Randy Lowman
LakeTurn Automation

SESSION 4B | DAY 2: JUNE 4 | 1:00 -2:15 PM

AUTOMATION TO AUTONOMY – PREPARING FOR THE AI AGENT ERA

Randy is the Founder of LakeTurn Automation, a Virginia-based professional services firm providing custom AI and Intelligent Automation solutions. LakeTurn helps organizations develop AI strategies, identify high-impact opportunities, and execute AI & Automation initiatives - from roadmap to results.

Before starting LTA, Randy began his career with Deloitte and spent 20+ years in leadership roles across various industries, including professional services, manufacturing, construction, distribution, and retail.

Randy holds a BS in Accounting Information Systems from Virginia Polytechnic Institute and State University. He has earned a PMI certification as a Project Management Professional, is a Certified ScrumMaster, and is certified in Production and Inventory Management with APICS.

Automation to Autonomy

Preparing for the AI Agent Era

Business & Industry
SPRING CONFERENCE

RANDY LOWMAN

SESSION 4B - JUNE 4

ncaCPA®

Welcome – Demystifying AI Agents

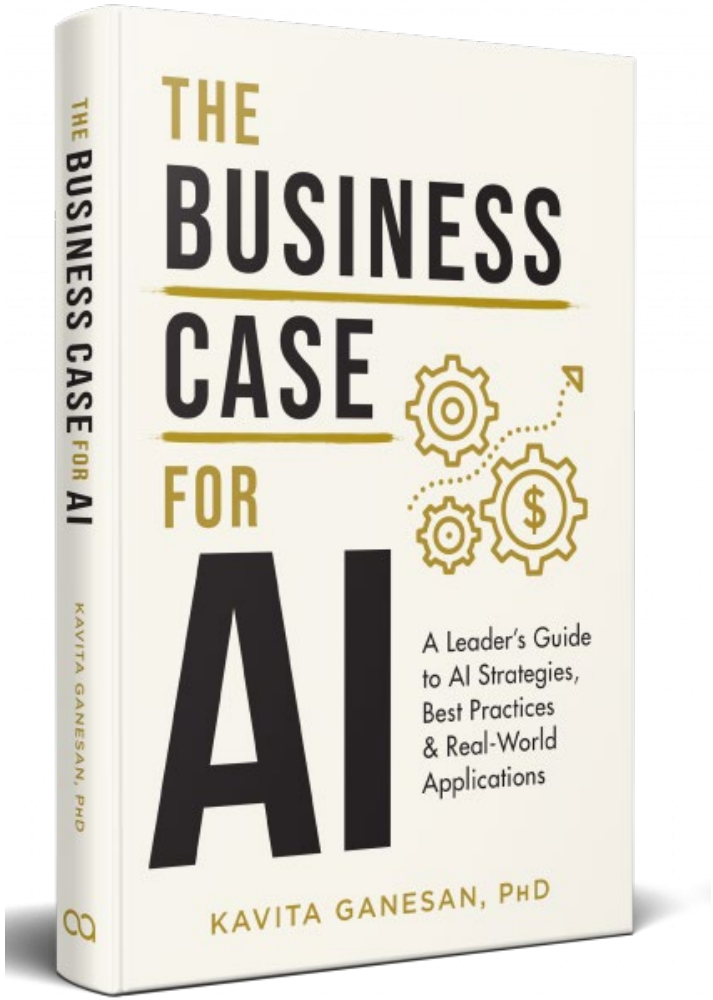
"You don't have to be a technologist to understand this – just someone curious about the future of work."

