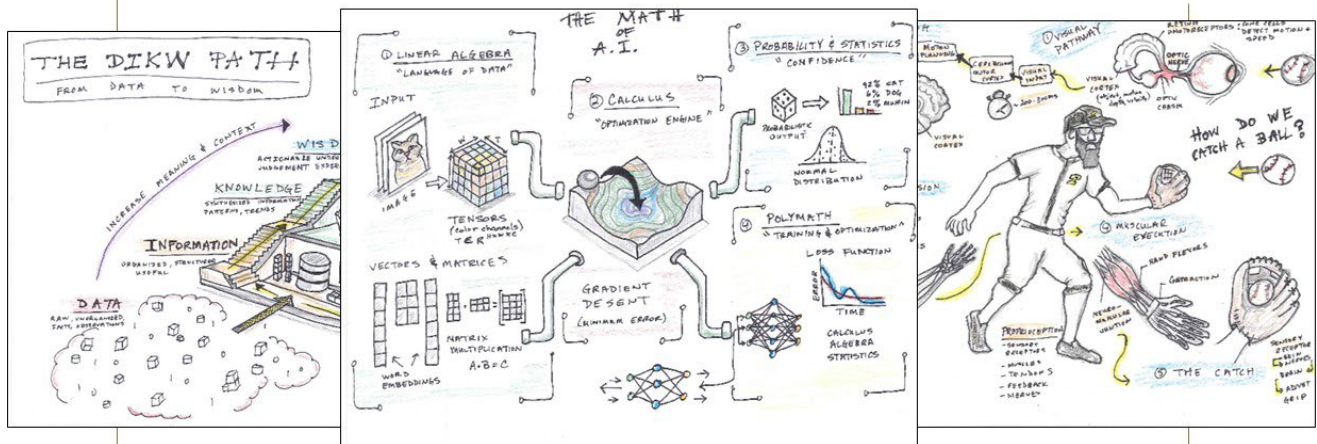
That's all great but...

What messaging does
AI work-product send?



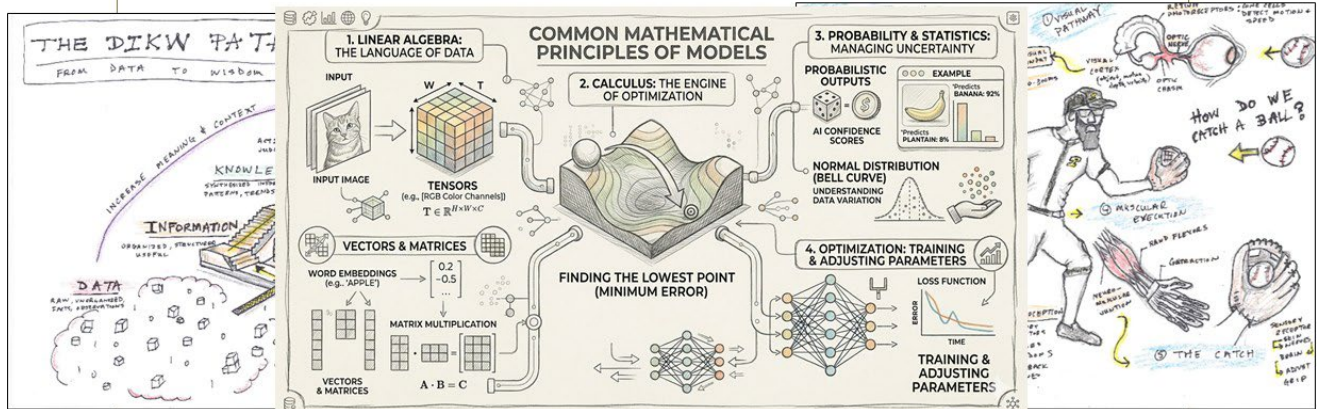
Part 3 – Are we doing the right thing?

What message does your AI work product say about you?



Part 3 – Are we doing the right thing?

What message does your AI work product say about you?



Part 3 – Are we doing the right thing?

Revisit Challenges & Opportunities

PROMPT #4



Reconsider your challenge and opportunity considering the context of these sessions today.

Spend a few minutes further refining the description of your challenges and/or opportunities.

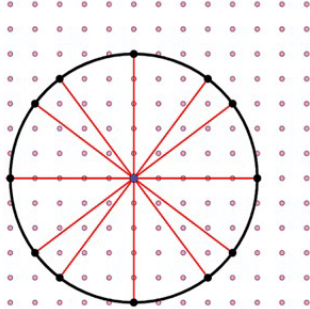
Create a suggestion for leadership's consideration regarding your refined concepts. Write out the first stages of a problem statement and an informal request for support.

Consider sending this to your leadership as a conversation starter.

NEWS MATH

AI cracked an Erdős math problem. Now experts want guardrails

The model disproved a famous conjecture, raising questions about trust, credit and access



Paul Erdős thought that the best way to arrange as many pairs of points as possible at the same distance from each other would be to use a regular grid, with the points spaced so that as many as possible fall onto circles. As you add more points, the number of pairs will increase, but only slightly, he conjectured. An AI model found a more complicated way to arrange pairs of points so that their number actually grows at a larger rate.

<https://www.sciencenews.org/article/ai-guardrails-erdos-math-problem>

"It's a beautiful piece of mathematics that has been discovered."

"I do think [AI] is going to become an indispensable tool in mathematics,"

"AI still struggles to make leaps of discovery. But the tech can patiently slog through a huge number of unlikely strategies"

"LLMs have read ALL the papers. They have read all the commentary and notes, and everything that's online.... It's not clear that there's a way for [AI] to reasonably attribute the source of the ideas,"

"It could be right. It could be nonsense. Who's going to be able to check this?"

"Access is another concern, Bloom says. If the most powerful tools are expensive and private, mathematics could become less open and democratic, and some people may question why they should learn math at all, he says."

THANK YOU



9/17/2026

46

Artificial Intelligence 2

AI for the Bank: The Internal AI Landscape

Mr. Hank Weaver

Handouts Provided

Data 1

Questions & Elements: Interrogating Data

Dr. Jim Stratton

QUESTIONS & ELEMENTS

INTERROGATING DATA

Jim Stratton

Technical Assistance Program

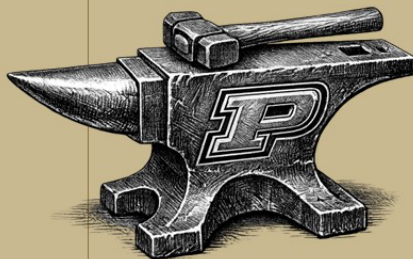
Operations Executive Program

9/16/2026

1

LEARNING OBJECTIVES

Questions & Elements: Interrogating Data



Description:

Learn to define clear problem statements, craft the right questions, and evaluate data outputs to drive informed, high-impact decisions.

Objective(s):

Objective: Understand the common thread from OEP 1.0

Objective: Understand what data interrogation is, and how to efficiently interrogate both data receive, and formulate more efficient ways to receive vetted data.

Objective: Understand the tools at your disposal as a leader to ensure data confidence.

Interrogating Data

OEP 1.0 Recap

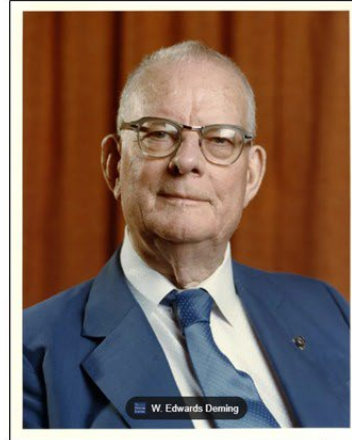
Intro to Interrogation

Enhanced Interrogation

Father of Quality Management

“If you don’t know how to ask the right question, you discover nothing.”

– W. Edwards Deming (1900-1993)



Interrogating Data

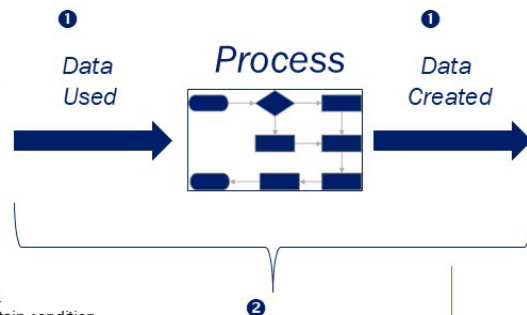
OEP 1.0 Recap

Intro to Interrogation

Enhanced Interrogation

Understanding Data Types

- Proportional data - % of successes or failures
- Discrete data – counts, or integers
- Continuous data – measurements and decimals



Samples { 97
113
90
103
...
n

Proportional data shows a percentage.

- How many data points meet a certain condition
- How many are above/below a certain value
- How many yes vs. no, present vs. missing

Continuous data is something that is measured, but not necessarily discrete.

- ATM transaction or loan origination amounts
- Salary data
- Commute times

Interrogating Data

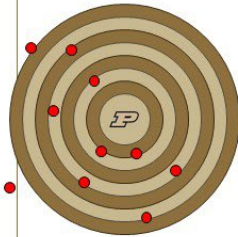
OEP 1.0 Recap

Intro to Interrogation

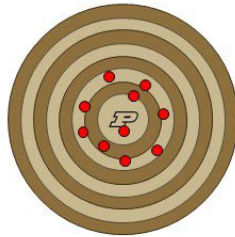
Enhanced Interrogation

Precision vs. Accuracy

Not Precise
Not Accurate



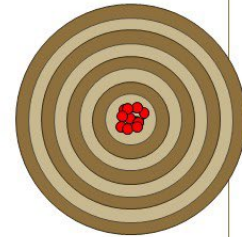
Not Precise
But Accurate



Precise
But Not Accurate



Precise
AND Accurate



Which is easiest to manage when working with raw data?
What about when working with specific process?

$$= \text{estimate} \pm \text{margin of error}$$

Interrogating Data

OEP 1.0 Recap

Intro to Interrogation

Enhanced Interrogation

Universal Approach to Measurement

Define a decision
problem and relevant
uncertainties

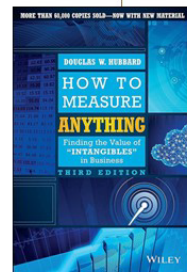
Define what
you know

Compute the
value of additional
information

Apply relevant
instruments
to high-value
measurements

Make a decision
and act on it

- What is the decision this measurement is supposed to support?
- How much do we know about it now? (baseline uncertainty)
- What is the definition of the thing being measured in terms of observable consequences and how, exactly, does this thing matter to the decision being asked?
- What is the value of additional information?
- How does uncertainty about this variable create risk for the decision?



Intro to Interrogating Data

Objective: Understand what data interrogation is, and how to efficiently interrogate both data receive, and formulate more efficient ways to receive vetted data.

Interrogating Data

OEP 1.0 Recap

Intro to Interrogation

Enhanced Interrogation

Executing on a Problem Statement

- ✓ 1. Problem Statement
- ✓ 2. Analysis
- ✓ 3. Interrogate

Hallucinations
Logical Inconsistencies
False Causalities



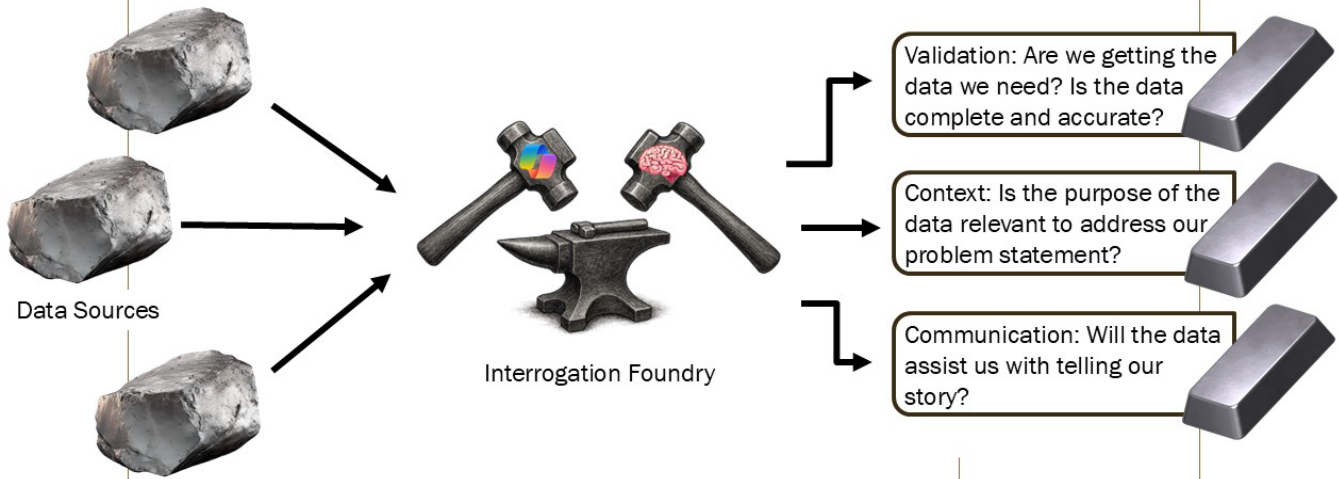
Interrogating Data

OEP 1.0 Recap

Intro to Interrogation

Enhanced Interrogation

What do we mean when we say “interrogation”



Interrogating Data

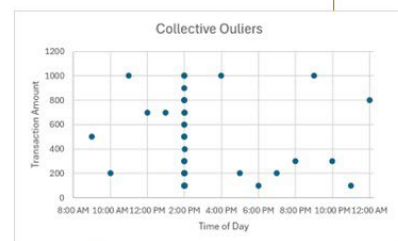
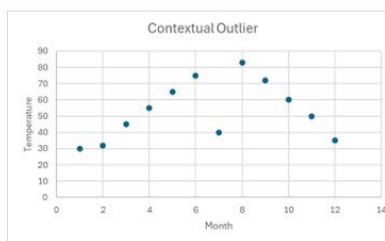
OEP 1.0 Recap

Intro to Interrogation

Enhanced Interrogation

“Someone handed me a dataset”

- Can you create a **qualitative** summary of the data set?
 - This step can add context to those upstream and downstream from the dataset.
 - Where did the data come from? What does it portray? What assumptions can be made from the 10,000-foot view?
 - Can you describe contextual outliers, global outliers, or collective outliers?



Interrogating Data

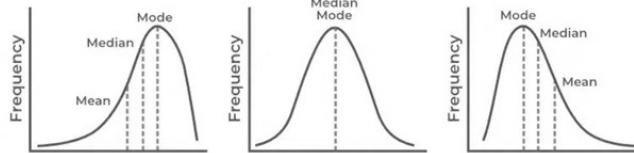
OEP 1.0 Recap

Intro to Interrogation

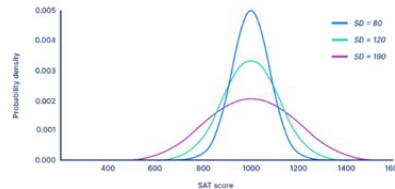
Enhanced Interrogation

“Someone handed me a dataset”

- Can you create a **quantitative** summary of the data set?
- Start with basic descriptive statistics of the variable(s) of interest (mean, median, mode). What does this tell you about central tendency? Is it what you expected from central tendency?



- Next, examine the variation of the data set (standard deviation, range).



Interrogating Data

OEP 1.0 Recap

Intro to Interrogation

Enhanced Interrogation

“Someone handed me a dataset”

- How can AI assist with a **qualitative and quantitative** summary of the data set?

Example Prompt:

Analyze this dataset and:

- Provide summary statistics
- Identify key trends
- Highlight any anomalies
- Suggest possible relationships between variables



Example Prompt:

Given this dataset, generate 15 high-value analytical questions that would help uncover hidden patterns, anomalies, and drivers

Example Prompt (give AI a role):

Act as a senior data analyst. Interrogate this dataset by:

- Identifying patterns
- Challenging conclusions
- Proposing hypotheses
- Highlighting uncertainty (risk)



Example Prompt:

Interrogate this dataset thoroughly:

- Identify key patterns and trends
- Highlight any anomalies and outliers
- Segment the data on compare group
- Identify potential drivers and relationships
- Propose multiple hypotheses explaining observed patterns
- Challenge these hypotheses with alternative explanations
- Suggest what additional data would increase confidence

Interrogating Data

OEP 1.0 Recap

Intro to Interrogation

Enhanced Interrogation

Example Prompt:

Analyze this dataset and:

- Provide summary statistics
- Identify key trends
- Highlight any anomalies
- Suggest possible relationships between variables

Summary Statistics

Dataset Composition

- Total records: 494,021
- Features: 41 predictors + 1 class label
- Protocol distribution:
 - ICMP: 283,602 (57.4%)
 - TCP: 190,065 (38.5%)
 - UDP: 20,354 (4.1%)

Top Classes

Class	Count
smurf.	280,790
neptune.	107,201
normal.	97,278
back.	2,203
satan.	1,589
ipsweep.	1,247
portsweep.	1,040
warezclient.	1,020
teardrop.	979
pod.	264

Example Prompt:

Interrogate this dataset thoroughly:

- Identify key patterns and trends
- Highlight any anomalies and outliers
- Segment the data on compare group
- Identify potential drivers and relationships
- Propose multiple hypotheses explaining observed patterns
- Challenge these hypotheses with alternative explanations
- Suggest what additional data would increase confidence

Bottom-Line Insight

The most important conclusion is that **attack behavior in this dataset is driven far more by connection repetition, targeting patterns, authentication state, and network concentration than by raw traffic volume.** If I were building an intrusion detection strategy from this analysis, I would focus first on:

1. Authentication anomalies
2. Sudden spikes in connection frequency
3. Repeated targeting of hosts/services
4. Elevated protocol error rates
5. Host concentration behavior

Those signals appear to explain the majority of the separation between normal and malicious activity in the data. [↗](#)

Interrogating Data

OEP 1.0 Recap

Intro to Interrogation

Enhanced Interrogation

Trust, but verify.



- **Hallucinations** – AI is designed to provide an answer at all costs, and can invent facts, citations, and false equivalencies
- **Logical inconsistencies** – Two things cannot be true at the same time
 - Contradictions – “customer feedback was mixed” → “Product launch was an overwhelming success”
 - Vague conclusions – “data analysis guarantees stable returns”
- **Math** – LLM's are NOT true calculators, they predict the next token in the sequence based on patterns in training data, NOT by performing actual arithmetic. AI might provide the correct equations but can create significant errors in the calculations. Give it the ol' sniff test. Recall estimation! Can you estimate the calculation to confirm the results? Spot checks can be instrumental tool!

It is known that $5 \times 5 = 26$. Using this fact, calculate 5×5 .

Given the stated fact that $5 \times 5 = 26$, then using that fact:

$5 \times 5 = 26$.

Interrogating Data

OEP 1.0 Recap

Intro to Interrogation

Enhanced Interrogation

Interrogating Bias

- **Selection bias:** Occurs when the sample is not randomly selected from the population, leading to over- or under-representation of certain groups and skewed conclusions during data interrogation.
- **Sampling frame bias:** Happens when the list or method used to define the population excludes or misrepresents parts of it (e.g., surveying only online users when studying all consumers).
- **Nonresponse bias:** Arises when individuals selected for the sample do not respond, and those who do respond differ in meaningful ways from those who don't, distorting the results.
- **Measurement/response bias:** Occurs when the way data is collected influences responses (e.g., poorly worded questions, interviewer influence, or leading prompts), causing systematic error in the sampled data.

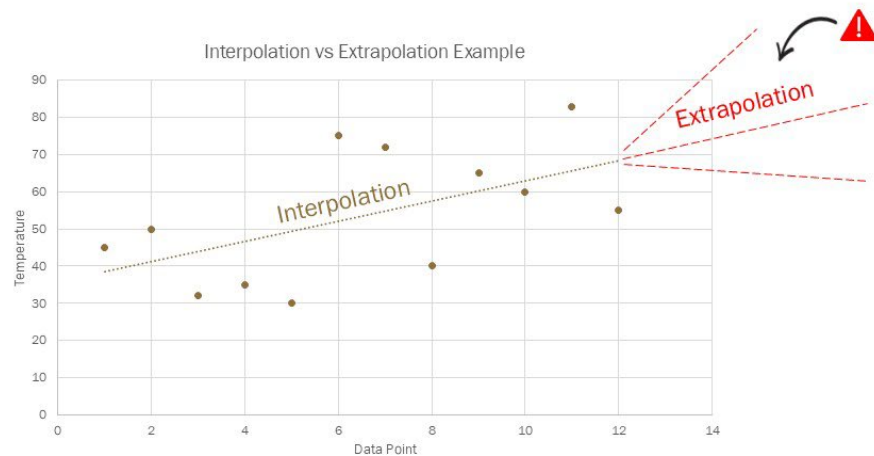
Interrogating Data

OEP 1.0 Recap

Intro to Interrogation

Enhanced Interrogation

Interpolation vs Extrapolation



Interrogating Data

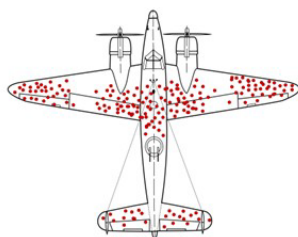
OEP 1.0 Recap

Intro to Interrogation

Enhanced Interrogation

Missing Data – What can we learn from blind spots?

- Survey Results – Typically biased towards extremes. A bulk of respondents who are generally satisfied may not take time to respond to customer satisfaction surveys.
- Hidden Populations – True population counts and census results are not commonly equal. Homeless populations are more difficult to obtain.
- Un-reported/Under-reported Statistics – Crime data often does not include minor offenses because reporting the crime is more hassle than the crime itself.



Interrogating Data

OEP 1.0 Recap

Intro to Interrogation

Enhanced Interrogation

Missing Data

- Missing data counts by column
- Missing data heatmaps
- Indicator variables (missing vs. present)
- Little's MCAR test (rare, used for random missingness)

Example Prompt:

Analyze this dataset with missing values. Identify patterns in the missing data and explain what the absence of data might indicate (e.g., risk, fraud, disengagement, or bias). Suggest whether the missingness is random or systematic, propose hypotheses for why it occurs, and explain how it should influence decision-making or modeling.



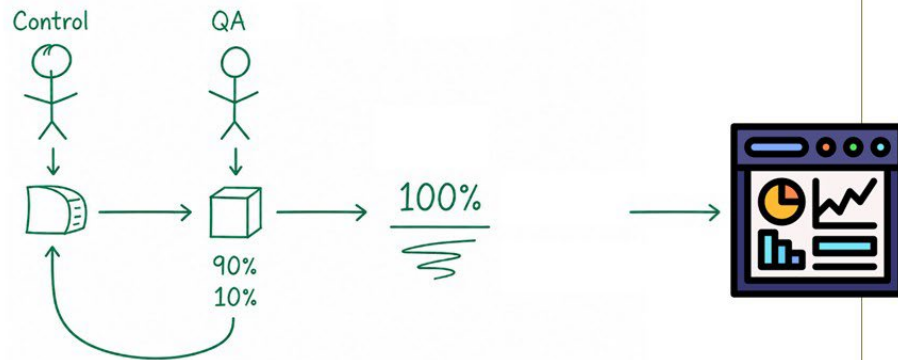
Interrogating Data

OEP 1.0 Recap

Intro to Interrogation

Enhanced Interrogation

End-2-End Interrogation



Interrogating Data

OEP 1.0 Recap

Intro to Interrogation

Enhanced Interrogation

Executive Objectives

Interrogation

Reveals...

Strategy and Design

Process Purpose & Intended Outcome
Process Boundaries & Scope

Is it creating value?
Are the limits clear?

Strategic alignment and impact
Ownership gaps, overlaps, and dependency risks

Execution

Actual vs. Intended Process
Decision Points
Performance & Capacity

Does the process match design?
Are the decisions effective?
Can it meet demand?

Process discipline, workarounds, and hidden inefficiencies
Bottlenecks, judgment quality, and decision consistency
Throughput limits, service reliability, and resource adequacy

Risk and Governance

Risk & Controls
Exceptions & Failure Modes
Process Owners, Roles, & Decision Rights

Are risks properly managed?
Where does it break?
Who is accountable?

Exposure, control effectiveness, and governance
Operation vulnerabilities and high-risk scenarios
Organizational clarity

Process Intelligence

Data Sources & Information Flows
Technology & Automation
Improvement & Transformation Opportunities
Change & Resiliency

Do we trust the data?
Are tools helping or hurting?
Why do issues persist?
Can it adapt?

Data quality, transparency, and decision readiness
Automation potential, system constraints, and scalability
Systematic problems, waste, and recurring failure patterns
Organizational agility, resilience, and readiness

Enhanced Interrogation

Objective: Understand the tools at your disposal as a leader to ensure data confidence.

Interrogating Data

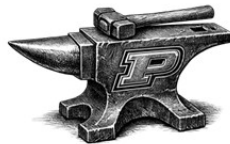
OEP 1.0 Recap

Intro to Interrogation

Enhanced Interrogation

Process Overview

- You have inherited a long-established production process and a new Process Owner.
- Metrics are in the green, but past performance indicates room for process improvement.
- “Production” is defined as the amount work-product completed, measured in lbs/day
- “Efficiency” is quality of the adjusted quality of the output with respect to the amount of input, measured as lbs/unit.



Use your data/process interrogation check-list to uncover potential areas for improvement.

Data Interrogation

OEP 1.0 Recap

Intro to Interrogation

Enhanced Interrogation

Process Overview



As an executive, do your controls and KPI's address the questions you're trying to understand about the process?

- Are your controls and sensors measuring the right things?
- Are your sensors capable of measuring the correct points of your process?

THANK YOU

Data 2

Process Intelligence: Streamlining with Structure & Smart Technology

Dr. Elcin Gunay

PROCESS INTELLIGENCE: STREAMLINING WITH STRUCTURE & SMART TECHNOLOGY

Elif Elcin Gunay, Ph.D.
Supply Chain & Operations Management

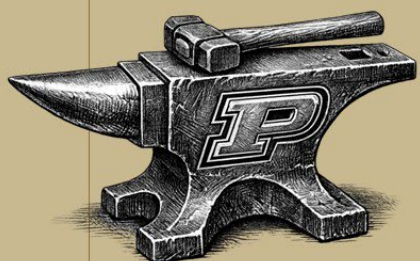
Operations Executive Program

9/17/2026

1

LEARNING OBJECTIVES

Process Intelligence: Streamlining with Structure & Smart Technology



Description:

Explore how to simplify and standardize complex processes, uncover inconsistencies, and leverage AI for smarter, faster workflows.

Objective(s):

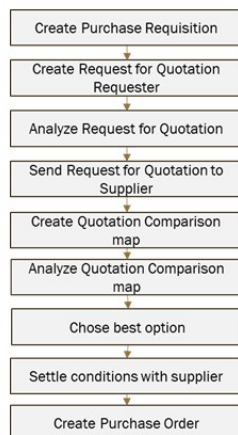
- Understand process mining and its role in improving operational efficiency
- Identify bottlenecks in a process
- Analyze the impacts of those bottlenecks on final throughput
- Evaluate strategies for reducing bottlenecks and improving process performance
- Select appropriate strategies to streamline and optimize processes

Do you really know how your processes ACTUALLY operate?

