Session 1: AI Roadmap for Manufacturers

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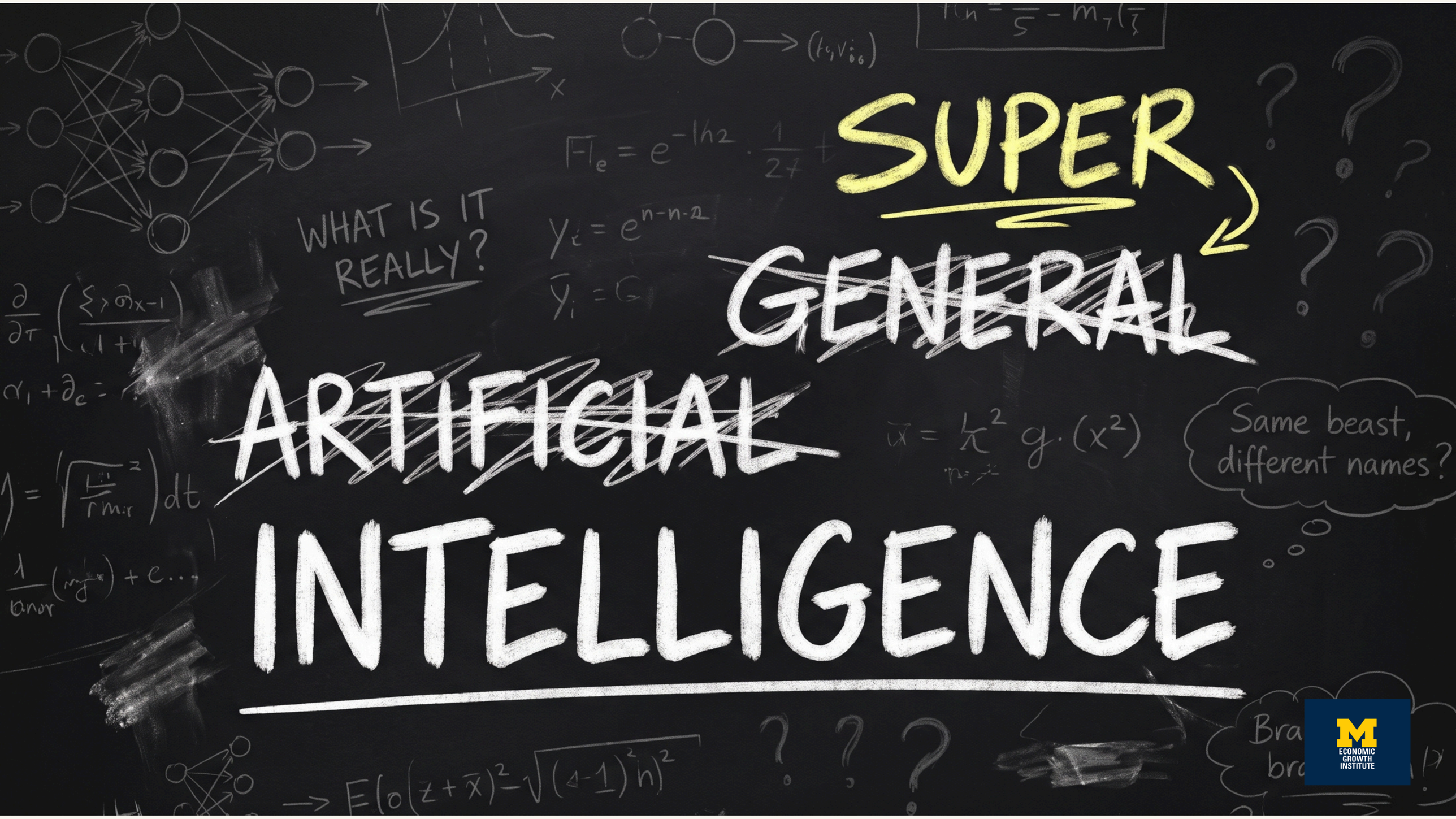
WHAT IS IT REALLY?
SUPER
GENERAL
ARTIFICIAL
INTELLIGENCE
Same beast, different names?
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1

