Marketplace Report

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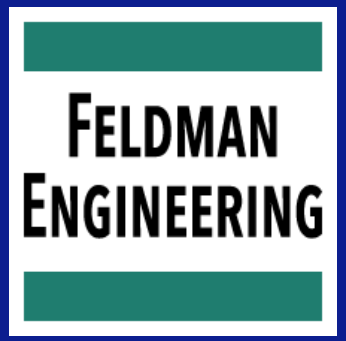


AI

Does anything else matter?

Oh, maybe the annual Socket Market update…

Objective – Agenda

Objective: Provide an objective view of AI in the current landscape. To do this, we start by looking backwards; humans have been in search of Artificial Intelligence since before the dawn of the computing age. Where are we, really? And where are we likely to go?

Agenda:

AI: A historical perspective

AI vs .com “Bubble”

AI and the Job Market

Conceptual & Theoretical Foundations (pre-1950)

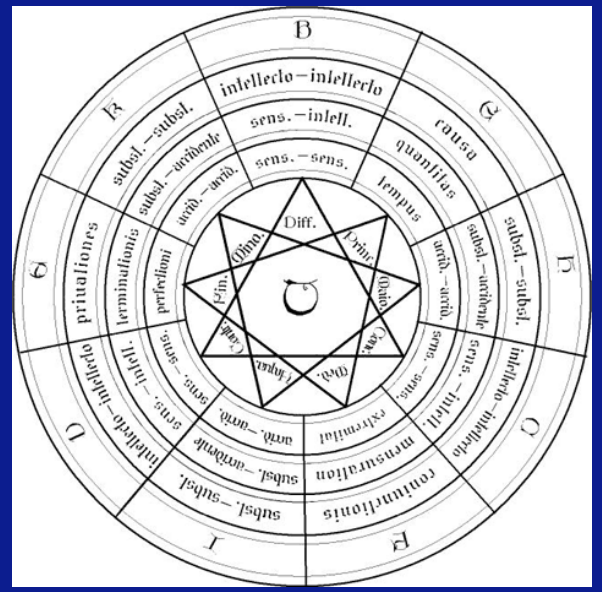
1308: Catalan poet & theologian Ramon Lull creates *Ars generalis ultima*

1700s: Philosophers Leibniz and Hobbs debate whether rational thought can be reduced to calculation (see PSSH, 1975)

1936: Alan Turing theorizes an abstract model of computation (the Turing machine), laying the groundwork for digital computers

1943: Pitts and McCulloch describe artificial neural networks to perform basic logic operations

1945: Vanevar Bush publishes “As We May Think”, predicting computers that assist intellectual activity



The Ultimate General Art; Logical deductions made in a mechanical - rather than a mental - way.

Source: https://en.wikipedia.org/wiki/Zairja

The Birth of AI (1950s)

1950: Alan Turing publishes “Computing Machinery and Intelligence”, introducing the Turing Test to measure machine intelligence

1951: Minski and Edmonds build SNARC, the first neural network machine

1955: Simon, Newell, and Shaw develop the “Logic Theorist”, often considered the first AI program

1945: Vanevar Bush publishes “As We May Think”, predicting computers that assist intellectual activity

1956: John McCarthy coins the phrase “artificial intelligence” at “The Dartmouth Workshop”

1958: McCarthy develops LISP programming language.

Neural Analog Reinforcement Calculator (SNARC)

Source: https://historyof.ai/snarc/

Early Progress & Challenges (1960s – 1999)

1966: Professor Weizenbaum creates The MIT Chatbot - ELIZA

1970s-’80s: *AI Winter*. Funding dries up due to slow progress in neural networks, though research continues

1990s: The shift from “rules based” to data-driven models – the birth of “Machine Learning” and major progress in “Backpropagation”

IBM’s Deep Blue beats Garry Kasparov

Deep Learning Revolution (2000-2020)

Massive datasets and growing GPU horsepower enabled the growth of complex "Deep Learning" models.

2006: Geoffrey Hinton and colleagues co-published a paper on **deep learning** techniques, reviving interest in neural networks.

