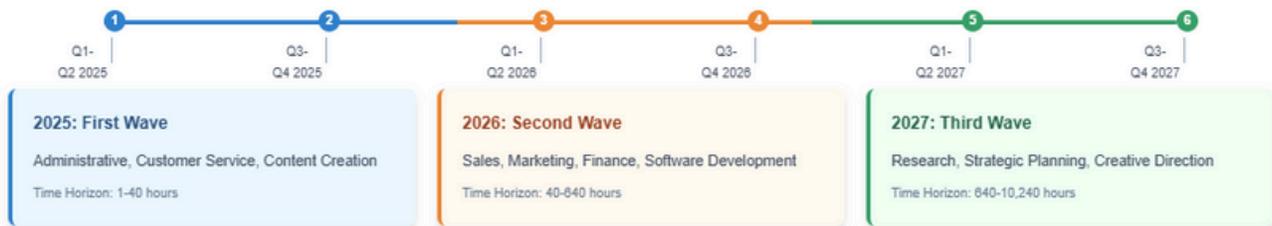


THE EXPONENTIAL REPLACEMENT CURVE

When Different Job Titles Will Be Fully Automated by AI

Based on METR's research on AI task completion time horizons, "The Open-Prem Inflection Point" analysis, and David Sacks' projections on multiplicative AI growth.



Time Period	AI Capability (Time Horizon)	Human Task Equivalent	Jobs Affected
Q1-Q2 2025	1-4 hours	Simple professional tasks	Data Entry, Administrative Support
Q3-Q4 2025	10-40 hours	Full week of professional work	Customer Service, Content Creation
Q1-Q2 2026	40-160 hours	Month-long professional project	Sales, Marketing, Financial Analysis
Q3-Q4 2026	160-640 hours	Quarter-long strategic initiative	Software Development, Project Management
Q1-Q2 2027	640-2,560 hours	Year-long comprehensive project	Research & Development, Strategic Planning
Q3-Q4 2027	2,560-10,240 hours	Multi-year research program	Executive Functions, Creative Direction



Data sources: METR (2025), "The Open-Prem Inflection Point" (Borish, 2025), David Sacks' Million-X Growth Model (2025)

AI IS GETTING EXPONENTIALLY BETTER AT COMPLETING COMPLEX TASKS

MULTIPLE JOB CATEGORIES WILL BE ELIMINATED BETWEEN 2025-2027

OPEN-SOURCE AI WILL ACCELERATE JOB LOSS

THE 1,000,000X FACTOR (DAVID SACKS, 2025)

Executive Summary

This report presents a straightforward analysis of when artificial intelligence will likely replace different types of jobs based on three major research sources: [METR's "Measuring AI Ability to Complete Long Tasks,"](#) ["The Open-Prem Inflection Point,"](#) and [David Sacks' recent projections on AI growth rates.](#)

The data from these sources reveals a sobering reality: AI capabilities are advancing much faster than most people realize, and job displacement will happen within months to years, not decades. Here's what the combined research shows:

- **AI is getting exponentially better at completing complex tasks** - The time required for human professionals to do tasks that AI can now handle is doubling every 7 months, and may accelerate further due to multiplicative improvements in algorithms, chips, and computing power.
- **Multiple job categories will be eliminated between 2025-2027** - Entry-level administrative, customer service, and content creation roles will reach replacement thresholds by late 2025. Mid-level positions in sales, finance, and programming will follow by mid-2026, with even senior specialized positions becoming replaceable by early 2027.
- **Open-source AI will accelerate job loss** - The cost advantage of open-source AI deployment is growing rapidly, from 4.2x cheaper than proprietary APIs in early 2025 to 22.4x cheaper by late 2027, making AI replacement economically viable across many more industries.
- **The 1,000,000x factor** - If David Sacks' predictions about multiplicative growth are accurate (3-4x improvement annually across algorithms, chips, and compute), AI capabilities will increase by approximately 1,000,000x in just four years.

This report doesn't sugar-coat the implications. The timelines presented here aren't speculative fearmongering, but the mathematical result of current growth trends. If you work in one of the affected fields, you have months to years—not decades—to prepare for significant disruption in your career.

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1. The Speed of AI Advancement: What Current Research Shows

1.1 The Time Horizon Framework

Recent research from METR has established a rigorous way to measure AI capabilities that's relevant to everyday workers. Their "time horizon" metric measures how long tasks take human experts to complete that AI can now do with 50% reliability.

As of early 2025, leading AI systems like Claude 3.7 Sonnet and GPT-4o have a time horizon of approximately 50 minutes. This means these AIs can reliably handle tasks that would take a skilled human professional about 50 minutes to complete.