Intelligence is a Commodity

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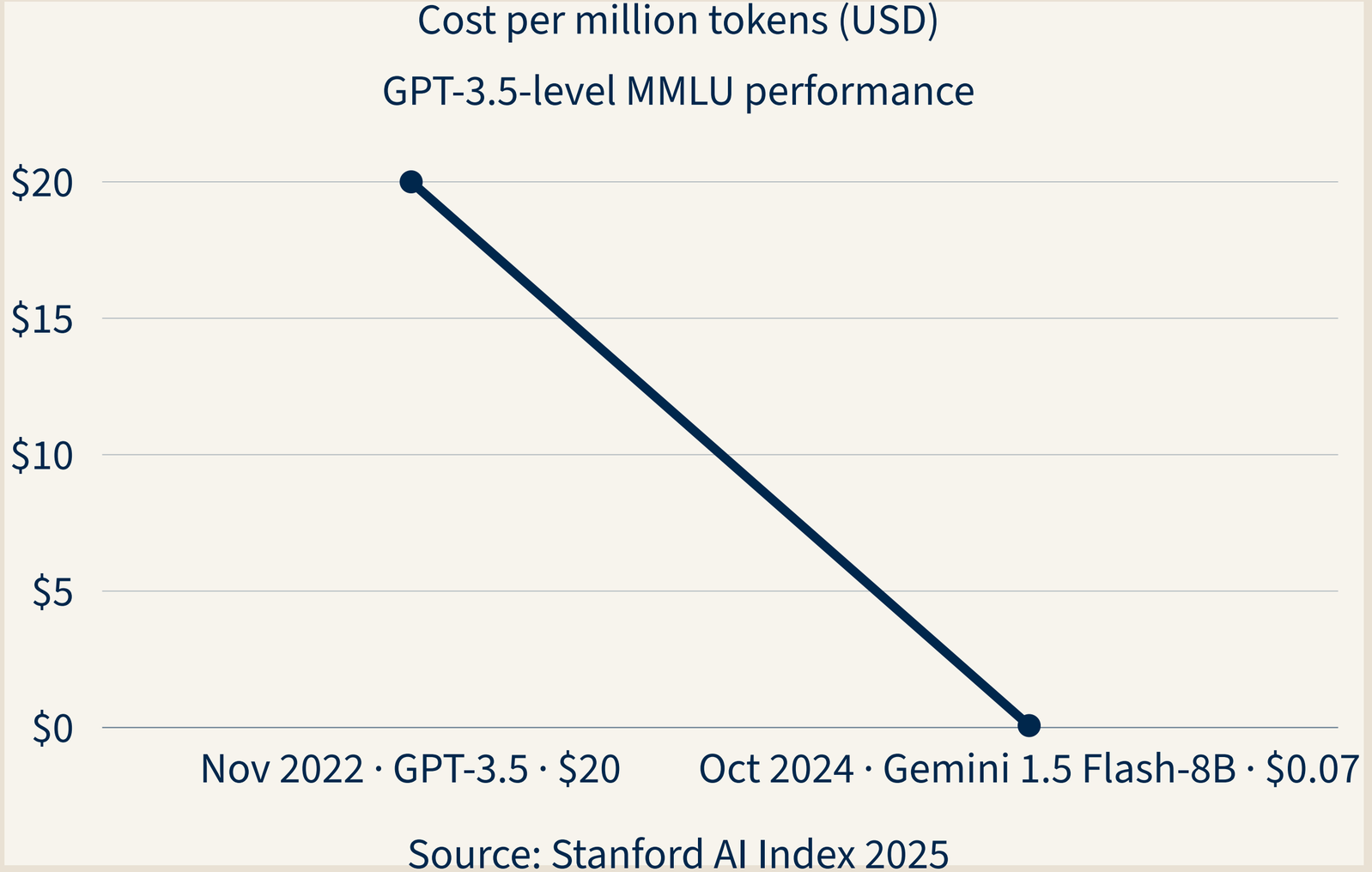
Intelligence is a commodity



Source: Stanford AI Index 2025

>280×

decline in GPT-3.5-level performance cost

$20 → $0.07

per million tokens
Nov 2022 → Oct 2024
Historical comparison — not today's pricing.

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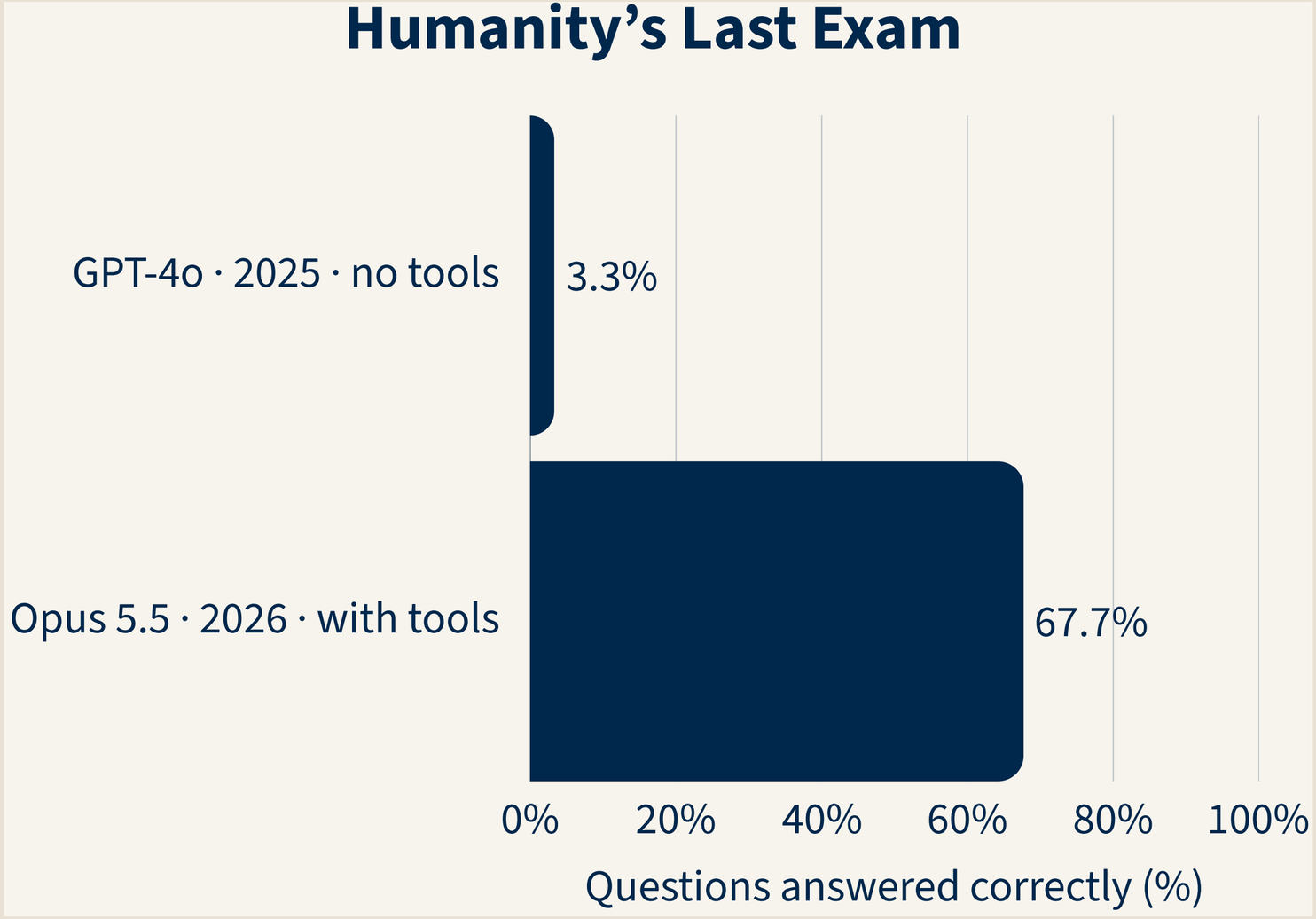
How Capable are new models?