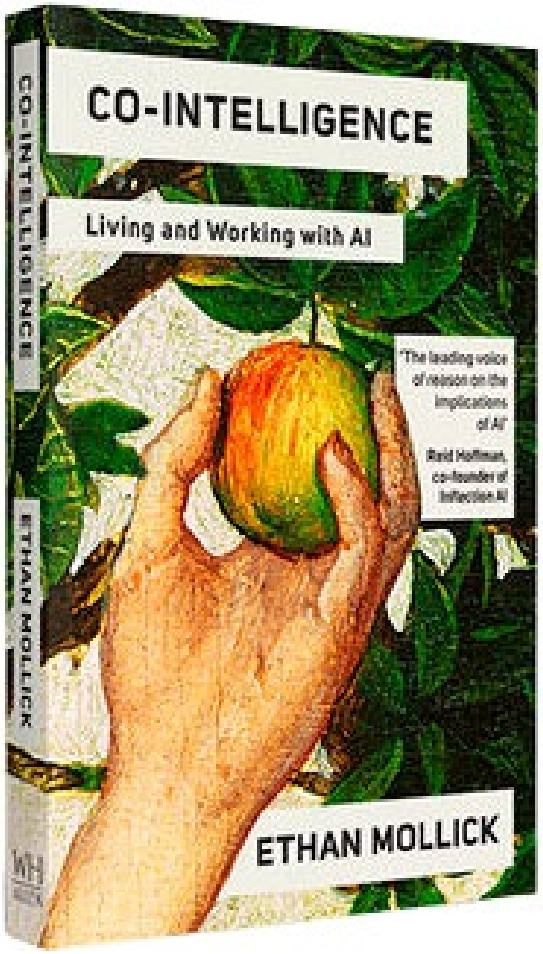
Session Objectives

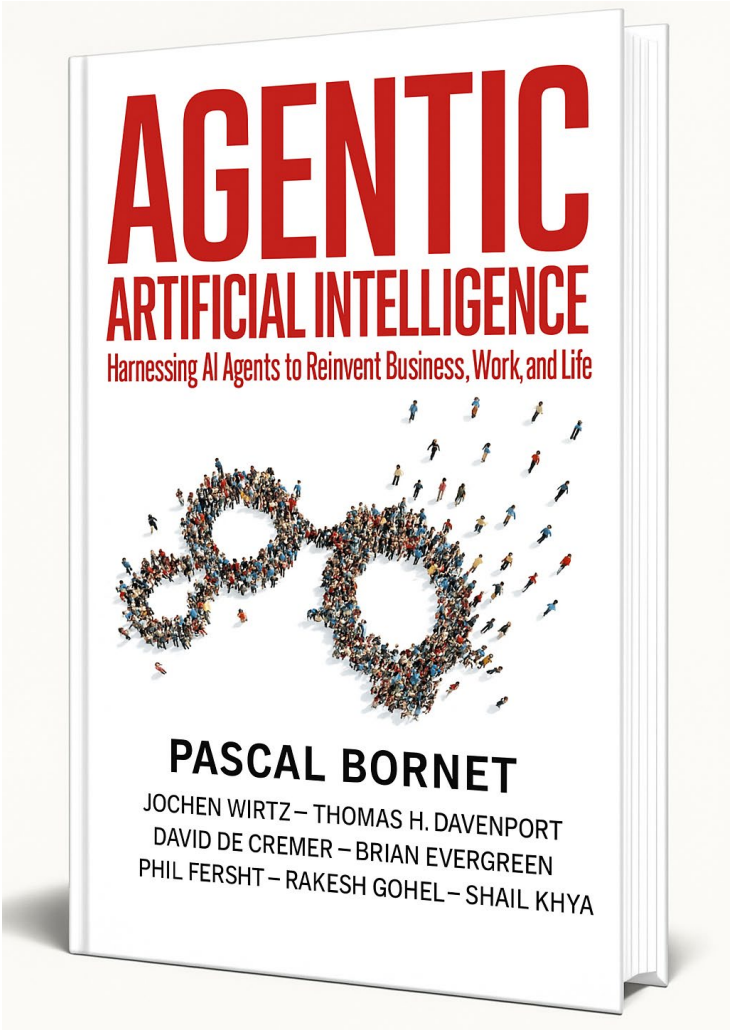
- Demystify AI Agents
- Current Capabilities & Limitations
- Review Real-World Use Cases
- Roadmap to get AI Ready
- Encourage Strategic Leadership
- Discuss What's Coming Next
- Create Space for QA & Discussion

Much of the marketing is hype—this session is about *clarity and practical insight*