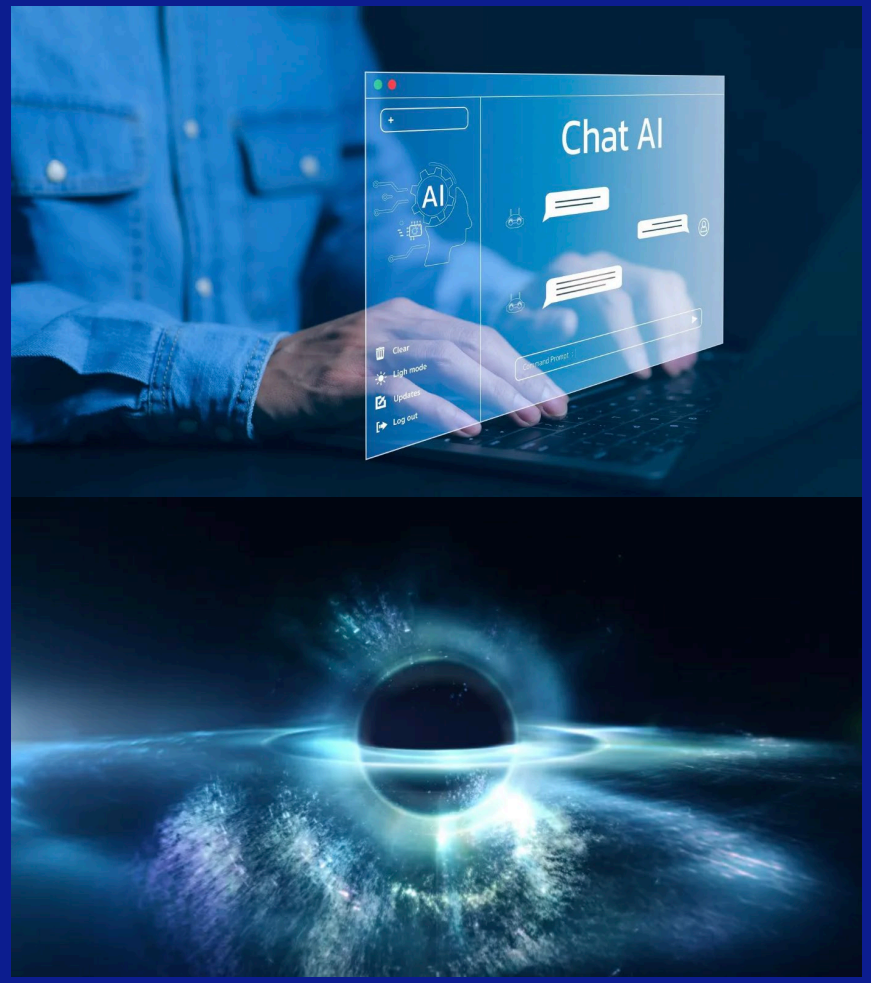
2011: IBM's Watson wins *Jeopardy!*

2012: Google/Stanford's **Alexnet** wins the important **Imagenet** competition

2016: Google's DeepMind AlphaGo beats human world class Go champion decades before anticipated

2017: Google introduces the **transformer architecture**

The Generative AI Era (2021 – Present)



The focus has shifted to large-scale, general-purpose models that generate human-like content.

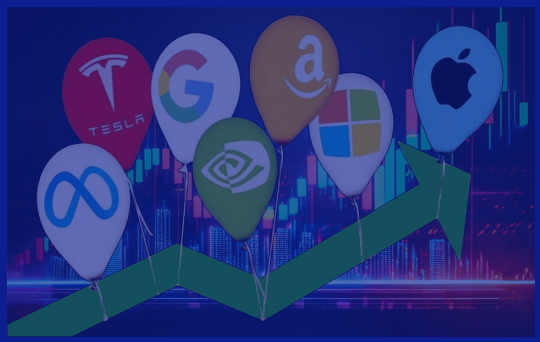
- **2025**: **OpenAI** releases ***ChatCPT*** bringing generative AI to the public awareness
- **2024+**: AI is moving towards **agentic AI** where systems are granted autonomy to carry out multi-task steps across various services
- **2025**: ***Forbes*** magazine publishes an important article on the "**Big Bang**" in AI

Debunking a myth: The Tech Sector Investors are too bullish on AI’s promise

AI Bubble vs the “.com” Bubble

Similarities: The “Bubble” Dynamics

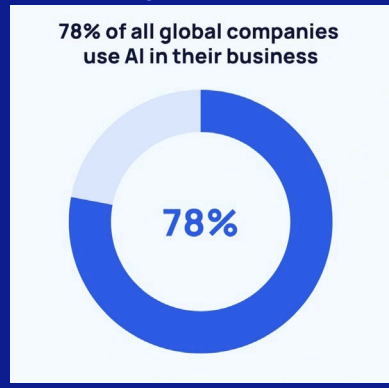
- Excessive Capital Expenditure
  - ***1999:*** over-investment on premature internet infrastructure
  - ***2025:*** Tech giants (Microsoft, Alphabet, Meta, Amazon) spending $100s Billions on data centers and GPUs
- Market Concentration
  - Like 2000, market performance is highly concentrated. In 2025, the “magnificent seven” stocks account for a larger share of the S&P 500 than the top companies did during the dot-com peak
- Irrational Exuberance & Hype
  - 2025 feels like 1999. Pre-profit AI startups score unicorn valuations FOMO driving investment decisions.