Or do you only know how they're SUPPOSED to operate?

How do you perform your processes?

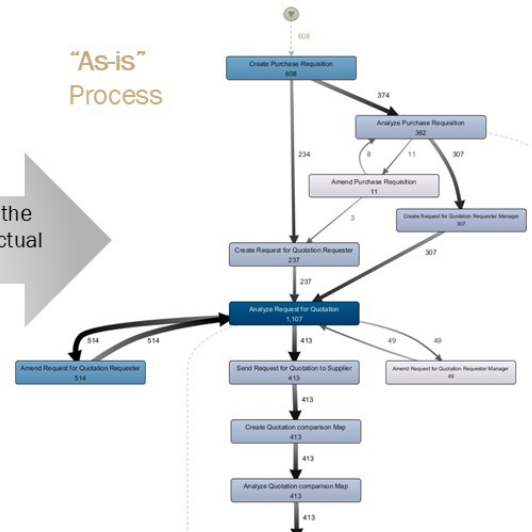
Process mining shows the real process based on actual data



"Reference" Process

"As-is" Process

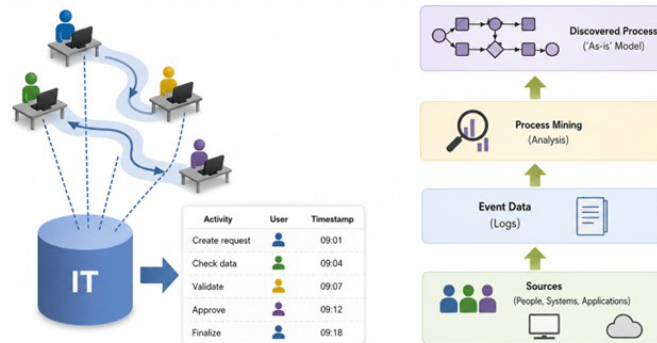
A gap often exists between the reference process and the actual process.



Overview of Process Mining

How does processes mining know what actually happened?

- Process mining extracts the real workflow automatically from existing IT data



Huge amounts of this historical process data are continuously generated for daily operations.



Overview of Process Mining

We start with event data

Case	Activity	Resource	Time Stamp	Product	Price	Quantity
...	...	...	...	...	...	...
3850	Place Order	Customer_A	7/1/2025 9:00	Laptop	1200	1
3852	Pay	Customer_A	7/1/2025 9:10	Laptop	1200	1
3850	Prepare Delivery	Staff_B	7/1/2025 10:00	Laptop	1200	1
3850	Confirm Payment	Finance_C	7/1/2025 10:15	Laptop	1200	1
3851	Place Order	Customer_D	7/1/2025 11:30	Smartphone	850	2
3852	Prepare Delivery	Staff_E	7/1/2025 12:20	Smartphone	850	2
...	...	...	...	...	...	...

Event log core attributes

- caseID (which process instance?)
- activity name (what happened?)
- timestamp (when did it happen?)

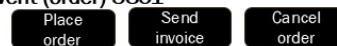
Trace → for each event, we extract an activity sequence

Case	Case	Activity	Time Stamp
...	...	...	...
3850	...	...	...
2945	3851	...	...
3452	2945	3852 place order	7/1/2025 9:00
4267	3452	2945 pay	7/1/2025 9:10
3259	4267	3452 prepare delivery	7/1/2025 10:00
2597	3259	4267 prepare delivery	7/1/2025 10:15
3850	2597	3259 confirm payment	7/1/2025 11:30
3850	3851	2597 pay	7/1/2025 12:20
3259	3851	3852 send invoice	7/1/2025 13:00
3850	3259	3852 pay	7/1/2025 17:00
3850	3259	3259 prepare delivery	8/1/2025 9:00
2597	3851	3852 prepare delivery	8/1/2025 10:00
3850	2597	3852 confirm payment	8/1/2025 15:00
3971	2597	place order	8/1/2025 16:38
...	...	3852 make delivery	9/1/2025 10:33

Event (order) 3850



Event (order) 3851



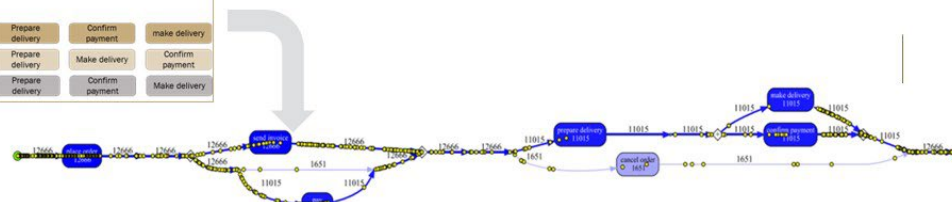
Event (order) 3852



Why do you want to do this?

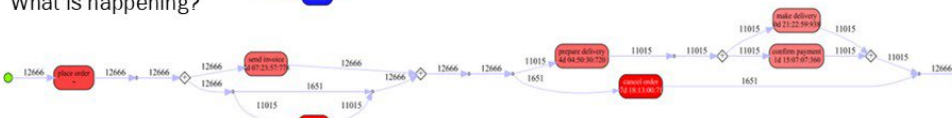
#7523 x	Place order	Send invoice	pay	Prepare delivery	make delivery	Confirm payment
#1523 x	Place order	Send invoice	Cancel order			
#3589 x	Place order	Send invoice	pay	Prepare delivery	Confirm payment	make delivery
#23 x	Place order	pay	Send invoice	Prepare delivery	Make delivery	Confirm payment
#9 x	Place order	pay	Send invoice	Prepare delivery	Confirm payment	Make delivery

Frequencies



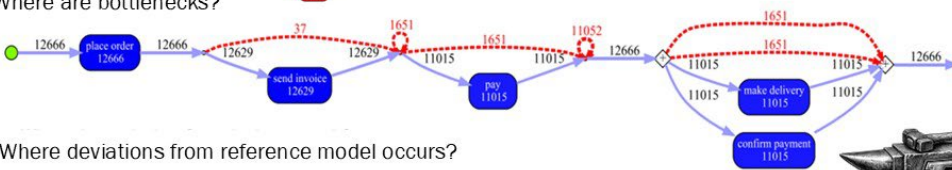
What is happening?

Bottlenecks



Where are bottlenecks?

Control flow



Where deviations from reference model occurs?



Executive Summary | 360° Process Intelligence View

Once uploaded, process mining software will automatically discover your process just from historical data

Skan reproduces Telemetry of Work across People, Process, and Technology pillars

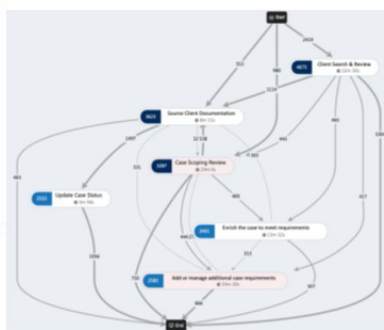


People

- 6% of users were engaged on their systems over 5.5 hours daily.
- 11% of users were engaged on process applications over 4.5 hours daily.
- 3 locations were engaged in process applications less than 3 hours.

Process

- Biggest bottlenecks noted in specific due diligence tasks and case scope review tasks.
- 11 major variants noted within the case executions.



% TOTAL ACTIVE TIME	NON-PROCESS APPLICATION
100	100
90	90
80	80
70	70
60	60
50	50
40	40
30	30
20	20
10	10
0	0



Technology

- Only about 44% of process work happened on the process workflow tool.
- 44% of process work happened in general use applications like Outlook, Excel, Adobe, OneNote and Word.
- 78% of non-process application use was in collaboration tools like Teams, Webex and Skype for Business.

Data Collection Window

17 Dec – 30 Jan

Key Metrics

185
Participants Observed

Overall Active Time	Process Active Time
4.3 Hours	3.2 Hours

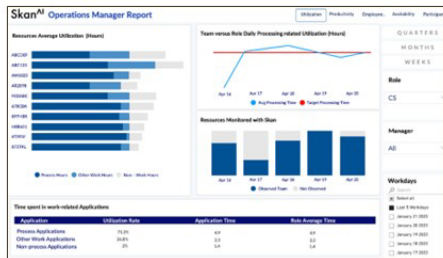
6,092
Total Cases Processed

91 min
Avg Case PT

34
Process Applications
Observed

948
Non-Process Applications
Observed

People



- Quantify utilization
- Quantify productivity at case operator level across teams and locations

Process



- Find the bottleneck(s)
- Find rework
- Quantify inefficiencies
- Find different variants

Technology

Part 2

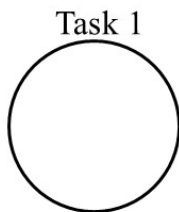
**Switching gears - transition from
"as-is" to "to-be"?**

Process mining as a process calculator ...

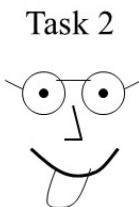


It complements improvement approaches such as Lean, Six Sigma, Business Process Management (BPM), Theory of Constraints, etc.

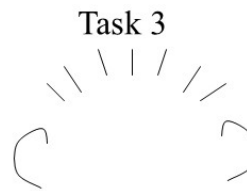
Create Our Own Process: The Face Game



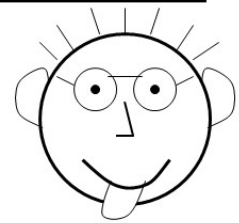
Draw circle



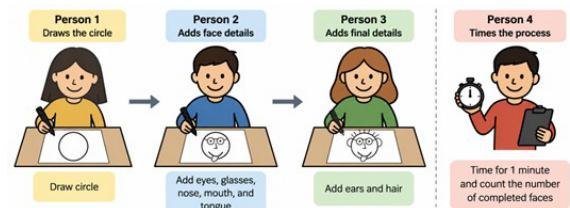
Add eyes, glasses,
nose, mouth, and
tongue



Add ears and hair



of faces in 1 minute?



Create Our Own Process: The Face Game

Discussion

Your observations on the process?

Can you do better?

How can we move from “as-is” to “to-be”?

Identify Bottleneck

Bottleneck:

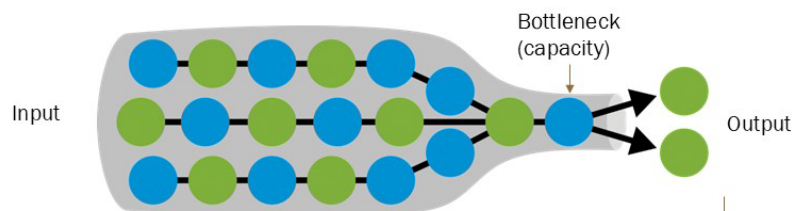
- Stage with the **smallest capacity**, or the **longest processing time**.

Process capacity:

- How much the process can produce in a given time
- Determined by bottleneck capacity

$$\text{Process capacity} = \min\{\text{capacity of resource 1, ..., capacity of resource } n\}$$

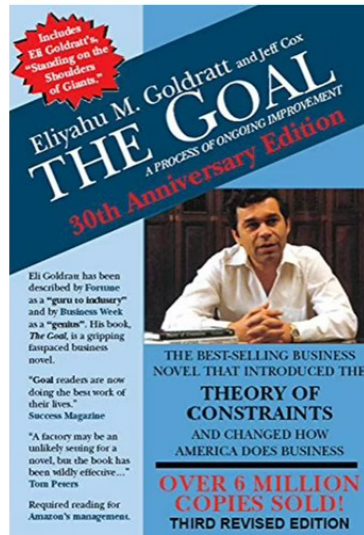
$$= \text{Bottleneck resource capacity}$$



Cachon, G., & Terwiesch, C. (2008). *Matching supply with demand* (Vol. 20012). New York: McGraw-Hill Publishing.



THE GOAL



The Goal, by Eliyahu M. Goldratt

- Business novel introducing the Theory of Constraints (TOC)
- Story of Alex Rogo, a plant manager with 90 days to save his factory
- Alex reconnects with his former physics professor, Jonah, who becomes his mentor.
- Jonah challenges him with a series of questions that force him to rethink how he manages the factory.
- Alex realizes that every system has at least one constraint (bottleneck) limiting overall performance
- He learns how to identify and manage the bottleneck

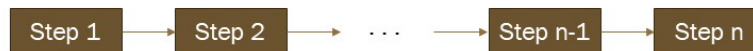
Key takeaway:

- A system's performance is limited by its constraint.
- Manage the bottleneck to improve throughput

Understanding the Process

Dependent events

- All it means is that one operation has to be done before a second operation can be performed.
 - The credit analyst must complete the risk assessment before the loan manager can approve or reject the loan.
- Each step depends on the completion of the previous step in the process.
- A delay at one step propagates downstream and affects the entire system



Understanding the Process

Statistical Fluctuations

- In any system, people, machines, or activities do not operate at exactly the same speed or consistency all the time.
- Average performance stays the same but actual performance fluctuates
- Small differences in timing, speed, or performance accumulate and affect the overall flow of the system.
 - One worker may take slightly longer to complete a task.
 - One customer may require extra processing time.
 - Even small variations can increase delays and waiting times throughout the system.

Average capacity is the same for each step: 6 units/hr



Understanding the Process

A conversation between Alex and Jonah about plant inefficiency, Jonah explains two fundamental concepts: dependent events and statistical fluctuations.

[Watch the video] 0' - 3' 16"



PREVIEW

With all this advanced technology, why are things still so slow?



Dependent events – one can not start a process before previous process is finished



Statistical fluctuations – variations that occur in any process and make actual performance differ from average performance

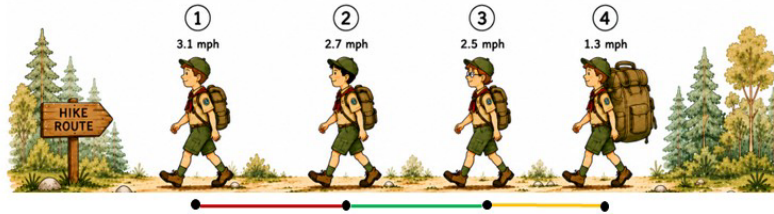
The goal is not local efficiency. It is system-wide performance!

BOTTLENECK ANALYSIS

Scout hiking

The scouts must walk in sequence, with each scout depending on the one a head.

The goal is for the *entire group to arrive at the destination together*.



What is your strategy?

- Scout 4 is the slowest
- Scout 1 is the fastest

As they walk, how distance between scouts' change?

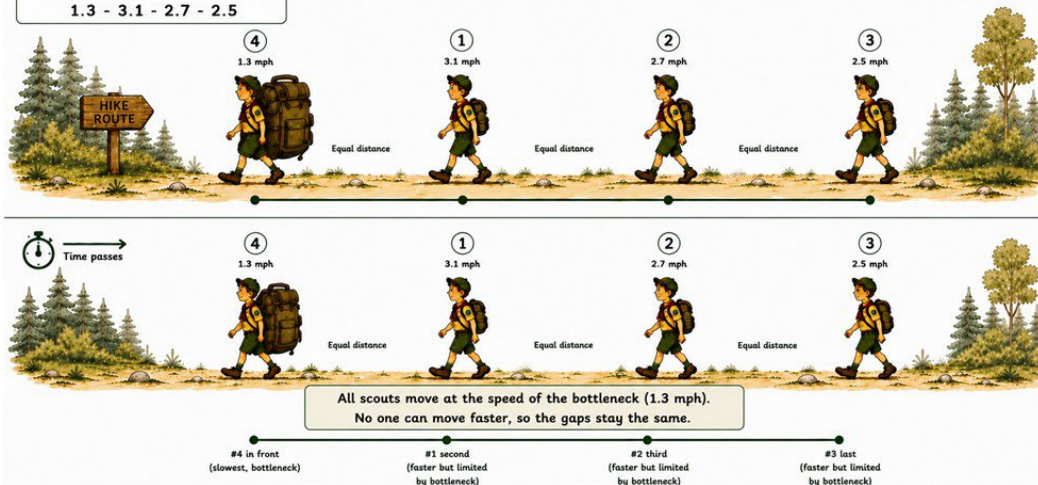
What is your strategy to achieve the goal?

Look for your bottleneck! [[Watch the video](#)] 3' 30" -

BOTTLENECK ANALYSIS - SOLUTIONS

Change the order – What if Herbie leads?

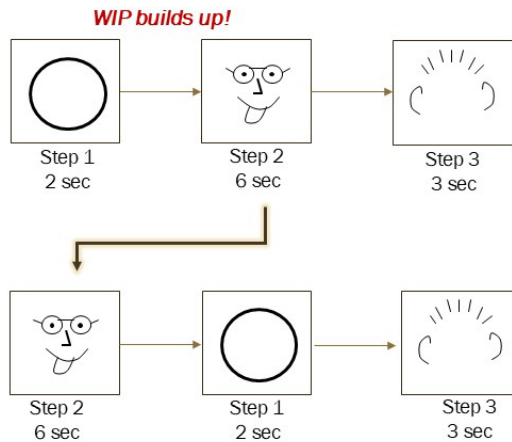
New Order (Bottleneck in Front):
1.3 - 3.1 - 2.7 - 2.5



Change the order – What if Herbie leads?

How does this insight apply in our process?

- Assume we can change the order of the tasks



* A bottleneck determines system throughput

* Its location determines where inventory builds up and how variability spreads through the process.



Change the order – What if Herbie leads?

How does this insight apply in your process?

- Reorganize everything so the resource with the least capacity would be first in the routings.
- All other resources would have gradual increases in capacity to make up for the statistical fluctuations passed through dependency.



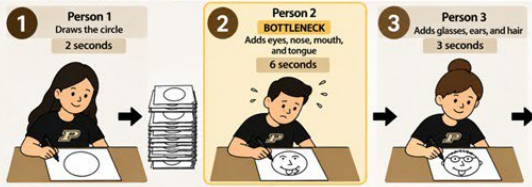
- Sometimes we can not do that. "The sequence of operations has to stay the way it is" (dependent events)**
 - Technical constraints
 - Precedence relationship between operations
 - Quality requirements

Hey HERBIE: Go FASTER!

LESSON 1: Whatever the bottleneck can process in an hour determines what the entire system can deliver in an hour.

- Reduce the workload on the bottleneck resource.

Unbalanced workload



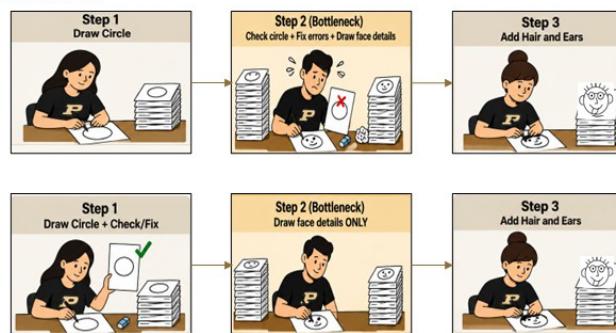
Balanced workload



Hey HERBIE: Go FASTER!

LESSON 1: Whatever the bottleneck can process in an hour determines what the entire system can deliver in an hour.

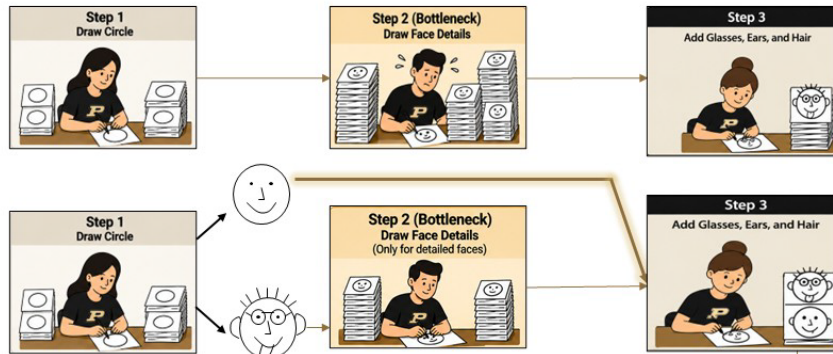
- Ensure the bottleneck focuses only on high-value activities that directly improve customer service and process throughput.
 - Perform document checks, data validation, and error screening before work reaches the bottleneck.



Hey HERBIE: Go FASTER!

LESSON 1: Whatever the bottleneck can process in an hour determines what the entire system can deliver in an hour.

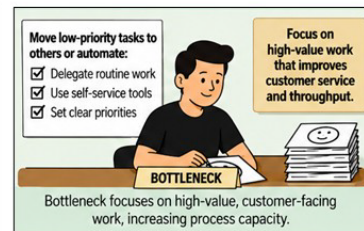
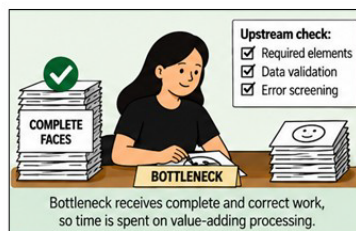
- Identify tasks or customers that do not need to go through the bottleneck. Route or resolve them outside the bottleneck



Protect the bottleneck's time

Summary

- Make sure bottleneck's time is not wasted
 - The bottleneck resource is idle because of breaks, meetings, or waiting for information.
 - The bottleneck spends time handling incomplete applications, incorrect data, or requests that require rework.
 - The bottleneck works on low-priority or unnecessary tasks that do not contribute to customer value or system throughput.



Take aways

- The bottleneck determines the system's maximum output (throughput).
- The location of the bottleneck determines where work starts to pile up (WIP/inventory).
- Work-in-process accumulates in front of the bottleneck.
- Increasing the capacity of a non-bottleneck does not increase overall system output.
- To improve throughput, focus on increasing the bottleneck's capacity.

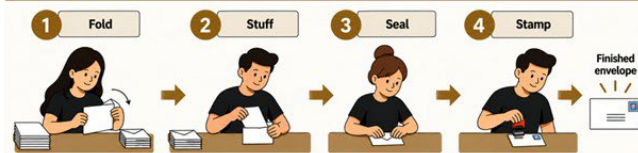


Reduce batch size

Envelope Stuffing

Which one is faster?

Single piece flow



Batch Production (batch size =10)



Reduce batch size

Which one is faster?

One piece flow

- Reduces first-piece and overall production lead time
- Enables faster detection of quality issues
- Minimizes rework and waste
- Enhances flexibility and responsiveness

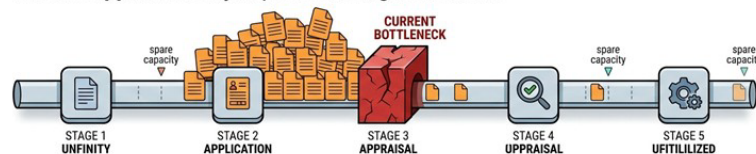
The goal of minimum batch sizes is “one-piece flow”



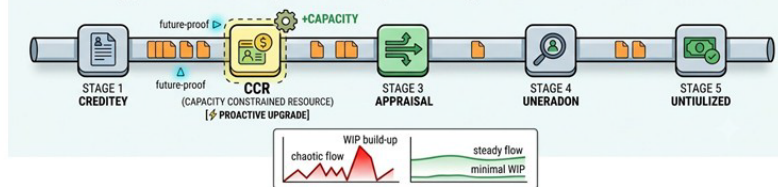
Proactive Approach

Today's non-bottleneck can become tomorrow's bottleneck

WRONG approach: Only improve existing bottlenecks



BETTER approach: Also improve CCRs proactively

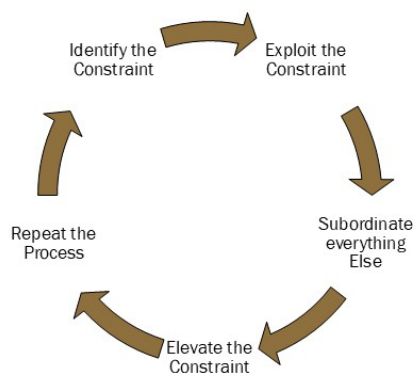


CCRs are “almost bottlenecks.” They still have some spare capacity, but not much. They may not handle statistical fluctuations.

CCR: Capacity Constrained Resource

Theory of Constraints Framework

- **Identify the Constraint** - Find what is holding everything back
- **Exploit the Constraint** - Use bottlenecks as efficiently as possible
- **Subordinate everything Else** - Adjust all other parts of the system to support the bottleneck
- **Elevate the Constraint** - If it's still holding you back, add more capacity
- **Repeat the Process** - Once one bottleneck is fixed find next one. Continuous improvement



Summary

Do you really know how your processes actually operate?

- Yes, Process mining helps you uncover the reality; not just how the process is supposed to work.
- You can discover rework, waste, delays, and bottlenecks using real process data

Bottlenecks are important because ...

- They set the system's maximum throughput.
- They determine where work-in-process (WIP) accumulates.

Think beyond local efficiency!

