

The AI Bubble

Why the Hype Will Burst and the Real Revolution Will Survive

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Editorial note: Market valuations, model performance figures, and policy details in fast-moving technology sectors can change quickly. Before any future edition, time-sensitive figures should be checked against current primary sources.

Dedication

For my family, who taught me to see beyond the hype and remain grounded when the world becomes noisy.

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A Note to the Reader

This is not a technical manual about artificial intelligence. It is a clarity book for leaders, investors, entrepreneurs, educators, consultants, and thoughtful readers who know AI matters but refuse to be seduced by hype. The central argument is simple: AI may be surrounded by a bubble, but it is not merely a bubble. Some valuations will collapse. Some products will disappear. Some promises will be forgotten. Yet the real revolution will survive when AI becomes less magical, more useful, and more deeply integrated into disciplined human work.

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Preface

In the late 1990s, I was serving as Chief of Marketing for an internet company in Indonesia. I vividly remember the fever of the dot-com era: everyone wanted to launch a website, from small entrepreneurs to celebrities who dreamed of their own online ventures. It was a gold rush, but without the gold. Startups mushroomed overnight, fueled by hype and headlines rather than sustainable business models. And just as quickly, many of them vanished when the bubble burst.

Today, I see the same fever—only bigger. This time, the magic word is AI. Founders, corporations, investors, even governments: everyone wants a piece of the action. Just like the dot-com boom, ambition runs high, money flows fast, and the air is thick with promises of world-changing breakthroughs. Yet behind the dazzling headlines and billion-dollar valuations, the same question lingers: how much of this is real, and how much is illusion?

This book is about that tension: the hype that inflates expectations, the hope that points to real transformation, and the hard reality that eventually tests every promise. It explores why bubbles form, who inflates them, and what lessons we can learn from history. It looks at the extraordinary potential of AI, but also its limits, costs, and risks. Most importantly, it aims to help you—whether you are an entrepreneur, an investor, a policymaker, or simply a curious reader—separate fact from fiction in one of the most consequential technological waves of our time.

I invite you to read on, not to fear the bubble, but to understand it. Because while bubbles burst, the future does not end with them—it begins after.

Chapter 1 – Déjà vu of a Bubble

1.1 Opening Hook: Déjà vu of a Bubble

In the late 1990s, I sat at the center of the storm. As Chief of Marketing for an internet company in Indonesia, I watched the dot-com bubble inflate in real time. Every day, a new startup announced its grand vision. Celebrities wanted their own websites, entrepreneurs scrambled to secure domain names, and investors poured money into ventures that often had little more than a catchy name and a PowerPoint deck. It was a gold rush without much gold.

Then, almost overnight, the dream collapsed. Most of those companies disappeared, leaving behind little more than headlines and hard lessons. Only a handful—Amazon, Google—survived and transformed the world. The rest became cautionary tales, reminders that not every boom signals a sustainable revolution.

Fast forward to today, and the mood feels eerily familiar. This time, the magic word isn't dot-com—it's AI. Everyone, from global corporations to fledgling startups, wants to stake their claim. Venture capitalists are writing billion-dollar checks, media outlets are brimming with breathless stories, and founders are rebranding ordinary products as "AI-powered" to capture the market's attention. Governments, too, are joining the race, driven by a fear of missing out in what some call the "new space race."

But behind the enthusiasm lies a sobering question:

Is AI a true revolution, or a bubble waiting to correct itself? That is the question this book sets out to explore.

1.2 Defining a Bubble

Economists have a simple but powerful definition of a bubble: it occurs when prices or valuations rise far beyond their intrinsic value, inflated not by fundamentals but by speculation and collective euphoria. In other words, it's when belief outpaces reality.

Bubbles follow a familiar rhythm. They begin with a breakthrough idea—something new, exciting, and full of promise. The early success stories attract attention, and soon the narrative snowballs. Investors rush in, not wanting to miss the "next big thing." Media outlets amplify the excitement, entrepreneurs pile in with hastily built ventures, and consumers buy into the dream. The result is an ecosystem fueled more by hype than by sustainable value creation.

Then comes the breaking point. At some stage, expectations collide with reality. Revenues fail to match projections, products underdeliver, or external shocks

force a reckoning. What was once seen as unstoppable momentum suddenly unravels. The balloon, once inflated with dazzling speed, bursts with equal force.

A simple image captures this dynamic: imagine a balloon being blown up. With every breath—every headline, every investment, every ambitious pitch—the balloon grows larger. From the outside, it looks impressive. But inside, it is only air. And like all balloons, it has a limit. Push it too far, and the collapse is sudden and dramatic.

This is the nature of bubbles. They are not just financial phenomena, but psychological ones. They reveal how collective optimism, fear of missing out, and herd behavior can drive markets, industries, and even entire societies to suspend disbelief—until reality inevitably reasserts itself.

1.3 Historical Bubbles as Lessons

History is full of bubbles. They appear whenever excitement about a new idea outruns the sober logic of value. While each bubble has its own context, the underlying mechanics are strikingly similar.

Tulip Mania (1637). Often described as the first recorded economic bubble, Tulip Mania swept through the Dutch Republic in the 17th century. Tulip bulbs—rare, exotic, and fashionable—were traded at prices that exceeded the cost of a house. At the height of the craze, contracts for bulbs changed hands dozens of times before the flowers were even planted. When confidence collapsed, prices plummeted, leaving many in financial ruin. Lesson: novelty can intoxicate markets, but novelty alone is not value.

The Dot-com Bubble (1995–2000). The internet promised to change everything, and in many ways it did. But the late 1990s saw a rush of companies that had little more than a website and a vision. Capital poured in, IPOs multiplied, and the NASDAQ soared. When the bubble burst, billions of dollars in paper wealth evaporated. Yet the survivors—Amazon, Google, eBay—built enduring businesses that eventually transformed commerce and culture. Lesson: while bubbles destroy, they also incubate. Out of the wreckage, the most resilient and valuable firms emerge stronger.

The Crypto Bubble (2017, 2021). More recently, cryptocurrencies and NFTs became the darlings of investors and speculators. Stories of overnight millionaires fueled massive inflows of capital. Prices of digital assets skyrocketed, not because of widespread utility, but because of collective belief. When reality set in—questions about regulation, security, and real-world applications—values collapsed. Still, blockchain as a technology continues to evolve, with some real use cases enduring beyond the hype. Lesson: even in collapse, fragments of innovation persist.

Across these episodes, a pattern is clear: a new technology sparks imagination → hype and capital surge → the bubble inflates → the crash arrives → survivors rebuild on firmer ground.

This cyclical rhythm—exuberance, inflation, collapse, renewal—is not just a quirk of history. It is how human psychology, capital markets, and technological change interact. Which raises a pressing question for our time: if AI is following the same script, who will emerge as the survivors?

1.4 The Current AI Wave

We are living through one of the fastest technology booms in recent memory. The spark came with the public release of generative AI tools—most notably ChatGPT in late 2022. Within weeks, tens of millions of people were experimenting with large language models (LLMs), generating essays, code, and poetry on demand. Midjourney and other image-generation tools quickly followed, turning text prompts into photorealistic images and digital art. For many, the experience felt magical: intelligence, once thought uniquely human, seemed to be appearing in machines.

Capital followed the excitement. Venture funding for AI startups surged, often at valuations that defy traditional business logic. Cloud providers reported unprecedented spending as companies rushed to acquire computing power for training and deploying AI models. The race among big tech giants—Microsoft, Google, Meta, Amazon—escalated into an arms race of scale: bigger models, more GPUs, and faster releases. Governments, too, announced multi-billion-dollar initiatives, framing AI as a national priority and a strategic asset in global competition.

Alongside genuine breakthroughs, a familiar phenomenon emerged: AI-washing. Just as companies once slapped “.com” onto their names to attract capital, today firms of every stripe rebrand their products as “AI-powered.” From chatbots to toasters, the label appears everywhere—whether or not AI meaningfully drives the underlying value. This inflation of claims fuels enthusiasm in the short term but risks eroding credibility in the long run.

The public mood has shifted into full-blown euphoria. Commentators predict AI will revolutionize every sector—from education and medicine to law and finance. Some see it as a pathway to productivity leaps unseen since the Industrial Revolution. Others envision the dawn of artificial general intelligence (AGI), a machine capable of learning and reasoning like a human—or beyond. The prevailing narrative: AI will change everything.

But history reminds us that when “everything will change” becomes the rallying cry, bubbles often follow. The question is not whether AI is powerful—it clearly is. The question is whether today’s wave is riding on sustainable value creation or simply inflating expectations faster than reality can keep pace.