Books that Informed this Session



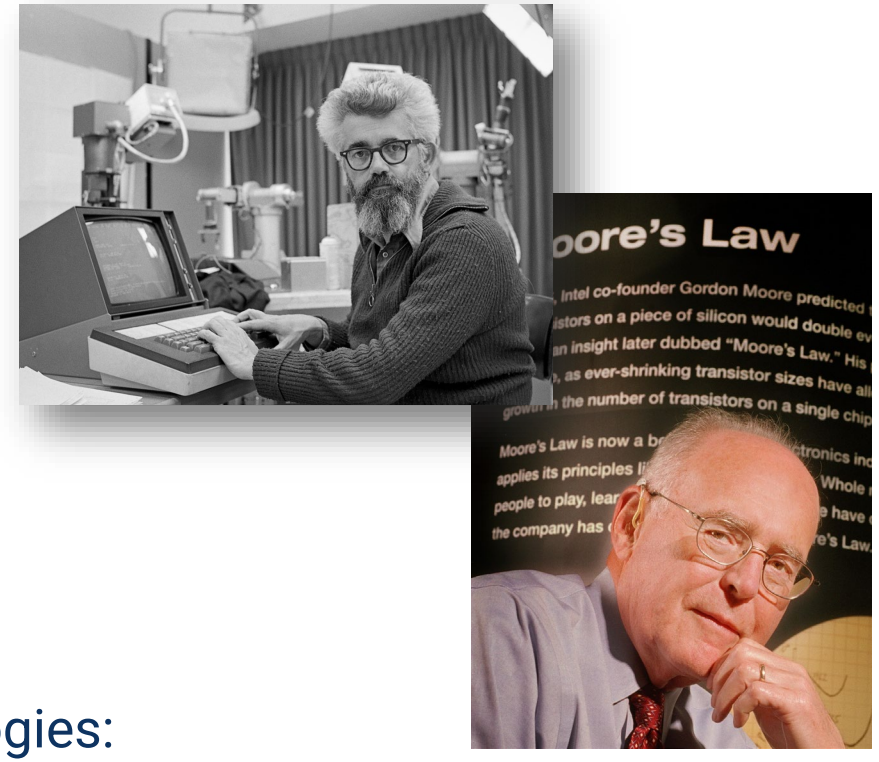




Building Blocks: Artificial Intelligence & Automation

Artificial Intelligence Coined in 1955 by John McCarthy

- Confusing Term – What does “Artificial” mean? What is “Intelligence”?
- According to the Oxford Dictionary, **AI = computer systems that can perform tasks that normally require human intelligence**.
- 3 Types (**Narrow AI**, **AGI**, **ASI**)
- Power of Exponential Growth