- Increasing the capacity of a non-bottleneck does not increase overall system output.
- Doubling a non-bottleneck department capacity does not increase overall throughput

Develop strategies to improve bottleneck capacity and thus overall system performance

- Reposition bottlenecks to reduce WIP when appropriate.
- Balancing the workload among resources to create smoother process flow.
- Make sure bottleneck's time is not wasted by incomplete applications, incorrect data or waiting



THANK YOU

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Scan to connect with me in LinkedIn



9/17/2026

33

Data 3

The Next Chapter: Advanced Storytelling with Data

Dr. Doug Pruim

KEY POINTS



People have mental shortcuts for interpreting visual info

Gestalt Principles of Visual Perception

Proximity



Closure



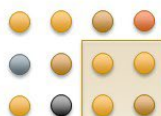
Similarity



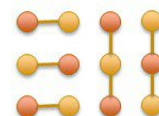
Continuity



Enclosure

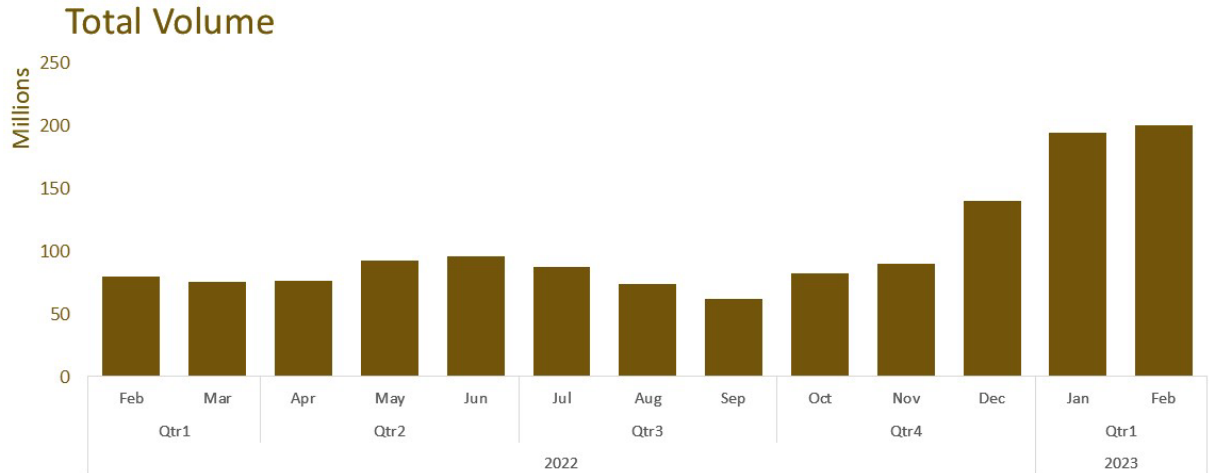


Connection



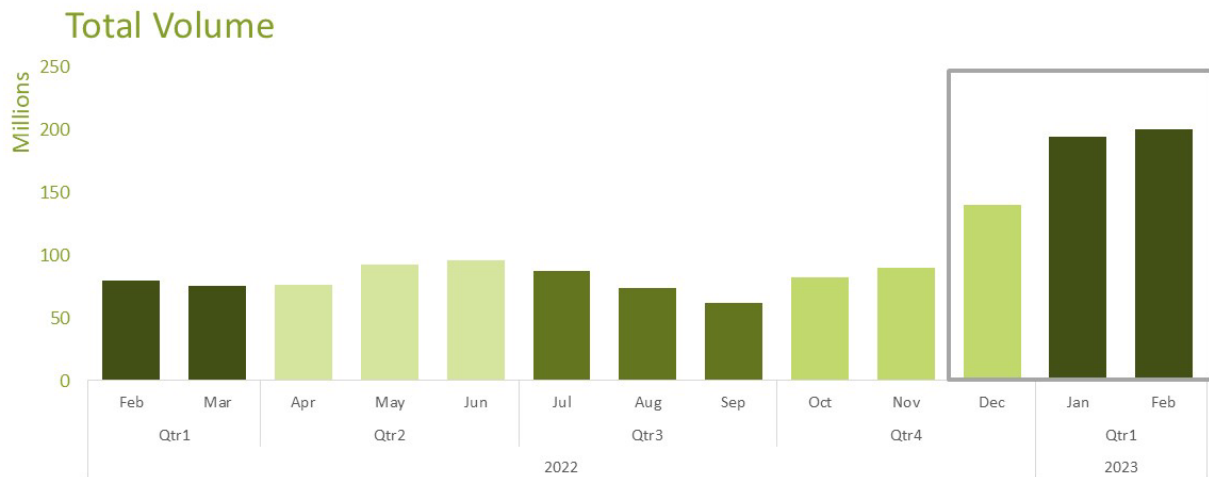
Similarity

The Gestalt principle of **Similarity** connects objects that share attributes



Enclosure

The Gestalt principle of **Enclosure** connects objects that are bound



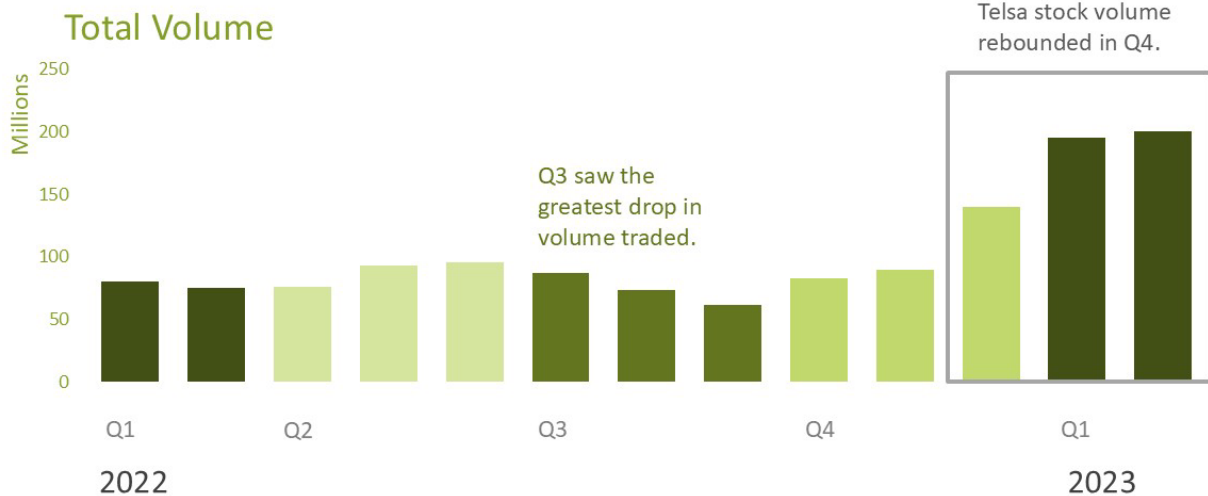
Proximity

The Gestalt principle of **proximity** connects objects that **close together**



Continuity

The Gestalt principle of **continuity** connects objects **in a line**



Connection

The Gestalt principle of **connection** connects objects with a line



Closure

The Gestalt principle of **closure** fills in the blanks



STORYTELLING WITH DATA: CHEESE-TIME



Price of 40 lb. cheddar cheese blocks

	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
2014	2.22	2.19	2.36	2.24	2.02	2.02	1.99	2.18	2.35	2.19	1.95	1.59
2015	1.52	1.54	1.55	1.59	1.63	1.71	1.67	1.71	1.66	1.67	1.62	1.46
2016	1.48	1.47	1.49	1.42	1.32	1.50	1.66	1.78	1.62	1.60	1.88	1.73
2017	1.69	1.62	1.43	1.50	1.63	1.60	1.66	1.69	1.64	1.73	1.66	1.49
2018	1.49	1.52	1.56	1.61	1.64	1.56	1.54	1.63	1.64	1.59	1.40	1.38
2019	1.41	1.56	1.59	1.66	1.68	1.79	1.82	1.88	2.04	2.07	1.97	1.88
2020	1.91	1.83	1.76	1.10	1.67	2.56	2.65	1.77	2.33	2.71	2.05	1.62
2021	1.75	1.58	1.74	1.79	1.68	1.50	1.64	1.72	1.76	1.78	1.74	1.89
2022	1.91	1.94	2.17	2.34	2.33	2.19	2.01	1.81	1.95	2.03	2.12	2.09
2023	2.00	1.89	1.94	1.76	1.57	1.40	1.62	1.98	1.85	1.72	1.63	1.51
2024	1.52	1.58	1.45	1.61	1.88	1.89	1.91	2.03				

SOURCE: Cheese Reporter

The price of 40 lb. cheddar cheese blocks hit an **all-time high** in October of 2020.

	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
2014	2.22	2.19	2.36	2.24	2.02	2.02	1.99	2.18	2.35	2.19	1.95	1.59
2015	1.52	1.54	1.55	1.59	1.63	1.71	1.67	1.71	1.66	1.67	1.62	1.46
2016	1.48	1.47	1.49	1.42	1.32	1.50	1.66	1.78	1.62	1.60	1.88	1.73
2017	1.69	1.62	1.43	1.50	1.63	1.60	1.66	1.69	1.64	1.73	1.66	1.49
2018	1.49	1.52	1.56	1.61	1.64	1.56	1.54	1.63	1.64	1.59	1.40	1.38
2019	1.41	1.56	1.59	1.66	1.68	1.79	1.82	1.88	2.04	2.07	1.97	1.88
2020	1.91	1.83	1.76	1.10	1.67	2.56	2.65	1.77	2.33	2.71	2.05	1.62
2021	1.75	1.58	1.74	1.79	1.68	1.50	1.64	1.72	1.76	1.78	1.74	1.89
2022	1.91	1.94	2.17	2.34	2.33	2.19	2.01	1.81	1.95	2.03	2.12	2.09
2023	2.00	1.89	1.94	1.76	1.57	1.40	1.62	1.98	1.85	1.72	1.63	1.51
2024	1.52	1.58	1.45	1.61	1.88	1.89	1.91	2.03				

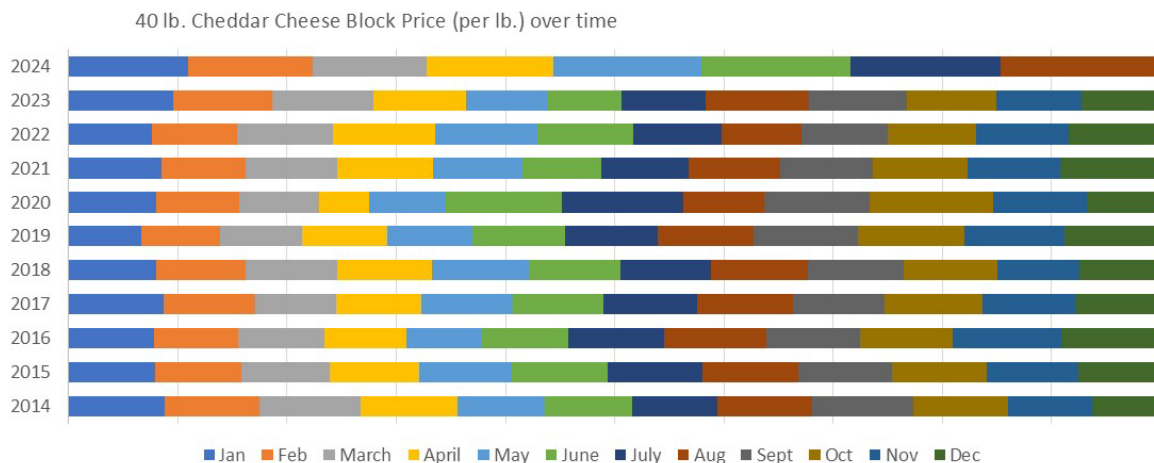
SOURCE: Cheese Reporter

The price of 40 lb. cheddar cheese blocks hit an **all-time high** in October of 2020.

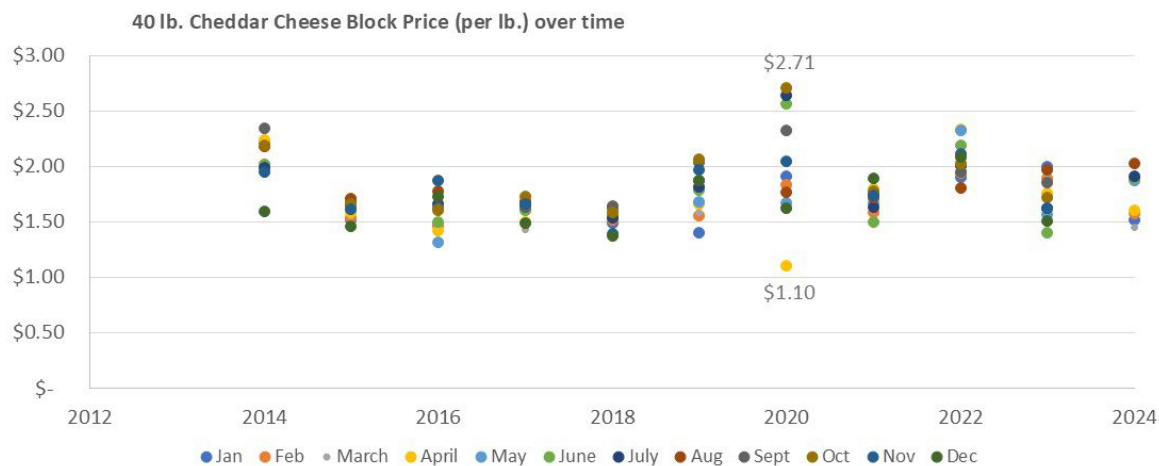
	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
2014	2.22	2.19	2.36	2.24	2.02	2.02	1.99	2.18	2.35	2.19	1.95	1.59
2015	1.52	1.54	1.55	1.59	1.63	1.71	1.67	1.71	1.66	1.67	1.62	1.46
2016	1.48	1.47	1.49	1.42	1.32	1.50	1.66	1.78	1.62	1.6	1.88	1.73
2017	1.69	1.62	1.43	1.5	1.63	1.60	1.66	1.69	1.64	1.73	1.66	1.49
2018	1.49	1.52	1.56	1.61	1.64	1.56	1.54	1.63	1.64	1.59	1.40	1.38
2019	1.41	1.56	1.59	1.66	1.68	1.79	1.82	1.88	2.04	2.07	1.97	1.88
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SOURCE: Cheese Reporter

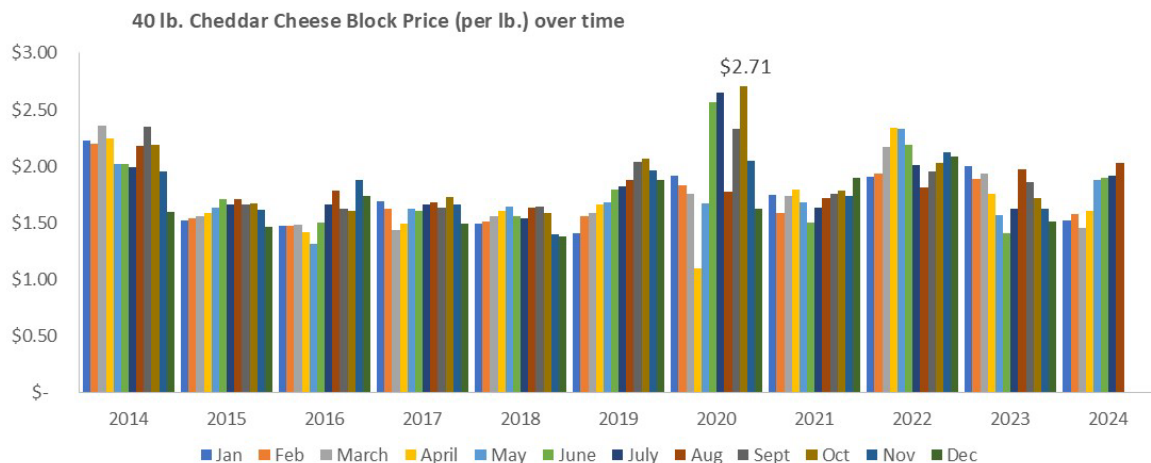
The price of 40 lb. cheddar cheese blocks hit an **all-time high** in October of 2020.



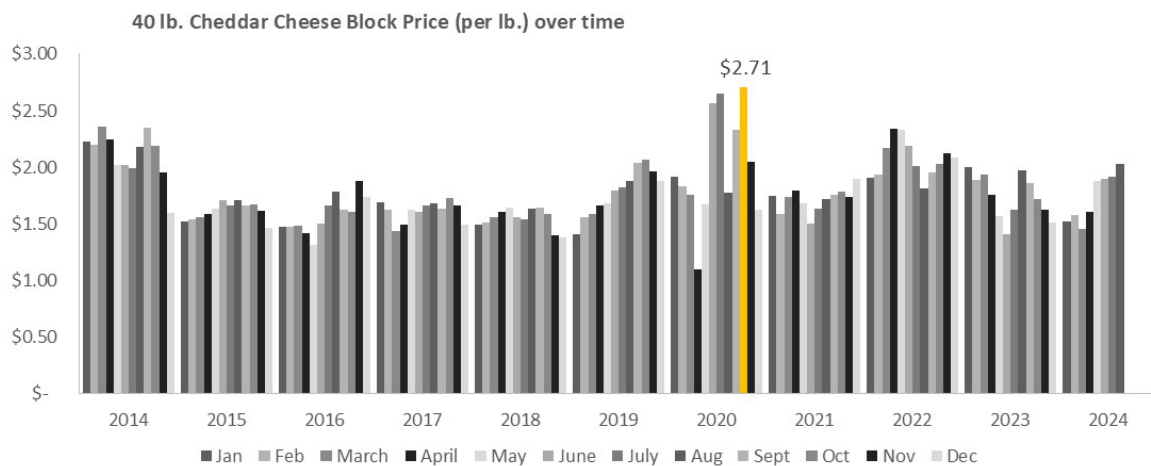
The price of 40 lb. cheddar cheese blocks hit an **all-time high** in October of 2020.



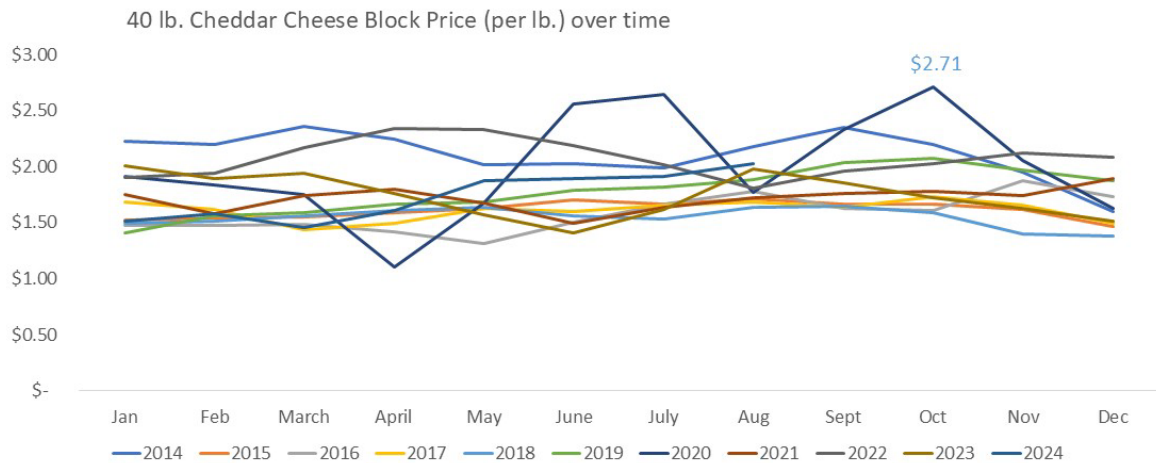
The price of 40 lb. cheddar cheese blocks hit an **all-time high** in October of 2020.



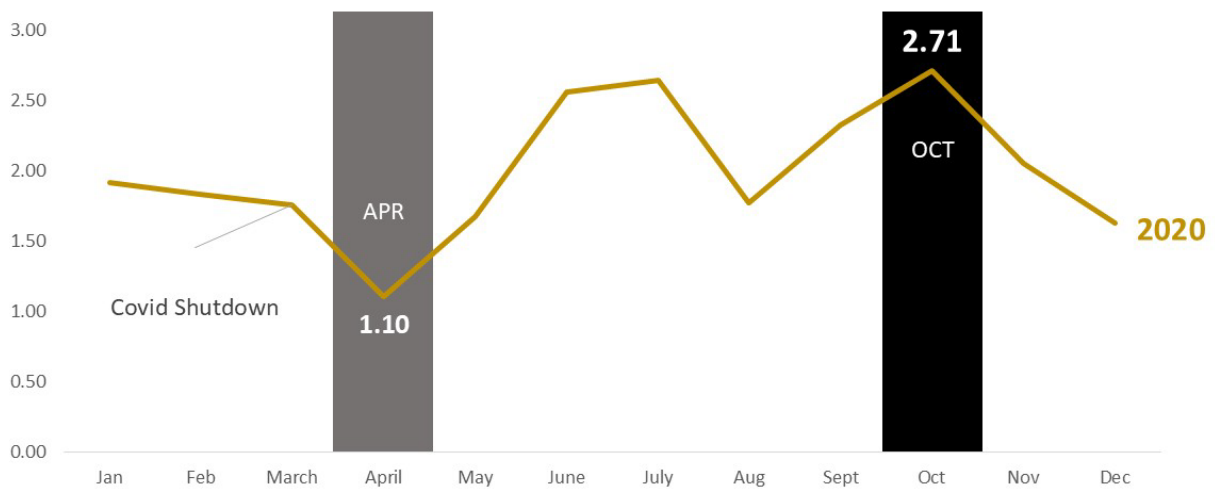
The price of 40 lb. cheddar cheese blocks hit an **all-time high** in October of 2020.



The price of 40 lb. cheddar cheese blocks hit an **all-time high** in October of **2020**



The price of 40 lb. cheddar cheese blocks hit an **all-time high** in October of 2020.



The price of cheddar cheese blocks hit an **all-time high** in October of 2020.

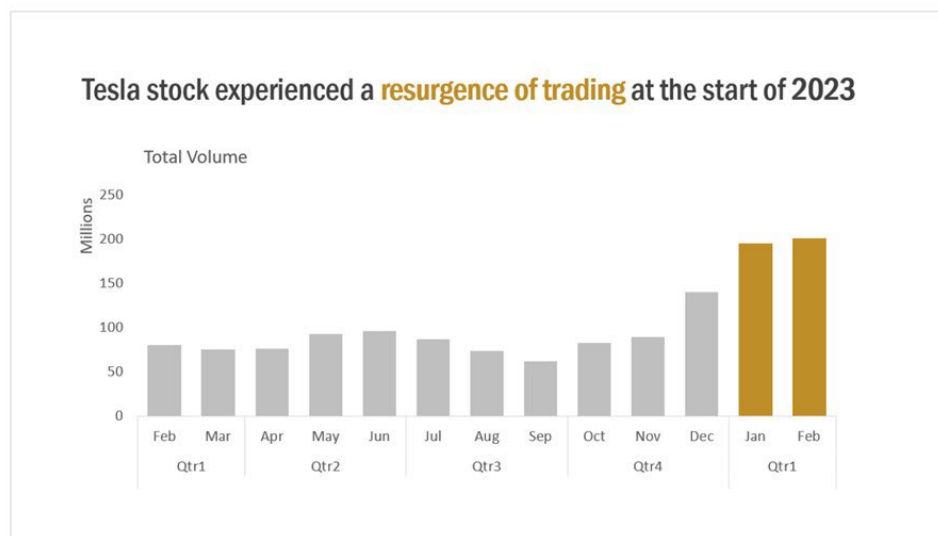


Price of 40 lb. cheddar cheese blocks

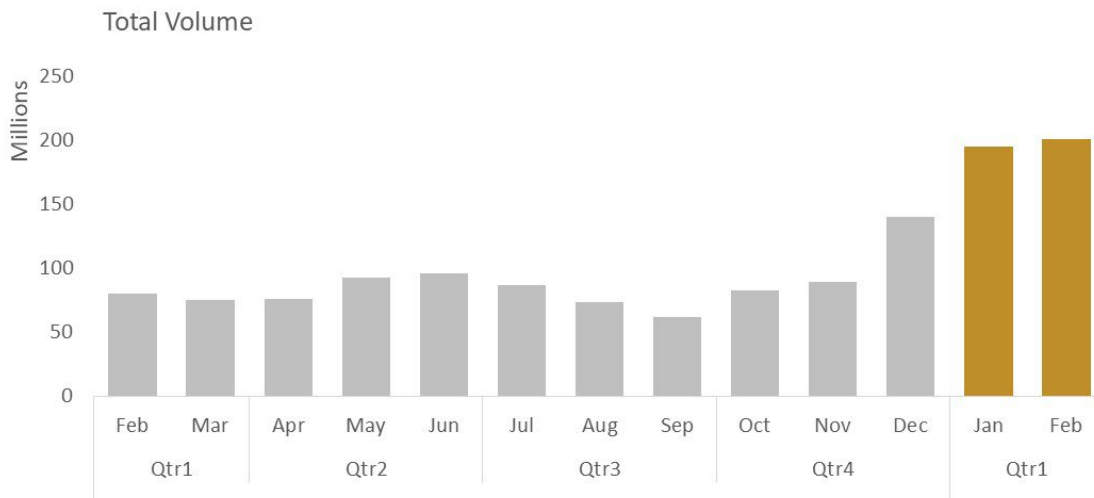
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2024	1.52	1.58	1.45	1.61	1.88	1.89	1.91	2.03				

SOURCE: Cheese Reporter

Write a sentence about the **big takeaway** of your slide instead of just using headers



Tesla stock experienced a **resurgence of trading** at the start of 2023

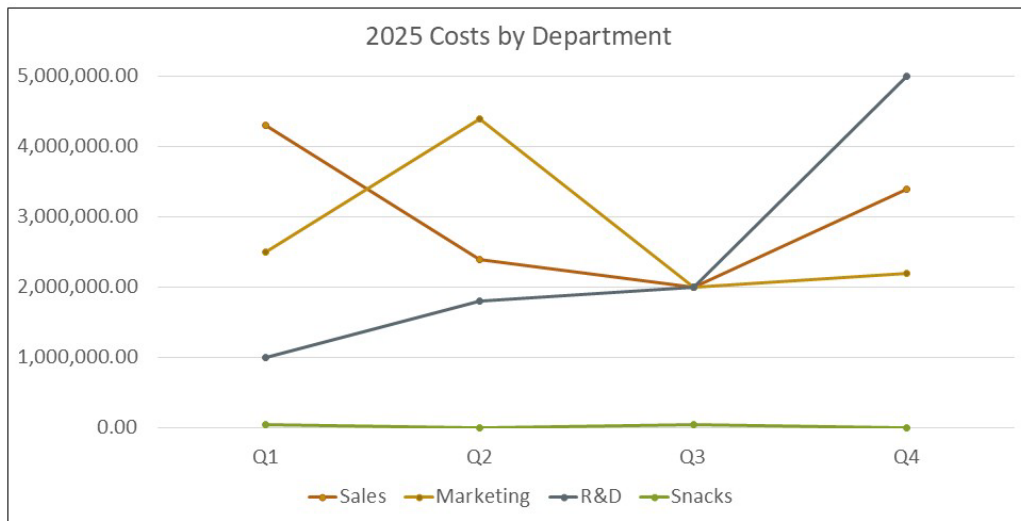
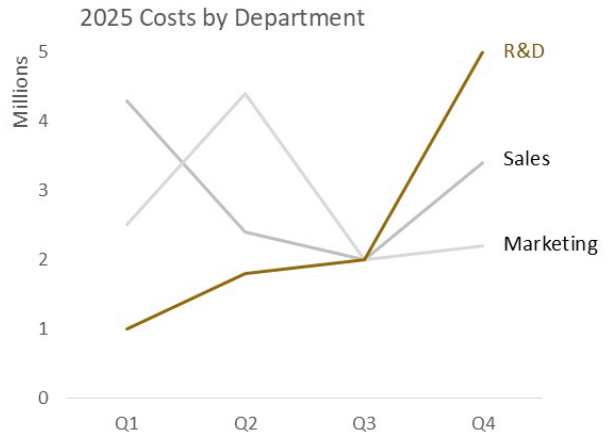
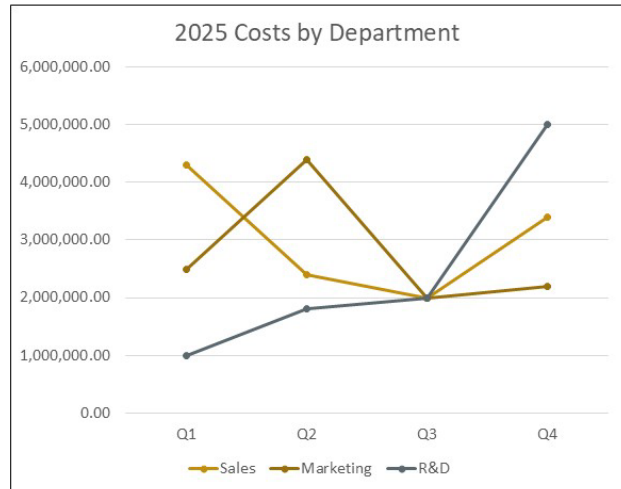