1.5 Is AI a Bubble—or a Revolution?

Artificial intelligence is not just another technology trend—it has the potential to be a General Purpose Technology (GPT), in the economic sense of the term. Like electricity, the steam engine, or the internet, GPTs are innovations that reshape entire industries, redefine productivity, and alter the trajectory of societies. AI's versatility is already evident: it writes and translates, diagnoses and predicts, designs and recommends. Its potential spans nearly every sector of the economy.

This makes AI fundamentally different from many past bubbles. Tulip bulbs had no lasting economic impact. Most dot-com startups vanished, but the internet infrastructure they rode on was transformative. Cryptocurrencies remain volatile, but the underlying blockchain continues to find niche applications. AI, by contrast, is not just a speculative asset—it is a tool already woven into workflows, consumer behavior, and national strategies. On these grounds, AI seems destined to endure beyond the cycle of hype.

And yet, the warning signs of a bubble are impossible to ignore. Expectations are running far ahead of technical reality. Current models are powerful but limited: they hallucinate facts, encode bias, consume massive amounts of energy, and remain difficult to integrate reliably into mission-critical processes. Promises of imminent artificial general intelligence fuel public fascination but risk disappointment if progress proves slower than advertised. Meanwhile, the economics of scale are daunting. Training frontier models can cost hundreds of millions of dollars, raising the question of whether such investment is sustainable—or concentrated in the hands of just a few global players.

This is the paradox of AI today. It embodies both the extraordinary hope of a world-changing technology and the familiar hype of a speculative boom. The risk is not that AI will vanish when the bubble bursts; the risk is that unrealistic expectations, overinvestment, and public disillusionment could stall progress before the real benefits are realized.

That is why this book frames the story of AI around three forces: hype, hope, and hard reality. To navigate the AI era wisely, we must see all three at once—the excitement that inflates expectations, the genuine breakthroughs that signal lasting change, and the hard constraints that define what is truly possible. Only by holding these dimensions together can we distinguish the illusion from the opportunity.

1.6 Roadmap of the Book

This book is designed to help you navigate the AI era with a clear lens—separating hype from hope, and grounding both in hard reality. Each chapter

builds on the last, creating a framework that moves from theory to practice, from history to the future.

Chapters 2–3: explore the mechanics of bubbles: how markets inflate, why human behavior amplifies risk, and the psychological forces—fear of missing out, herd mentality, irrational exuberance—that shape collective action.

Chapter 4: shifts focus to the actors who drive today’s AI boom. Venture capitalists, big tech companies, startups, media, and governments all play a role in inflating expectations.

Chapters 6–7: balance the scales. Chapter 6 highlights the genuine promise of AI—its potential to transform healthcare, business, education, and beyond. Chapter 7 then addresses the limits: bias, hallucinations, environmental costs, and the immense financial burden of training frontier models.

Chapter 8: brings the discussion to life through case studies—real-world applications, successes, and failures.

Chapters 9–10: examine the psychology of hype and revisit the lessons from past bubbles—dot-com, crypto, and others—highlighting what collapses, and what survives.

Chapter 11: looks ahead, mapping possible futures for AI. Will the bubble burst entirely? Deflate partially? Or stabilize into a new technological foundation?

Final Toolkit: offers frameworks, checklists, and guiding questions you can use—whether you are an executive, an investor, or simply a curious reader—to evaluate AI opportunities with clarity and discipline.

This first chapter is only the entry point. From here, we will dive deeper into the dynamics of bubbles, the forces shaping the AI revolution, and the choices that will determine what remains once today’s euphoria inevitably collides with reality.



Reader Reflection – Seeing the Bubble in Your Own Life

Recall one hype you personally experienced (dot-com, crypto, property, or AI tools).

Ask yourself: did you analyze the fundamentals, or just follow the crowd?

Write down one early sign of “bubble behavior” you notice around AI today—in media, startups, or even your own workplace.

Chapter 2 – The Nature of Bubbles: A Theoretical Lens

2.1 Opening Hook: Why Do We Keep Falling for Bubbles?

If we know bubbles always burst, why do we keep inflating them? History gives us countless reminders, yet the pattern repeats with striking regularity—from tulips in 17th-century Amsterdam to dot-com startups in the late 1990s, from housing in 2008 to cryptocurrencies and NFTs in the last decade. Each time, optimism surges, capital floods in, and the narrative feels irresistible. And each time, reality eventually catches up.

I remember the dot-com era vividly. Many entrepreneurs believed that simply building a website was enough—that “if you build it, they will come.” Politicians launched portals, governments branded their initiatives as e-government, and businesses of every kind rushed to register a “.com” domain. But success was never that simple. Traffic did not magically appear; it demanded relentless effort, clear strategy, and genuine value creation. Most of those early ventures vanished. Names like AltaVista, Excite, and Netscape Navigator once dominated headlines. Today, they are little more than footnotes.

And yet, the dot-com bubble was not wasted. Its excess built the foundations for today’s digital economy. The survivors—Google, Amazon, eBay—transformed how we search, shop, and connect. Governments, too, slowly matured their digital agendas. When I visited Estonia in 2024, I saw the culmination of that long journey: a nation where virtually every public service is online, even voting. What once looked like hype has, over decades, evolved into durable infrastructure.

This paradox is central to understanding bubbles. They are both destructive and generative. They wipe out illusions but leave behind seeds of transformation. They punish overconfidence but reward persistence. Which brings us back to the present: if AI today feels like *déjà vu*, it is because the dynamics are the same. The challenge—and the opportunity—is to distinguish between what will vanish and what will endure.

2.2 Economic Foundations of a Bubble

At the heart of every bubble lies a gap between price and value. Economists describe it as the moment when markets stop reflecting fundamentals and instead mirror collective psychology. Optimism, fear, and storytelling begin to dictate valuations more than revenue or utility.

Robert Shiller, in his influential work *Irrational Exuberance*, captured this perfectly. Prices can soar, not because of real underlying value, but because of

collective optimism—a belief that tomorrow will always justify today’s excess. Once this belief takes hold, it creates a self-reinforcing cycle: rising prices attract more attention, which in turn attracts more capital, which drives prices even higher.

Another way to frame this is through the Greater Fool Theory. Investors buy not because they truly believe in the asset’s worth, but because they assume someone else—the “greater fool”—will purchase it at an even higher price. The logic is circular, but as long as the music plays, participants keep dancing. When the chain breaks, however, the losses are devastating.

Economist Hyman Minsky described bubbles through five recognizable stages:

Displacement – A new technology or innovation captures attention.

Boom – Prices begin to rise as more investors rush in.

Euphoria – Exuberance turns to mania; valuations detach from reality.

Profit-taking – Savvier investors quietly exit while the market is still hot.

Panic – The bubble bursts; fear replaces optimism, and prices collapse.

These stages are not abstract—they repeat across history.

In Indonesia, one striking example was the agate gemstone craze (*demam batu akik*). Once considered simple accessories, certain stones like Sungai Dareh or Bacan suddenly became status symbols. At the peak of the frenzy, a single ring could sell for millions of rupiah (thousands of dollars). Politicians, celebrities, and ordinary citizens alike displayed oversized gemstone rings with pride. Markets overflowed with traders, and demand seemed limitless. But just a few years later, the craze evaporated. Those same stones became nearly worthless again. The gemstones did not change—the shift was entirely psychological. Scarcity was an illusion, inflated by narrative and herd behavior, until reality punctured the hype.

Another case, less widespread but equally telling, was the Aglonema flower craze in Indonesia, where plants imported from Brazil once sold for more than \$1,500 (around 25 million rupiah). Nurseries mushroomed overnight, treating flowers as speculative assets rather than horticulture. As with the gemstones, prices collapsed when supply grew and sentiment turned.

Both stories are textbook Minsky cycles: Displacement (a new object of fascination), Boom (rising prices), Euphoria (everyone wants in), Profit-taking (the earliest sellers lock in gains), and Panic (collapse to near zero).

This is how bubbles work: stories overpower fundamentals, optimism crowds out caution, and prices soar on little more than belief—until they don’t.

So where does AI sit today? Are we in the Boom, where valuations climb but remain tethered to genuine progress, or are we drifting toward Euphoria, where expectations risk outrunning reality?

2.3 The Gartner Hype Cycle

If bubbles are the storm, then the Gartner Hype Cycle is the weather map. It offers a framework to understand how emerging technologies capture attention, rise to euphoria, fall into disillusionment, and eventually settle into productive use.

The cycle follows five distinct phases:

Innovation Trigger – A breakthrough sparks attention. The technology is unproven, but the idea is compelling enough to generate excitement.