Source: hexmarkets

Differences: The “Fundamental” Reality

- Earnings vs. Hype
  - ***1999:*** Companies valued on “eyeballs” and website traffic, not profits.
  - ***2025:*** AI leaders (e.g.,, Nvidia) producing record-setting earnings & revenue growth.
- Player Quality
  - The 2000 bubble was driven by unproven, cash-burning start-ups (Pets.com). The 2025 AI bubble is led by cash-rich, trillion-dollar “hyperscalers”
- Valuation Multiples
  - 2025 valuations are not as extreme as the dot-com peak.
- Utility & Integration
  - By 2025, AI is deeply integrated into workflows (e.g., coding assistants, marketing automation). 78% of companies report use of some form of AI.



Gartner, 10/25

Financial Fundamentals: 2000 vs. 2025

Metric	Dot-com Bubble (Peak 2000)	AI Bubble (2025-2026)
Profitability	Only **14%** of companies were profitable	Leading firms (Nvidia, Microsoft, Google) are highly profitable
Forward P/E ratio	Nasdaq-100 reached **~60x**	Nasdaq-100 sat at **~26x** (late 2023) to **~27x** for megacaps
Cash Flow	Many had negative cash flow and were “burning through” money	Megacaps have enormous cash flows (e.g., Nivdia’s $25B/quarter)
Market Concentration	Top 7 companies were **19%** of S&P 500.	Top 7 companies are **30-37%** of S&P 500.

Key Points of Contrast

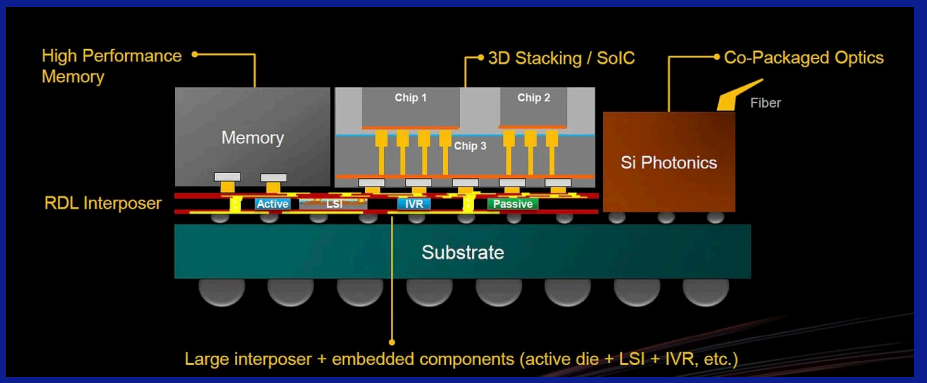
- Customer Base Stability
  - ***2000:*** Cisco sold to fragile start-ups that went bankrupt when funding dried up.
  - ***2025:*** Nvidia's primary customers are cash-rich giants like Microsoft, Amazon, and Meta who can sustain years of experimentation
- Infrastructure Utility
  - Fiber optic cable (lead during the dot-com era) have become the backbone of the modern internet.
    - Critics of the AI bubble argue that spending on GPUs has fewer applications … and face rapid obsolescence
- Revenue Gap
  - Disconnect between investment and returns. Five major tech firms invested ~$56B in AI infrastructure over 2 years but generated only $35B in AI-related revenue

Emerging Challengers

- OpenAI & Anthropic
  - Both are major candidates for potential IPOs in 206. Anthropic recently released its Claude 4.6 (Opus) model and “Claude Cowork”
- Perplexity AI
  - A rising start-up in the search and agentic space, recently securing a $400M partnership with Snapchat for search 2026 integration
- Infrastructure Alternatives
  - Arm Holdings is expected to benefit from the inference-driven CPU demand
  - Nebius and TSMC are highlighted as essential physical infrastructure plays
- Mid-Cap Picks
  - Analysts are watching UiPath (PATH), Five9 (FIVN), Qualsys (QLYS), Teradata (TDC), and BlackBerry (BB) as potential game changers