***DECLUTTERING
WALKTHROUGH***

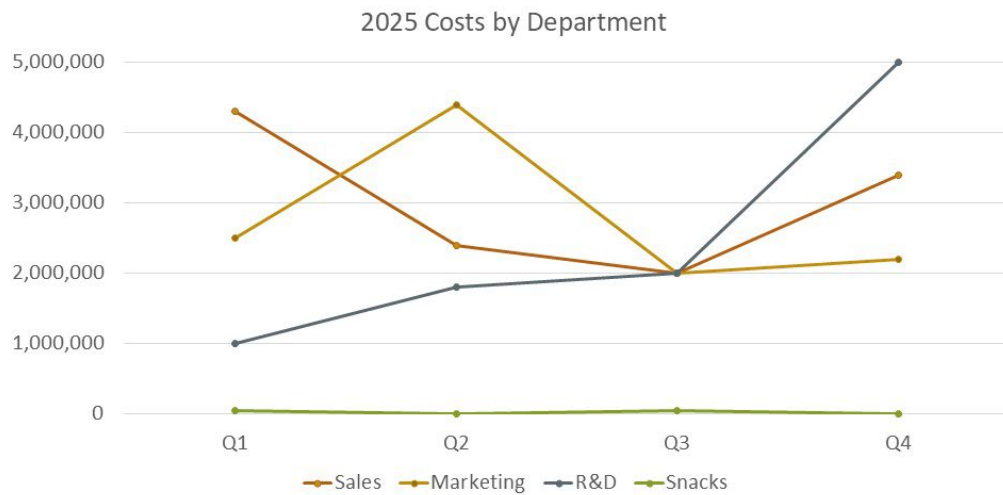


Removing clutter makes visuals easier to understand

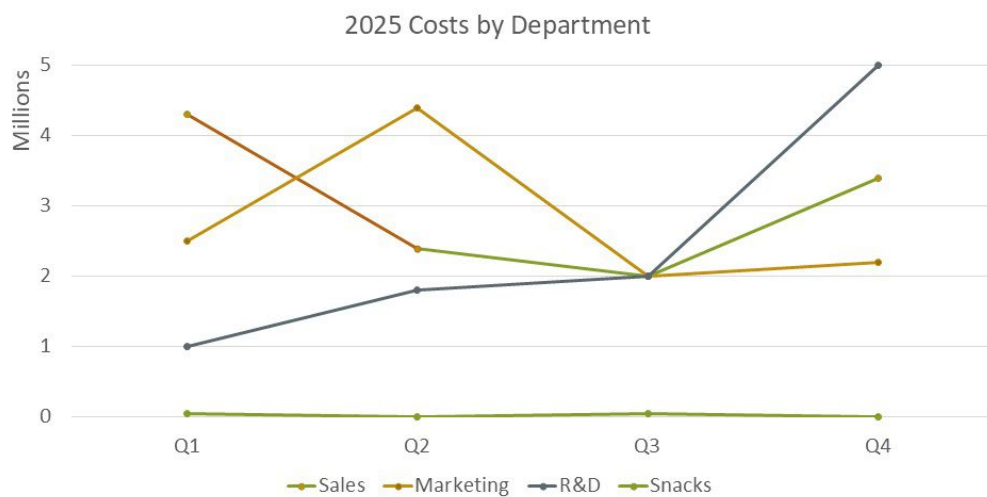
Clutter



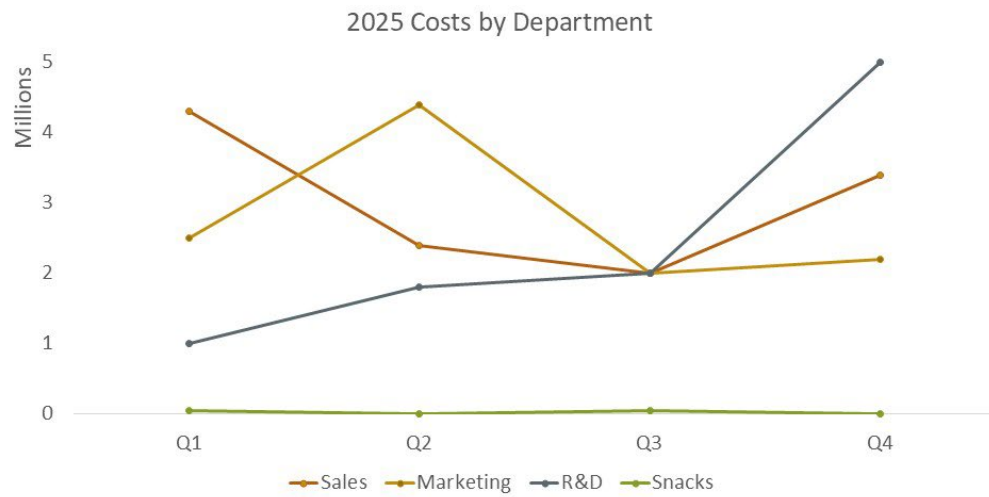
Original



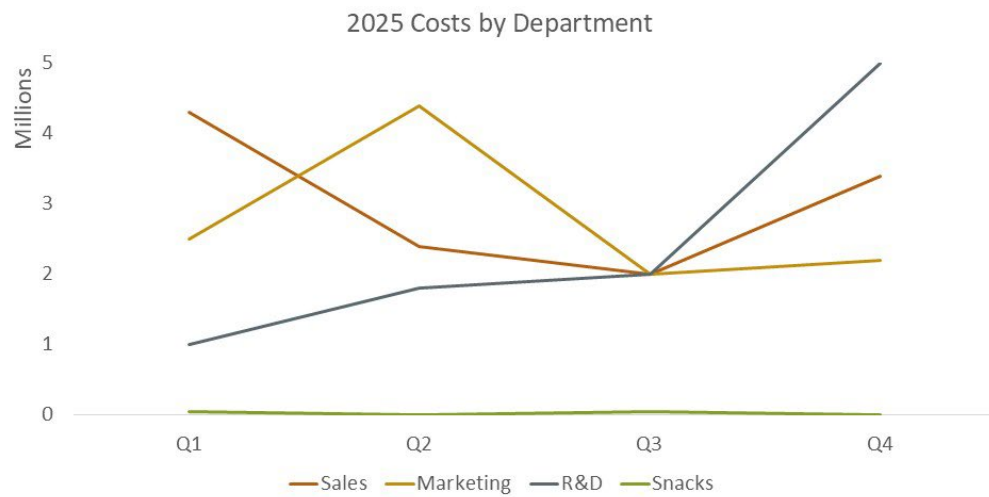
Remove box outline and extra decimals



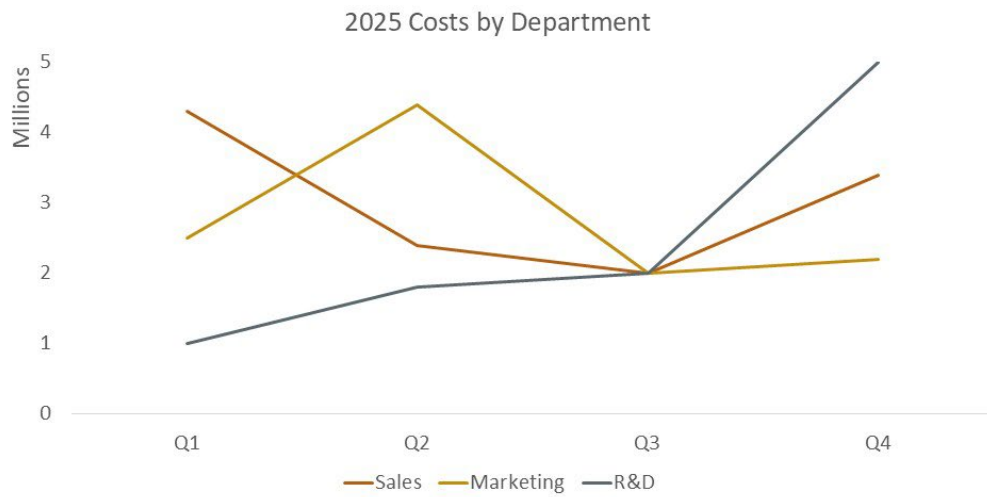
Change the unit size of millions



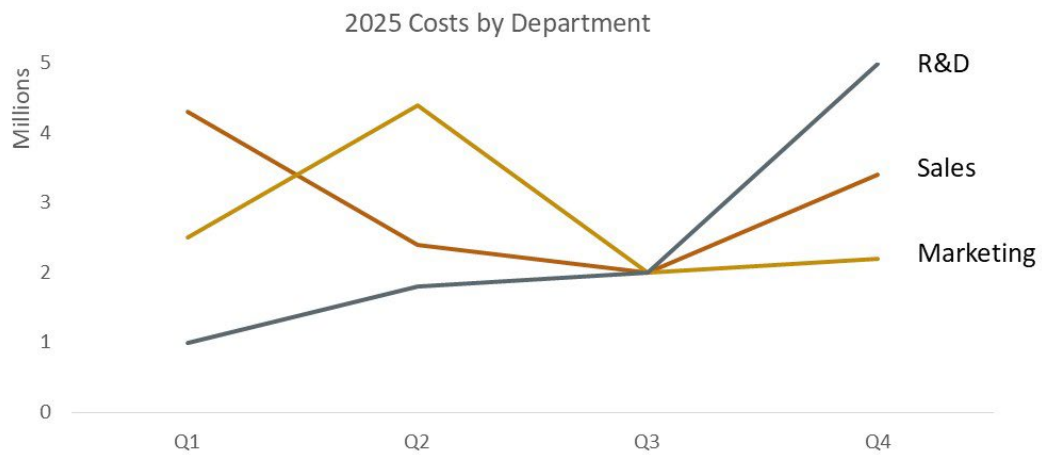
Remove gridlines



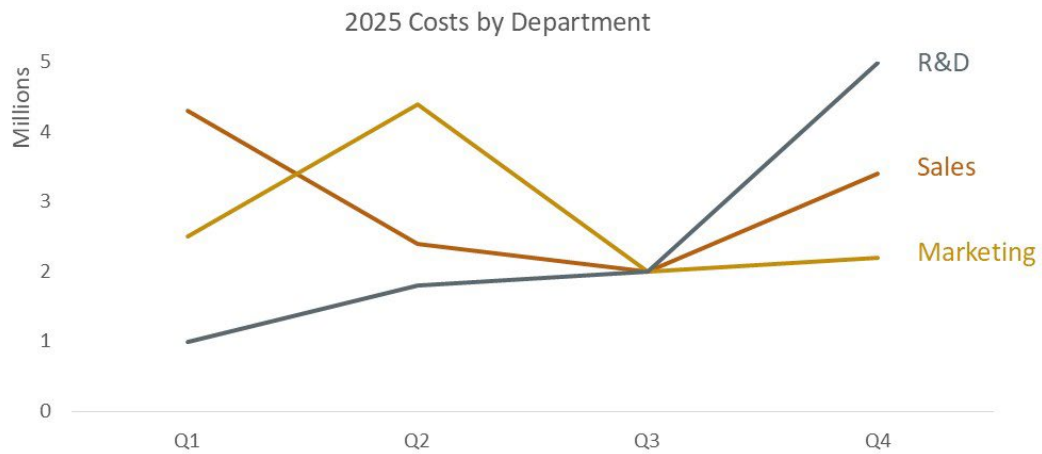
Remove data point markers



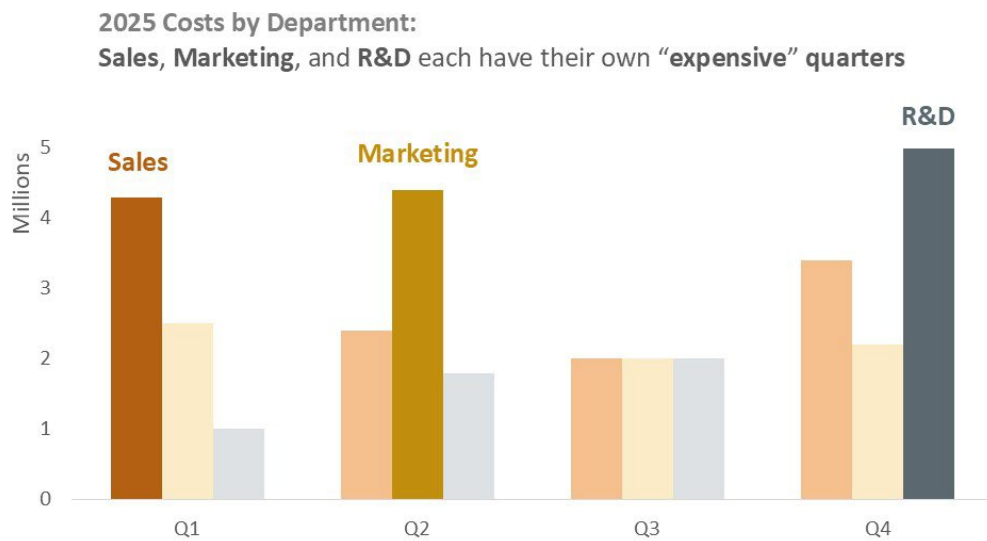
Remove or gray out less important lines



Label lines directly



Color code labels



Consider alternative ways to present the data

EXTRA TIPS



“Ghosting” can help guide your audience’s attention

Table

Bar Charts



Line Chart



Scatterplot



Table

Bar Charts

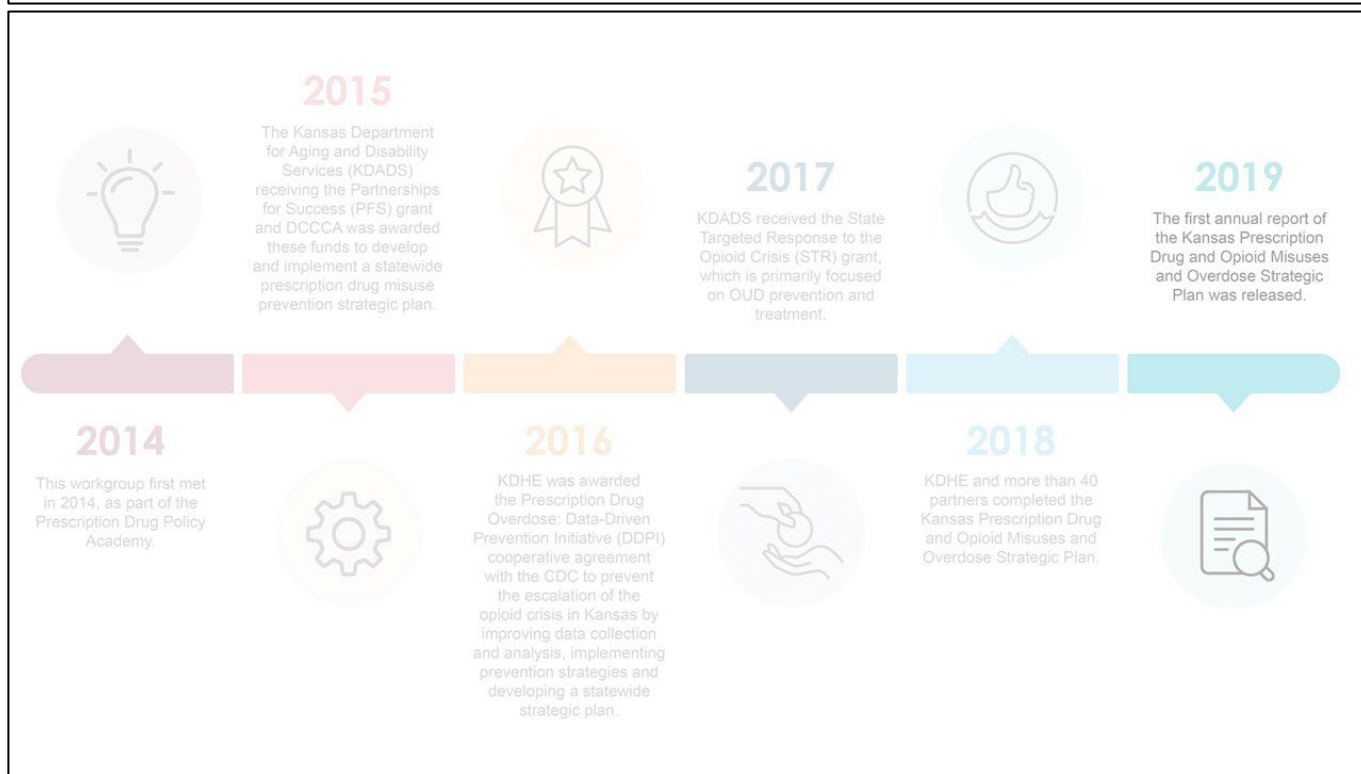
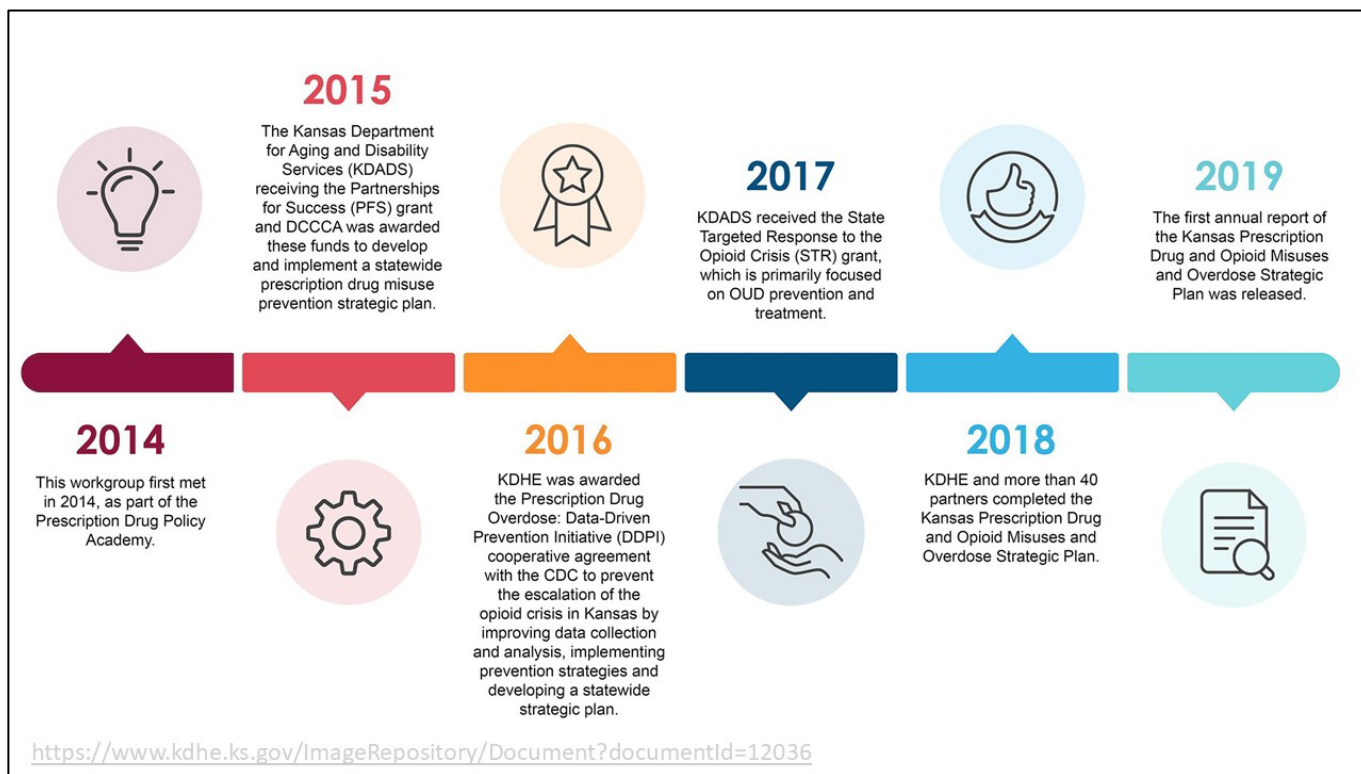


Line Chart



Scatterplot





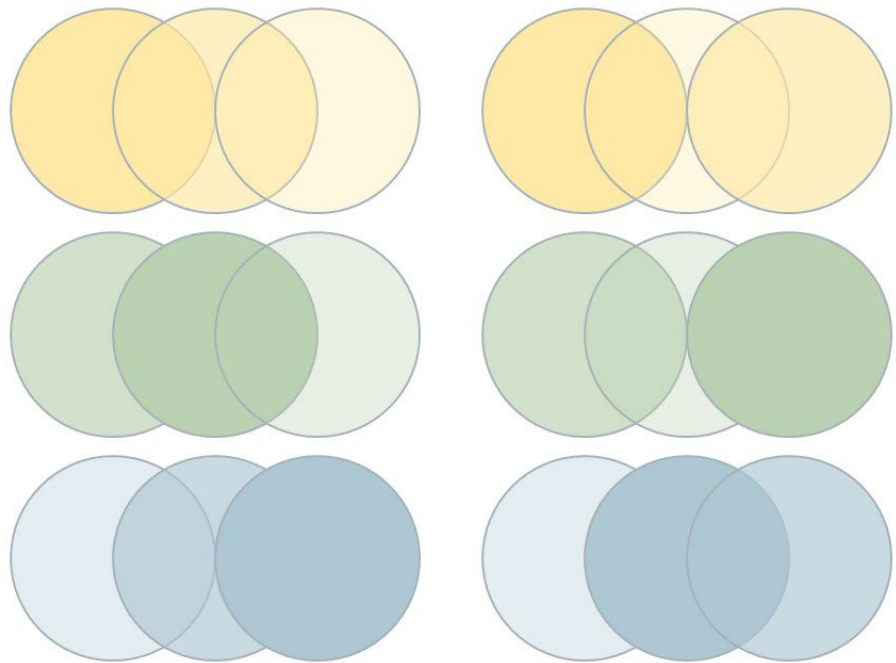
Key Takeaways

Know your point (clear messages)
and
make it easy for **your audience** to **understand**
(clean visuals)

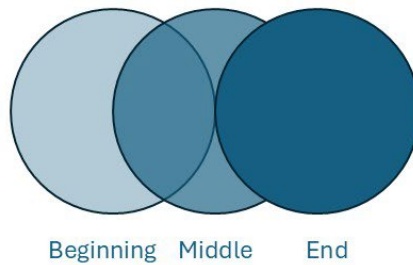
Story Order Options

Choosing the right path based on your audience

Stories can be ordered in a variety of ways **based on your audience and the situation.**



Downstream



Standard story:

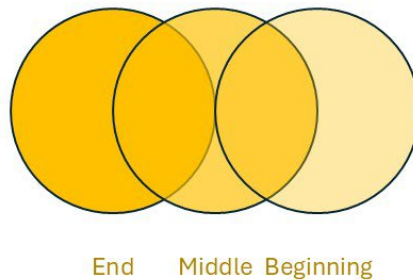
Once upon a time...
Unfortunately ...
Here's what we did...
Finally, we won.

Audience:

People who don't know
the context

Interested clients,
workers, investors

Upstream



The BLUF

(bottom line up front)

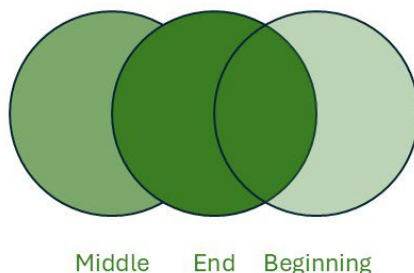
Here's the deal...
Here's our rationale...
Here's the problem it solves.

Audience:

People who already know
the context, limited time

CEOs, bosses, higher ups,
people who don't have
time for "stories"

Cross-stream



The Record Scratch

As you're aware, we've been...
Which is why we need...
Remember why we started.

Audience:

People who already know the journey

Team members, partners, co-workers, fellow travelers

Cross-stream

Half-time Speech

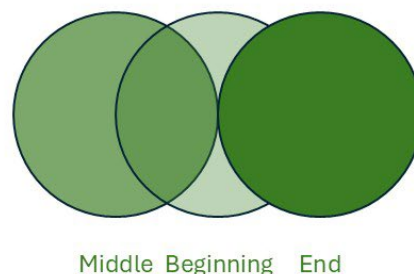
It was a tough first half...
Remember why we started...
Which is why we need...



Audience:

People who already know the journey

Team members, partners, co-workers, fellow travelers **who might need some motivation**

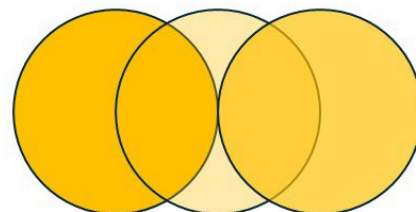


Upstream

The “Calling in a Favor”

Here’s what we need...
Remember, you said...
Here’s our rationale.

End Middle Beginning



End Beginning Middle

Audience:

People who already know
the context, limited time

Important people who
need a gentle reminder or
perhaps a little bit of a
guilt trip; parents

Downstream

“Don’t be anxious” story:

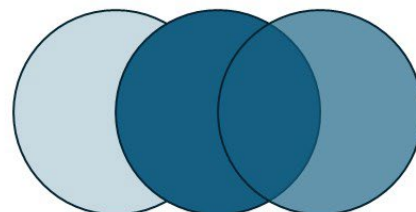
Once upon a time...
Unfortunately...
Don’t worry; we won.
Here’s how it happened...