2,500

specialist questions
100+ subjects
~1,000 experts

Different evaluation conditions — not a controlled head-to-head comparison.

What does $20 or 1 Million Tokens get you?

10
financial reviews AND
~2,000 words each

5
sales strategy drafts AND
~3,000 words each

100
RFQ briefs AND
~1,000 words each

100
supplier comparisons AND
~1,000 words each

500
emails AND
~200 words each

100
meeting summaries
~400 words each

375,000 words

Illustrative writing budget; inputs, tools, retries, setup and review extra.

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2

Intelligence Is NOT Judgement

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It can solve Advanced Math Proofs But



THE WALL STREET JOURNAL.

TECHNOLOGY • ARTIFICIAL INTELLIGENCE • SCIENCE OF SUCCESS

OpenAI Says It Has Solved a Millennium Prize Problem—a Holy Grail of Math

As the leading AI labs battle for math supremacy, OpenAI spent millions of dollars and cracked the Navier-Stokes problem. Rivals are already challenging AI's biggest math breakthrough yet.

but only

31.4%*

in Real Business workflows

*AutomationBench Score - Fable 5.1: end-to-end pass rate to test if agents can execute real, multi-step business workflows across software-as-a-service (SaaS) tools - across messy data, conflicting notes, company policies vs real life,

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Your firm’s knowledge makes AI useful

Your Team’s Experience makes makes AI implementations successful

Train your team vs Buy the “Solution”

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3

AI is the “Great Leveller”

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We all have an Angie

Purchasing

- Requesting Quotes,
- Generating and sending Purchase Orders (POs)

Accounting

- Match PO, receipt, and invoice; send exceptions for approval.
- Generating client invoices and chasing overdue payments (AR)

Customer & Supplier Relations

- Chasing missing W-9s, COIs
- Where is my order?

Angie



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Give office staff capacity for better work

Purchasing

- Automated RFQ & PO Generation:
- Automated Order Tracking

Accounting

- Autonomous AP Processing:
- Smart AR Dunning

Customer & Supplier Relations

- Inbox Triage & Auto-Drafting

AI to Automate

- Data entry
- Read and Draft Emails
- Extract Pdf data
- Create invoices, documents

Angie



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AI is the GREAT LEVELLER

Big Company

- Corporate Controller
- FP&A Manager
- Accounting Manager (General Ledger)
- Accounts Payable (AP) Manager
- Accounts Receivable (AR) & Credit Manager
- Cost Accounting / Plant Controller
- Revenue Accounting Manager
- Treasury Manager
- Corporate Tax Manager
- Internal Audit & SOX Manager
- Procurement / Strategic Sourcing Manager
- Financial Systems (ERP/EPM) Manager

Angie



Free to take on strategic projects

4

Companies that use AI will replace companies that don’t

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Two similar companies, the same starting line

Status Quo		AI-enabled shop
RFQs wait in the manual queue	**Quoting**	RFQ checked quickly; estimator approves
Follow-up depends on spare time	**Sales**	Sales follow-up runs on a schedule
One person posts when available	**Marketing**	Reviewed content reaches buyers often
Staff chase updates by email or phone	**Customer Service**	ERP status answers routine questions