But here's the alarming part: this time horizon has been doubling approximately every 7 months. That's an exponential growth rate of roughly 3.5x annually.

1.2 The Three Accelerants to AI Growth

According to investor David Sacks, AI is improving along three dimensions simultaneously:

1. **Algorithm improvements:** Models are becoming 3-4x more capable each year
2. **Chip performance:** Each new generation of AI chips is 3-4x more powerful
3. **Compute availability:** The amount of computing power being deployed is expanding 3-4x annually

These three factors multiply together rather than merely adding. If algorithms improve by 100x over four years, chips improve by 100x, and available compute expands by 100x, the result is a 1,000,000x total improvement in AI capabilities.

1.3 Open-Source Models Will Make AI Deployment Much Cheaper

"The Open-Prem Inflection Point" research shows that open-source AI models already demonstrate 85-90% of the capabilities of proprietary solutions at a fraction of the cost. Models like DeepSeek-V3, Llama 3.3, and Mistral are rapidly approaching parity with commercial offerings.

The cost differentials are dramatic and growing:

Time Period	Proprietary API Costs (per 100M tokens)	Open-Source Deployment Costs (per 100M tokens)	Cost Ratio
2025 Q1-Q2	\$1,000	\$240	4.2x
2025 Q3-Q4	\$700	\$120	5.8x
2026 Q1-Q2	\$490	\$60	8.2x
2026 Q3-Q4	\$343	\$30	11.4x
2027 Q1-Q2	\$240	\$15	16x
2027 Q3-Q4	\$168	\$7.5	22.4x

Cost differentials driven by MoE architectures, advanced quantization techniques, and hardware amortization in on-premises deployments

● Lower Advantage
 ● Medium Advantage
 ● High Advantage

2. Here's When AI Will Be Able to Do Your Job

Based on the combined research data, here's when AI will be technically capable of performing different levels of work:

Time Period	Projected Time Horizon	Human Task Equivalent
2025 Q1-Q2	● 1-4 hours	Simple professional tasks
2025 Q3-Q4	● 10-40 hours	Full week of professional work
2026 Q1-Q2	● 40-160 hours	Month-long professional project Key Milestone
2026 Q3-Q4	● 160-640 hours	Quarter-long strategic initiative
2027 Q1-Q2	● 640-2,560 hours	Year-long comprehensive project Major Threshold
2027 Q3-Q4	● 2,560-10,240 hours	Multi-year research program

Based on multiplicative growth across algorithms (3-4x annually), chips (3-4x per generation), and compute availability (3-4x annual scaling)

● 2025
 ● 2026
 ● 2027

3. Job Categories and When They'll Be Replaced

3.1 First Wave: 2025

These jobs will be technically replaceable by AI in 2025, with economic viability for replacement following shortly after:

Administrative and Support Roles

- Technical capability threshold: Q2 2025
- Economic viability threshold: Q3 2025
- Affected jobs: Data entry operators, administrative assistants, schedulers, file clerks

Customer Service

- Technical capability threshold: Q3 2025
- Economic viability threshold: Q4 2025
- Affected jobs: Customer service representatives, help desk operators, basic technical support

Content Creation

- Technical capability threshold: Q3 2025
- Economic viability threshold: Q4 2025
- Affected jobs: Junior copywriters, content creators, basic social media managers, email marketers

3.2 Second Wave: 2026

Sales and Marketing

- Technical capability threshold: Q1 2026
- Economic viability threshold: Q2 2026
- Affected jobs: Sales representatives, market analysts, campaign managers, media buyers

Financial Analysis and Accounting

- Technical capability threshold: Q2 2026
- Economic viability threshold: Q3 2026
- Affected jobs: Bookkeepers, accountants, financial analysts, compliance specialists

Software Development

- Technical capability threshold: Q2 2026
- Economic viability threshold: Q3 2026
- Affected jobs: Junior-to-mid-level programmers, QA testers, documentation writers

3.3 Third Wave: 2027

Research and Development

- Technical capability threshold: Q4 2026
- Economic viability threshold: Q1 2027
- Affected jobs: Research assistants, literature reviewers, lab technicians, data scientists

Strategic Planning and Management

- Technical capability threshold: Q1 2027
- Economic viability threshold: Q2 2027
- Affected jobs: Middle managers, project managers, business analysts, consultants

Creative Directors and Senior Specialists

- Technical capability threshold: Q2 2027
- Economic viability threshold: Q3 2027
- Affected jobs: Senior creative professionals, specialized technical experts, department heads

4. What This Means For You

4.1 If You Work in a High-Risk Category (2025 Replacement)

If you're in administrative support, customer service, or entry-level content creation, the data suggests your job role will likely be replaced by AI within the next 12-18 months. This isn't speculation—it's the mathematical projection based on current AI advancement rates.