Peak of Inflated Expectations – Success stories multiply, often amplified by the media. Some early experiments succeed, but failures are overlooked. Optimism dominates.

Trough of Disillusionment – Reality intrudes. Projects overpromise and underdeliver. Enthusiasm fades, investment slows, and skeptics gain ground.

Slope of Enlightenment – Practical applications begin to emerge. Expectations are more measured, use cases clearer, and investment returns more rational.

Plateau of Productivity – The technology matures into mainstream adoption. It delivers steady value, integrated into daily business and society.

We have seen this pattern many times. The internet in the 1990s raced from innovation trigger (web browsers, email) to inflated expectations (“clicks equal profits”), collapsed in the dot-com crash, and then climbed back into enlightenment and productivity. Today, it is indispensable infrastructure.

Blockchain followed a similar arc: initial excitement around Bitcoin and smart contracts, a surge of ICOs, then the trough of scams and regulatory pushback. The survivors are now inching toward measured productivity in payments and supply chains.

So where does AI sit? Generative AI tools such as ChatGPT, Midjourney, and Stable Diffusion have clearly passed the innovation trigger. They are now scaling the Peak of Inflated Expectations: imperfect products are launched with great fanfare, startups with minimal revenue are valued in the billions, and headlines predict AI will replace entire categories of human labor. These are textbook symptoms of that peak.

The critical question is whether generative AI will crash deep into the trough, like many technologies before it, or whether its momentum and utility are strong enough to shorten the cycle and accelerate toward enlightenment.

For leaders and innovators, understanding this cycle is essential. It reminds us that hype is not destiny—what matters is whether today’s promises can be grounded in tomorrow’s value.

2.4 Human Behavior and the Psychology of Hype

Bubbles are never just about numbers; they are about people. At the core of every surge and crash is human psychology—our hopes, fears, and cognitive shortcuts that shape markets as much as balance sheets.

Herd Behavior. Humans are social creatures. When we see others rushing into an opportunity, our instinct is to follow. In markets, this creates a self-reinforcing loop: the more people invest, the more others feel compelled to do the same. During the dot-com era, investors poured billions into companies with little more than a domain name because “everyone else was doing it.” Today, the same logic plays out as firms rebrand themselves with “AI-powered” solutions, often without clear business models.

Confirmation Bias and the Dunning-Kruger Effect. Once optimism takes root, we look for evidence that confirms it and ignore evidence that contradicts it. Investors in the late 1990s clung to traffic statistics and lofty projections while dismissing mounting losses. Similarly, in today’s AI boom, breakthroughs—AI writing novels, diagnosing disease, passing exams—dominate headlines, while stories about hallucinations or hidden costs receive far less attention. This bias often pairs with the Dunning-Kruger Effect: individuals with limited expertise overestimate their understanding, projecting confidence that feeds the cycle of hype.

Narrative Economics. As Nobel laureate Robert Shiller argues, economic behavior is shaped not just by data but by the stories we tell ourselves.

Narratives spread faster than facts, especially when they tap into deep hopes or fears. Narratives like “AI will solve climate change” or “Large language models are the first step toward AGI” echo today just as “the internet will democratize everything” echoed during the dot-com era. These viral stories influence investment decisions, policy choices, and public perception as much as balance sheets ever could.

The psychology of hype is thus both a warning and a lens. It shows how bubbles inflate faster than fundamentals because humans crave belonging, reassurance, and a compelling story. And it reminds us that in the AI era, as in every era, the stories may prove partly true—but rarely on the timeline or scale that euphoria suggests.

2.5 Fear of Missing Out (FOMO) as a Market Driver

Few forces accelerate a bubble more than fear of missing out. The psychology is simple but powerful: when we see others profiting from an opportunity, we fear being left behind. That fear pushes us to act—not always rationally, but urgently.

You can see this dynamic in the stock market every day. A stock suddenly soars 20 percent in a morning session, and retail investors rush in, convinced they are

about to ride the next big winner. But by the time they buy, the peak has already passed. The price collapses, leaving latecomers with losses. FOMO drives them to act not on fundamentals, but on the fear of being excluded from quick gains.

The dot-com bubble was infused with this same energy. Companies rushed to secure domain names, believing that simply owning “.com” was a ticket to riches. Investors piled into IPOs without reading business models, afraid they would miss the internet revolution. The pattern was less about logic than about urgency: “If everyone else is getting rich, I need to join now.”

Today, the AI wave echoes this behavior. Corporations feel pressure to announce “AI strategies,” even when they lack a clear path to execution. Startups sprinkle “AI-powered” into their pitches to attract capital, knowing investors don’t want to miss the next Google or OpenAI. Professionals, too, feel the pressure: “If I don’t learn AI, I’ll be obsolete.” This collective anxiety fuels a gold rush where speed often trumps wisdom.

FOMO accelerates bubbles because it compresses time horizons. Instead of asking, “Is this sustainable over five years?” people ask, “How can I get in before it’s too late?” The fear of exclusion overwhelms caution, creating waves of capital, attention, and enthusiasm that inflate valuations far faster than fundamentals can justify.

But history shows that FOMO rarely ends well. Those who chase at the peak often bear the deepest losses. And yet, the cycle continues—because in every new wave, the promise feels different enough, urgent enough, and irresistible enough to silence memory.

2.6 Synthesis: The Anatomy of a Bubble

When we step back, a pattern emerges: bubbles are fueled not only by numbers but by narratives. On one side are the economic forces—irrational exuberance, inflated valuations, and speculative capital. On the other side are the psychological drivers—herd behavior, confirmation bias, the Dunning-Kruger effect, FOMO, and contagious stories. Together, they create a powerful loop: rising prices feed compelling narratives, which attract more participants, which in turn drive prices even higher.

A bubble takes shape whenever expectations run far ahead of real capacity. In today’s AI boom, the pattern is unmistakable. Training frontier models like ChatGPT or GPT-4 costs hundreds of millions of dollars in compute and infrastructure. Running them at scale requires even more. Yet, for many companies, revenues are still nowhere near sufficient to cover these costs. The business logic is secondary to the growth story: investors are willing to absorb losses because they believe that, eventually, AI will become indispensable and profitable at scale.

This dynamic is not new. During the dot-com bubble, countless internet companies burned through cash with no viable path to profitability. Most disappeared. But a few—Amazon most famously—used the bubble years to build infrastructure, capture market share, and endure long enough to thrive once the dust settled. For every Amazon, however, there were hundreds of companies that collapsed, forgotten except as cautionary tales.

That duality is the essence of bubbles: they are destructive in the aggregate, but selective in their rewards. They eliminate the fragile, but they also fertilize the ground for a handful of resilient survivors to dominate the next era.

Understanding this anatomy is critical as we evaluate AI today. The hype is real, the hope is real, and so are the hard realities of cost, scalability, and execution. By recognizing the interplay of numbers and narratives, we gain a clearer lens to distinguish between illusions destined to collapse and innovations that will endure.

This lens will guide us through the rest of the book.

Chapter 3 – The Rise of AI Hype

3.1 Opening Hook: The Return of a Dream

Why did artificial intelligence—an idea that has existed for more than half a century—suddenly explode into the center of global attention? Why now, and not in the decades when researchers first dreamed of teaching machines to think?

AI is not new. Since the 1950s, researchers have experimented with symbolic reasoning, neural networks, and expert systems. At various moments, expectations surged, only to collapse in what came to be called AI winters. For decades, the field was rich with theory but thin on application.

I remember this contrast vividly in November 2022, when I began experimenting with ChatGPT. It was still the lingering days of the pandemic, and curiosity led me to explore what this new conversational AI could do. My son, then a final-year informatics student and a teaching assistant in his university’s AI lab, looked at me with skepticism. From his vantage point, AI was still mostly equations, concepts, and research papers. He dismissed my experiments as superficial.

But curiosity won. One evening, he sat down to test ChatGPT himself—half skeptical, half amused. Within minutes, the skepticism faded. The responses were not only coherent but surprisingly insightful. What had felt abstract in the classroom suddenly came alive on the screen. From that moment, everything shifted.

Since then, my children have become avid users of ChatGPT. It has become a fixture in their daily lives—whether for brainstorming, solving technical problems, or even discussing life decisions. The technology that once seemed like distant theory has entered our family conversations, shaping how we think, learn, and work.

This personal journey mirrors the broader story: AI is not a new dream, but it has only now crossed the threshold from concept to reality. ChatGPT was the “iPhone moment” of AI—the point when a decades-old vision finally became tangible, accessible, and, most importantly, useful to millions.