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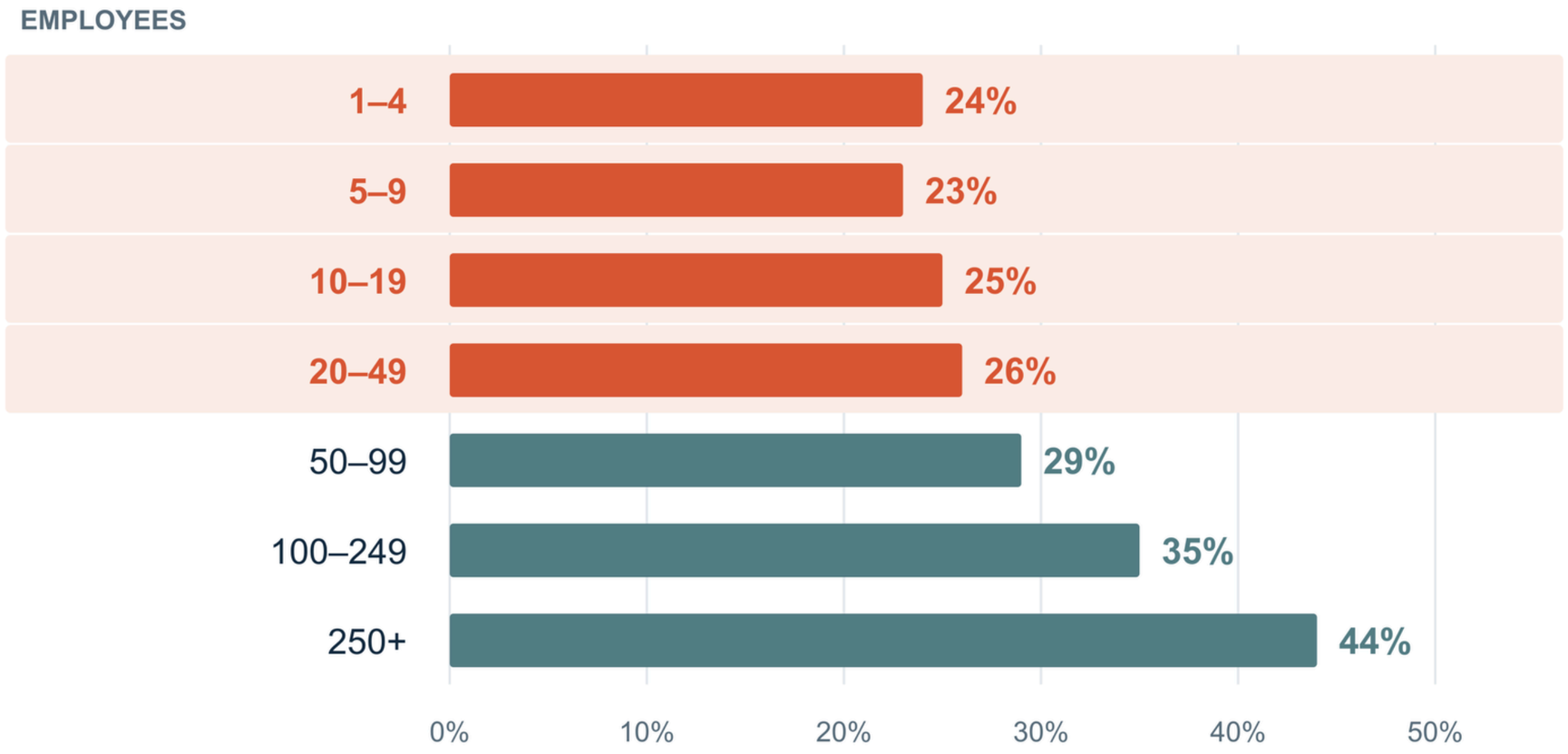
Small firms are using AI less

Reported AI use by employer size · All sectors



≈20

percentage points

Less AI use among the smallest firms than the largest

Source: Census BTOS, cycle 202621, as cited in the supplied figure. Reference: Sept. 21–Oct. 4, 2026.

Approximate point estimates read from the supplied chart; uncertainty intervals omitted. The 250+ group includes larger firms.

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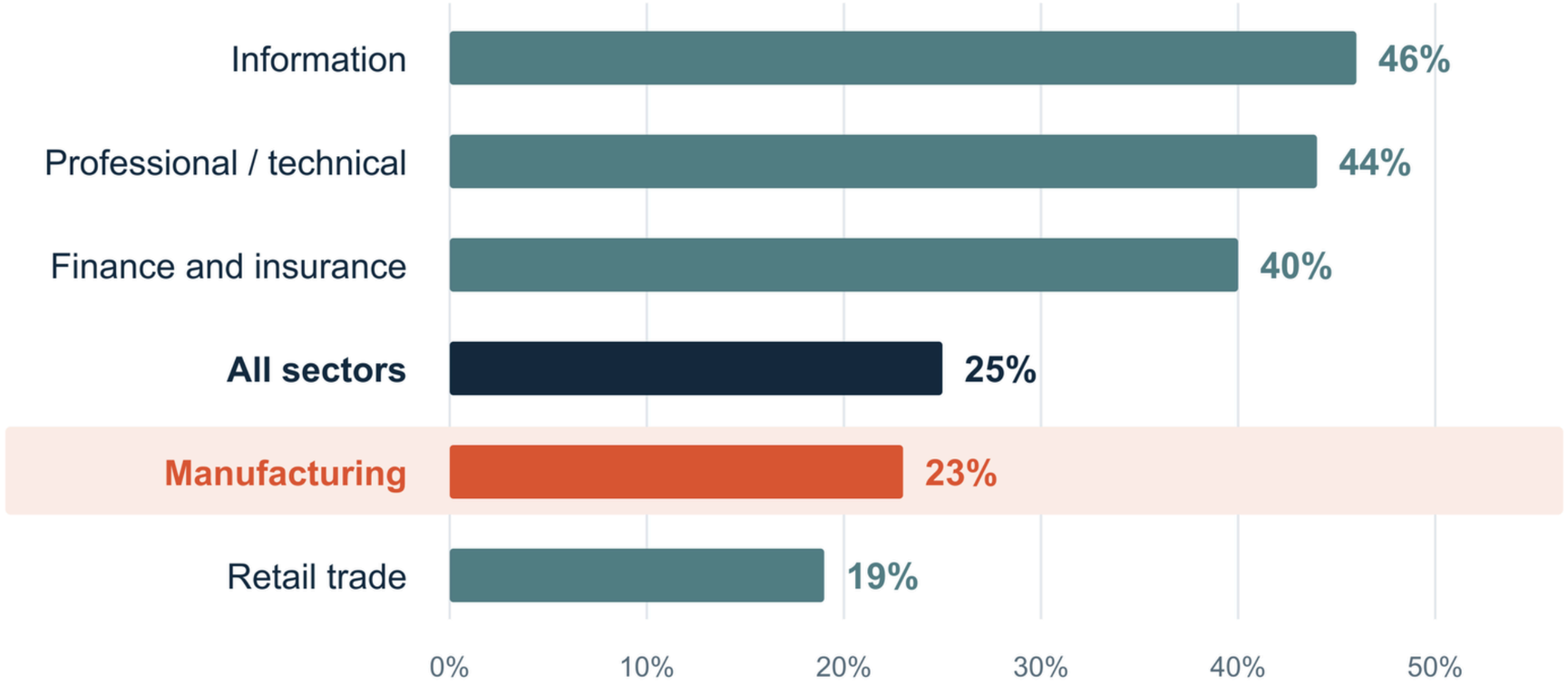
Manufacturers are using AI less