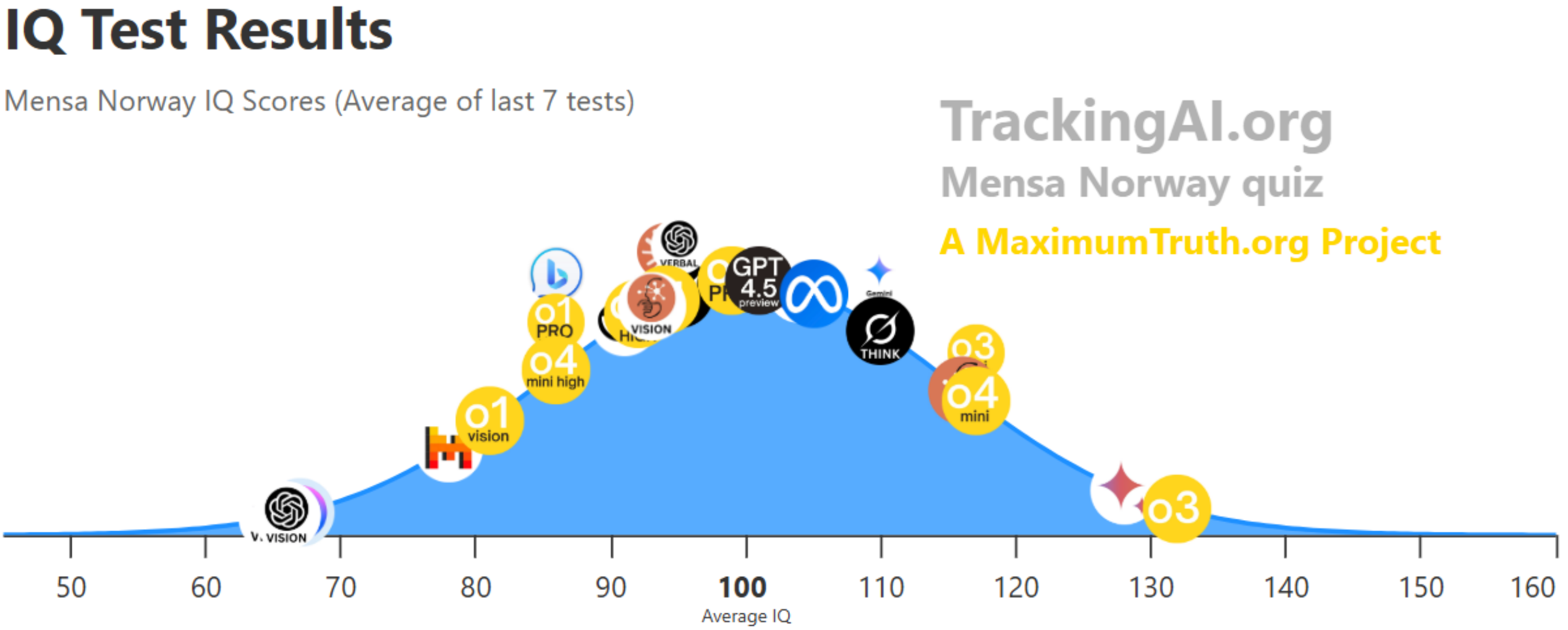
The Birth of Agentic AI

Convergence of 2 technologies:

1. AI Large Language Models *(specifically LRMs)*
2. Robotic Process Automation

Automation + AI = much greater than the sum of their parts!

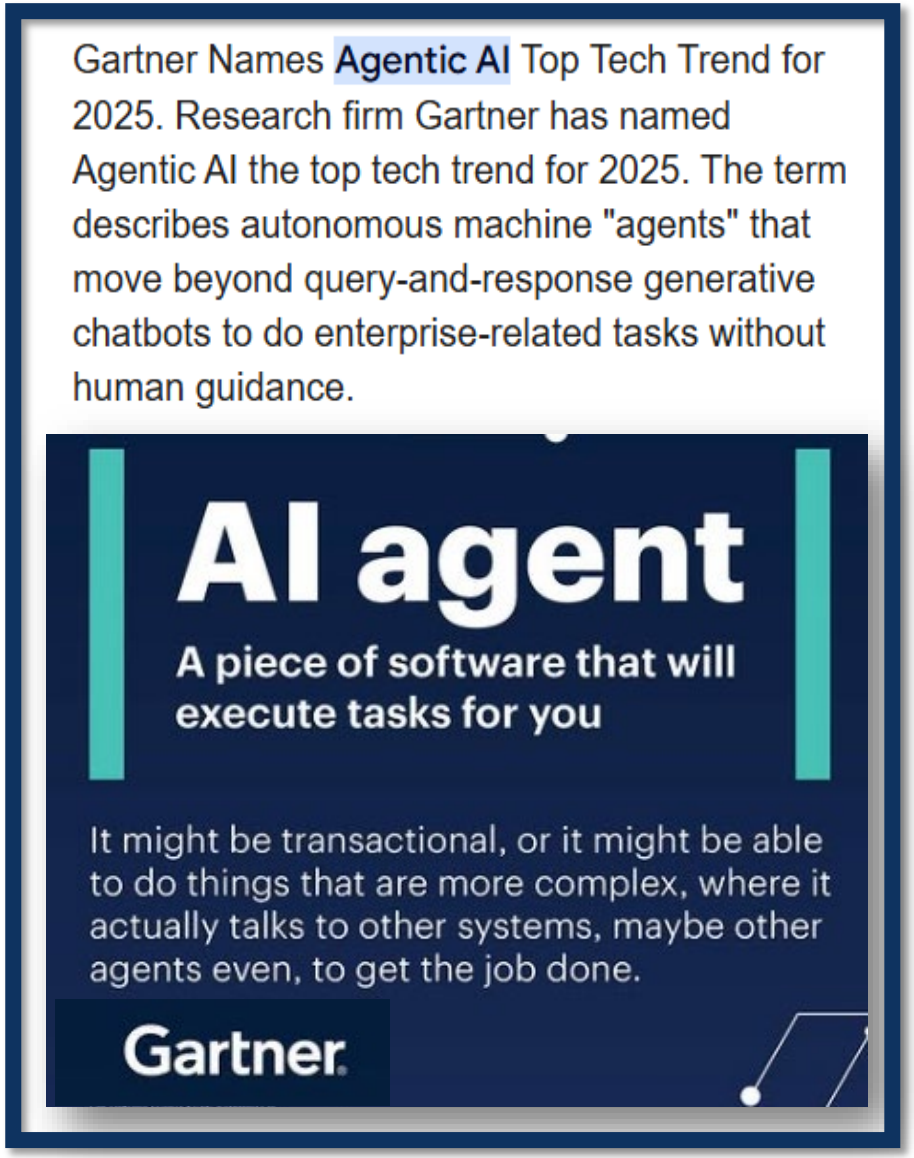
AI vs. Human Performance: Current Landscape