What You Should Do:

- Start learning skills in areas that will be harder for AI to replace (see Section 5)
- Consider how your current job knowledge could transfer to AI oversight or governance roles
- Begin exploring career transitions immediately, as you have the shortest timeframe

4.2 If You Work in a Medium-Risk Category (2026 Replacement)

Those in sales, marketing, finance, or software development have a bit more time, but not much. By mid-to-late 2026, AI will likely be capable of handling most of the tasks in these fields at a fraction of the cost of human workers.

What You Should Do:

- Develop deeper expertise in areas requiring human judgment, creativity, and ethical reasoning
- Consider moving up to more strategic roles that will be automated later
- Start developing side skills now while your current position is still viable

4.3 If You Work in a Lower-Risk Category (2027 Replacement)

Even if you're in research, strategic management, or other specialized fields, the timeline for disruption is still measured in years, not decades. By 2027, even complex roles requiring years of experience and education will face AI replacement pressure.

What You Should Do:

- Focus on uniquely human capabilities like complex ethical judgment, novel problem framing, and interdisciplinary synthesis
- Consider how you might work alongside increasingly capable AI systems
- Position yourself in fields where human oversight of AI will be necessary for the longest time

5. Skills That Will Remain Valuable Longest

Based on the research, these capabilities are likely to remain valuable for humans even as AI advances:

Complex Value Judgment:

- Ethical reasoning in ambiguous situations
- Balancing competing interests of multiple stakeholders
- Cultural and social nuance interpretation

Novel Problem Identification:

- Identifying problems that haven't been recognized yet
- Interdisciplinary synthesis across domains
- Reformulating challenges in more productive ways

Human-to-Human Connection:

- Building authentic trust and rapport
- Navigating complex social and emotional terrain
- Cross-cultural empathy and understanding

AI Oversight and Governance:

- Understanding AI limitations and failure modes
- Ensuring AI systems operate ethically and safely
- Translating between human and AI communication styles

6. Personal Action Plan

The data makes clear that career disruption from AI is not a future possibility but an imminent reality. Here's a straightforward action plan:

1. **Assess your vulnerability timeline** based on your current job category
2. **Develop a transition strategy** appropriate to your replacement timeframe:
 - 2025 replacement: Immediate career shift needed
 - 2026 replacement: Begin transition while employed
 - 2027 replacement: Strategic repositioning over 1-2 years
3. **Focus on gaining skills in:**
 - AI collaboration and supervision
 - Complex ethical reasoning
 - Novel creative thinking
 - Human emotional intelligence
4. **Consider career paths that will remain valuable longer:**
 - AI oversight and governance
 - Human-to-human services requiring trust and empathy
 - Novel problem identification and framing
 - Complex ethical and social domains

7. Conclusion: This Is Happening Faster Than Most People Realize

The combined data from METR's time horizon research, open-source AI economic analysis, and multiplicative growth models presents a clear and sobering picture: AI replacement of human jobs will happen much faster than conventional wisdom suggests.

This isn't fearmongering or speculation. It's the mathematical result of current growth trends that are well-documented and accelerating. While many public discussions frame AI job displacement as a gradual process that might unfold over decades, the data suggests a much more compressed timeline:

- **Entry-level jobs in multiple categories:** Replaced within 1-2 years
- **Mid-level professional roles:** Replaced within 2-3 years
- **Senior specialized positions:** Replaced within 3-4 years

The acceleration is driven by the multiplicative effects of algorithm improvements, chip advancements, and expanding compute availability. This report isn't designed to cause panic, but to present the unvarnished facts as indicated by the research. The window for adaptation is measured in months to a few years, not decades. For individuals in affected fields, the time to prepare for this transition is now.

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This white paper was prepared by a leading AI Strategist David Borish at Trace3, bringing 25 years of experience in Technology & Innovation to the analysis of enterprise AI trends. As a frequent Keynote Speaker on emerging technologies and a Lecturer on AI at NYU, the author mentors the next generation of AI practitioners while maintaining an active presence in the industry. The insights presented draw on extensive experience in the technology and specifically Artificial Intelligence, as documented in the author's recent book "AI 2024" and regular contributions to "The AI Spectator", MarketWatch, The Canadian Press, and other media outlets worldwide.



Times Square billboard featuring David Borish AI Strategist from Trace3, photographed during Trace3 New York Launch event. 2 Times Square, New York, NY. March 20, 2025