Reported AI use across sectors · Employers of all sizes



≈23%

of manufacturers

Below the 25% average and well behind the service sectors shown

Source: Census BTOS, cycle 202621, as cited in the supplied figure. Reference: Sept. 21–Oct. 4, 2026.

Approximate point estimates read from the supplied chart; uncertainty intervals omitted. Selected sectors shown.

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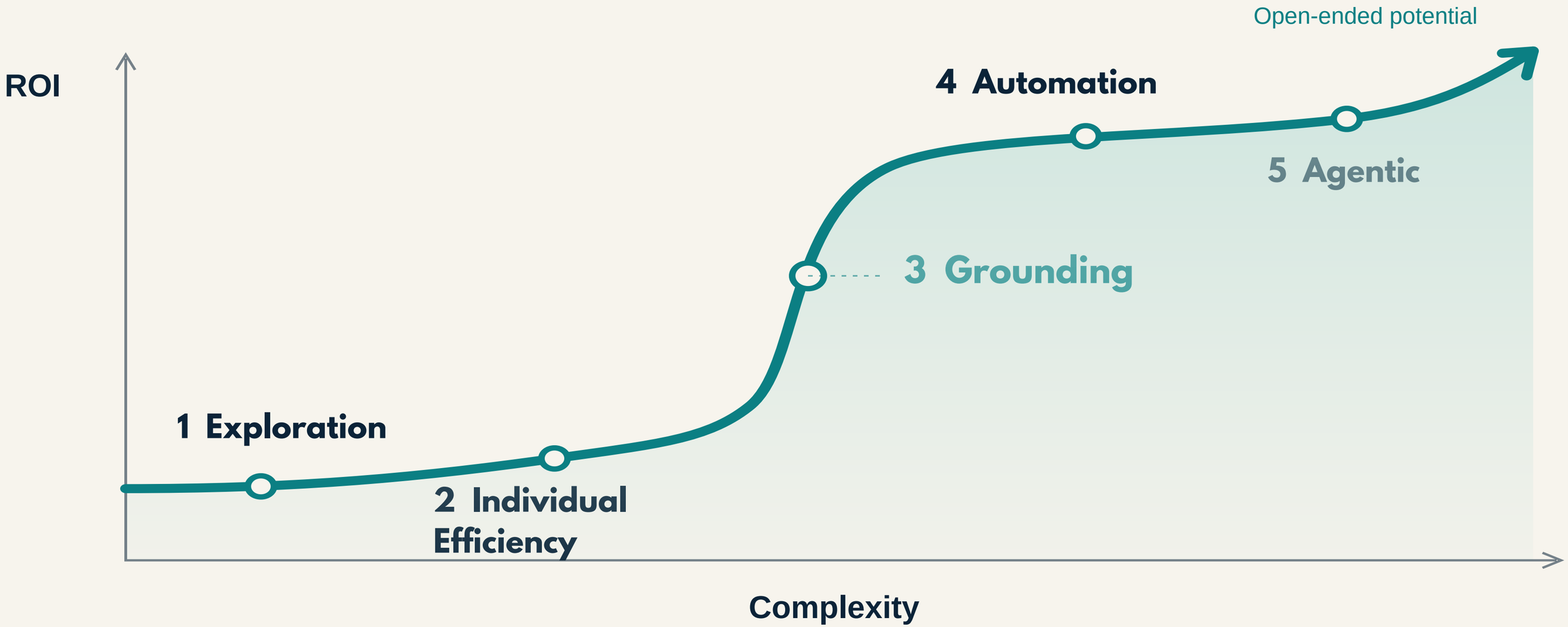
The AI adoption pathway



1 Build literacy and curiosity

2 Use AI in everyday tasks

3 Connect approved knowledge

4 Humans verify steps in workflows

5 Humans supervise planning and action

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01
Exploration

Learn what AI can do—and how to check it.

— Try simple tasks using public or fictional material.

— Learn to instruct, follow up, and check answers.

— Identify curious employees who can become champions.