Disruptive Forces

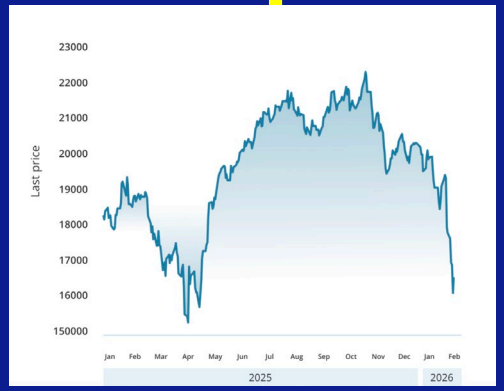
- The Copper Wall
  - The physical limitations restricting data move-ment through chips … creating opportunities for companies offering interconnect solutions
- Agentic AI
  - Autonomous AI Agents (e.g., OpenClaw, Claude Cowork) is moving from experimental software to “autonomous execution”
- Software Sector De-rating – Citrini Research
  - Pundits – who may not know what they are talking about – have driven broad sell-offs of software companies with investors fearing AI-powered competitors will supplant established business models
- Labor Disruption
  - Amazon, Walmart, & more proactively froze or slashed payrolls in anticipation of AI-driven productivity gains



Source: SEMIVISION: TSMC’s Silicon Photonics Architecture

February 2026: Anthropic Shock & Citrini Report

- Software Sector ”Freefall”
  - iShares Software ETF plummeted roughly 10% in 2/26. Microsoft & Oracle erased $270B and $60B of market cap, respectively
- ”Anthropic Shock”
  - Direct confrontation between the White House and Anthropic driven by Anthropic’s refusal to grant the military unfettered access to its models
- The ”AI Scare” Trade – Citrini Research
  - Economic report goes viral imagining a total evaporation of white-collar work … triggered an 800-point drop in the dow on a single Monday (2/26)
  - This report was compounded when Block (formerly Square) announced a 40% workforce reduction attributed to AI efficiency; Block stock surged 14% while broader software stocks sank on fears of mass labor displacement.



Source: empower.com/investment-insights February, 2026

Financial Impact Summary (February 2026)

Entity	Stock Impact (2/26)	Market Cap Change	Rationale
Microsoft (MSFT)	-9%	-$270B	General software de-rating / AI disruption fears
Oracle (ORCL)	-13%	-60B	Broader sector sell-off
Block (SQ)	+14%	N/A	40% headcount reduction due to AI
Nvidia (NVDA)	-4%	N/A	Post-earnings slide; sustainability of hyperscaler capex
Anthropic	N/A (private)	N/A	Designated “supply chain risk” by Pentagon