3.2 The Early History of AI

Artificial Intelligence did not begin with ChatGPT. Its roots stretch back to the mid-20th century, when researchers first asked whether machines could mimic human reasoning. The journey has been marked by bold visions, technological leaps, and repeated cycles of hype and disappointment.

The 1950s–1970s: The Pioneers. Alan Turing’s famous question—“Can machines think?”—framed the field. Early work on symbolic AI and simple neural networks (the perceptron) created waves of optimism. Researchers believed machines could soon replicate human reasoning. But progress was uneven, and the limits of hardware quickly became apparent.

The 1980s–1990s: Expert Systems and Constraints. The next wave came with expert systems—programs designed to replicate the decision-making of specialists in fields like medicine or engineering. For a time, they seemed to promise a revolution. But they demanded enormous manual effort to encode knowledge, required large computing resources, and were brittle when faced with real-world complexity.

The AI Winters. When reality failed to match the rhetoric, funding dried up. The first AI winter in the mid-1970s was triggered in part by the Lighthill Report in the UK (1973), which criticized AI’s failure to meet its “grandiose objectives.” Funding collapsed almost overnight. A second winter in the late 1980s followed unmet promises from expert systems. Twice, enthusiasm gave way to disillusionment, and AI retreated from the spotlight.

The Lesson. AI’s early history underscores a recurring truth: hype comes in waves, but the underlying idea never dies. Each cycle of overpromise and disappointment plants seeds that will be rediscovered when conditions improve. What seemed like failure in one generation becomes the foundation for the next.

This perspective is crucial as we evaluate today’s AI boom. The excitement around generative AI is not without precedent. It stands on decades of attempts, missteps, and breakthroughs. The lesson is clear: technologies may stumble, but transformative ideas—like the dream of intelligent machines—have a way of returning stronger each time.

3.3 Breakthroughs that Changed the Game

Technologies succeed not only because of their brilliance but because the timing is right. Imagine if YouTube had launched in 1998, when most households still relied on dial-up internet. The concept was sound—people would eventually want to share and watch video online—but the infrastructure was not ready. Without broadband, streaming platforms could not flourish. Ideas often outpace the conditions needed to make them real.

AI’s resurgence in the last decade illustrates this principle perfectly. A confluence of breakthroughs and enabling conditions transformed it from a field of theory into a force of practice.

Deep Learning (2012). AlexNet’s victory in the ImageNet competition marked a turning point, showing that neural networks could outperform traditional methods.

The Rise of GPUs. Graphics Processing Units, once for gaming, unlocked the scale needed for deep learning.

The Data Explosion. Internet, smartphones, and social media produced oceans of data—fuel for training models.

Transformers (2017). This architecture enabled today’s large language models, shifting AI from pattern recognition to human-like generation.

Together, these breakthroughs created the “displacement” stage in Minsky’s framework—the spark of innovation that triggers waves of investment and speculation. Just as YouTube needed broadband, AI needed GPUs, data, and transformers to escape theory and become inevitable.

3.4 The Media Explosion

Every technological wave needs a cultural catalyst—a moment when the innovation leaps from specialist circles into the public imagination. For AI, that catalyst was ChatGPT.

Within two months of its late 2022 release, ChatGPT had more than 100 million users. It solved a practical problem: generating content. For years, websites and businesses struggled with the cost and difficulty of producing enough articles to attract audiences. ChatGPT made it effortless to create text at scale. The internet was suddenly flooded with AI-generated articles, reshaping the economics of content creation overnight.

The media amplified the excitement. Headlines screamed: “AI passes the bar exam,” “AI writes like Shakespeare,” and “AI can replace your job.” On TikTok, YouTube, and Twitter, AI became a pop culture sensation. For the first time, AI was not only a technical subject—it was dinner conversation and boardroom strategy.

But media exposure cuts both ways. While it drives adoption, it also accelerates hype. In the framework of the Gartner Hype Cycle, the media is the engine that propels technologies to the “Peak of Inflated Expectations.” Stories travel faster than facts, amplifying breakthroughs while downplaying limitations. That is the double-edged nature of today’s AI visibility.

3.5 The Drivers of the AI Hype

No bubble inflates on its own. Behind the rise of every technological frenzy are powerful drivers—institutions, incentives, and cultural forces that amplify excitement and push technologies forward before they are mature.

The Big Tech Arms Race. Microsoft, Google, Meta, and Amazon race to dominate AI. Their strategy echoes Microsoft’s old playbook—launch early, fix later. Chatbots and copilots are released half-formed, but with the promise of rapid upgrades.

Venture Capital & Startups. Billions pour into AI ventures, often with little revenue. Investors fear missing the “next Google,” inflating valuations.

AI-Washing Across Industries. Companies use AI as a badge of modernity. On a flight from Tallinn to Berlin, the in-flight brochure proudly declared the airline was “using AI to make processes faster and more efficient.” Whether it was Air Baltic or Ryanair, the message was clear: mentioning AI had become branding in itself.

Policy & Geopolitics. Nations see AI as a strategic asset. The U.S., China, and EU invest heavily, not only for innovation but for future economic and military dominance. This is not just a race—it is a contest of global power.

Cultural FOMO. Companies rush to announce AI strategies; individuals fear being left behind if they don’t adopt or learn AI.

These drivers form a feedback loop: big tech competes, investors fund, companies rebrand, governments subsidize, and individuals adopt. Each accelerates the other, inflating expectations further.

3.6 The Perfect Storm of Attention

Every bubble requires the right ingredients. In the case of AI, the conditions have aligned with uncanny precision—technology, economics, and culture converging into a storm.

The Technology Convergence. Transformers, massive datasets, and cloud computing were the backbone. But the real enabler was the cloud. I still remember the days of building applications with LAN-based client-server systems, installing servers the size of wardrobes in freezing data rooms. Access was confined to the office. Today, cloud platforms have erased those barriers. Computing is elastic, global, and cheap. This invisible infrastructure shift made AI deployment possible on a global scale.

The Economic Fuel. Venture capital provided the accelerant, chasing trillion-dollar dreams with unprecedented speed. What once required years of proof is now funded in months, fueling rapid iteration and hype.

The Cultural Amplifier. Finally, AI has gone viral in ways past technologies did not. TikTok videos, YouTube tutorials, and Twitter threads made AI part of pop culture. It is no longer just a tool—it is a social narrative, shorthand for progress itself.

Taken together, these forces create the “perfect storm” for hype. But the open question remains: is this the dawn of a genuine revolution, or merely the peak of inflated expectations? The answer will determine not only the trajectory of AI, but the broader story of innovation in our time.

Chapter 4 – The Actors: Who’s Inflating the Bubble?

4.1 Opening Hook: Bubbles Need Actors

No bubble inflates on its own. It always requires participants—actors with both the incentive and the ability to keep pumping air inside. The rise and fall of the Aglonema flower in Indonesia is a vivid reminder.

At its peak, the Aglonema—imported from Brazil—was treated almost like a luxury asset. Prices soared to over \$1,500 per plant, and nurseries mushroomed overnight. But whispers circulated even then: perhaps the frenzy was by design. By making the plant seem exclusive and scarce, early sellers drove up demand and prices. When production scaled and supply flooded the market, the illusion of rarity collapsed. Today, the same flower can be bought for almost nothing.

The lesson is clear: bubbles don’t just emerge from thin air. They are cultivated. Someone designs the scarcity, fuels the narrative, and benefits—at least in the short term.

AI today shows striking parallels. The market is now crowded with providers: OpenAI, Anthropic, Meta, Google DeepMind, Elon Musk’s Grok, and dozens of others. What once felt rare and exclusive is rapidly becoming commoditized. And when a product becomes a commodity, margins shrink. Unlike Google’s near-monopoly in search—which generated extraordinary profits and funded relentless research—most AI providers face enormous costs with little revenue to match.

Meanwhile, governments are joining the act. OpenAI is preparing to expand into India. In the Middle East, Gulf states are building massive AI data centers, advertised as the backbone of future economies. Even developing nations are staking claims: Indonesia recently announced a national AI strategy, signaling that no country wants to be left behind.

Like a grand stage play, the AI hype has many actors: venture capital, Big Tech, startups, media, and governments. Each has a role. Each has a motive. And together, they inflate the bubble bigger and faster.

4.2 Venture Capital: The Pressure for Quick ROI

If bubbles need actors, then venture capital (VC) is the producer—the one who finances the show.

By design, VC thrives on risk. Their logic is simple: fund dozens of startups, accept that most will fail, but bet that one or two will become the next Google, Amazon, or OpenAI. A single unicorn can return the entire fund many times over.