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Exploration: use-case example

Write a professional LinkedIn post for ITD Precision (itdprecision.com/service/tool-die/) highlighting our precision tool and die capabilities, focusing on engineering excellence and reliability (operational excellence), and targeting OEMs and manufacturing leaders who need tight-tolerance components. Include a call to action and a request to generate an accompanying image of a precision tool and die machining setup on a modern manufacturing floor.

At ITD Precision, operational excellence starts in our tool room. We combine advanced engineering with full in-house tool and die capabilities to build, maintain, and optimize complex progressive dies that deliver repeatable accuracy across millions of cycles.

How we drive value for manufacturing leaders:

- **Engineering Excellence:** Collaborative DFM (Design for Manufacturability) that solves complex geometry challenges before steel is cut.
- **Tight-Tolerance Precision:** State-of-the-art CNC machining, wire EDM, and grinding built for micron-level consistency.
- **Unmatched Reliability:** Proactive in-house die maintenance and rapid tooling support that minimize downtime and protect your supply chain.

Whether you are launching a new program or transferring existing tooling, our team ensures your parts meet exact specifications—every run, on time.

Explore our precision tool and die capabilities and request a quote for your next project: https://itdprecision.com/service/tool-die/

#ToolAndDie #PrecisionManufacturing #MetalStamping #EngineeringExcellence #OEM #OperationalExcellence #ManufacturingLeadership #ITDPrecision



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Build AI literacy and curiosity

- People and skills
- AI tools
- Data access and protection
- **Licensing and cost**

04 / 04

Free

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02
Individual Efficiency

Make recurring individual tasks easier.

— Use approved company inputs in a company-approved enterprise workspace.

— Save useful prompts and share examples with colleagues.

— Compare time, quality, and rework with today’s approach.

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Stage 2: Overdue invoice follow-ups

PROMPT

Using this uploaded AR aging report, group overdue invoices by customer and draft a polite follow-up for each. Flag missing information.

SAMPLE OUTPUT (fictional)

Acme: INV-1042, $2,400 outstanding, 18 days overdue.

Draft: “Our records show invoice 1042 is overdue. Could you confirm the expected payment date?”

Angie checks balances and customer context, then sends.
Value: Less preparation, more time resolving payment issues.

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Use AI in everyday tasks

People and skills
AI tools
Data access and protection
Hosting and infrastructure
Licensing and cost

05 / 05

Licensing options

- Enterprise: ~$20–60/user/month (planning range)
- GovCloud API: pay per use + cloud costs
- On-prem: ~$25k DIY setup estimate + ongoing costs

Illustrative planning range, not a published Enterprise price list. Actual quotes, seat minimums and usage charges vary by provider and agreement. GovCloud and on-prem costs vary.

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03

Grounding

Give AI the context of your business.

— Connect approved non-CUI documents, records, and decision rules.

— Capture the knowledge experienced employees use every day.

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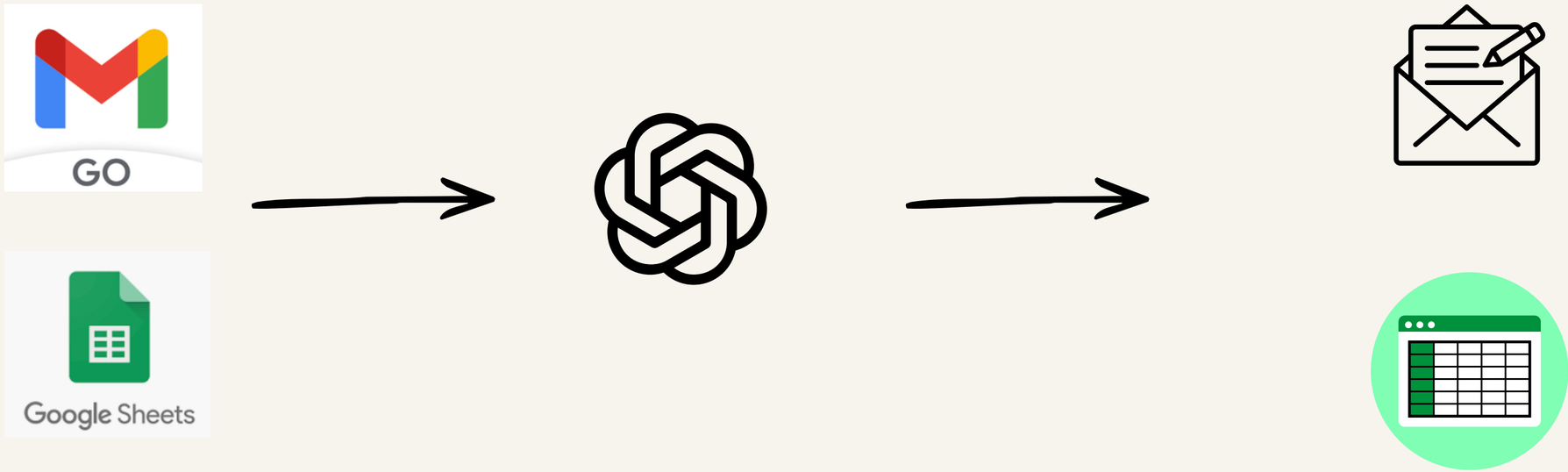
Stage 3: Weekly Invoice Approval?

PROMPT

From my emails, invoice files and our tracking sheet, find invoices awaiting approval. Match the PO and material receipt, link the sources, and make the spreadsheet updates and tell me which invoices need approval.