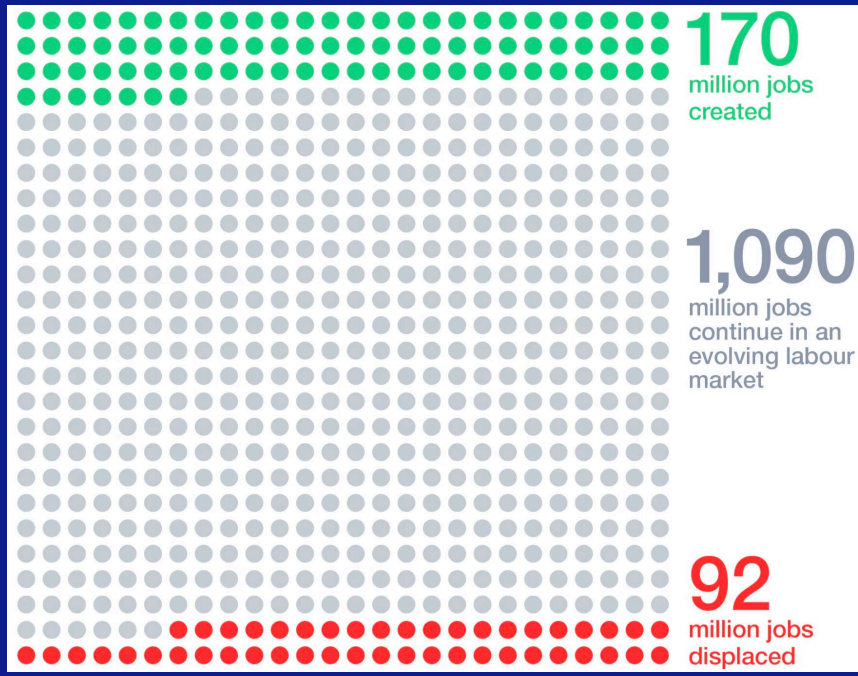
AI and the Job Market

The Industrial Revolution Timeline

Revolution	Primary Driver	Impact
1st (late 1700s)	Steam & Water Power	Evolve from hand production to machines and factories
2nd (late 1800s)	Electricity and Assembly Lines	Mass production and global telecommunications
3rd (1960s)	Computers and Semiconductors	Automation of simple tasks; the rise of the internet
4th (Present)	Artificial Intelligence and massive data	Blurring lines between the physical, digital, and biological

What are the Prognosticators Saying

- World Economic Forum predicts overall job growth – but changing focus of required skills
- AI is a disruptive force
  - Some industries will be most impacted:
    - Healthcare
    - Consumer Customer Service & Experience
    - Banking, Financial Services, & Insurance (BFSI)
    - Logistics
    - Retail
    - Cybersecurity
    - Transportation
    - Marketing
    - Defense
    - Lifestyle



Workforce Shift – Execution to Oversight

From human execution to human-led orchestration.

- From performing manual tasks to **curating and directing AI outputs**.
  - **Software Engineering:** From manual coding to "scaffolding," where AI generates code and humans focus on system design and high-level debugging.
  - **Content Creation:** From writing first drafts to strategic editing and brand alignment.
  - **Legal & Finance:** Automating document review and basic bookkeeping, allowing professionals to focus on complex advisory work and relationship

Workforce Shift – High-Exposure vs Resiliency

Cognitive, non-routine tasks in white-collar sectors will see the most disruption.

- **Most vulnerable:** Data entry, administrative support, payroll, and basic customer service. Entry-level "grunt work" is particularly at risk, which may disrupt traditional career ladders.

- **Most resilient:** Careers requiring physical dexterity (electricians, plumbers), complex empathy (nursing, therapy), or high-stakes judgment (surgeons, senior advocacy)

Workforce Shift – Emerging Categories

The transition will create millions of new positions—as many as **97 million globally by 2030**—that didn't exist.

- AI & Core Infrastructure – build, maintain, refine
  - AI | ML Engineers, Data Engineers & Curators, AI Research Scientists, NLP & Computer Vision Engineers
- AI Interface and Orchestration – AI as coworker
  - Prompt Engineers, Human | AI Interaction Designers, AI Agent Managers, AI Solutions Architects
- Governance, Ethics, and Compliance – Anti-bias and compliance
  - AI Ethicists & Consultants, Algorithmic Bias Auditors, AI Compliance & Policy Professionals w
- AI Augmented Specialized Roles – Human expertise supercharged by AI
  - AI Product Managers, Digital Health & Telecare Specialists, FinTech Engineers, Sustainable AI Engineers

AI Future-Proofing – AI Specific Domain Expertise

Master AI-Specific Domain Expertise

- Lead the implementation of AI within your current role

Embrace AI-Infused EDA Tools

- Master next-generation EDA platforms (e.g., Synopsys or Cadence) that use AI for Design Space Exploration (DSE)

Hardware-Software Co-Design

- Develop skills in optimizing hardware accelerators (GPUs, TPUs) so they can efficiently execute AI algorithms

Yield & Process Optimization

- Learn to apply ML for defect detection and predictive maintenance in fab to improve yield

AI Future-Proofing – Build a "Bridge Skillset"

Programming and Frameworks

- Abandon C++ & Verilog in favor of Python and master frameworks like PyTorch or TensorFlow

Data Handling

- Get proficient with Snowflake or BigQuery to manage the massive datasets generated during chip fab and teste