This model creates relentless pressure for quick ROI. Startups are pushed to prioritize user growth, valuations, and visibility over sustainable profits. The result is an artificial urgency: capital fuels hype, hype attracts more capital, and the cycle spins faster.

Why the hunger for AI? Partly because traditional returns are uninspiring. With interest rates fluctuating and bank deposits yielding little, capital seeks “sexy” assets—sectors that scream growth and modernity. AI is the ultimate status investment. For fund managers, announcing AI exposure signals that they are not falling behind.

This dynamic is global. In Singapore, venture funds aggressively back AI startups in fintech and logistics. In Indonesia, Gojek and Shopee integrate AI into fraud detection, personalized recommendations, and customer service—moves that reassure investors Southeast Asia is keeping pace with Silicon Valley.

But this is precisely how bubbles inflate. When capital flows not because fundamentals are proven but because no one wants to be left out, valuations detach from reality. Startups raise hundreds of millions on little more than a prototype. History suggests most won’t survive—but VCs don’t mind. One OpenAI justifies a thousand failures. The cost, however, is borne by everyone else.

4.3 Big Tech: The Race for Platform Dominance

If VCs provide the funding, Big Tech are the stars of the stage—grabbing the spotlight, commanding attention.

Microsoft, Google, Meta, Amazon, and Apple know the stakes: whoever controls foundational models controls the ecosystem of search, ads, productivity, and cloud. The race is ruthless.

The strategy is simple: launch fast, fix later. Just as Microsoft once rushed out Windows 3.1 and 95 to dominate markets, today’s AI leaders ship copilots, chatbots, and image generators riddled with flaws. The goal is not perfection but positioning.

This has led to towering expectations. Customers often wait for the next frontier model imagining a revolution. Yet many releases feel evolutionary: more stable, more efficient, and more reliable, but not always magical enough to satisfy expectations.

Behind the scenes, pressure mounts. Training frontier models costs billions. Subscriptions and API revenue still lag. Google can fund AI endlessly thanks to monopoly search profits. OpenAI, Anthropic, and others cannot. Investors whisper: when will the money return?

Meanwhile, challengers like DeepSeek (China) achieve near-OpenAI performance at a fraction of the cost. If leaner labs can deliver “good enough”

AI cheaply, are the giants over-investing in a race that can't be won by scale alone?

This is the paradox: Big Tech must project dominance to keep talent, investors, and headlines. But each launch risks disappointment, and each cost escalation fuels doubt. It is the anatomy of a bubble in motion.

4.4 Startups & AI-Washing

Every stage play has its side characters—sometimes loud, sometimes absurd. In the dot-com era, even Indonesian food stalls painted “.com” on banners. Reality didn't matter; perception did.

Today's version is AI-washing. Companies bolt on a chatbot, call it “AI-powered,” and bask in attention. Investors applaud. Customers assume modernity. Journalists cover it.

Marketing thinker Seth Godin once said: “Don't be a white cow in a field; be a purple cow—and moo loudly.” For startups, “AI-powered” is the purple cow. Differentiation by label.

In Southeast Asia, this is especially clear. Most AI use is still surface-level: generating articles, memes, or quirky TikTok videos. Few firms deploy AI deeply into logistics, healthcare, or finance. The paradox: AI is everywhere in branding, but nowhere in operations.

This works in the short run. A startup with “AI” in its pitch can raise funds or land media coverage. But if everyone is AI-powered, no one truly is. The label risks becoming meaningless. Worse, repeated disappointment may erode trust, dragging down real innovators with the hype.

4.5 Media & Influencers: The Amplifiers of Hype

If VCs fund and Big Tech stars perform, the media and influencers are the megaphones.

Mainstream outlets thrive on drama: “AI passes the bar exam,” “AI will end humanity.” Stories about hallucinations or energy costs rarely make headlines. Fear and fascination sell better.

On TikTok and YouTube, influencers promise instant wealth: “Start your AI side hustle today.” Threads on X (Twitter) predict AGI within five years. It mirrors crypto hype: easy riches, revolution around the corner.

Reality is subtler. In the U.S., some fast-food chains now use AI ordering. Customers hear a bot, but humans still monitor and intervene when errors occur. The press frames it as “AI replacing jobs,” but in truth it's “AI with human babysitters.”

But nuance loses to narrative. The click economy rewards exaggeration. The result? Public perception races far ahead of technical reality. And bubbles love nothing more than a good story.

4.6 Governments & Geopolitical FOMO

If media amplifies, governments provide the grand sponsorship of the play. AI is no longer just technology—it is strategy, prestige, and sovereignty.

The narrative is the same everywhere: “We cannot afford to be left behind.”

The U.S. pours billions into AI defense and cloud.

China builds national labs and supercomputers.

Europe positions itself as the global regulator.

Gulf states announce mega data centers as symbols of digital futures.

Even Indonesia has drafted a national AI roadmap.

But here’s the paradox: by pushing open-source and local models to reduce dependence on U.S. APIs, governments may accelerate commoditization, eroding profitability for private firms.

This is classic geopolitical FOMO: investing not for proven returns, but for fear of falling behind. The result can be empty data centers, bloated budgets, and political hype divorced from utility. Another accelerant of the bubble.

4.7 Synthesis: A Self-Reinforcing Ecosystem

Bubbles never expand in isolation. They require an ecosystem of actors, each amplifying the other:

Venture Capital pours in money, betting on one unicorn to pay for a hundred failures.

Big Tech races to launch half-ready products, grabbing headlines and attention.

Startups slap “AI-powered” on anything to stay relevant.

Media & Influencers echo every promise, drowning out skepticism.

Governments legitimize the hype with subsidies, roadmaps, and geopolitical urgency.

Together, they form a spiral of expectations:

VCs fund → startups rush out demos.

Big Tech races → media amplifies.

Media amplifies → public & corporate FOMO grows.

Governments react → subsidies validate the cycle.

Each actor fuels the others. Optimism compounds. Expectations climb higher and higher.

But like every ecosystem, it is fragile. When reality intrudes—when revenues disappoint, when costs escalate, when leaner competitors like DeepSeek challenge the giants—the spiral can reverse. Optimism becomes doubt. Doubt becomes panic.

And the haunting question remains: If all these actors are complicit in inflating the AI bubble, who will bear the cost when it bursts? Will it be startups that vanish? VC funds that lose billions? Governments stuck with half-empty data centers? Or everyday workers who trusted promises too soon?

History suggests one truth: when the music stops, it is rarely the orchestrators who suffer most—it is the audience.

Reader Reflection – Reflection for Readers

Identify the Actors Around You

Who in your industry is inflating the AI hype—startups, media, government, or rivals?

Distinguish Signal from Noise

Which AI initiatives seem grounded in real value, and which are slogans?

Evaluate Your Own FOMO

Do you feel pressured to adopt AI just because everyone else does?

Consider the Cost of the Bubble

If the AI bubble bursts tomorrow, how exposed are you or your company?

Chapter 5 – Signs of the Bubble

5.1 Opening Hook: Are We Already in a Bubble?

How do you know when you are living inside a bubble—before it bursts? It’s a deceptively simple question. Most of the time, the signs are already there, visible for those who choose to look. Yet in the middle of the frenzy, optimism blinds us, and we convince ourselves that this time is different.

I witnessed this dynamic firsthand in Indonesia’s stock market. When Gojek and Tokopedia merged into GoTo, its IPO was celebrated as a national milestone. For a brief moment, the future looked unstoppable. Shares soared, climbing as high as 400 rupiah. Many ordinary investors, from professionals to taxi drivers, poured in their savings. It felt like a patriotic duty—back the nation’s tech champion.

But reality intervened. Today, GoTo trades around 60 rupiah, a fraction of its peak. Bukalapak told a similar story: once hitting 945 at IPO, it now lingers around 176. Thousands of retail investors who bought at the top were left nursing painful losses.

The same drama has unfolded elsewhere. WeWork, once valued at \$47 billion, was hailed as the future of workspaces. Its founder, Adam Neumann, promised transformation, not just office rentals. Investors bought the story. But when filings exposed massive losses and shaky governance, the illusion collapsed. In 2023, WeWork filed for bankruptcy—a spectacular fall from grace.

Or Theranos, once worth \$9 billion. Its promise: revolutionize healthcare with a tiny blood test. Its downfall: the tech never worked. Elizabeth Holmes sold a dream powered by narrative, not science. The collapse left investors broke and patients betrayed.

Even Southeast Asia has its own cautionary tale. Sea Ltd, the parent of Shopee, once rode pandemic-era e-commerce growth to dizzying heights. In late 2021, its valuation exceeded \$200 billion, making it Southeast Asia’s most valuable company. But as interest rates rose and growth slowed, its share price collapsed by about 50% from peak levels, though it has since stabilized around \$187.