Audience:

People who don’t know
the context but are
worried about the
outcome

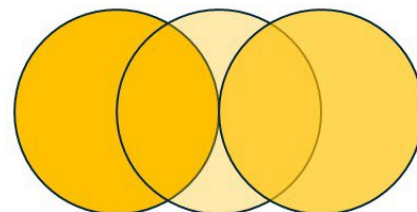
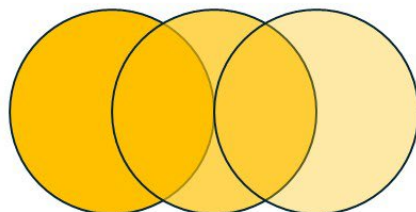
Nervous clients, workers,
potential investors

Beginning Middle End

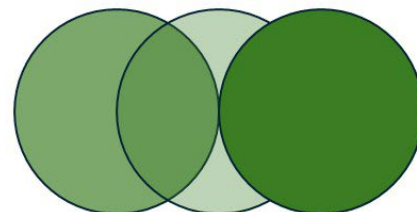
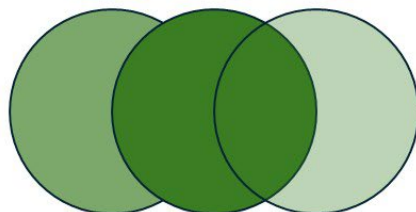


Beginning End Middle

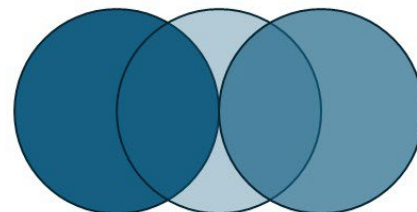
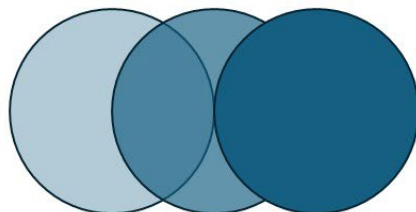
Upstream



Cross-stream



Downstream



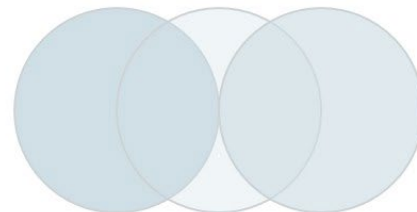
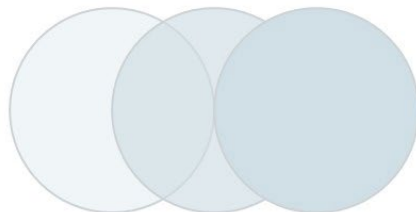
Upstream



Cross-stream



Downstream



What's your story?

**Intelligent
prompts
guide the AI to
better results**

Role

What **role** should the AI play?

Audience

Who is your **audience**?

Purpose

What is your **goal**?

Criteria

What **must be included**?

Constraints

What are the **parameters**?
(*Tone, length, medium, etc.*)

Examples

What is your **desired style**?

Options

How many options would you
like to see?

Process 1

Innovative Problem Solving for Leaders

Mrs. Jennifer Christie

INNOVATIVE PROBLEM SOLVING FOR LEADERS

LEADING INNOVATION WITH CLIENT-FOCUS

Jennifer Christie

MEP

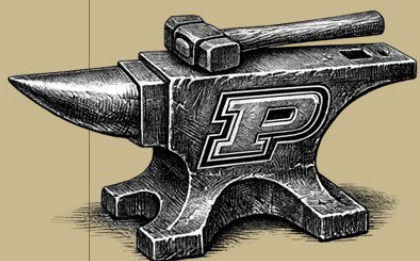
Operations Executive Program

9/16/2026

1

LEARNING OBJECTIVES

Innovative Problem-Solving for Leaders



Description:

Discover methods for innovative thinking and apply the in a group exercise. Understand your strengths and weaknesses as an innovation leader and how best to lead and support a team to produce client-focused innovative results.

Objective(s):

- Explore your role and the behaviors that support innovation as a leader.
- Understand the role of the customer voice and how to capture critical to satisfaction criteria for process design.
- Apply Triz and benchmarking strategies to innovative problem-solving.
- Understand the key attributes for innovative success.

INTRODUCTIONS

- Name
- What you do at your job
- What problem have you recently solved?
- How did you solve it?



3

SUCCESSFUL EXAMPLES

Instacart: Solved the problem of inconvenient shopping for busy shoppers or those without a car while keeping prices competitive. Founded 2012. Currently worth \$39 Billion. Continues to evolve.

Apple: Constantly innovating from computer to ipod to iPhones and other personal devices...incorporation of AI. Without sacrificing security and trust. Founded 1976. Currently worth \$3 Trillion. The Apple 1 computer sold for \$667.

Fair Oaks!

4

UNSUCCESSFUL EXAMPLES

- WeWork
- Kodak
- Circuit City
- BlockBuster



What do you know about these companies?

5

WHAT DID THE
SUCCESSSES
HAVE IN
COMMON?

THE VOICE OF THE CUSTOMER!

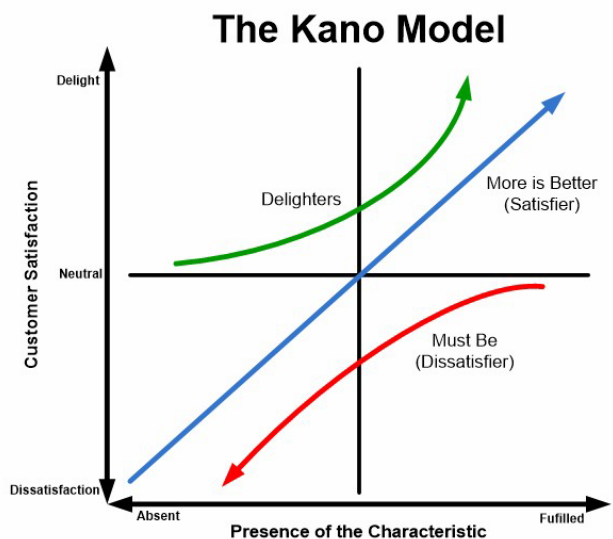
- Do you know what your customer really wants?
- Do you know who your customer is?
- How can you gather the “voice of the customer?”
 - Interviews
 - Surveys
 - Feedback
 - What else?



7

THE KANO MODEL

- Not all customer expectations are equally important
 - **Must Be** characteristics are taken for granted – unless they are absent!
 - Customers typically focus on **More is Better** characteristics.
 - **Delighters** are generally not mentioned, since the customers are not dissatisfied with their absence.



8

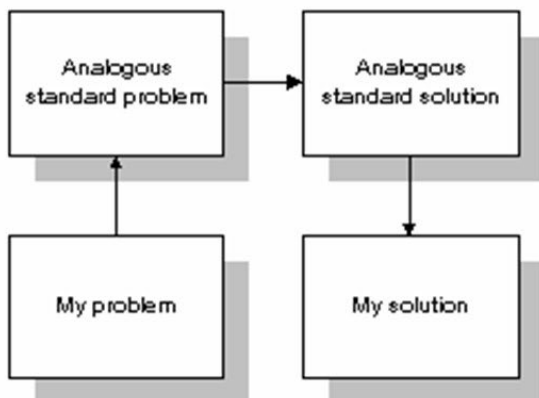
KANO EXAMPLE

Clinic

Output	Must Be	More is Better	Delighters
Immunization received at clinic	Accomplished per the SOP with no harm to the patient	Appointment starts on time	Wait less than 10 minutes for walk-in appointment
	Correct labeling and handling	Caring manner of nurse	Child-friendly environment
	Experienced trained nurses	Parking close to building	Snacks and drinks available
	Accurately filed in CHIRP	Patient comfort level	

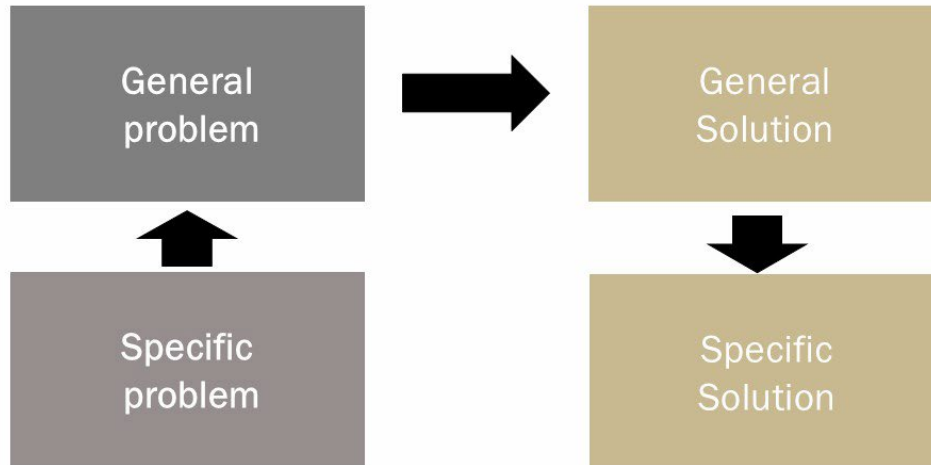
9

HOW DO WE THINK?



10

TRIZ APPROACH



11

**Without a method, we lean on the following for
“innovation”**



Trial and Error



Brainstorming



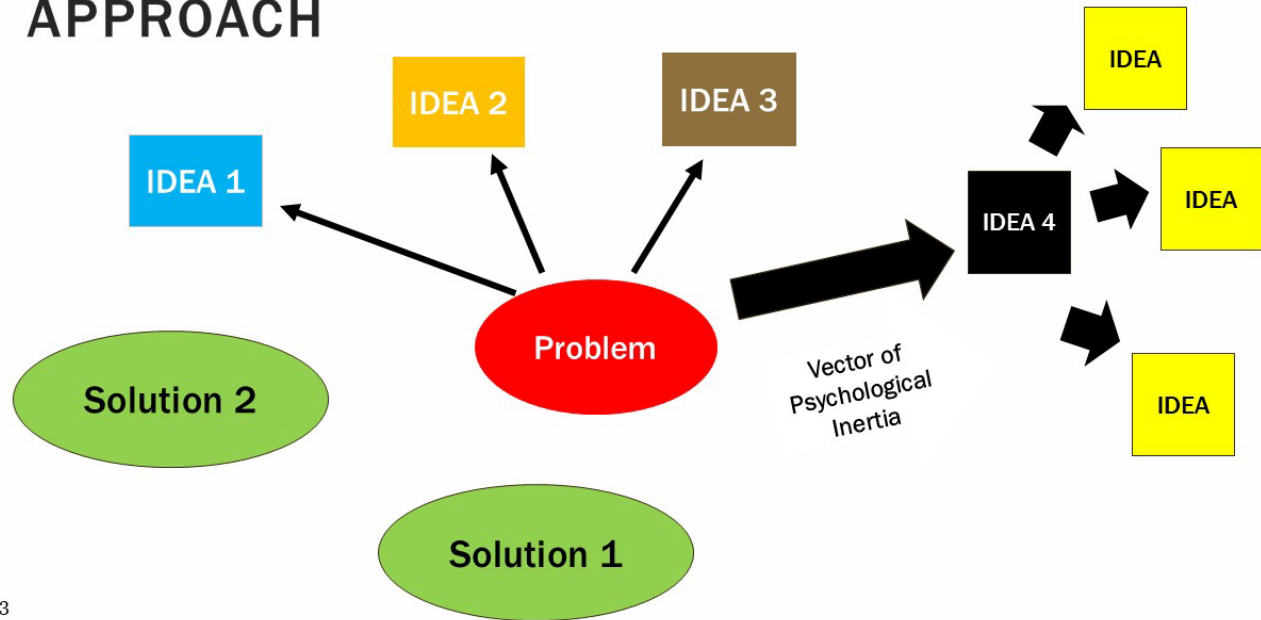
Past Experiences



Psychologically Dependent Ideas

12

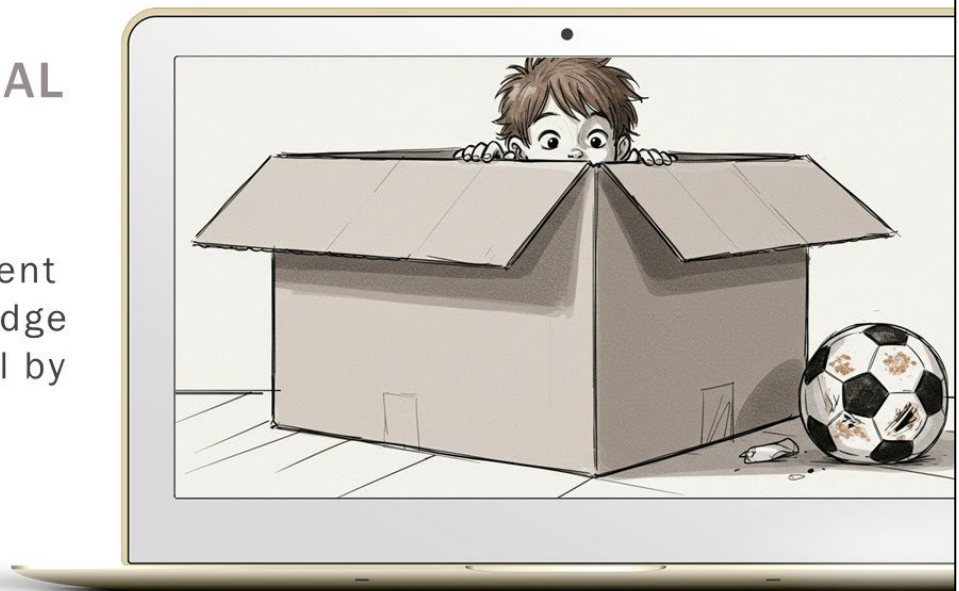
PSYCHOLOGICALLY CONSTRAINED APPROACH



13

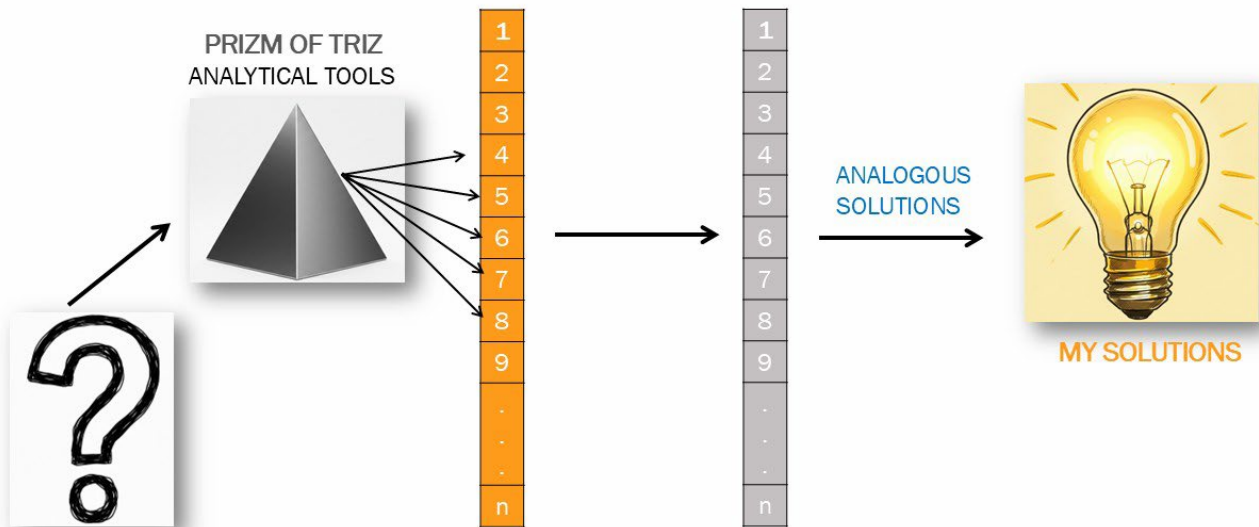
PSYCHOLOGICAL INERTIA

- Inability to go beyond the current realm of knowledge by the individual by the group



14

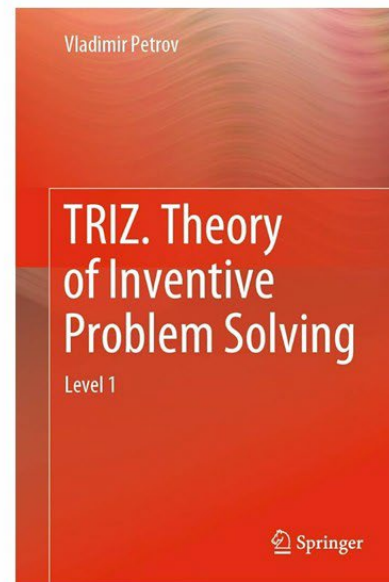
A FUNDAMENTALLY DIFFERENT APPROACH



15 **MY PROBLEM**

TRIZ = THEORY OF INVENTIVE PROBLEM SOLVING

- Systematic, scientific approach to innovation
- Repeatable and reliable
- Moves away from trial-and-error
- Accesses and adds to body of inventive knowledge
- Overcomes psychological inertia



16

GENRICH ALTSHULLER

- Was a young inventor, he began developing TRIZ in 1946 while working in the Soviet Navy initiating invention proposals for the patent office.
- He realized that a problem requires an inventive solution if there are technical contradictions
- He was imprisoned for letters sent to Stalin and newspapers about erroneous Soviet government decisions. After Stalin died, he was freed under Khrushchev.
- Earned his living under penname H. Altov writing science fiction books.
- First paper published 1956
- Shifted from technical TRIZ to creativity and even developed a version of TRIZ for school children.
- After the Cold War, TRIZ was shared with other countries.



15 October 1926 – 24 September 1998

17

ALTSHULLER STUDIED 200,000 PATENTS

Level 5 | <1%

A rare scientific discovery or pioneering invention of essentially a new system

Level 4 | 4%

New generation principle to perform primary functions. Solution found in science.

Level 3 | 18%

Fundamental improvements by methods known outside the industry. Contradictions resolved

Level 2 | 32%

Minor improvements, by methods within the industry
Usually with some compromise

Level 1 | 45%

Routine design problems solved by methods well known within the specialty. No invention needed

95% OF THE SOLUTIONS HAD BEEN SOLVED BEFORE!

Levels of Inventiveness				
Level	Degree of Inventiveness	%	Source of Knowledge	# of solutions
1	Apparent solution	45%	Personal knowledge	10
2	Minor improvement	32%	Knowledge within company	100
3	Major improvement	18%	Knowledge within the industry	1000
4	New concept	4%	Knowledge outside the industry	100,000
5	Discovery	1%	All that is knowable	1,000,000

19

ALTSHULLER FOUND

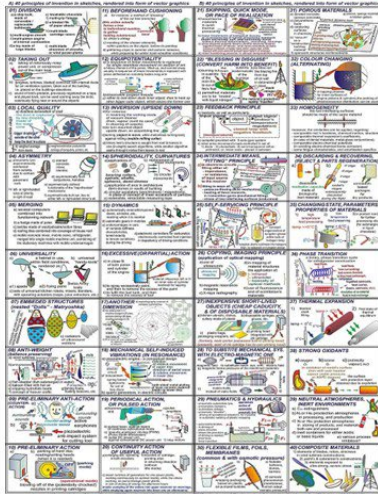
- True innovation strived to overcome contradictions.
- Contradictions between opposing forces like...
 - ❖ Faster with sacrificing Quality
 - ❖ More Accurate without more Complexity
 - ❖ Greater Utility without more Cost



20

ALTSHULLER FOUND

that most inventions seemed to have
similar patterns (40 of them!)



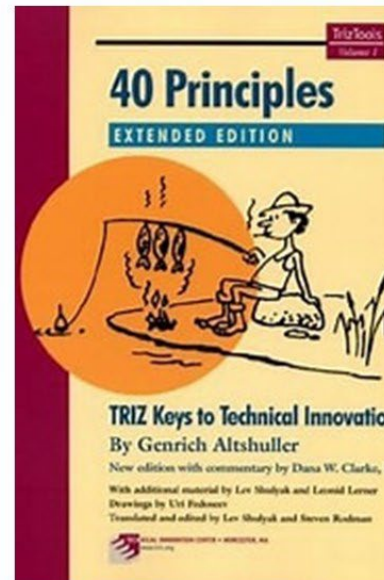
Patterns used in resolving the contradictions.

Worsening Feature		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
m	Weight of moving object - 1	-	+	10	8	20	15	20	2	8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	Weight of stationary - 2	-	+	20	15	20	15	20	2	8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
o	Length of moving object - 3	-	+	10	8	20	15	20	2	8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	Length of stationary - 4	-	+	20	15	20	15	20	2	8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
n	Area of moving object - 5	-	+	10	8	20	15	20	2	8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	Area of stationary - 6	-	+	20	15	20	15	20	2	8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
f	Volume of moving object - 7	-	+	10	8	20	15	20	2	8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	Volume of stationary - 8	-	+	20	15	20	15	20	2	8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
a	Speed - 9	-	+	10	8	20	15	20	2	8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	Force (Intensity) - 10	-	+	20	15	20	15	20	2	8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10

40 INVENTIVE PRINCIPLES

- Generic principles can provide solutions to specific problems by the means of analogical thinking
- As far as we know there are only 40 ways to solve a contradiction
- Knowing this provides an excellent means of focusing brainstorm activities

www.triz40.com



40 INVENTIVE PRINCIPLES

- | | |
|---------------------------|--------------------------------|
| 1.SEGMENTATION | 11.BEFOREHAND CUSHIONING |
| 2.TAKEOUT | 12.EQUIPOTENTIALITY |
| 3.LOCAL QUALITY | 13.OTHER WAY ROUND |
| 4.ASYMMETRY | 14.SPHEROIDALITY |
| 5.MERGING | 15.VARIABILITY or DYNAMICISM |
| 6.UNIVERSALITY | 16.PARTIAL or EXCESSIVE ACTION |
| 7.NESTED DOLL | 17.ANOTHER DIMENSION |
| 8.ANTI-WEIGHT | 18.MECHANICAL VIBRATIONS |
| 9.PRELIMINARY ANTI-ACTION | 19.PERIODIC ACTIONS |
| 10.PRELIMINARY ACTION | 20.CONTINUITY OF USEFUL ACTION |

40 INVENTIVE PRINCIPLES CONT.

- | | |
|---|--|
| 21."SKIP" | 30. FLEXIBLE SHELLS and THIN FILMS |
| 22.BLESSING IN DISGUISE | 31. POROUS MATERIALS |
| 23.FEEDBACK | 32. CHANGE OF COLOR |
| 24.INTERMEDIARY | 33. HOMOGENEITY |
| 25.SELF-SERVICE | 34. DISCARD and RECOVER |
| 26.COPYING | 35. CHANGE PHYSICAL or CHEMICAL PARAMETERS |
| 27.SERVICE LIFE - CHEAP/SHORT VS.
EXPENSIVE/LONG | 36. PHASE TRANSITIONS |
| 28.MECHANICS SUBSTITUTION | 37. THERMAL EXPANSION |
| 29.PNEUMATIC OR HYDRAULIC CONSTRUCTIONS | 38. STRONG OXIDANTS |
| | 39. INERT ATMOSPHERE |
| | 40. COMPOSITE MATERIALS |

LAW OF INCREASING IDEALITY...

Net Utility divided by Harmfulness

$$\text{Ideality} = \frac{\sum U_i}{\sum H_j}$$

The faster you get there the more inventive you are!

The evolution of the mechanical spring-driven watch into the electronic quartz crystal watch is an example of moving towards ideality.

IDEALITY

- All benefit, no cost, no harm.

$$\text{Ideality} = \text{'Value'} = \frac{\text{Benefits}}{\text{Cost} + \text{Harm}}$$

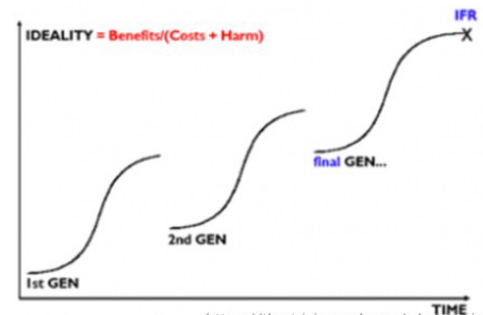
- Try stating the Ideal Final Result (IFR) as "itself."

EXAMPLES:

The data enters itself.

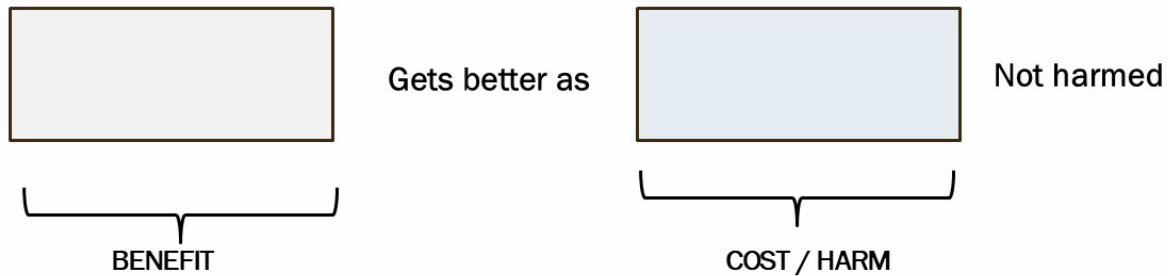
The grass mows itself

The data keeps itself complete, accurate, and current.



<https://the-trizjournal.com/what-is-triz/>
Figure 3: The Fundamental Dynamics Of System Evolution

IDENTIFY THE CONTRADICTIONS



27

RESOLVE CONTRADICTIONS

- Find the applicable principles from the 40 Principles.
- How can you achieve the Ideality?
- How can you use your resources?
- Consider even the wildest ideas!
- Use models.

28

RESOURCES

- Everything in the system is a resource (even the harmful things)
- The best solutions will come from knowing about all the resources

Identify everything in and around the system!



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BENCHMARKING

- Look outside
 - Your industry
 - To nature and science
- How is your general problem solved?

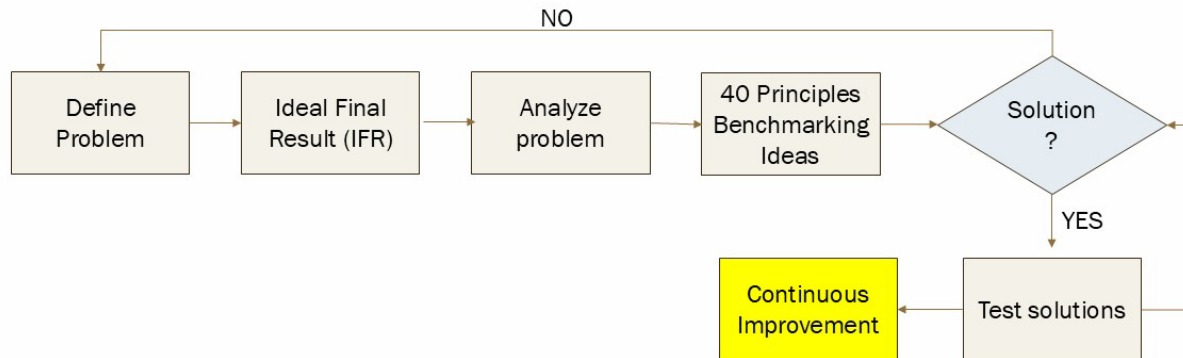


EXAMPLES:

- Burdock burrs used to discover Velcro
- Humpback whale flippers inspired wind turbine shape
- Termite mounds to design architecture without air conditioning in Africa
- Ant colonies inspire logistics and queuing

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ROADMAP TO INNOVATIVE IDEAS



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DATA AND PILOTS

Typically, when we are ready to institute a change, we execute a pilot study.

- During a pilot study, we seek to confirm our solutions in a relatively controlled setting.
- Pilot studies are performed on a smaller scale (e.g. one shift, short period of time, a specific product...)

Use data to confirm your idea works.

- Did you meet the customer specifications?
- Is it sustainable?
- Affordable?
- Scalable?