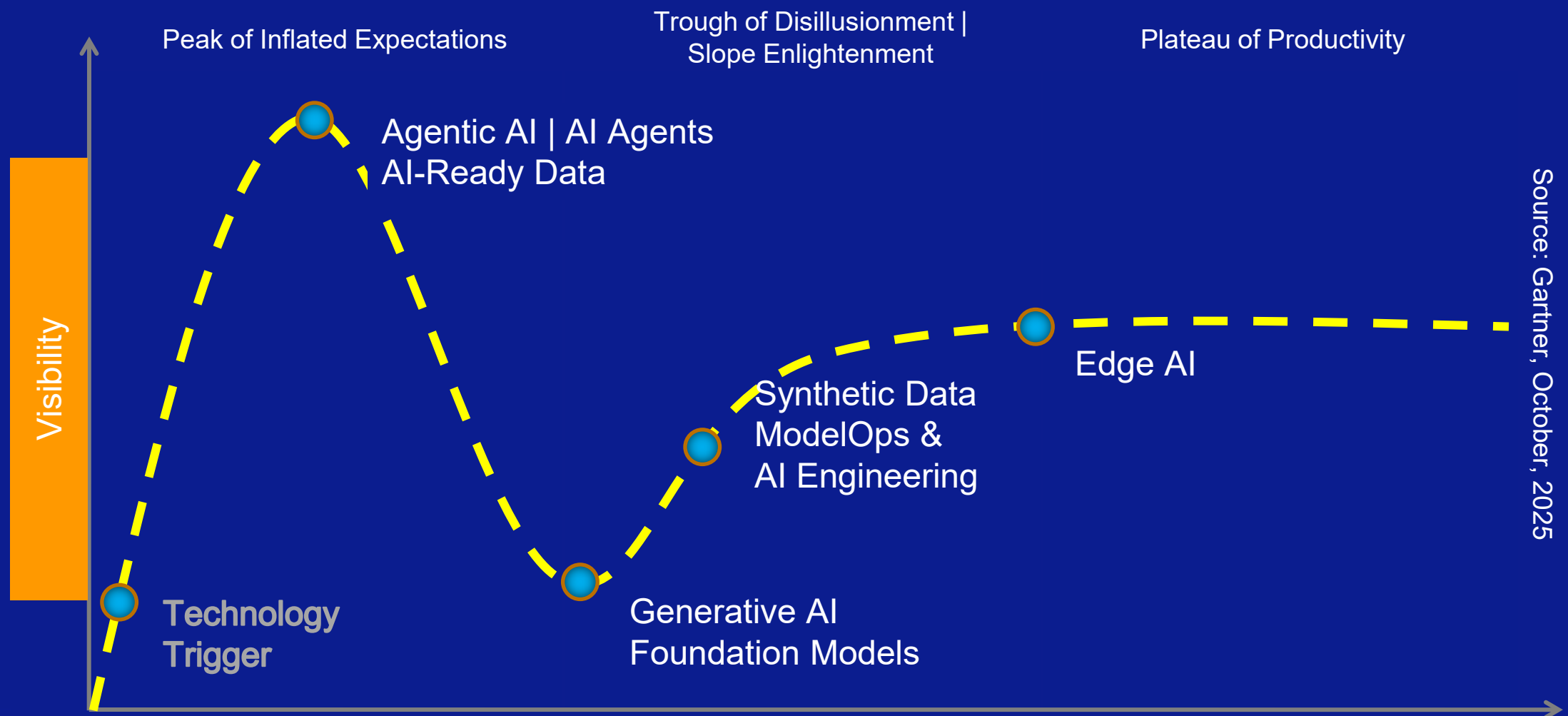
AI Agents and LLMs

- Explore how LLMs can automate technical documentation and accelerate Verilog/HDL code generation