Use maintained company knowledge

People and skills

AI tools

Data access and protection

03 / 03

Access to company data

- Connect AI systems to sources such as ERPs, email, and company drives

- No CUI in standard SaaS; separate approved route required

Government cloud and on-prem CUI routes require approval for the complete deployment before data is connected.

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04
Automation

Put a repeatable process into motion.

— A trigger starts a defined sequence of steps.

— People manage approvals and exceptions.

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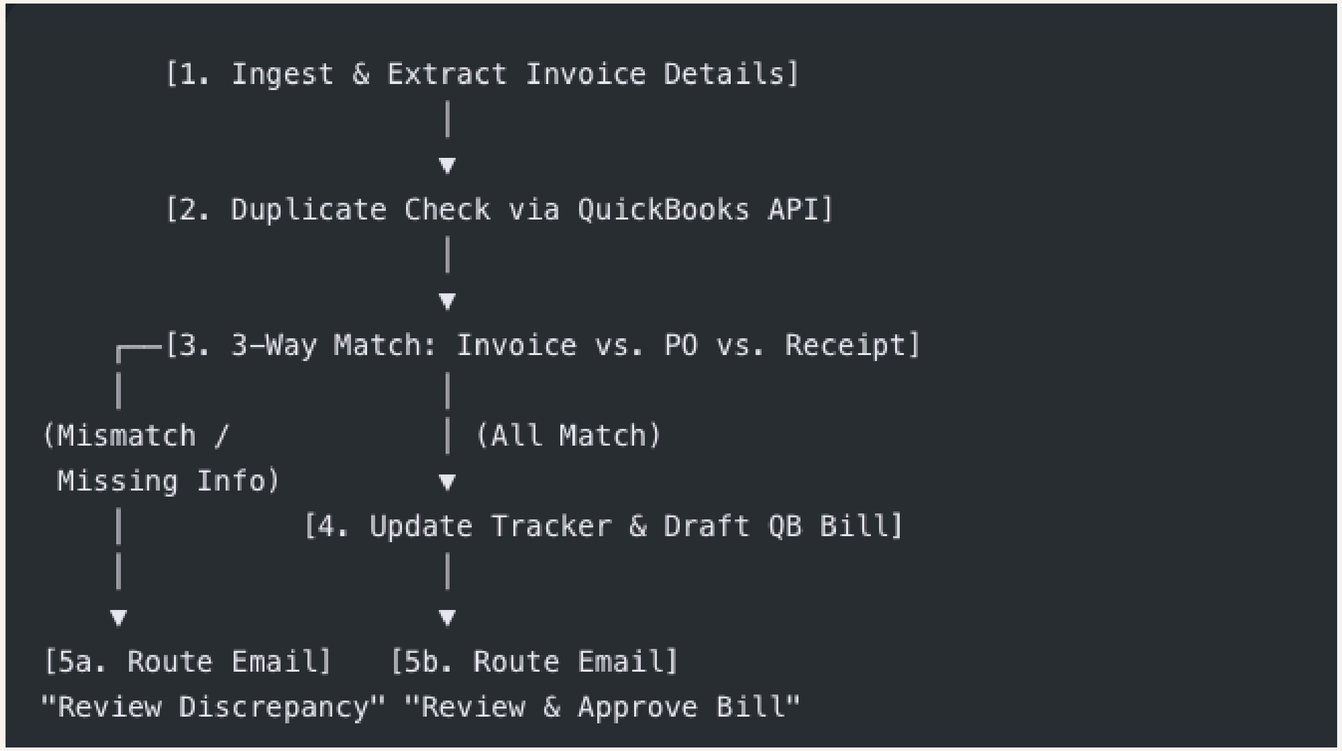
Stage 4: Automatic invoice intake

WORKFLOW

Extract invoice details. Check duplicates and match the PO and receipt. Update the tracker and prepare a draft bill. Route discrepancies or missing information for review.





A person approves posting and payment.
Value: Less rekeying and fewer missed handoffs.

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Put AI into defined workflows

People and skills

AI tools

Data access and protection

03 / 03

Already connected to company data

Controlled data flows

- Map data through systems, logs and stored copies
- Limit read and write permissions

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05
Agentic

Set the goal, define the limits, and supervise the work.

— Agents choose steps and tools within permitted boundaries.

— Multiple agents can coordinate research, drafting, and checking.

— People retain authority over consequential decisions.

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Demo: Lightening Manufacturing Inc

Fast, quick parts.

A simulated machine shop competing on quote speed and credible delivery.

67%

expected a quote
in under 24 hours

75%

made a buying decision
within a week of a quote

92%

would pay more
for faster parts

Paperless Parts / ResearchScape, 2020 Part Buyer Expectations Report; 417 U.S. buyers and procurement engineers.

Stage 5: RFQ to quote for review

GOAL
Prepare a feasible quote with standard and rush options using the shop’s approved resources and schedule.

1 Read the RFQ and drawing. Check machine fit, tools and material.

2 If the preferred machine is full, compare another route and reprice.

3 Prepare the quote email, delivery options, process sheet and STEP/3D preview.
A person reviews the package and sends the quote.