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GUIDED, NOT RANDOM APPROACH TO SOLUTIONS:

Step	Description	Output
1. Define the Problem	Describe what's wrong and why it matters	Clear problem statement
2. Identify Contradictions	Determine conflicting parameters	Technical contradiction list
3. Define the Ideal Final Result	Describe the perfect outcome	IFR statement
4. Use the Contradiction Matrix	Find relevant inventive principles	Set of possible principles
5. Generate Solutions	Brainstorm ideas guided by TRIZ principles	List of potential solutions
6. Evaluate and Select	Assess feasibility and impact	Chosen solution for implementation

EXAMPLE: REDUCING DOWNTIME

PROBLEM: Frequent changeovers cause long downtimes on a service/counter line.

CONTRADICTIONS: Speed and Quality of Customer Service

IDEAL FINAL RESULT: The line seamlessly changes itself over without increasing defect rates or affecting customer satisfaction.



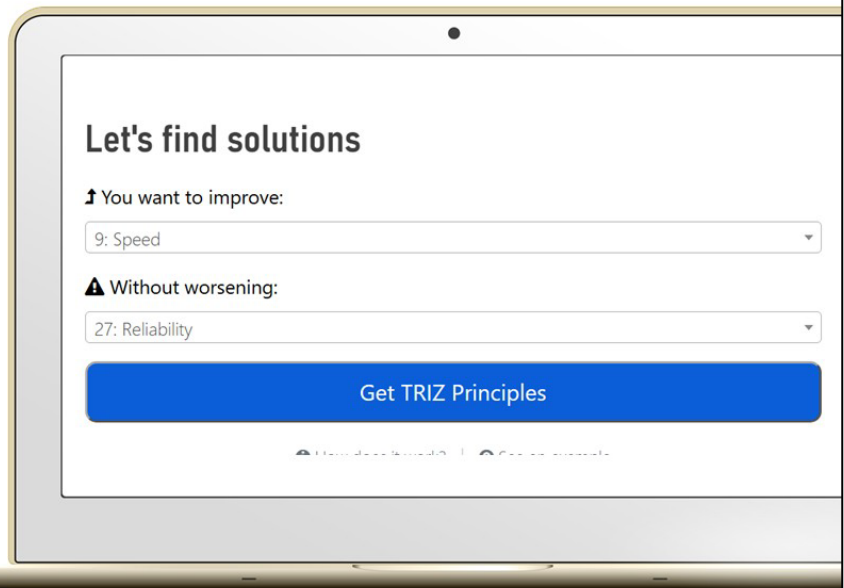
The Contradiction

- Improving parameter: Changeover speed
- Worsening parameter: Quality of Customer Service

Consult Contradiction Matrix

Triz matrix recommends principles:

- Principle 11 – Beforehand Cushioning
- Principle 35 – Parameter Changes
- Principle 27: Cheap Short-living Objects
- Principle 28 – Mechanics Substitution



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Brainstorm, design, and pilot

- **Principle 11 (Beforehand Cushioning):** Prepare all materials, changeover commands, and cash drawers in a kit beforehand
- **Principle 28 (Mechanics Substitution):** Count, cash out, and close applications with sensors.
- **Principle 27 (Cheap Short-living Objects):** To minimize customer service interruption, rotate changeovers through stations, using temporary lane used only for changeovers and cashed out at end of day.



LET'S DO ONE TOGETHER!

PROBLEM: Customers are complaining about wasted ketchup left in bottle and inconsistent product delivery (runny ketchup). We must redesign ketchup bottle to deliver all product with consistent delivery and competitive price point.



37

YOUR TURN – TEAM COMPETITION!

- In teams, you will set out to improve one of the following and present your results:
 - A. Efficient archival of 600,000 historical paper documents that are rapidly degrading.
 - B. Crowded café at lunch time that suffers from noisy overcrowded atmosphere and customer complaints.



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WHAT DID YOU LEARN?

Is innovation easy?

Did everyone contribute?

What was your role?

Did one or two people talk most?

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LEADER SELF ASSESSMENT

Self-Assessment: Innovative Leadership

INSTRUCTIONS: For each statement, rate yourself from 1 to 5, according to the response scale below. This assessment aims to measure your effectiveness as an innovative leader in the context of organizational change. Be sure to choose the response that best reflects your natural leadership style and/or instincts, from your viewpoint as a current or future leader, depending on your circumstances. Be sure to answer as honestly as possible, especially since there are no right or wrong answers, and your score will have absolutely no bearing on how this portion of your post-test is graded. Once the assessment is completed, take note of your total score and refer to the interpretation guide to understand your results.

RESPONSE SCALE:

1 – Strongly Disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Strongly Agree

- ___ 1. I encourage my team to think creatively and explore new ideas.
- ___ 2. I am open to trying out new approaches, even if they involve some level of risk.
- ___ 3. I actively seek feedback from my team and other stakeholders to improve our processes.
- ___ 4. I embrace failure as an opportunity for learning and growth.
- ___ 5. I allocate time and resources for experimentation and innovation.
- ___ 6. I promote a culture where everyone's ideas and perspectives are valued.
- ___ 7. I am willing to challenge the status quo and question traditional methods.
- ___ 8. I support and invest in professional development opportunities for my team.
- ___ 9. I actively seek out new technologies and tools that can enhance our work.
- ___ 10. I collaborate with other leaders to foster a culture of innovation across the organization.
- ___ 11. I am open to receiving feedback and ideas from all levels of the organization.

Complete the assessment. Be brutally honest with yourself to get the most out of it.

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SCORING

SCORING:

- Remember, for each item, assign a score between 1 through 5
(1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree)
- You can manually calculate your total score by adding the scores of all 20 items together, for a range of 20-100

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RESULTS

- 90-100: Excellent level of effectiveness as an innovative leader
 - 80-89: Good level of effectiveness as an innovative leader
 - 70-79: Average level of effectiveness as an innovative leader
 - 60-69: Low level of effectiveness as an innovative leader
 - Below 60: Improvement needed as an innovative leader
-
- A high score indicates that you exhibit strong innovative leadership qualities and practices. You actively encourage and support your team in embracing new ideas, taking risks, and thinking creatively. Your open-mindedness, adaptability, and willingness to learn from failures inspire those around you to push the boundaries and explore new possibilities.
 - A moderate score suggests that you are on the right track to being an innovative leader, but there are areas where you can further excel. You demonstrate an awareness of the importance of creativity and change, and you are taking steps to encourage innovative thinking within your team. Continue to develop your skills in promoting a culture of experimentation, and actively seek feedback from your team to identify areas for improvement. Consider seeking mentorship or training opportunities to develop your innovative thinking and leadership capabilities.
 - A low score indicates that you have room for growth in becoming a more innovative leader. Embrace the significance of fostering a culture of innovation and creativity within your organization. Take proactive steps to encourage idea generation, risk-taking, and continuous learning among your team. Seek guidance and resources to help you develop the skills and mindset necessary for innovative leadership. With dedication and a willingness to adapt, you can grow into a more innovative leader and drive positive change within your organization.

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QUALITIES OF EFFECTIVE INNOVATION LEADERS

- **Authenticity:** inspire trust
- **Servant Leadership:** putting collective good above personal ambitions (getting out of the way)
- **Growth Oriented:** embracing mistakes as stepping stones
- **Innovative Mindset:** open to new approaches and risk-taking



*Four qualities according to UC Berkeley ExecEd.

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AUTHENTICITY

How can you tell if someone is authentic?

- Self-awareness
- Genuine
- Transparent
- Ethical

What does this inspire?



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SERVANT LEADERSHIP

Who was the best leader you've had? Why?

- Facilitators
- Supportive
- Empowerment
- Listeners
- Build Communities

What else?



45

GROWTH ORIENTED

How would this feel to work in this environment?

- Resilient, even in the face of failure
- Receptive to feedback
- Champions continuous learning and improvement
- Embraces challenges
- Delegates
- Open to new ideas



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INNOVATIVE MINDSET

How does this shape your approach to problem-solving, to teams?

- Visionary
- Tolerance for ambiguity
- Curious
- Collaborative
- Customer-centric
- Persuasive
- Calculated-risk tolerance



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THE ROLE OF LEADERSHIP IN INNOVATION

- Sets the Tone
- Creates an environment where innovative ideas happen
- Provide clear vision
- Catalysts for transformation



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Thank you!

Be a Student of the World!

Process 2

Process Thinking: Emerging Process Theory

Dr. Pat Brunese

P2: PROCESS THINKING:

EMERGING PROCESS THEORY

DR. PATRICK BRUNESE

*(FORMERLY) EDWARDSON SCHOOL OF INDUSTRIAL
ENGINEERING*

BRUNESE TRAINING, COACHING, AND CONSULTING

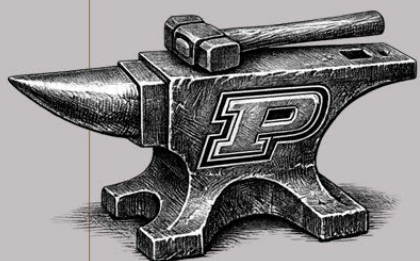
**Global Operations Executive
Program**

9/16/2026

1

LEARNING OBJECTIVES

P1: PROCESS THINKING – EMERGING PROCESS THEORY



Description:

Explore key elements of process thinking and analysis while considering recent advances in technology and how they are reshaping modern organizational workflows.

Objective(s):

1. Understand key process analysis principles.
2. Understand limits to process improvement based on typical performance measures.
3. Frame emerging technology in terms of potential for process improvement.

Part 1:

Process Thinking

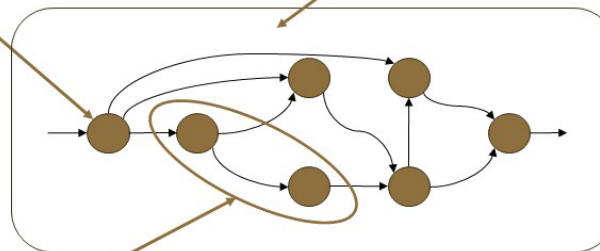
A process is an inter-related series of actions (activities, operations) needed to produce an object according to some objective (goal).

States, Activities, and Transitions

Key Definitions

State: The status of an input undergoing transformation

Activity: Transformation action in between two states



Transition: {Input state, activity, output state}

S₂. Check Ticket, S₄

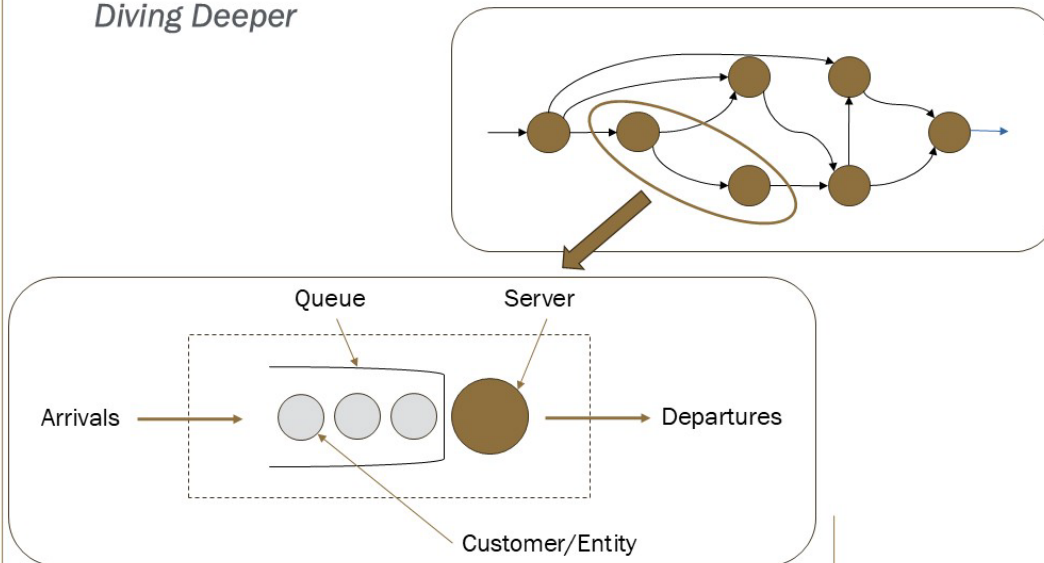
"Check Ticket"

Transformation types:

- Physical
- Location
- Exchange
- Storage
- Physiological
- Informational

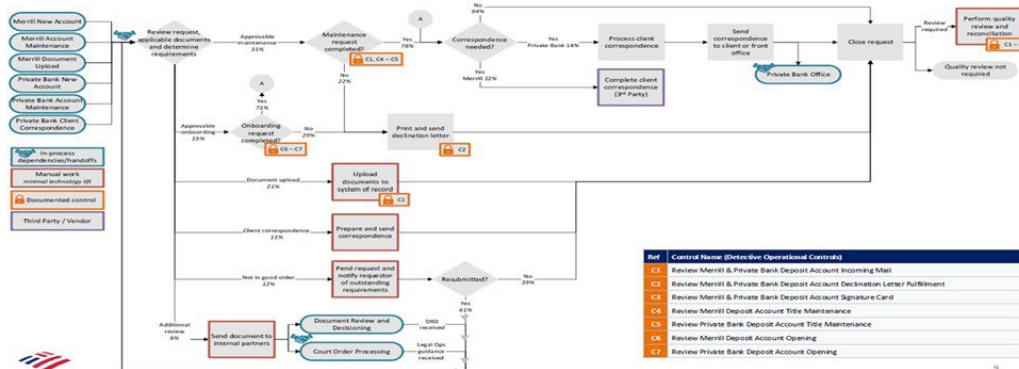
States, Activities, and Transitions

Diving Deeper



Experiencing Processes

Small group discussion – Foundary Example



Consider the Foundary process scenario. What would you as a customer notice about the process? As the server? What metrics would you use to describe the process?

Part 2

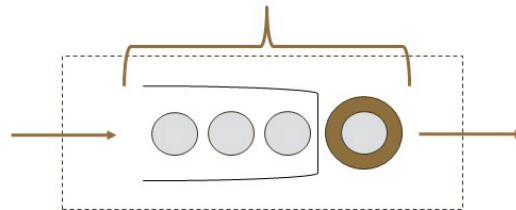
Measuring Performance

Thinking about measurement of process performance will provide significant insights into how emerging technology can contribute to improvement.

Key Process Measurements

Three Primary Metrics

Work-in-Process (WIP): The number of items currently in the process step



Throughput (TH): The rate at which the process produces outputs

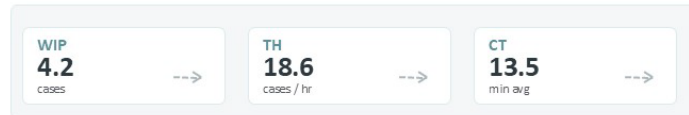
Cycle Time (CT): Time from input entering the process step to output delivered to next step

When Numbers Only Tell Part of the Story

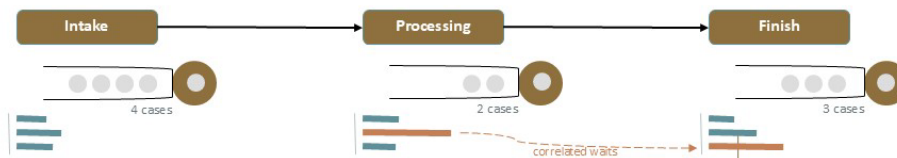
Hidden Dynamics (i.e., correlation)

- *WIP, TH, and CT* look like simple accounting... They aren't
 - *WIP* is a stock; *TH* and *CT* represent flows
- *WIP, TH, and CT* are averages, and thus do not reflect dynamics

Dashboard view



Underlying process



Key Measures of Success

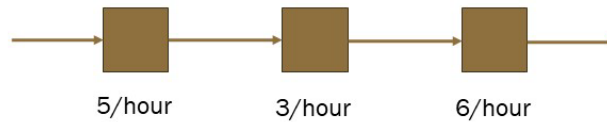
Easy to measure, hard to use well

- Efficiency: Process effort compared with resources required.
 - In other words, being efficient means we are using the minimal resources to achieve the required outputs
- Utilization: How much something produces compared with its capacity.
 - Capacity is an upper-limit on the throughput of a process
 - Useful representation: $Utilization = \frac{Input\ Rate\ to\ Process}{Service\ Rate\ of\ Process}$

Hypothetical Case (1)

Management by utilization. Or everyone should be busy!

- Consider a multi-step process where each process operates at a different (flow) rate.



Let's assume that we have regular arrivals to the process (at least 5-6 per hour). Process steps can accumulate inventory (WIP).

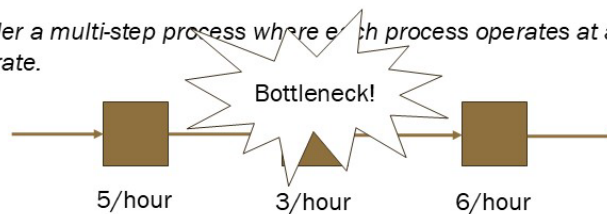
What are you likely to see?

What would happen if the process manager were to have utilization as a key process success metric?

Hypothetical Case (2)

Management by utilization. Or everyone should be busy!

- Consider a multi-step process where each process operates at a different (flow) rate.



Let's assume that we have regular arrivals to the process (at least 5-6 per hour). Process steps can accumulate inventory (WIP).

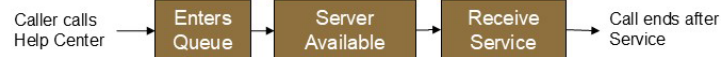
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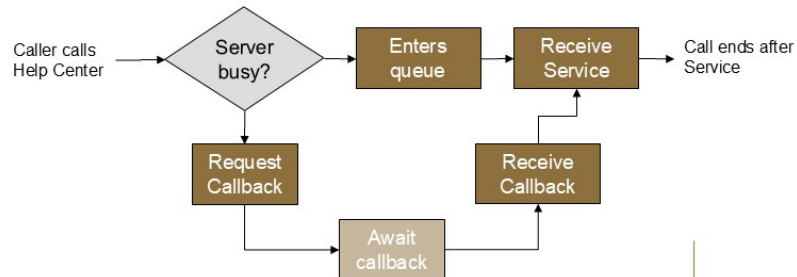
System Thinking – An Example

Manage the metric? Or, redesign?

Design 1



Design 2



Little's Law

Key process law

Work-in-Process = Throughput Rate x Cycle Time

$$WIP = TH \times CT$$



Alternatively,

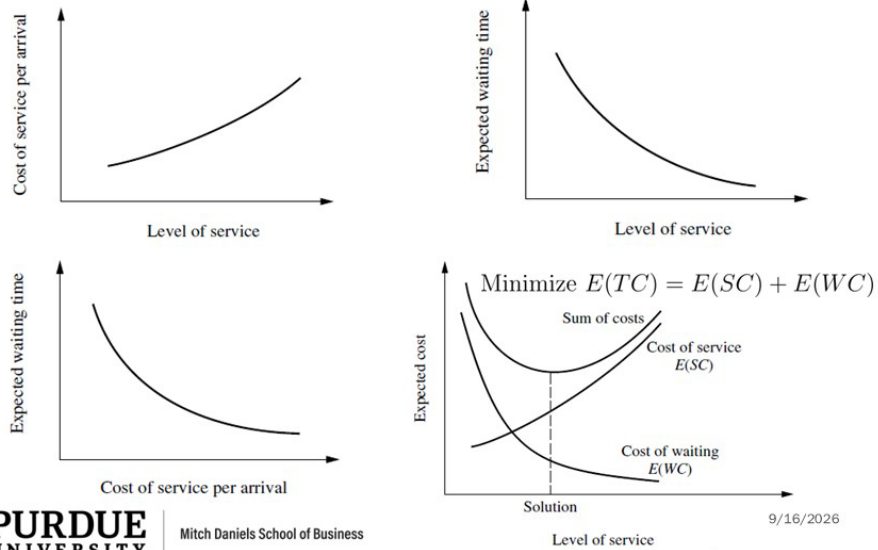
Avg. Objects in Process = Arrival Rate x Avg. Waiting Time in Process

$$L = \lambda \times W$$

- Provides practical limits on process performance
 - Processing need not be FCFS
 - Holds for any system with inputs and outputs
 - In steady state, process input rate = output rate

Level of Service Tradeoffs

Achieving high performance is not straightforward



Part 3

Other performance limits?

Performance is also limited by *variability*, which shows up in numerous ways, and has limited options for mitigation.

Variability

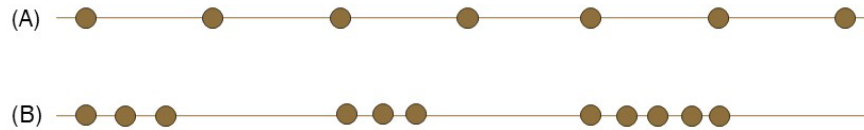
Why is variability important?

Recall, $Utilization = \frac{Input\ Rate\ to\ Process}{Service\ Rate\ of\ Process}$

What happens to a process when work arrives like (A)? (B)?

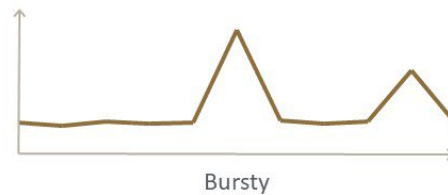
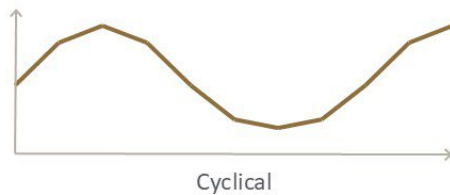
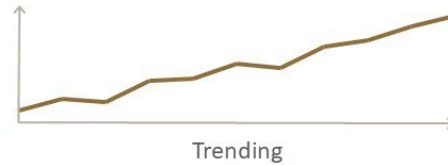
First, assume a constant service rate.

Now, assume a variable service rate.



Key implications of variability

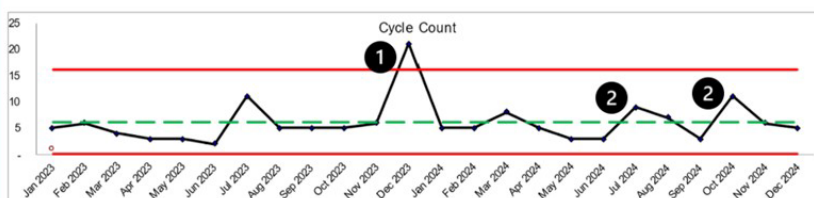
Behavior over time



Key implications of variability

Behavior over time – in practice (from OEP 1.0)

- Trade Compression is a process where market participants reduce the number of derivatives trades on the books by netting the offsetting positions, reducing operational complexity.
 - Each trade has operational overhead such as settlement and reconciliation, trade compression reduces that overhead and makes trade processing more efficient.



Observations / Opportunities

- Predictable spikes at year end
- Due to complexity of the Compression Process and to avoid over staffing, Pre Planning of Cycles in Q3/4 helped minimize spikes at year end.

Key implications of variability

Utilization and the Nonlinear Cost of Overload

- As a resource approaches 100% utilization, cycle time approaches infinity — nonlinearly.
 - Feature, not a bug.
- Mismatch between supply and demand within a process must be buffered
 - Inventory: Holding WIP prevents blocking and starvation
 - Capacity: Holding extra resources allows for scale when demand spikes
 - Time: Make downstream customers wait



Within your processes (and functional area), how do you address the mismatch between demand and supply (resources)?

Part 4

Part 4: Technology Levers

Understanding the primary process parameter(s) emerging technology addresses is the key to principled investment and sustainable process improvement.

Thinking in Revolutions

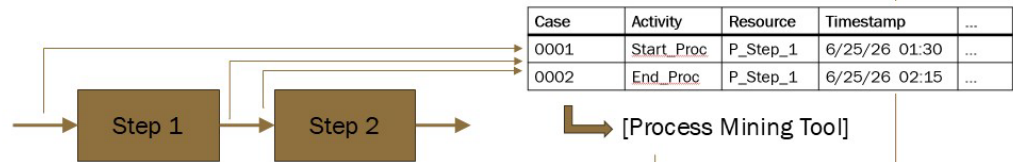
Each Industrial Revolution Replaces a Different Type of Work

- *Each industrial revolution has been defined by the type of human work it displaced*
- **1.0 — Steam (~1760s):** Physical and manual labor.
- **2.0 — Electricity (~1870s):** Mechanical and technical labor.
- **3.0 — Computers (~1960s):** Administrative and skilled technical work — ERP, workflow systems, early robots.
- **4.0 — IoT/CPS (~2010s):** Routine intellectual work — data analysis, process monitoring, scheduling optimization.
- **5.0 — Generative AI (~2020s):** Managerial intellectual work — synthesis, drafting, scenario analysis, human-AI collaboration.
- **6.0 — Agentic AI (~2025+):** Supervisory intellectual work — reasoning, autonomous decision-making, cross-system orchestration.

Industry 4.0 Technology

Scaling data

- (Near) Real-time visibility: IoT and dashboards let organizations see WIP and CT live.
 - “Hard” Examples: Sensors, Internet of Things
 - “Soft” Examples: Digital simulation and Machine Learning algorithms
 - “Mixed” Examples: Digital Twins and Process Mining
- Primary lever: Demand variability reduction and bottleneck identification.
- Simple case: Add sensors to an object being processed



Industry 5.0 Technology

Technology + Human Scaling

- Reshapes usage of Industry 4.0 technologies
- Human-Machine Integration: Virtual and Augmented Reality, cobots, health-monitoring devices
 - “Hard” Examples: Biosensors
 - “Soft” Examples: Artificial Intelligence (LLM)
 - “Mixed” Examples: Augmented Reality vision systems for training human labor
- Primary lever: Primarily reduces service time variability and augments effective bottleneck capacity (i.e., increased flexibility)

How has engagement with AI adapted your work from a process improvement lens?
What do you see as the next step?

Industry 6.0 Technology

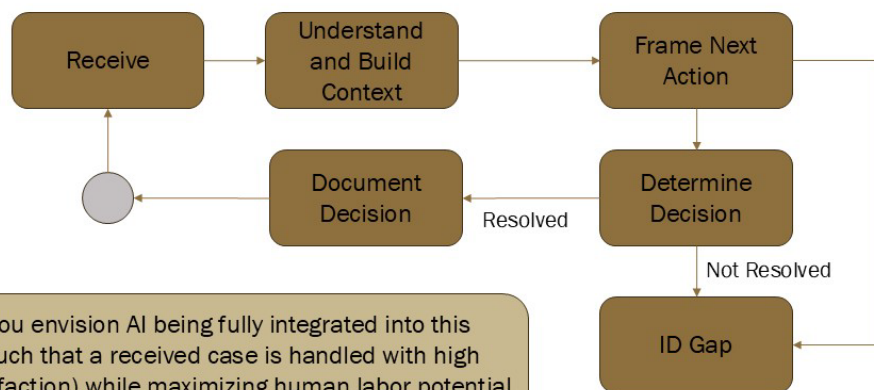
Fully-Integrated Scaling

- *Full-scale integration of agentic AI into organizations*
 - Coordination within and across functions to reframe local optimization and global optimization
 - Co-development and participatory decision making with human labor and decision makers – enabling sequential decision making at scale
- *Primary lever: Ecosystem-level analysis and emergent dynamic adaptation that addresses supply and demand side variability.*

*How has engagement with AI adapted your work from a process improvement lens?
What do you see as the next step?*

Small group Discussion

Sample Service Process



How do you envision AI being fully integrated into this process such that a received case is handled with high quality (satisfaction) while maximizing human labor potential and benefiting the company?