AI Future Proofing – 12 Month Roadmap

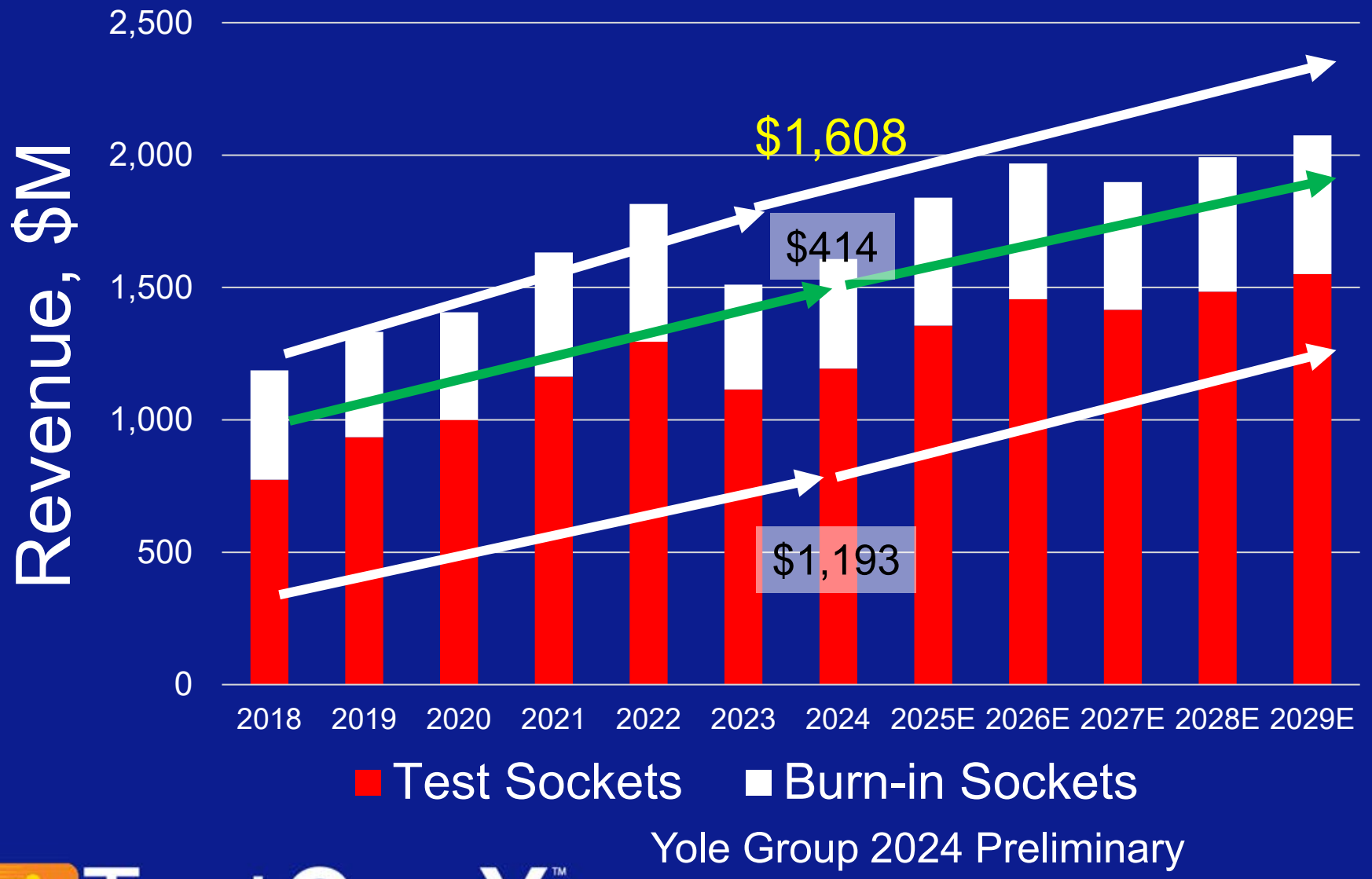
PHASE	FOCUS	KEY ACTIONS
Months 1-3	Foundations	Learn Python for Data Science & statistics; earn a ML certification
Months 4-6	Specialization	Enroll in programs like IEEE's AI Integration in Semiconductor Manufacturing
Months 7-9	Practical Application	Apply ML models to a semiconductor dataset (e.g., thermal sensor data or yield logs)
Months 9-12	Portfolio & Visibility	Document your AI hardware projects on Github and LinkedIn