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The shop’s resources set the limits

3 machines · 12 tools · 3 materials · priced outside services

$90/hr

VMC-4X

4-axis vertical machining center

Simple prismatic parts
300 × 200 × 150 mm
±0.05 mm · setup 0.75 hr

$145/hr

MILL-6X

6-axis machining center

Complex, multi-face parts
500 × 400 × 300 mm
±0.025 mm · setup 1.5 hr

$165/hr

MILLTURN-9X

9-axis mill-turn center

Round parts with milled features
Ø200 × 400 mm length
±0.025 mm · setup 2 hr

12 tools

Face mill, end mills, drills, tap,
chamfer mill, boring bar and turning tools.
304 stainless needs EM-12C — out of stock.

3 priced materials

6061 aluminum: $8.50/kg
1018 steel: $3.20/kg
304 stainless: $9.80/kg

Outside services

Anodize, passivate, black oxide,
grinding and CMM inspection.
Lot charges and lead times priced
separately.

Schedule constraint: VMC-4X is full on days 1–3. Reroute capable rush work or offer a later slot.

Seven agents. One quote ready for review.

RFQ email → verified plan → price and schedule → quote + Gmail draft

1 Intake

Read the RFQ. Capture customer, part, dimensions, material, tolerance, quantity and rush.

Missing input? Hold the job.

Job folder

2 Geometry

Verify dimensions and ambiguity. Build CAD only when geometry supports it.

No material or dimension? Ask Intake.

STEP / STL

3 CAM

Choose operations, capable machine and tools. Reroute or add a priced outside step.

Ask about out-of-stock tooling.

Machines + tools

4 Machinist

Peer-review the plan against the same shop libraries.

Confirm feasibility or reject with a named reason.

Same libraries

5 Estimating

Price material, machine time, tools and outside work. Apply margin and quantity breaks.

Tool buy: qty ≥20; cost ≤$10/part.

Materials + services

6 Scheduling

Check real free hours. Offer premium rush or a later standard slot.

No double booking. Wait for a choice.

Master schedule

7 Quote

Assemble unit price, quantity breaks, delivery and internal process notes.

Create a Gmail draft. Never send it.

quote.md + draft

Delegate goals within clear limits

People and skills

AI tools

Data access and protection

03 / 03

Already connected to company data

Limited access per agent

- Scope each agent’s data and memory
- Review and revoke access as tasks change

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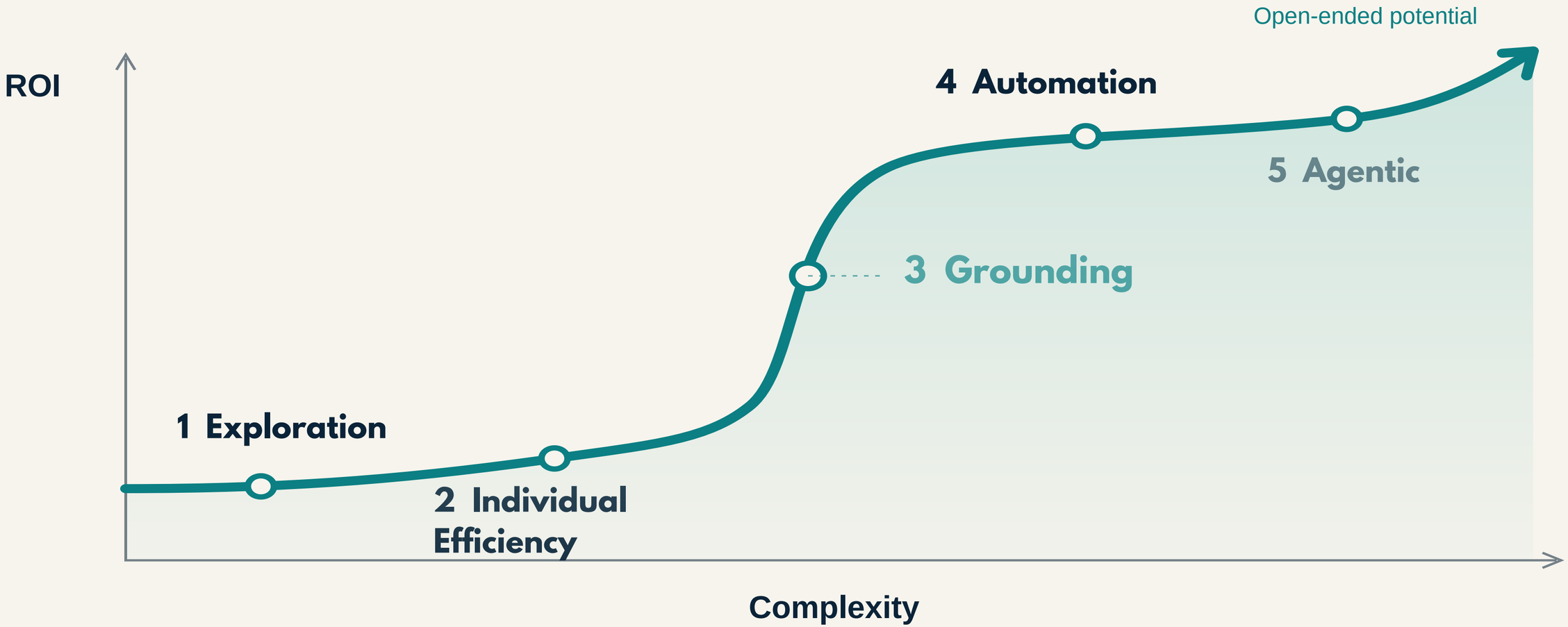
The AI adoption pathway



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