What is an Agentic AI?

- **Definition**
  Agentic AI is an advanced form of artificial intelligence that not only answers questions but takes action - using reasoning, memory, and tools to complete tasks on its own.
- **What Makes It Different?**
  - **Goal-Driven:** You give it a goal, and it figures out the steps to get there.
  - **Takes Action:** It can search the web, fill out forms, analyze documents, or send emails - without constant human input.
  - **Learns and Adapts:** It improves over time by learning from results and adjusting its approach.
- **Why it Matters?**
  Unlike chatbots or basic automation, Agentic AI can interact with the world. It's like having a smart assistant that not only gives advice but also follows through.

  It enables the automation of **entire business processes,** especially when **multiple agents work together** toward a shared outcome.



How Do Agents Work (the **S.P.A.R** Framework)

How a Human Takes Action

Goal: "I want to cook dinner."

Input → **Think** → **Plan** → **Act** →  **Outcome**

Gather information check available ingredients, recipes and time

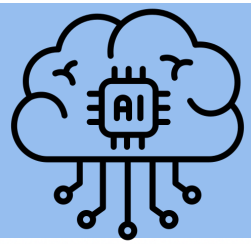
Analyze options and choose the best approach: "I can make spaghetti with marinara."

Outline the steps: "Boil water, then cook pasta, and make sauce."

Execute the plan: Cook the meal.

Reflect on what to improve next time: "Next time, I'll use less sait."

Learn



How an AI Agent Takes Action: the SPAR Framework

Goal: "Generate the outcome I need."

Sense → **Plan** (and Reason) → **Act** → Outcome → **Reflect**

Gather data from multiple sources, detect triggers, and maint-awareness of their context

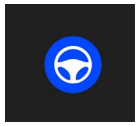
Engage in sophisticated reasoning to develop step-by-step plans for achieving their goals. They evaluate option, prioritize actions, and coordinate resources

Use available tools to carry out actions like sending messages, entering data, updating systems

Learn and adapt from experience: analyze purforma-nce, refine approaches

Source: *Agentic Artificial Intelligence* (Bornet, 2025)

What Can Agents Currently Do (the Agent Progress Framework)

	Level	Car Analogy	Agentic AI Analogy	Main Technology Involved
	**Level 0** Manual Operations (Human-Only)	Manual driving with no assistance	Humans perform all tasks without automation	Basic digital tools (spreadsheets, email), manual processing
	**Level 1** Rule-Based Automation	Basic cruise control maintains speed but needs human operation	Simple automation follows fixed rules (e.g., data entry, RPA systems)	Basic automation tools (RPA, simple scripts, rule engines)
	**Level 2** Intelligent Process Automation	Advanced driver assistance systems handle speed and steering with supervision	AI combines automation with cognitive abilities like NLP and machine learning	AI tools (machine learning, NLP, computer vision, RPA, process orchestration)
	**Level 3** Agentic Workflows	Vehicles navigate highways but need human intervention in complex situations	Agents generate content, plan, reason, and adapt in defined domains	Large language models, memory systems, content generation tools, basic reinforcement learning
	**Level 4** Semi-Autonomous Agents	Self-driving cars operate autonomously in specific conditions	Agents work autonomously within defined expertise, adapt strategies, and learn	Advanced reasoning and planning, real-time adaptation, causal reasoning
	**Level 5** Fully Autonomous Agents	Fully autonomous cars drive anywhere in all conditions	AI systems handle any task, cross-domain learning, and self-adaptation with no human intervention	Sophisticated memory systems, advanced learning mechanisms, safety protocols for autonomy