THANK YOU

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9/16/2026

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Process 3

Process Thinking: Executive Leadership of Process & Process Owners

Dr. Patrick Brunese

P3: PROCESS THINKING:

EXECUTIVE LEADERSHIP OF PROCESS &
PROCESS OWNERS

Dr. Patrick Brunese

(Formerly) Edwardson School of Industrial Engineering

Brunese Training, Coaching, and Consulting

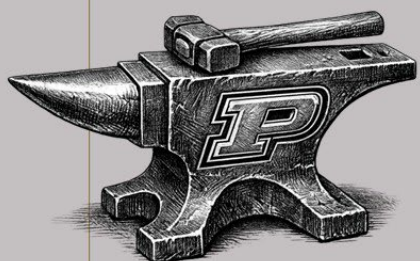
Global Operations Executive Program

9/16/2026

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LEARNING OBJECTIVES

EXECUTIVE LEADERSHIP OF PROCESS & PROCESS
OWNERS



Description:

Learn practical strategies for influencing and guiding process owners across functional boundaries.

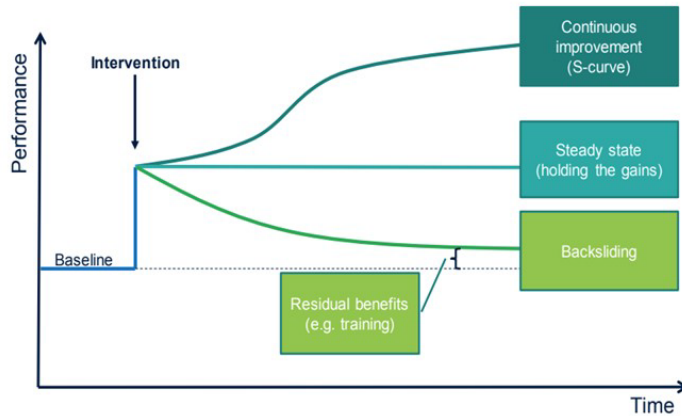
Objective(s):

1. Think more broadly about how process changes can be implemented more broadly up and downstream from the process owner.
2. Understand the horizontal impact of process improvement and optimization
3. Practice process interrogation, without intimidation, from the perspective of upstream and downstream effects

9/16/2026

Setting the Stage

Process Change (Improvement) Redux (OEP 1.0, Session 1.3)

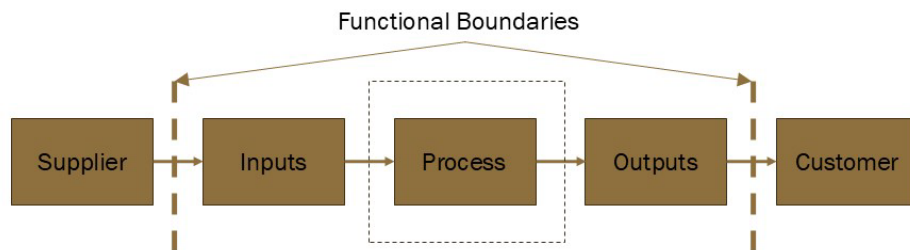


- **Process improvement requires a long view**
 - Organizational change is always large-scale
 - Top-Down ↔ Bottom-Up
- **Impediments to change and sustained improvement**
 - Initiative fatigue
 - Tools, tools, tools
 - (Short-term) Metrics
 - Dogmas



Assessing Processes In Organizations

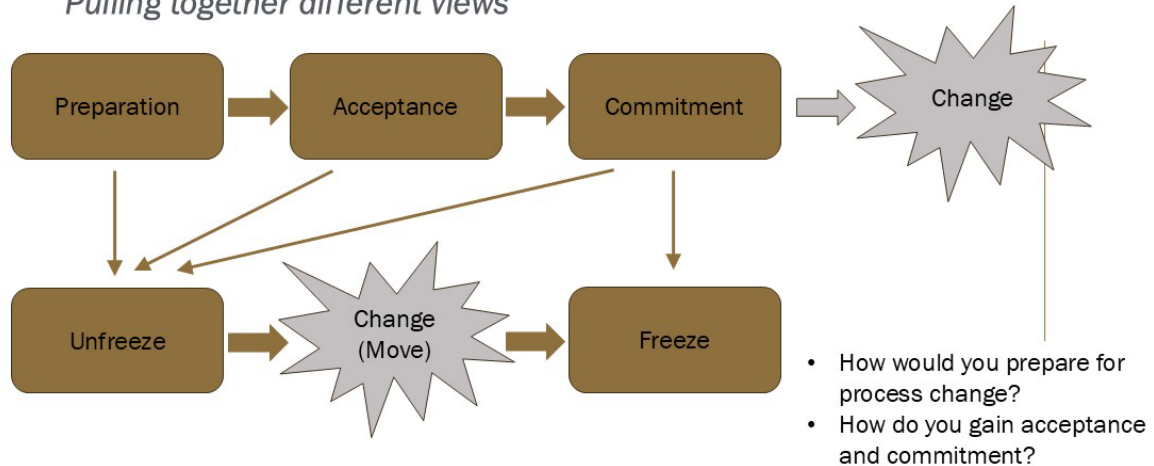
Interconnected processes → Many process owners → Limited Authority



- **Processes may span functional boundaries – suppliers/customers inside and outside**
 - Authority to change will not likely have same span
- **Success/Performance Metrics do not automatically align across functional boundaries**
 - What matters most may not be consistent across process owners

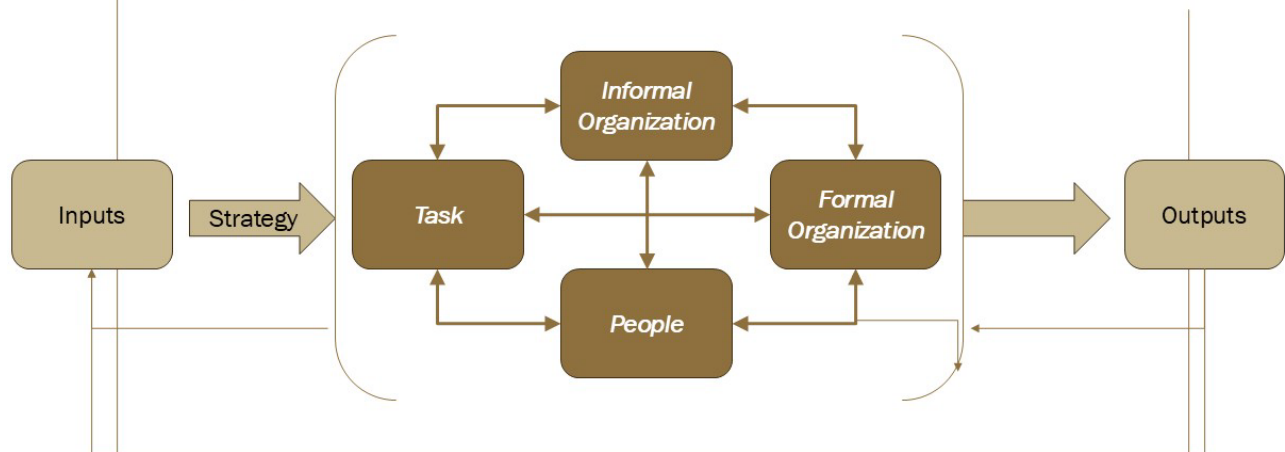
Simple Change Perspectives

Pulling together different views



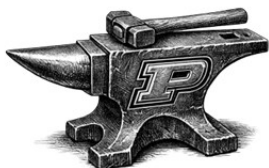
A simple organizational model

Organizational transformation Process



What can we change?

Congruence between the four key elements



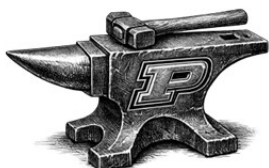
Change effectiveness depends on congruence among all four elements — not quality of any single one in isolation.

- **Task:** The work to be done and critical characteristics
- **People:** Skills, needs, expectations of those performing the work.
- **Formal Organization:** Structures, processes, roles, reward systems.
- **Informal Organization:** Emergent norms, power relationships, communication patterns.

When you led a process change initiative which of these key elements has become misaligned (incongruent)?

Change Readiness

Movement requires multiple things to be true simultaneously



$$C = (abd) > x$$

- **C** = Change
- **a** = Level of dissatisfaction with status quo
- **b** = Clear or Understood desired state (if change were successful)
- **d** = Awareness of practical first steps toward desired state
- **x** = "Cost" of changing

Where are we?

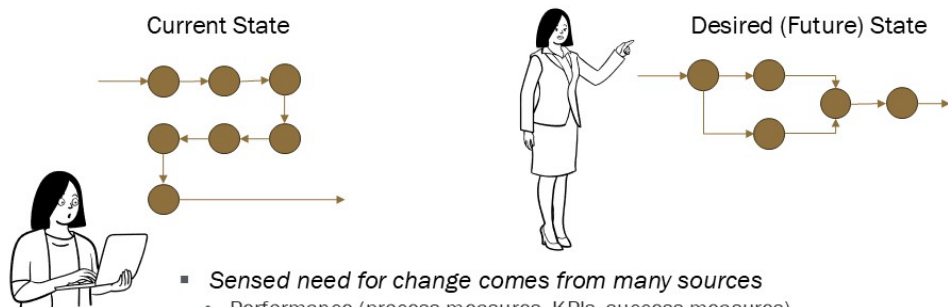
Putting together the threads so far...

- *Effective process (continuous) improvement requires significant and sustained effort*
- *Spanning organizational boundaries means that process improvement necessarily involves many stakeholders – upstream, inside, and downstream from the process itself*
- *Process change requires addressing the Task (work), People, and Formal and Informal Structures*
- *Willingness to change requires dissatisfaction, vision, good starting point(s), and understanding of costs to maintaining the status quo*



Process Owner's World

Interrogating processes to facilitate change



- *Sensed need for change comes from many sources*
 - Performance (process measures, KPIs, success measures)
 - Environmental change (business climate, strategy, technological change, etc.)
- *What to change? How to change?*

From your experience, where should we begin? Why?

Process Interrogation Framework

Looking forward and backward – Prospective Questions

- **Suppliers (Upstream Processes):**
 - What does this process receive from upstream processes?
 - What is changing for the upstream processes/suppliers?
 - How does the proposed change affect what upstream processes need to provide?
 - What is the cost (time, effort, rework) imposed on upstream process owners?
- **Customers (Downstream Processes):**
 - What does this process deliver downstream?
 - What is changing for the downstream processes/customers?
 - How does the change alter what downstream processes receive?
 - What is the cost (time, effort, rework) imposed on downstream process owners?

Process Interrogation Framework

Looking inward – Prospective Questions

- **People & Roles:**
 - Who performs work that touches this process?
 - Whose role changes, and how?
 - How will perceived change impact attitudes of people within the process?
- **Metrics & Incentives:**
 - How does the change impact metrics (you report, reported to you)?
 - How does change impact current incentive structure?
 - Will new incentives be needed to facilitate change?
- **Informal Dynamics:**
 - Who stands to gain/lose power?
 - How will change influence working norms?

Applying the Framework

Activity (Individual or Group)

- **Task:** Apply the five-area framework to a real process improvement challenge from your organization.
- **Step 1:** Select one process improvement challenge that:
 - You are currently leading; or
 - You were a part of; or
 - You would like to lead.
- **Step 2:** Work through the five areas of inquiry — one area at a time.
 - Use the framework as a structure, not a checklist.
- **Step 3:** Identify the area you feel/felt is the weakest — where do/did you have the least clarity?

Debrief: What Did You Find?

Which of the five areas produced the most useful — or most uncomfortable — insight?

- *What gap did you surface that you had not previously named?*
- *Where is the incongruence between the four elements (Task, People, Informal and Formal Structures)?*
- *Which stakeholder group appears most critical to address first — and why?*

Building change

Establishing dissatisfaction and desired state

- **Problem Finding vs. Problem Solving**
 - Is there a crisis? Is there an opportunity?
 - Appropriate framing matters most
 - Consider the possible implementation of a new analytics tool.
 - Which is better? Why?
 - “This [change] will help make better decisions for you”
 - “This [change] will help you make decisions faster?”
- **Pitching change isn’t top-down**
 - Invite stakeholders in as collaborators – people support what they help create
 - Multiple perspectives achieve at least three things
 - Clarity on problem statement – “Success looks like...” (in common terms)
 - Surfaces value propositions (or costs that matter)
 - Establishes usability requirements

Building change

Practical first steps

- **Implementation from “Day One”**
 - Engaging in co-creation allows stakeholders to define how their work might change up front
 - What is the story?
 - Humanize the change process
 - Defines current state and future state
 - Small pilots or experiments
 - Especially where work involves discretion
- **Commitment devices**
 - Create opportunities to engage
 - Design and implement rewards for changing

THANK YOU

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9/16/2026

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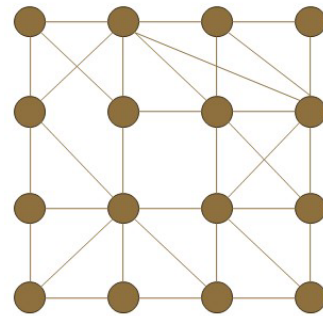
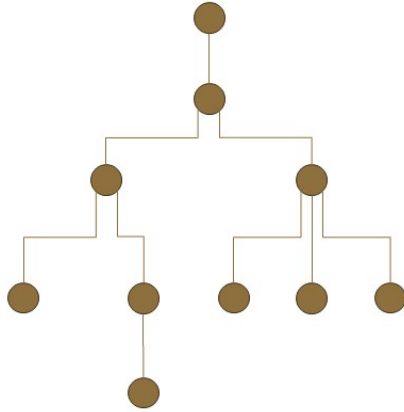
Assessing Authority

Local optimization $\neq$ Global optimization

- *Organization seeks Global Optimization*
 - Strategic metrics (measures of success) aligned to end customers
- *Functional Units seek Local Optimization*
 - Operational and/or Tactical metrics aligned to process(es) performance
- *Process changes propagate nonlinearly given organizational complexity*
 - Handoff failures between processes due to mismatched capabilities
 - Alignment failures between processes due to metric mismatches
- *Where do you see this pattern in your work?*

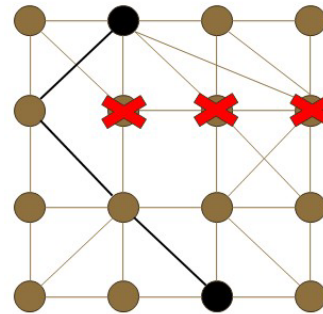
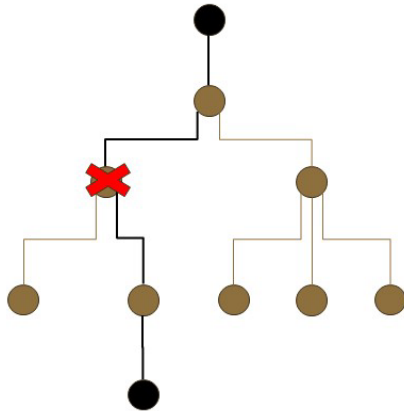
Structure Matters

Organization Design Controls Influence



Structure Matters

Organization Design Controls Influence



Start With Why: The Stakeholder's Perspective

People do not resist change. They resist being changed. The difference is whose values the change serves.

- *Simon Sinek's insight: people are moved by purpose, not by logic alone. Start with why the change matters — in their terms.*
- *The error: leaders frame process change as a technical improvement. Stakeholders experience it as disruption.*
- *The reframe: for each stakeholder group, answer "Why does this change serve your interests?" before asking for cooperation.*

Process 4

Being a Process Executive: Tactical Management of Process Owners

Mr. Mike Hyzy

Handouts Provided

Operations Foundry

Participant Packet

Mat Trampski
Dr. Jim Stratton

OPERATIONS EXECUTIVE PROGRAM

Process Interrogation Foundry Exercise

A 3-day learning exercise to equip leaders with the capability to critically interrogate the processes within their organizations

Facilitator
TBD – Purdue Faculty

Audience
Operations Leaders

Format
3 × 1-hour sessions + report out

OEP FOUNDRY EXERCISE

Executive Directive

You are a senior executive responsible for multiple client-facing processes and Process Owners. In this Foundry exercise, you are interrogating the “Onboard and Maintain Accounts and Associated Data – Banking” process using Tactical Management Tools and Techniques and a standard Process Pack as your evidence base.

*Your task is to identify the **key questions you would ask the Process Owner** to gain real insight into process design, controls, performance, and efficiency, and to **form your own executive view on what should change**. Using only the artifacts provided, you are expected to surface weaknesses, challenge gaps or inconsistencies, and propose **practical improvement actions** you would seek to agree.*

Disclaimer – The process details used in this exercise have been modified and are not a true representation of the process on which the exercise is based.

PURPOSE

Why Process Interrogation

Executives are accountable for processes they rarely observe at ground level. When leaders cannot ask pointed, evidence-based questions of their process owners, weak controls, poor design, and under-utilized capacity go unchallenged.

Strengthens leaders' ability to partner with Process Owners, using process data and tools to identify, prioritise and deliver improvement opportunities.

Interrogate with Evidence

Move from opinion to artifact-led challenge using the process pack.

Expose the Unseen

Surface design gaps, control weaknesses, and capacity slack invisible in dashboards alone.

Raise the Bar

Build a shared standard for how process owners are held to account across the enterprise.

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APPROACH

Approach: One Process, Three Lenses

Approach: FLU-aligned table teams analyze process documentation and data to develop diagnostic questions for a Process Owner and prioritize improvement actions, refined through daily debriefs and consolidated in a final Friday summary report (questions, approach & improvements).

1 DAY 1

Process Design & Resource Utilization

High-Level Assessment Criteria:

- Assess description, scope, granularity level, roles & customers, 3rd parties, LRRs
- Evaluate whether process map, connections and activity detail are appropriate & complete for effective management
- Determine whether volume, capacity, and resourcing align to demand and strategy (if time allows)

OUTPUT

- Identified areas of concern and questions for the Process Owner
- Prioritized improvement actions
- Output feeds into Friday report

2 DAY 2

Control, Risk, Metrics & Performance

High-Level Assessment Criteria:

- Assess key process risks using the Activity Risk Assessment
- Evaluate whether controls, measures, triggers & limits, and sampling approaches are appropriate & complete
- Assess if controls in right place (inline & post), address risks (incl. 3rd party & LRRs) and op losses and issues

OUTPUT

- Identified areas of concern and questions for the Process Owner
- Prioritized improvement actions
- Output feeds into Friday report

3 DAY 3

Process Efficiency

High-Level Assessment Criteria:

- Identify non-value add work (value stream analysis output), efficiency improvements and process simplification ops
- Identify potential AI-enabled efficiency and risk reduction opportunities
- Estimate the relative value and impact of improvement opportunities (if time allows)

OUTPUT

- Identified areas of concern and questions for the Process Owner
- Prioritized improvement actions
- Output feeds into Friday report

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SCHEDULE

Foundry Exercise: Schedule

TIME	DAY 1 <i>Design & Utilization</i>	DAY 2 <i>Control, Risk, Metrics & Performance</i>	DAY 3 <i>Process Efficiency</i>	DAY 4 <i>Report Out</i>
10 min <i>re-orient</i>	Framing: design & capacity lens. Recap prior context.	Framing: control & performance lens. Review Day 1 content & questions.	Framing: efficiency lens. Review Day 2 content & questions.	Each participant completes the Day 4 Capture Template and is prepared to share their reflections before table-level discussion. Table teams to then provide final day OEP report inclusive of their Process Interrogation Exercise; questions, approach, identified improvements and learnings 90 min duration
20 min <i>Interrogate the Pack</i>	Process Summary · Process Flow · Resource Utilization	Activity Risk Assessment · Performance Scorecard · Control, Metric and EIT extract	Value Stream Analysis · Full pack – hunt for waste, duplication, non-value add, delay, rework, and simplification or automation potential	
20 min <i>Draft Questions</i>	Capture Process Owner questions using Day 1 template	Capture Process Owner questions using Day 2 template	Capture Process Owners questions and prioritized improvement ideas using Day 3 template	
10 min <i>Share & Close</i>	Table Debrief – Day 1 Observation and Insights	Table Debrief – Day 2 Observation and Insights	Table Debrief – Day 3 Observation and Insights	

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PART TWO

The Process Pack

Seven artifacts. One process. The evidence base for executive inquiry.

Process Summary

Process Flow

Capacity Utilization

Activity Risk
Assessment

Performance
Scorecard

Control, Metric & EIT
Extract

Value Stream Analysis

KEY TERMS

Glossary

Lense	Term	Definition
Process Design & Resource Utilization	Connection or Handoff	Represents a relationship between two or more processes with dependencies on each other. It signifies the changing of hands where responsibility to complete the work passes from one process to another, either permanently or temporarily.
Control, Risk, Metrics & Performance	Activity Risk Assessment	A structured evaluation of each step within a process to identify what could go wrong, understand why it might occur, assess the potential impact, and determine whether existing controls are sufficient to prevent or detect the issue. It also serves as a tool to highlight and prioritize improvement opportunities to address identified gaps and strengthen the process. The assessment is anchored in three key risk dimensions: 1. Occurrence – The likelihood that the failure will happen 2. Severity – The level of impact if the failure occurs 3. Detectability – The ability to identify the failure before it results in impact
	Control	A preventative or detective step in a process designed to ensure a process achieves its intended objectives or reduces the risk of process failure and/or unanticipated outcomes.
	Measurement	A structured means of assessing process performance, control effectiveness, or risk exposure through quantitative or qualitative methods, including metrics, testing, and review activities.
Process Efficiency	Non-Value Add	Work that consumes time, effort, or cost but does not change the product or service from the customer's perspective.
	Value Add	Work that directly changes the product or service in a way the customer needs and is willing to pay for.
	Required Non-Value Add	Work that does not directly create value from the customer's perspective, but is necessary due to regulatory, control, risk, or operational constraints.
Process Performance	Control Chart	Shows whether a process is stable over time, using control limits based on historical performance rather than specification limits or target definitions.

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PROCESS PACK · 1 OF 7 · INTRODUCED DAY 1

Artifact 1: Process Summary

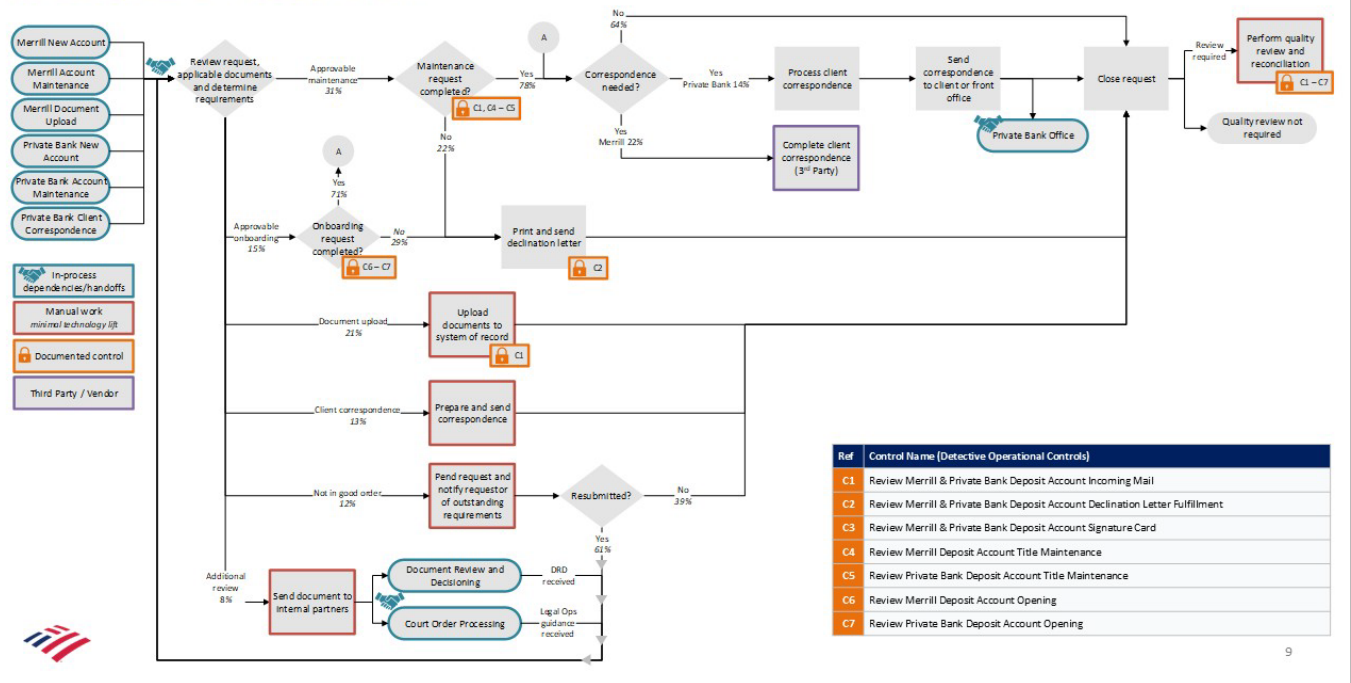
Onboard and Maintain Accounts and Associated Data – Banking

Process Purpose		Aligned Risks and Controls			
The purpose of this process is to support the opening and non-financial maintenance of banking accounts. The process begins when the Banking Onboarding and Maintenance teams receive account opening or maintenance requests through the applicable systems and review the related documentation. Requests that meet requirements are processed through the relevant systems, with account records updated and applicable disclosures issued.		Risks - Customer / Client Account Management - Data accuracy / completeness / Timeliness		Controls - Review Merrill & Private Bank Deposit Account Incoming Mail - Review Merrill & Private Bank Deposit Account Returned Undeliverable Mail - Review Merrill Deposit Account Beneficial Owner Details - Review Merrill Deposit Account Title Maintenance - Review Merrill Deposit Account Opening - Review Private Bank Deposit Account Title Maintenance - Review Private Bank Deposit Account Opening	
Process Details		Data Elements			
Process Owner:	John Doe	- Data Lifecycle: N/A - Aligned Risks: 2 - Legal Entity: 2 - Number of Activities: 14 - Process Moves Money: No - Process Frequency: Daily		- Internal/External Customers: 3/3 - Client Touchpoint: Yes - Number of AITs : 19 - Number of Controls: 7 3rd Party Alignment: 1 - Number of Handoffs (Connections): 9	
Org:	Wealth Management Operations				
Function:	Banking Onboarding & Maintenance				
Supported LOBs:	Merrill Branch Office & Private Bank Front Office				
POCE Rating:	Satisfactory				
FTE:	50				
GBS:	6				
Sites:	Jacksonville, FL / Chandler, AZ / Gurugram Haryana, India				
LRR:	AML / Economic Sanctions, Electronic Fund Transfers (Regulation E), Truth In Savings (Regulation DD)				
External Customers:	Merrill Wealth Management Client, Private Bank Client				
Primary KPIs (Current vs Target)					
Key Process Indicator		Current	Target	Status	
Average Processing Time (Case Handle Time)		32 mins	≤ 35 mins	G	
% of Requests Meeting Published SLAs		98.7%	> 97%	G	
% of Requests Returned to Requestor		12%	≤ 15%	G	
Control Pass Rate (QA / EIT)		97.4%	≥ 97%	G	



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Artifact 2: Process Flow



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Artifact 3: Capacity Utilization

2025 TOTAL DEMAND

33,520

requests +18% YoY

2025 UTILISATION

112%

target ceiling 85%

PEAK FTE GAP

- 6.5

2025 shortfall

PLANNED FTE 2023 → 28 F

47 → 61

vs Required: 43 → 63

Demand vs Capacity — quarterly

Historical (2023–25) | Forecast (2026–28)



KEY EVENTS & FORECAST ASSUMPTIONS

2024 Q3 Regulatory change stepped up Acc Maintenance volumes by ~20%.

2025 Product launch lifted Onboarding demand.

Forecast Acc Maintenance partially reverts (~40%) toward pre-reg levels by '28. Onboarding +6% p.a. off '25 base. Hiring ~+3 Planned FTE/yr.