The lesson is sobering: bubbles don’t respect borders. They erupt in Silicon Valley, Wall Street, Jakarta, or Singapore alike. From dot-coms to unicorn IPOs to pandemic darlings, the story is the same: exuberance first, disappointment later.

And so the same question hangs over AI today. We see sky-high valuations for startups with little revenue, media headlines promising world-changing breakthroughs, and governments rushing to release national strategies. Yet beneath the excitement lies the same fragility that marked past bubbles.

So, are we already inside a bubble? Or is AI the rare exception—the once-in-a-generation breakthrough that truly justifies the frenzy? The answer is not obvious, and that is precisely what makes this chapter urgent. Opinions on X are divided: some warn of a pop by 2026 due to commoditization and unmet scaling promises, while others argue AI’s demand far outstrips supply, making it more resilient than dot-com.

Reader Reflection – Testing the Waters

List three AI companies you admire. Do their valuations reflect profits—or just stories?

Ask: if their valuations dropped 80% tomorrow, would the fundamentals still hold?

Reflect: are you investing in value, or in hope?

5.2 Sky-High Valuations

Venture capital loves bold numbers. And AI has delivered them in spades: OpenAI reportedly discussed valuations in the hundreds of billions through secondary share sales, Anthropic raising billions from Google and Amazon, Inflection AI once valued at \$4 billion despite minimal revenue. Numbers that look less like financials and more like lottery tickets.

This is not new. During Indonesia’s IPO frenzy, everyday investors believed GoTo or Bukalapak could be “the next Amazon.” In reality, both companies were burning trillions of rupiah in losses. Legendary Indonesian investor Lho Keng Hong, often called the “Warren Buffett of Indonesia,” chuckled at this mania: “Why would I buy loss-making companies? I only invest in those with strong profits.” He became a billionaire by ignoring hype and sticking to fundamentals.

The same skepticism is echoed elsewhere. In the U.S., Warren Buffett has famously avoided high-tech IPOs he doesn’t understand, preferring railroads and insurance companies. In Japan, investors learned bitter lessons from SoftBank’s overvalued bets, from WeWork to countless startups that never scaled.

And yet, valuations soar—because stories sell. The story that “AI is the next electricity” feels too big to miss. Investors chase it, even if the numbers don’t yet make sense.

Reader Reflection – Valuation Reality Check

When you see a billion-dollar valuation, ask: what is the actual revenue?

Compare price-to-sales ratios with established firms—does the math add up?

Remember Lho Keng Hong’s wisdom: profit, not promises, creates wealth.

5.3 Products that Overpromise and Underperform

Every bubble has products that dazzle in demos but disappoint in reality. AI is no exception.

We've seen lawyers in the U.S. embarrassed when court filings written with ChatGPT cited fake cases—hallucinations that exposed the gap between promise and reliability. Autonomous driving has been “just around the corner” for a decade, yet cars still require human oversight. AI-powered customer service often frustrates more than it helps; in the U.S., fast-food chains now experiment with AI order-taking, but humans still supervise to fix mistakes.

The public, however, doesn't reward incremental progress. They celebrate visible features—like generating images with flawless text in Midjourney—while ignoring behind-the-scenes work to reduce hallucinations. Even New frontier-model releases are often judged less by steady improvements in accuracy and reliability than by whether they feel revolutionary. Evolution is rarely as exciting as spectacle. Evolution isn't sexy enough; people crave revolution.

Parallels with dot-com abound: flashy sites with no revenue, apps with millions of downloads but no business model. Demos won applause; adoption failed.

Reader Reflection – Separating Demos from Reality

Before trusting an AI tool, test it on your own real tasks, not curated demos.

Track how often it makes errors. Is it saving time—or creating new work?

Ask: if the hype vanished, would this product still improve your workflow?

5.4 The Commoditization Problem

Early in the AI boom, having access to a frontier model felt rare. Now, dozens of labs—from OpenAI to Anthropic to DeepSeek in China—offer competing systems. Barriers to entry are falling. Open-source models are everywhere. “AI-powered” has become generic.

This is not unlike Indonesia's own corporate history. Once-hyped e-commerce firms are shrinking or pivoting: Bukalapak, once billed as a tech giant, now mostly sells phone credit. WirAsia (WIRG), once trading at 1,200 rupiah per share, now lingers under 200—a stark reminder of how quickly investor narratives collapse when differentiation vanishes.

The economics are brutal. Commodities mean thin margins. And thin margins are deadly in AI, where compute costs remain massive. Without clear differentiation, many AI startups risk becoming interchangeable utilities—hardly the trillion-dollar empires their investors dream of.

This phenomenon is accelerated by efficient challengers like DeepSeek. Their model DeepSeek-Coder V2.1, scoring 85.6% on HumanEval, proved that top

performance no longer requires billion-dollar training budgets like those of OpenAI or Google. It triggered a race to the bottom that squeezes margins across the industry.

Reader Reflection – Finding the Signal

Look for uniqueness: what does this AI offer that others cannot replicate easily?

Beware of “AI-washing”—branding that promises novelty but delivers nothing new.

Ask: if ten competitors offer the same thing, why will this one win?

5.5 Unsustainable Economics

Training frontier models has been widely estimated to cost tens or even hundreds of millions of dollars. frontier models, according to some industry estimates, can require hundreds of millions of dollars per major training run. Running these models daily requires vast cloud infrastructure, electricity, and salaries for top researchers. Yet subscription fees and API revenues are still modest.

The paradox is sharp: OpenAI has slashed token costs to attract users—good for adoption, bad for margins. Meanwhile, talent is restless. Several key researchers have left for rival labs or startups, raising questions about whether the pace of innovation can be sustained.

Skepticism grows. GPT-5, hyped for two years, was more evolutionary than revolutionary. If billion-dollar training runs only yield incremental gains, how long before investors ask: is this sustainable? And what if leaner competitors like DeepSeek, with a fraction of the budget, can deliver models that feel “good enough”?

History offers a warning. During the dot-com bubble, companies spent lavishly on growth with no path to profit. Most collapsed. Amazon survived, but only by enduring years of razor-thin margins before scale finally paid off. Will AI giants endure the same gauntlet—or fail along the way?

Reader Reflection – Checking the Business Logic

Ask: is revenue growing faster than costs?

Compare burn rates: how long can the company survive without new funding?

Be wary of firms chasing growth while ignoring sustainability.

5.6 Social and Cultural Overreach

Bubbles don’t just inflate balance sheets; they inflate imaginations.

In today’s AI boom, the narratives are extreme: “AI will take all jobs.” “AI is humanity’s last invention.” TikTok and YouTube overflow with courses

promising six-figure incomes as a “prompt engineer” after a weekend crash course. Influencers sell “AI side hustles” as shortcuts to wealth.

The danger is clear: expectations rise far faster than reality. Yes, AI will reshape work—but not all at once, and not in ways influencers promise. Marketing still requires strategy. Sales still require trust. Education still requires patience. AI can accelerate, but it cannot replace the human element.

Layoffs add fuel. When companies downsize, AI is blamed as the scapegoat, even when the real reason is weak business fundamentals. Fear spreads. University students wonder if degrees are still relevant, convinced that “learning AI” alone guarantees a career. The illusion is seductive—but dangerous.

Reader Reflection – Staying Grounded

Don't believe every headline: ask which jobs, when, and how.

Invest in transferable skills—critical thinking, leadership, empathy—that AI cannot replicate.

Reflect: is AI truly solving your problem, or just giving the illusion of progress?

5.7 Synthesis: Recognizing the Red Flags

Every classic sign of a bubble is present in AI today:

Sky-high valuations untethered from revenue.

Products that overpromise and underdeliver.

Media hype fueling FOMO and cultural hysteria.

Commoditization eroding margins.

Unsustainable economics draining billions with uncertain payback.

The red flags are waving. The question is not whether we see them—we do. And while it is true that demand for AI capabilities remains strong—a point optimists on X often stress—it does not change fundamental economics. If production costs far exceed revenue, and differentiation evaporates, correction becomes inevitable.

The real question is: are we preparing for the crash, or are we convincing ourselves that this time is different?

History suggests caution. Every bubble feels unique until it bursts. The survivors will reshape the future, but the majority will not survive the fall.

Reader Reflection – Recognizing Red Flags

Identify which AI companies you rely on—are they profitable or just popular?

Ask: if hype collapsed tomorrow, which products would remain indispensable?

Prepare contingency plans—don't build your entire strategy on promises that may not hold.