Source: *Agentic Artificial Intelligence* (Bornet, 2025)

Where do AI Agents currently struggle

1. **Common Sense & World Knowledge**
   - **Lack of real-world intuition and background understanding**
     - Often miss content or make decisions that humans would find flawed
2. **Memory & Context Retention**
   - **Limited long-term memory across interactions**
     - Improving in **short-term memory**, they struggle with longer retention
     - This limits effectiveness in complex workflows.
3. **Integration with Real-World Systems**
   - **Cannot reliably operate user interfaces or enterprise software**
     - Currently required to use RPA or human assistance
     - New Standards (ex., MCP and Agent2Agent) will improve this
4. **Trust, Transparency and Control**
   - **"Black Box" decision making, leading to low user trust**
     - Hard to audit the "why" an agent took a specific path – requires HITL
     - New tools (ex., audit logs, "reason trails", internal control guardrails)
5. **Autonomy ("Full self driving")**
   - **Struggle outside of defined tasks**
     - Most of today's agents operate in narrow well-defined domains

AI Agents in Action: Real Business Use Cases

Banking Operations

- **Fraud Detection (HSBC)**
  - AI scans 1.35B transactions monthly, doubling detection and cutting false positives by 60%.
- **KYC & Onboarding (Banco Galicia)**
  - AI reduced account setup from 20 days to same-day through document automation.
- **Virtual Assistants (BoA, Wells Fargo)**
  - Agents handle millions of service interactions with no human involvement.

Corporate Finance

- **AI Forecasting**
  - Autonomous tools improve accuracy by 20–50% and speed up planning cycles.
- **Finance Workflow Automation**
  - Agents handle bookkeeping, reconciliations, and invoices to reduce manual effort.

Accounting, Audit & Tax

- **Audit Analytics (KPMG)**
  - AI analyzes 100% of transactions for anomalies, boosting audit assurance.
- **Document Review (Deloitte, EY)**
  - Agents extract key terms from contracts and filings, cutting review time.
- **Tax Prep & Compliance (TurboTax, Firms)**
  - AI auto-fills returns, flags issues, and accelerates filings at scale.