Annual view · actuals (2023–25) and forecast (2026–28)

Planned FTE = request-processing staff on plan. Required FTE = needed at 85% target utilization & current handle times. Utilization = Demand ÷ Capacity (target ≤ 85%). FTE shown as point-in-time staffing positions (not annual averages)

Measure	2023	2024	2025	2026 F	2027 F	2028 F
Annual Total Demand	25,050	28,520	33,520	33,600	33,600	33,600
Annual Total Capacity	27,000	28,460	29,900	31,340	32,780	34,220
Utilization	93%	100%	112%	107%	103%	98%
Planned FTE – Supply	47	50	53	56	58	61
Required FTE – Demand	43	50	59	60	62	63
FTE gap (Plan - Required)	+3.8	+ 0.4	-6.5	-4.8	-3.2	-1.7



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Artifact 4: Activity Risk Assessment

Assumption: The Process Owner completed the ARA in full, the resulting extract provided is a subset.

Activity/process step	Potential failure	Potential cause	Controls in place	Likelihood of Occurrence	Severity of Occurrence	Difficulty of Detectability	Opportunities/actions
Review request with applicable documents and determine requirements	Ignoring mismatched details, discrepancies between case, applications, documentation	Inadequate training; associate rushing through the request or failing to review all information	EIT accuracy tests; inline quality reviews	Medium	High	High	1. Associate training 2. Develop a checklist 3. Inline quality reviews 4. Explore systematic opportunities to have client information feed from SORs
	Inaccurately reviewed case missing required documents, signatures or details; considered in good order when it's not	Inadequate training/procedures; lack of knowledge	EIT accuracy tests; inline quality reviews	Medium	High	High	1. Associate training 2. Review and update procedures 3. Develop a checklist
Pend request and notify requestor of outstanding requirements	Failure to provide a complete list of outstanding documents/requirements leading to repeated follow-ups	Associate failing to review the entire case to identify all missing information/documentation; lack of knowledge	Quality reviews	Low	Medium	High	1. Associate training 2. Review and update procedures
	Not promptly informing the requestor of the outstanding requirements causing delays	Delayed outreach or follow-ups due to high case volumes; associate has an unanticipated out of office	Quality reviews	Low	Medium	High	1. Associate training 2. Create procedure for a backup buddy system for associate absences 3. Develop daily reporting outlining pending cases and activity
	Failed to return the request	Associate oversight; lack of knowledge	Quality reviews	Low	Medium	Medium	1. Associate training 2. Develop daily reporting outlining pending cases & activity
Resubmitted?	Failure to notice resubmitted case resulting in delayed processing	High case volumes; lack of attention	Quality reviews	Low	Medium	Low	1. Explore systematic opportunities to enhance PB SR to alert associates when cases are resubmitted 2. Develop daily reporting outlining pending cases and activity
	Assigned associate is out of office when case is resubmitted resulting in delayed processing	Lack of work queue oversight	Quality reviews	Medium	Medium	Low	1. Explore systematic opportunities to enhance PB SR to alert associates/leaders when cases are resubmitted 2. Develop daily reporting outlining pending cases and activity so cases can be reassigned
Onboarding request completed?	Bank account is not opened timely	Inadequate training; case missing required information or documents	EIT accuracy and timeliness tests; inline and post quality reviews	Low	Medium	Medium	1. Associate training 2. Develop educational resources for field partners 3. Develop reporting identifying issue and field partner trends



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Artifact 5: Performance Scorecard

POCE	Controls				Open Challenges	Metrics		
Current Rating	Issues	#	# Non-Sat	% Non-Sat	#	Green	Non-Green	Trending Red
Satisfactory	3	7	0	0.00%	0	5	0	0

Process Measurement Performance

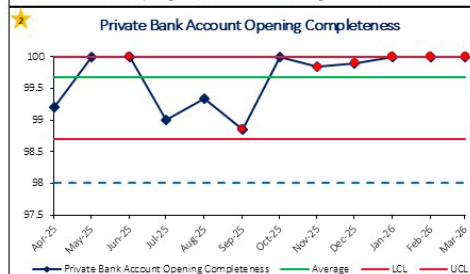
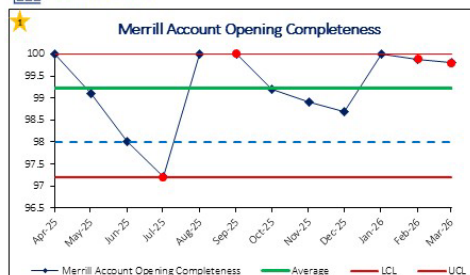
Measure	Input, In-Process, Output	COPP / KRI / QA	Thresholds	Measurement Approach	Jan	Feb	Mar
★ Merrill Account Opening Completeness	Output	QA	T > 97.00% and <= 98.00% L <= 97.00%	Sampling	100%	99.88%	99.80%
★ Private Bank Account Opening Completeness	Output	QA	T > 97.00% and <= 98.00% L <= 97.00%	Sampling	100%	100%	100%
Merrill & Private Bank Account Maintenance Timeliness	Output	QA	T > 97% and L <= 95%	Full Population	98.87%	100%	99.92%
Merrill & Private Bank Mail Timeliness	Output	QA	T > 80% L <= 84%	Full Population	97.5%	98.5%	99.25%
Private Bank Account Correspondence Timeliness	Output	QA	T > 97% L <= 94%	Full Population	100%	99%	98.75%

EIT Test Performance

Measure	Input, In-Process, Output	COPP / KRI / QA	Thresholds	Measurement Approach	Jan	Feb	Mar
Merrill Account Opening Completeness	Output	QA	T > 97% and L <= 95%	Sampling	98%	98%	99%
Private Bank Account Opening Completeness	Output	QA	T > 98% and L <= 96%	Sampling	97%	97%	98%
Merrill & Private Bank Account Maintenance Accuracy	Output	QA	T > 97% and L <= 95%	Sampling	100%	100%	100%
Declination Letter Timeliness	Output	QA	T >= 2.00 and < 3.00 L >= 3.00	Sampling	0	0	0
Deposit Account Signature Card Completeness	Output	QA	T > 97% and L <= 95%	Sampling	98%	95%	95%



Control Charts



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Artifact 6 : Control, Metric & EIT Extract

Control Name	Control Statement	Control Rating	Inline or Post?	Control Automation	Aligned Risks				
Review Merrill and Private Bank Account Maintenance	Monthly, completed account maintenance requests are subject to a review to confirm required actions were performed and requests were completed accurately. The review considers information documented in the case management system and associated supporting materials for the request. Evidence of the review, including any noted observations or follow-up actions, is retained in a shared location with restricted access.	Satisfactory	Post	Semi-automated	- Customer / Client Account Management - Data accuracy / completeness / Timeliness				
Metric Name	Metric Description	Metric Formula	Metric Approach	Frequency	Jan 2026	Feb 2026	Mar 2026	Trigger	Limit
Merrill and Private Bank Account Maintenance Timeliness	Evaluate the timeliness of all completed account maintenance requests by identifying requests completed within the applicable service level timeframes, as recorded in the case management system. Timeliness is assessed by comparing key request and completion timestamps to documented processing expectations.	Total # of account maintenance requests completed within SLA / Total # of account maintenance requests received	Full Population	Monthly	98.87%	100%	99.92%	97%	<= 95%
Test Name	Test Description	Test Formula	Test Approach	Frequency	Jan 2026	Feb 2026	Mar 2026	Trigger	Limit
Merrill and Private Bank Account Maintenance Accuracy	Evaluate the accuracy of quality assurance (QA) performed on a sampled set of completed account maintenance requests. This review will be conducted by examining request documentation, case notes, and associated system records maintained within the case management system. Accuracy will be assessed by the QA validation outcomes and documentation retained, ensuring that required information, updates, and supporting evidence are present and appropriately aligned to the request type.	Sample of account maintenance request QA completed accurately / Sample of Account Maintenance requests QA completed	Sample Population	Monthly	100%	100%	100%	97%	<= 95%

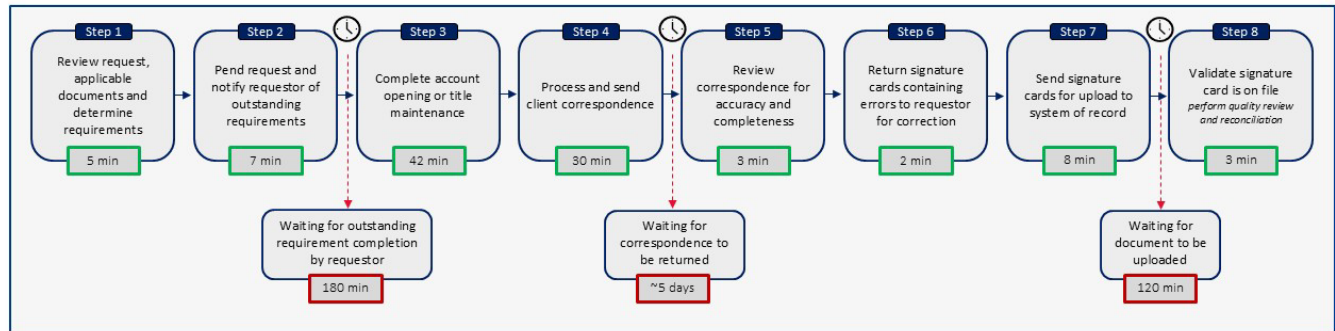


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Artifact 7 : Value Stream Analysis

Waste Type	Time	% of Total Time
Value Add	1.6 hours	3.43%
Non-Value Add	45 hours	96.57%

Directive: Use this value stream analysis to assess how effectively waste is identified across the process and to test whether the documented workflow reflects reality. The goal is not to accept the process on paper at face value, but to challenge where the view may be incomplete, misaligned, or missing the true sources of delay and rework



*This time is based on single observation of the process being completed and not all completions result in this exact wait time.



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PART THREE

Capture Templates

One template per day — to turn observation into probing inquiry.

TEMPLATE · DAY 1

Day 1 Capture: Process Design & Resource Utilization

KEY CONSIDERATIONS:

- *Notice how the process is framed and bounded.*
- *Observe where work appears to slow, repeat, or be checked.*
- *Pay attention to how responsibility moves through the flow.*
- *Look at how effort, review, and escalation show up in the design.*
- *Consider what the volume, demand, and utilisation signals suggest about the nature of the work.*
- *Reflect on where pressure is absorbed by people rather than structure.*

DAY 1 EXERCISE:

With the above Process Design & Resource Utilization considerations in mind, take 20 minutes to review the Day 1 process pack artifacts. Then spend a further 20 minutes capturing, on the page overleaf, the questions or observations you would raise with the Process Owner to surface process design and capacity improvement opportunities that would strengthen the effectiveness and management of the process.

This will be followed by 10 min debrief to share findings and thoughts.

TEMPLATE · DAY 1

Day 1 Capture: Process Design & Resource Utilization

No.	Question/Areas of Concern	Rationale

Wrap-Up

Key Findings:

Insightful Questions:

Most Significant Improvement Opportunity:

17

TEMPLATE · DAY 1

Day 2 Capture: Control, Risk, Metrics & Performance

KEY CONSIDERATIONS:

- Notice how risk is described and where it is most visible in the flow.
- Observe where controls appear to intervene, and at what point in the process they do so.
- Pay attention to what the metrics emphasise — and what they remain silent on.
- Look for alignment (or misalignment) between risks, controls, tests, and reported results.
- Consider how quickly emerging issues would become visible using the current measures.
- Reflect on whether quality assurance activity appears to strengthen the process or sit alongside it.
- Is the process too reliant on controlling inputs and responsibilities upstream to the process?

DAY 2 EXERCISE:

With the above Control, Risk, Metrics & Performance considerations in mind, take 20 minutes to review the Day 1 and Day 2 process pack artifacts. Then spend a further 20 minutes capturing, on the page overleaf, the questions or observations you would raise with the Process Owner to identify opportunities to strengthen control framework, process performance and overall effectiveness.

This will be followed by 10 min debrief to share findings and thoughts.

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TEMPLATE · DAY 2

Day 2 Capture: Control, Risk, Metrics & Performance

No.	Question/Areas of Concern	Rationale

Wrap-Up		
Key Findings:	Insightful Questions:	Most Significant Improvement Opportunity:

19

TEMPLATE · DAY 3

Day 3 Capture: Process Efficiency

KEY CONSIDERATIONS:

- Notice where work appears to change hands, pause, or come back before completion.
- Observe which steps seem to consume the most effort relative to the value they create.
- Pay attention to where variation shows up in how work is handled or resolved.
- Look for signs of exception handling, rework, or special routing becoming the norm.
- Consider what aspects of the process appear stable by design versus dependent on effort or workarounds.
- Reflect on where simplification, automation, or design changes could materially shift cost, speed, or experience.

DAY 3 EXERCISE:

With the above Process Efficiency considerations in mind, take 20 minutes to review the entire process pack. Then spend a further 20 minutes capturing, on the page overleaf, the questions and prioritized improvement opportunities you would raise with the Process Owner to meaningfully improve cost, speed, and overall experience.

This will be followed by a 10-minute debrief to share findings and observations.

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TEMPLATE · DAY 3

Day 3 Capture: Process Efficiency

No.	Question/Areas of Concern	Rationale

Wrap-Up		
Key Findings:	Insightful Questions:	Most Significant Improvement Opportunity:

21

TEMPLATE · DAY 4

Day 4 Capture: Learnings

Directive – In addition to the below please leverage the improvement opportunities captured on previous days to produce prioritised list.

Wrap-Up		
How will you take this experience back to your organization and implement differently or do better?	How will you change the way you manage the process?	How has this exercise impacted your intention in process reviews?

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Purdue Faculty, Staff, & Panelist Bios

BRAD ALGE

ASSOCIATE PROFESSOR OF MANAGEMENT

MITCHEL E. DANIELS, JR. SCHOOL OF BUSINESS



Dr. Brad Alge holds the position of Associate Professor of Management in the area of Organizational Behavior and Human Resource Management at Purdue's School of Management where he has served since 1999. He has served on the editorial boards at the Academy of Management Review, Journal of Management, and Organizational Behavior and Human Decision Processes. Dr. Alge has over 20 years of experience helping companies to improve their business processes, organizational culture, and human capital.

Research focus:

- Virtual Work; Technology's impact on individual and group attitudes and behaviors on the job
- Employer/employee rights (e.g., privacy, justice, ethics & corporate social responsibility)
- Leadership--particularly in the contexts of distance leadership and organizational control
- Organizational versus employee control
- Social Networks
- Creative Performance

Dr. Alge has provided his expertise and consultation to numerous organizations including US DoD, US DHHS, US Department of Interior, Whirlpool, Alcoa, British Petroleum, ArcelorMittal, Pfizer, Evonik (Eli Lilly), Metropolitan Police Departments, City Public Transportation Departments, INDOT, Valspar, and numerous mid-size and small businesses.

PAT BRUNESE**ASSISTANT DEPARTMENT HEAD, INDUSTRIAL ENGINEERING**

Dr. Patrick Brunese is the Assistant Head of the Edwardson School of Industrial Engineering at Purdue University. He earned his Ph.D. from Purdue University in 2011, following a Master of Science in Industrial Engineering from the University of Alabama in 2007 and a Bachelor of Science in Industrial Engineering from Western New England College in 2005.

Dr. Brunese's research interests include facility logistics systems and operations research.

In his administrative role, he oversees experiential learning programs, emphasizing the application of technical expertise and professional skills through industry partnerships. He has highlighted the advantage Purdue industrial engineering students gain from these hands-on experiences, stating that they not only acquire technical knowledge but also develop essential soft skills through collaboration with industry partners.

Additionally, Dr. Brunese is affiliated with Purdue's Global Engineering Program and serves on the First-Generation Success Team, demonstrating his commitment to supporting diverse student populations and promoting global engagement within the engineering field.

JENNIFER CHRISTIE**SENIOR SERVICES MANAGER, PRODUCTIVITY IMPROVEMENT, PURDUE MEP**

Jennifer has decades of experience as a Master Black Belt and process improvement leader where she completed projects, designed curriculum, coached, and certified black belts, green belts, and champions all over the world. She spent over 9 years at Covance, one of the world's largest and most comprehensive drug development services, and 10+ years as a leader in sustainability and business development.

She graduated from Purdue University, earning a B.S. in Chemistry and a B.A. in Biology. She also minored in mathematics and has a passion for teaching and communicating technical subjects so that they can be applied to real-world solutions.

ELCIN GUNAY**CLINICAL ASSISTANT PROFESSOR, SUPPLY CHAIN & OPERATIONS MANAGEMENT**

Professor Günay's research and teaching interests focus on operations management, decision theory and analysis, and supply chain design. Her expertise is in developing mathematical models and algorithms to support decision-making under uncertainty. She has been involved in multiple projects by developing solutions for inventory management, supply chain design, product design, and sustainability. She is also deeply committed to improving the quality of teaching and learning in higher education. Her research in the field was recognized with a best paper award from the American Society of Engineering Education in 2022 and paper of distinction award at the Design for Manufacturing and the Life Cycle Conference in 2025 organized by American Society of Mechanical Engineers.

LEIGH ANN GRIFFIN**PROJECT MANAGER, TECHNICAL ASSISTANCE PROGRAM**

Leigh Ann Griffin is the Senior Business Partnership Manager for Purdue University's cyberTAP department since April 2022. In this role, she manages funding projects and executes agreements with clients. Prior to transferring to cyberTAP, she served for seven years as a Senior Quality Advisor for Purdue Healthcare Advisors. In this role, Leigh Ann provided expertise to physicians and hospitals participating in the EHR Incentive Program under Indiana Medicaid, as well as the QPP reporting program for Medicare. Her 20+ years of project management and process improvement experience include working side-by-side with nurses, physicians, administrators, and other staff to design process improvements, install computer systems, and meet project timelines. She has extensive experience in public speaking, employee training, and policy and procedure development. She has also served as a HIPAA standards auditor in a hospital setting.

Leigh Ann has been a member of the Indiana Association for Healthcare Quality (InAHQ) for 25 years, serving on its board in numerous roles, including President from 2019-2022.

Leigh Ann holds a bachelor's degree in business management. She earned her Certified Professional in Healthcare Quality (CPHQ) in 1998 and a Lean Six Sigma for Healthcare Black Belt in 2013. She was also certified as a Strategic Doing Workshop Leader in 2021.

When Leigh Ann is not project managing, she can be found traveling, riding motorcycles, or spending time with her grandchildren.

ANGIE HOFFINE**ASSOCIATE PROGRAM MANAGER, DANIELS SCHOOL OF BUSINESS**

Angie Hoffine is currently the Administrative and Logistics Coordinator for the Master's Program in the Mitchel E. Daniels, Jr. School of Business. She has been employed at Purdue University for 19 years. Before coming to the School of Business, she worked in the athletics program and Purdue football for 14 years

COURTNEY HUCKSTEP**OPERATIONS SUPPORT ADMINISTRATOR, TECHNICAL ASSISTANCE PROGRAM**

Courtney Huckstep received her Bachelor of Science in Organizational Leadership and Supervision from Purdue University. Her expertise spans operations management, business development, marketing. She is passionate about innovation and collaboration and creating meaningful impacts in every endeavor she undertakes.

LOGAN JORDAN**ASSOCIATE DEAN FOR ADMINISTRATION, DANIELS SCHOOL OF BUSINESS**

Dr. Jordan is the Associate Dean for Administration for the Krannert School of Management. Dr. Jordan's responsibilities include much of the school's infrastructure and support services operations. He also serves in a support role for budgeting and human resource issues. His academic area is strategic management, including the management of technology.

He has taught in the Krannert School's undergraduate, masters, and executive programs, including the American Animal Hospital Association's Veterinary Management Institute and the Purdue Veterinary Practice Management Program. He has also conducted management development programs for Rolls-Royce / Aero Engine Controls, Cendant, Novartis, Pfizer, Lucent, Case Corporation and Owens-Illinois.

Dr. Jordan has served as a facilitator and consultant to a variety of business enterprises, campus departments and not-for-profit organizations and is a member of the Academy of Management, the Strategic Management Society, and the North American Case Research Association.

KEVIN KOHARKI**ASSOCIATE PROFESSOR OF MANAGEMENT, DANIELS SCHOOL OF BUSINESS**

Kevin Koharki joined the Krannert School of Management at Purdue University as an associate professor in 2018. Prior to joining Purdue University, Kevin held a tenure track appointment at Washington University in St. Louis.

As a researcher, Kevin has published in leading academic journals including: *The Accounting Review*, *Journal of Accounting and Economics*, *Review of Accounting Studies*, *Contemporary Accounting Research*, and *Management Science*. His research broadly focuses on credit rating agencies and financial institutions.

Kevin has taught courses on both managerial accounting, advanced financial accounting, financial statement analysis, and accounting for EMBA students.

**JACQUELINE
McCLOSKEY**



DIRECTOR OF BUSINESS DEVELOPMENT, FAIR OAKS FARMS

At Fair Oaks Farms, Mrs. McCloskey has served as a brand representative and public spokesperson since 2019, regularly speaking to corporate groups, industry leaders, and Midwestern news outlets. She is involved in sales strategy for the multiple hospitality businesses under the Fair Oaks Farms brand. As part of the brand is a nonprofit business, she leads fundraising efforts for the educational and museum components on the campus. She also serves as the lead for master planning strategies to integrate new businesses into the existing campus. When a new business is identified and approved, she oversees the construction project management for the brand.

DOUGLAS PRUIM

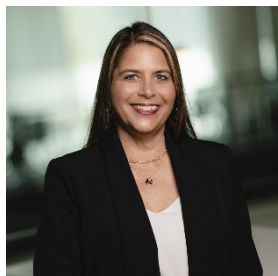


CLINICAL ASSISTANT PROFESSOR OF MANAGEMENT, DANIELS SCHOOL OF BUSINESS

Doug Pruim is an award-winning clinical assistant professor of business communication for the Daniels School of Business. He has a PhD and Masters in Interpersonal Communication from Purdue, as well as a Master of Divinity from Calvin Theological Seminary. He teaches graduate courses on Storytelling with Data, Communication for Accountants, and Persuasive Communication. His undergraduate course, Strategic Thinking and Decision Making, is co-taught with a professor from Purdue Polytechnic School as part of an NSF grant on cross-college collaborative teaching.

Doug has been teaching “speech” classes since 2002, and he spent ten years giving presentations and working with people as a pastor. His publications include “Disaster Day! Integrating speech skills through impromptu group research and presentation,” “Scientific storytelling: A narrative strategy for scientific communicators,” “Implications of some “obvious truths” for building theories of deceptive message formulation and production,” “Grown-ups at play: Theorizing quintessential interpersonal experiences of connection, novelty, and mirth,” and “Critically fun: Analyzing humor in political comedy.”

In addition to these “academic” things, Doug has been performing comedy improv for decades, and he announces for women’s roller derby. He’s also pretty sure that these last two details were probably the real reason why he was invited to be part of this training event.

LISA ROARK**BUSINESS OPERATIONS ADMINISTRATOR, TECHNICAL ASSISTANCE PROGRAM**

Lisa currently serves as the Business Operations Administrator for the Purdue Technical Assistance Program. Lisa has vast operations and administration experience from a career with Purdue University and the Purdue Research Foundation (PRF). Recently, Lisa spent over five years as the Investment Office Manager and Executive Assistant to the PRF Chief Investment Officer supporting the Purdue Endowment. Previously, Lisa worked as an assistant with the Purdue Manufacturing Extension Partnership and as the Account Manager for the Purdue College of Pharmacy, Center for Medication Safety Advancement. Along with positions at Purdue and PRF, Lisa has worked for Harley-Davidson and Procter & Gamble. Lisa holds an undergraduate degree in Business from Indiana University-Indianapolis and is a loyal Boilermaker.

JIM STRATTON**ASSISTANT DIRECTOR OF OPERATIONS, TECHNICAL ASSISTANCE PROGRAM**

As the assistant director of operations for the Purdue Technical Assistance Program, Jim manages major programs and grant opportunities from both the public and private sector. He has worked with the Technical Assistance Program since 2009, where he started as a graduate assistant.

He graduated from Eastern Illinois University in 2009 with a BS in Engineering Technology and holds a MS and PhD in Mechanical Engineering Technology from Purdue University, where he graduated in 2016.

Jim's particular areas of interest and expertise include technology adoption practices, industrial automation, process specification, and operations.

MAT TRAMPSKI**EXECUTIVE DIRECTOR, TECHNICAL ASSISTANCE PROGRAM**

Mat Trampski joined the Purdue Technical Assistance Program in 2013. Mat's responsibilities include directing and managing large-scale industry partnerships, directing cyberTAP activities, directing a team focused on business and technical systems, and executing several industry-sponsored programs.

Mat started his career in the Washington D.C. metro area as a systems analyst with Lockheed Martin. After Lockheed Martin, Mat also worked with General Dynamics, Advanced Systems Development Inc., and Blackbird Technologies. During his time with these companies, Mat supported several federal agencies including The National Reconnaissance Office, National Geospatial Intelligence Agency, The Immediate Office of the Secretary of Defense, and other DoD and intelligence agencies.

Mat received a B.S from Purdue University in Computer Technology - Telecommunication & Networking Technology and completed his graduate studies with Purdue University Global, receiving his M.S. in Higher Education Administration. Mat's areas of interest include cybersecurity, cyber-physical systems, enterprise information technology, and education.

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