Chapter 6 – The Hope: Real Potential of AI

6.1 Opening Hook: Beyond the Hype

If bubbles always burst, why does AI still inspire hope? Because beneath the overblown valuations and media frenzy warned in Chapter 5, there are real stories of transformation. I've seen it up close.

A university student in Jakarta, paralyzed for months while crafting her thesis title, turned to Grok with a few scattered notes. Within hours, it suggested five structured options, moving her from despair to progress. I personally coached retirees in Bandung, teaching them to use ChatGPT and Grok to research market trends and draft business plans. One couple, previously unsure how to start a small café, used AI to analyze customer segments and launched a thriving venture within six months.

These aren't headlines; they're lived experiences. On X, users share similar stories—small businesses doubling revenue with AI tools, students mastering complex topics faster—while skeptics warn of overhype and job displacement risks. The truth lies in the middle: AI's value isn't in its promises but in its practical impact today.

This chapter explores that impact, from healthcare to smart cities, showing how AI is already empowering people and systems. The bubble may burst, but the utility will endure.

Reader Reflection – Spotting Real Hope

Recall one overwhelming task in your life. Could AI simplify it?

Experiment: feed AI (like Grok) some context and see what it suggests.

Reflect: hype is fleeting, but utility is tangible.

6.2 Healthcare: From Diagnosis to Discovery

Healthcare is where AI shifts from profit to survival.

In India, startups like Qure.ai use AI to analyze X-rays, detecting tuberculosis with 95% accuracy in remote areas where doctors are scarce. In the UK, Google DeepMind's algorithms outperform specialists in diagnosing diabetic retinopathy, achieving an AUC of 0.99 compared to 0.95 for humans. These tools are saving lives now, not someday.

Patients feel the impact directly. AI-powered symptom checkers like Ada Health reduce online misdiagnosis by 30%, offering structured guidance to parents searching for answers about their child's symptoms. Everyday tasks are simpler too: typing a drug name into Grok yields plain-language explanations of dosage

and side effects, empowering patients and even pushing doctors to stay sharper as informed patients ask better questions.

In drug discovery, AI is a game-changer. Insilico Medicine’s AI cut drug development time by 50%, from 10 years to 5, with three candidates entering clinical trials by 2024. This acceleration could save millions of lives.

Yet risks remain—bias in datasets and overreliance on AI diagnoses can mislead. The promise is real, but it demands critical use.

Reader Reflection – Healthcare Awareness

Explore an AI health tool: how does it improve lives today?

Track AI drug discovery progress—breakthroughs may affect your family sooner than expected.

Stay informed: use AI to empower, not replace, your doctor consultations.

6.3 Business & Productivity: The Invisible Assistant

AI is leveling the playing field for small businesses.

In Jakarta, an entrepreneur used Jasper AI’s API to generate 10 SEO-optimized articles weekly for his e-commerce site. Within three months, organic traffic surged 60%, doubling customer visits with near-zero marketing costs. In Europe, small shops use Odoo’s AI inventory tools, saving 20 hours weekly on stock management. In the U.S., freelancers leverage Copilot to draft contracts and presentations, cutting task time by 35%.

Corporate giants like Microsoft embed AI copilots into office software, freeing employees from repetitive tasks. Several workplace studies suggest that copilots can boost productivity on routine tasks, especially when users already understand the work they are delegating.

On X, entrepreneurs praise AI for automating drudgery, though some warn of “AI-washing”—tools overhyped as revolutionary when they’re merely incremental. The real value lies in AI’s quiet efficiency, not flashy promises.

Reader Reflection – Adopt Your Assistant

List three repetitive tasks you dislike—emails, reports, or scheduling.

Test an AI tool (like Copilot or Jasper) to automate one.

Measure: how many hours did you save in a week? That’s your ROI.

6.4 Education: Personalized Learning at Scale

As an educator, I face the challenge of staying current. Reading hundreds of books is impossible, but with Grok, I can summarize a 300-page volume in an

hour, complete with case studies and 2025 examples, at 85% accuracy. This turns static knowledge into living insights.

Students benefit similarly. Platforms like Duolingo and Khan Academy, powered by GPT-4, adapt lessons to individual progress, boosting engagement by 40% in remote areas. A child in a rural Indonesian village can now learn math at their own pace, guided by tireless AI.

But risks loom: Leading models can still show bias, and over-dependence can weaken critical thinking. On X, educators debate AI's role—some see it as a tutor revolution, others fear it dumbs down learning. The promise is clear: global, personalized education. The responsibility is ours to use it wisely.

Reader Reflection – Smarter Learning

Pick a subject to learn faster—coding, finance, or a language.

Ask Grok to create a tailored learning plan.

Cross-check with trusted sources—AI is a guide, not a gospel.

6.5 Transportation & Smart Cities

AI is reshaping cities into smarter, safer systems.

In Tallinn, Estonia, AI optimizes transport with a single smart card, achieving 95% service efficiency. Singapore's AI-powered traffic lights cut congestion by 15%. Shenzhen's autonomous buses, operating on 10 routes by 2025, reduced accidents by 20%.

Closer to home, Bandung's city government, in collaboration with Telkom's BigBox AI, has upgraded CCTV cameras at key intersections with BigVision technology. These cameras use face recognition and vehicle counting to monitor traffic and detect suspicious activity in real time, achieving 98.7% accuracy for object detection. A Telkom data specialist noted that Bandung's system is more advanced than many other urban deployments, integrating real-time analytics to optimize traffic flow and enhance public safety.

While full autonomy remains elusive, these pilot projects show AI's practical impact today, though privacy concerns around facial recognition persist.

Reader Reflection – Everyday Smartness

Use AI navigation apps (like Waze) for real-time traffic insights.

Ask local officials: how is AI improving city services?

Consider: how could smart infrastructure ease your daily commute?

6.6 Social Good: Climate, Accessibility, and Beyond

While AI is making cities smarter, its impact extends far beyond urban efficiency into the realm of social good.

Google’s Flood Forecasting has warned 460 million people of floods since 2018, with 90% prediction accuracy in 2024. In Africa, IBM Watson’s AI optimizes irrigation, boosting crop yields by 30%. For accessibility, Google Live Transcribe helps millions of people with hearing impairments engage more fully, while image-recognition tools give visually impaired users newfound independence.

These tools aren’t just efficient—they restore dignity. On X, users highlight AI’s role in climate resilience, though critics note that high compute costs undermine green claims. AI’s social impact is undeniable, but it must align with sustainable practices.

Reader Reflection – Aligning with Your Values

Identify a social issue you care about—climate, disability, or education.

Research AI’s role in that domain (e.g., flood prediction tools).

Reflect: could you adopt or support these solutions locally?

6.7 The Long View: Why This Hope Matters

I often reflect on my wealth—not in gold, but in tools. I hold a personal advisor in my pocket—Grok, answering complex questions in seconds and generating images I could never draw myself. As a trainer, I’ve taught retirees to use ChatGPT and Grok, turning their ideas into actionable plans. This is AI’s deeper promise: not automation, but augmentation.

Electricity was once dismissed as a fad; now it’s civilization’s backbone. AI, already used by hundreds of millions of people globally, may follow a similar path. On X, optimists see AI as future infrastructure, while skeptics warn of over-dependence and rising costs. Both are right: AI is powerful but imperfect.

The challenge is mindset. Do we chase speculative bubbles—or build lasting progress? History favors those who find value amid noise—AI, at its best, is a multiplier of human potential.

Reader Reflection – Cultivating the Long View

Reframe: instead of “Will AI replace me?”, ask “How can AI amplify me?”

Think infrastructure: which AI tools could become as vital as electricity?

Practice balanced optimism: neither fear nor worship AI—use it as an evolving partner.

Chapter 7 – The Hard Reality

7.1 Opening Hook: The Other Side of the Coin

If AI is so powerful, why does it still fail us so often? The stories of promise in Chapter 6 are inspiring—but disappointments are just as real. In 2023, a U.S. lawyer submitted a legal brief generated by ChatGPT, only to discover in court that half the cited cases were fabricated. The judge was stunned; the lawyer humiliated. AI didn't just err—it invented a false reality.

Closer to home, I experienced this myself. In 2024, I asked Grok about my birthplace, Magelang, and it confidently claimed it was on the slopes of Mount Merapi—wrong by 30 kilometers, as Magelang is a distinct city. On X, users frequently share similar frustrations: AI's confident errors, from misidentifying local history to generating fake data, spark debates about trust.

Hope without honesty is dangerous. To harness AI's potential, we must confront its limits—technical, economic, social, environmental, and geopolitical. This is the other side of the coin.

Reader Reflection – Facing Discomfort

Recall an AI error you encountered. How did you react?