Getting Started with AI Agents: Roadmap to Results

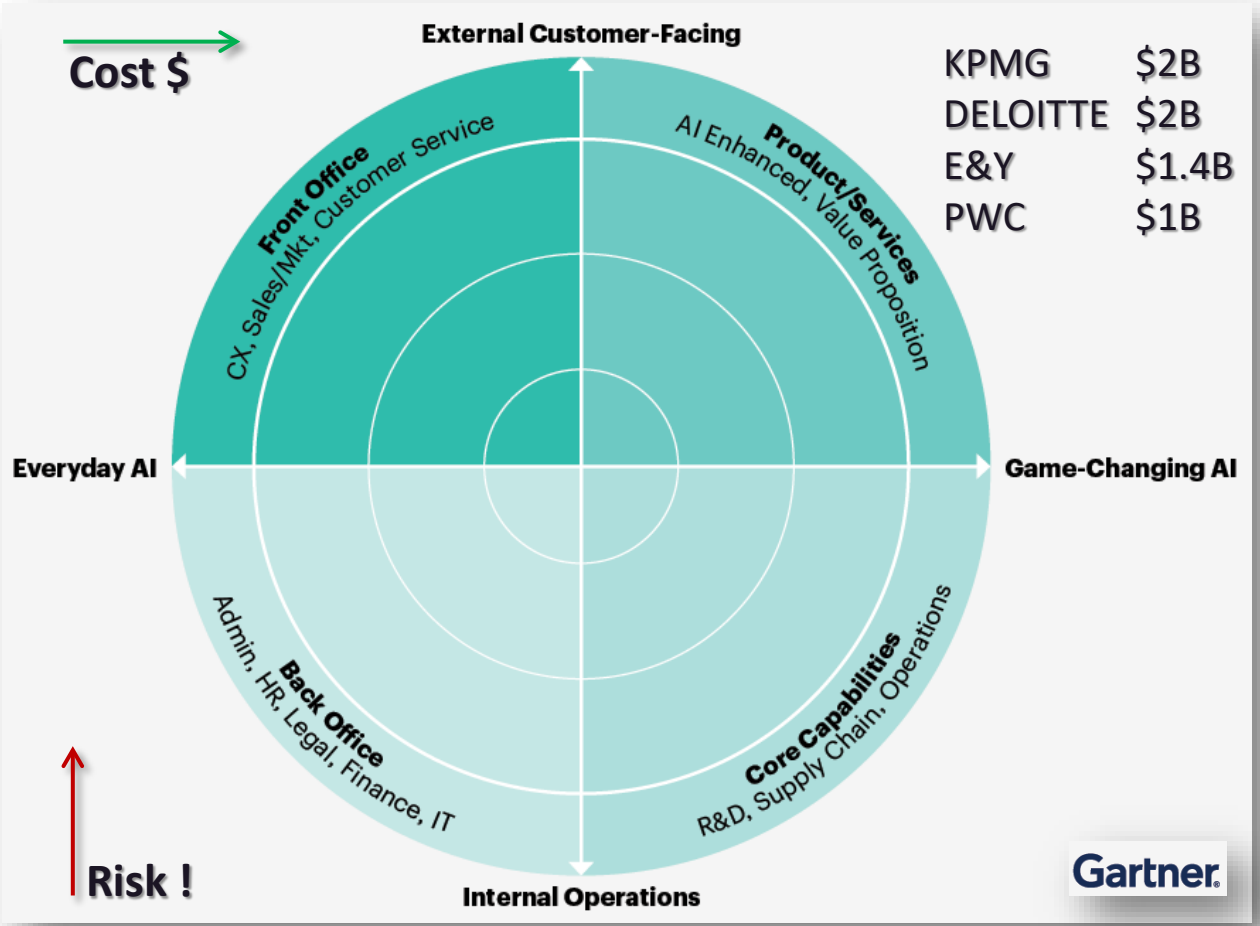
- **Leverage Gartner's AI Radar**
  Identify AI Agent Opportunities that balance cost/risk while aligning with the business strategy
- **Phased Approach to AI & Automation Adoption**
  Step 1: Proof of Concept (PoC)
  Small projects to solve specific, measurable pain points
  Step 2: Scaling
  Expand. Continue focus on alignment with strategic goals
- **Selecting Initiatives for the AI Radar**

Where do ideas come from?

Internal Challenges: Pain points in current processes.
Strategic Priorities: Align AI projects with business goals
Digital Backlog: Gaps from the technology To Do list
Employee Input: Frontline teams know broken processes
Brainstorming: AI ideas list/industry technology trends
Customer Feedback: Recurring issues or unmet needs

Evaluation Criteria for Placement on the Radar

Business Impact: Does it drive measurable outcomes?
Feasibility: Do we have what it takes to support the project?
Risk: Can potential risks be mitigated effectively?
Cost: Is the investment reasonable relative to the ROI?



AI Agents are ideal for tasks with repeatable logic, clear rules, and high interaction volume—start here.

Key Takeaways and What's Next

Key Takeaways

- **AI Agents are here**
  Already delivering value in finance, operations, and accounting services
- **AI Agents are more than chatbots**
  They reason, plan, and act to automate full workflows.
- **Current limitations exist**
  Memory, learning & transparency – but these gaps will close fast
- **Success depends on business leadership – Strategy is key**
  Getting your business ready for AI starts with the C-Suite (not IT)
- **Start small, scale smart – but start now**
  AI is an F1 race (not a footrace), waiting = playing catch-up

What's Next

1. Agent Collaboration
2. New Standards Expedite Integrations
3. Improved Memory & Reasoning
4. Agent Templates by Vertical / Function
5. Agent-as-a-Service Models
6. Low-Code / No-Code Agent Tools

DISCUSSION / Q&A

LTA LakeTurn Automation
Advancing Work with the Power of AI™

RANDY LOWMAN

Managing Director

o. 540-352-3250
c. 540-529-2970
rlowman@laketurn.com
20 E College Street #297
Rocky Mount, VA 24151
LakeTurnAutomation.ai