Gartner's Hype Cycle – The Period of AI Reckoning



Socket Market

Test and Burn-In Socket Market

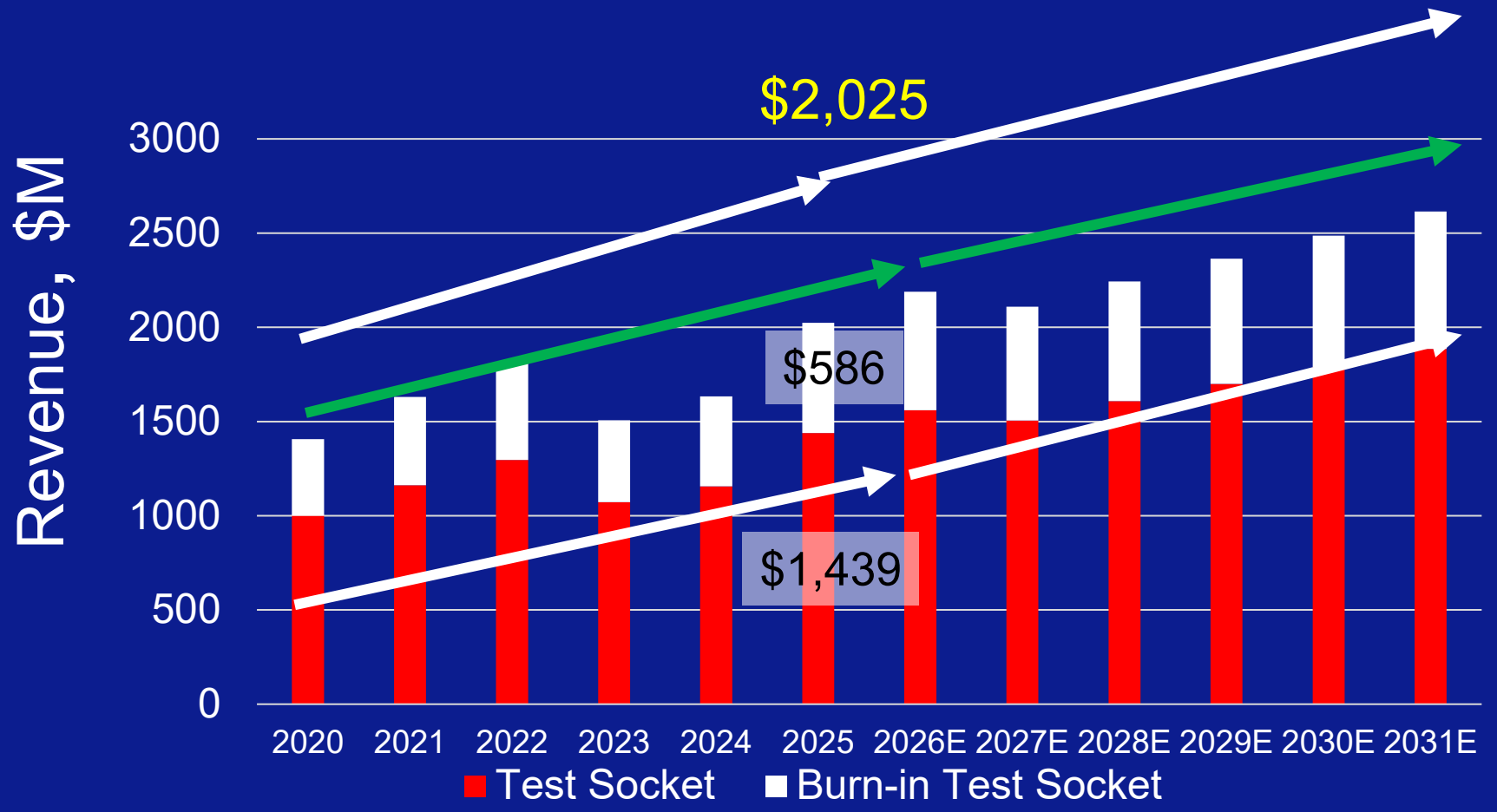


Yole Group 2024 Preliminary

	2018-2023 CAGR	2024-2029 CAGR
Overall	7.6%	5.4%
Burn-in	-0.8%	4.8%
Test	5.0%	5.2%

Forecast vs Actual
For 2024:
Test ($147M)
Burn-in ($116M)

Test and Burn-In Socket Market



	2020-2025 CAGR	2024-2029 CAGR
Overall	7.6%	3.6%
Burn-in	7.5%	3.5%
Test	7.6%	3.9%

Forecast vs Actual
For 2025:
Test +$83M
Burn-in +$102M
Overall +185M

Yole Group 2025 Preliminary

Top Test & Burn-in Vendors 2024

Rank	Overall	Test Socket	Burn-in Socket
1	Yamaichi	WinWay	Enplas
2	WinWay	LEENO	Yamaichi
3	LEENO	Cohu	BOYD
4	Cohu	Yamaichi	Micro Contact Solution
5	Enplas	Advantest	Okins

Yole Group 2024

Top Test & Burn-in Vendors 2024 to 2025

Preliminary

Rank	Overall 24	Overall 25	Overall 25
1	Yamaichi	LEENO	Yamaichi
2	WinWay	Yamaichi	LEENO
3	LEENO	Smiths Interconnect	WinWay
4	Cohu	Enplas	Smiths Interconnect
5	Enplas	WinWay	Enplas
	Yole Group 2024	Yole Group 2025 prelim	TechInsights 2025 prelim

Preliminary

Top Test & Burn-in Vendors 2025

Rank	Overall	Test Socket	Burn-in Socket
1	LEENO	LEENO	Yamaichi
2	Yamaichi	WinWay	Enplas
3	Smiths Interconnect	Smiths Interconnect	BOYD
4	Enplas	ISC	Micro Contact Solution
5	WinWay	Cohu	FT Device

Yole Group 2025 Preliminary

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    - Panchami Phadake!

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