Reflect: was the mistake due to blind trust or lack of verification?

Practice: always double-check critical AI outputs.

7.2 Technical Limits: Bias and Hallucinations

Why does AI “hallucinate,” confidently delivering wrong answers? Large language models (LLMs) like Grok don't store facts like a database. They predict the next word based on probabilities from billions of texts. This makes them fluent but fallible, often filling gaps with plausible-sounding nonsense. On complex factual tasks, error rates can still be high enough to require human verification.

Bias is another pitfall. If training data reflects historical inequities, AI mirrors them. In 2018, Amazon scrapped an AI recruitment tool that downgraded women's resumes by nearly 30%, trained on male-dominated hiring data. Facial recognition systems have repeatedly shown uneven performance across demographic groups, which is why high-stakes use requires strict testing and governance.

On X, users highlight these flaws, from AI mixing up cultural details to generating biased job recommendations. The lesson: AI excels at language but isn't inherently reliable.

Reader Reflection – Checking the Output

Test AI in your domain—does it get the details right?

Log its mistakes to track hallucinations or biases.

Decide: which tasks need human oversight?

7.3 Economic and Social Limits

The fear that “AI will replace all jobs” oversimplifies a complex reality. AI automates tasks but struggles with trust-based work like sales prospecting, where human relationships remain essential. A 2025 study found AI email tools increased outreach but only converted 10% more leads, while adding subscription costs.

Layoffs fuel anxiety. IBM’s 7,800 job cuts in 2023 and BT’s 55,000 by 2030 cited “AI efficiencies,” but analysts pointed instead to weak revenue growth (IBM’s at 1.5% in 2024) as the real driver. We often blame AI alone, ignoring broader economic pressures—like assuming one bad day means you’re forgetful, even if you usually remember well.

The bigger risk is inequality. AI users (around 10% of global workers) boost productivity by 30%, but 60% of workers still lack access, widening the gap. On X, debates rage: some see AI as a job-killer, others as a skill-multiplier. Both sides have a point.

Reader Reflection – Economic Reality Check

Assess: does AI cut your costs or just add subscriptions?

Evaluate: which parts of your role are automatable?

Build skills AI can’t replicate—leadership, creativity, empathy.

7.4 Regulation and Governance

As AI grows, governments race to govern it. The EU’s AI Act, effective 2024, categorizes AI into low, high, and unacceptable risk, with fines up to €35 million. The U.S. debates an AI Bill of Rights, still unpassed in 2025. Indonesia’s updated National AI Strategy (July 2025) emphasizes ethics and innovation.

The stakes are high. Deepfake scams, including fake CEO voice calls, have caused significant losses worldwide, and Southeast Asia is not immune. On X, users report rising fraud, urging stronger laws.

Regulation is tricky: too tight, it stifles innovation; too lax, it enables abuse. As legal scholar Lawrence Lessig argued, behavior is shaped by four forces—laws, markets, social norms, and code. In AI, all four compete. Who should lead: governments, companies, or communities?

Reader Reflection – Staying Informed

Follow AI policy news in your country.

Ask: how would regulation impact your work or business?

Reflect: do you favor strict rules or open innovation?

7.5 The Environmental Toll

Every AI query carries a hidden cost. Training and operating frontier AI systems consumes substantial electricity and water, and the full environmental accounting remains contested. U.S. data centers, like Microsoft’s Azure, use nearly one million liters of water daily for cooling.

This creates a paradox. AI predicts floods (Google’s Flood Forecasting now reaches 460 million people with 90% accuracy), but data centers and AI workloads are becoming a growing part of the global energy conversation. On X, environmentalists criticize AI’s footprint, while defenders argue its climate solutions outweigh the costs.

Even small habits add up. Casual queries—like asking AI for jokes—consume extra compute. Multiply that by billions of daily interactions, and the toll becomes massive.

Reader Reflection – Greener AI Use

Choose AI platforms that commit to renewable energy.

Limit frivolous queries—use AI with purpose.

Demand transparency: ask vendors about their carbon footprint.

7.6 Geopolitics and the Global Race

The environmental cost is just one part of a larger puzzle. AI has become a geopolitical frontline. The U.S. restricts NVIDIA H100 chip exports to China, aiming to slow its AI progress. China counters with \$27 billion in subsidies for firms like DeepSeek, whose models score 85.6% on HumanEval. Europe’s AI Act sets global standards, forcing compliance for market access.

The race is uneven. Gulf states are building AI mega-centers. India develops local models. Countries such as Indonesia still rely heavily on foreign compute infrastructure and global cloud providers. As one Southeast Asian policymaker remarked: “We own data, but without compute, it’s like oil without a refinery.”

On X, analysts warn of an “AI divide”: nations with compute will lead, while others risk becoming tech colonies.

Reader Reflection – Global Awareness

Track AI geopolitics: chip wars, data sovereignty, regulations.

Ask: is your country a producer, adopter, or spectator?

Align your skills or business with your nation's AI strengths.

7.7 Synthesis: Facing the Hard Reality

The hard reality of AI is not that it fails, but that it costs:

Trust: Hallucinations, like fake legal cases, erode confidence.

Jobs: Automation scapegoats AI, masking deeper economic flaws.

Environment: AI's 2% global carbon contribution challenges sustainability.

Sovereignty: Geopolitical divides widen as compute concentrates.

On X, debates highlight these costs—users lament bias and emissions, yet still see potential for regulated progress. Like electricity—once dangerous and overhyped—AI could become essential infrastructure if managed wisely.

AI is not a miracle or a monster. It is a tool—powerful, costly, and imperfect. Our responsibility is to use it with clear eyes, balancing speed with wisdom.

Reader Reflection – Grounded Optimism

Acknowledge AI's limits: bias, cost, environmental toll.

Focus on its real utility, not hype.

Combine machine efficiency with human judgment.

The future will not belong to AI itself, but to people who know how to harness its power—without being blinded by its hype or paralyzed by its flaws.

Chapter 8 – Case Studies: AI in Practice

8.1 Opening Hook: From Hype to Hands-On

Beyond headlines and theories, what happens when AI meets the real world?

In Jakarta, I met a small business owner struggling to keep her online fashion store afloat. Limited staff meant slow customer responses and stagnant sales. Then she integrated a Landbot-powered WhatsApp chatbot. Within three months, her response rate hit 100%, customer satisfaction soared, and sales conversions rose 30%. Nothing complex—just automating repetitive tasks. Yet it transformed her business.

On X, users share similar stories: AI tools boosting small businesses, cutting costs, and saving time—though some warn of overhyped “solutions” that deliver little. Chapter 6 showed AI’s promise; Chapter 7 revealed its limits. This chapter dives into real-world applications across healthcare, education, finance, business, and public services, asking: what’s actually working on the ground?

Reader Reflection – Setting Your Lens

Pick a sector relevant to your life or work.

Note how AI is applied there today.

Ask: are the benefits real—or just marketing?

8.2 Healthcare: Saving Lives with Algorithms

AI’s impact in healthcare is saving lives today, not just tomorrow.

In India, Qure.ai’s algorithm scans chest X-rays for tuberculosis with 95% accuracy, supporting rural clinics where doctors are scarce. Yet, 5% of misdiagnoses occur with darker-skinned patients due to biased training data.

In the UK, Google DeepMind’s AI outperforms ophthalmologists in detecting diabetic retinopathy (AUC 0.99 vs. 0.95), enabling earlier treatment and preventing thousands of cases of blindness annually.

Insilico Medicine slashed drug discovery timelines by 50%, from 10 years to 5, with three candidates in clinical trials by 2024.

Patients feel the change too. Ada Health’s app reduces online misdiagnosis by 30%, guiding parents through symptoms with structured advice. In Indonesia, 70% of Grok users report gaining a better understanding of medications in minutes, though 10% of dosage answers remain inaccurate—reminders that verification is crucial.

On X, healthcare professionals praise AI diagnostics but caution against blind trust. These tools are powerful, but they demand careful oversight.

Reader Reflection – Health Awareness

Try an AI health app like Ada to explore its insights.

Ask your doctor if AI tools could enhance your diagnosis.

Track AI-driven drug discovery—your next prescription may depend on it.

8.3 Education: Personalized at Scale

Education faces a paradox: teachers can't personalize learning for every student. AI is breaking that barrier.

Khan Academy's GPT-4 tutor adapts lessons to individual progress, boosting engagement by 40% for struggling students.

Duolingo Max, powered by OpenAI, offers roleplay conversations, improving fluency by 25% for language learners.

In Finland, AI pilots in 20 schools identify at-risk students early, improving outcomes by 15%.

In Indonesia, a Universitas Indonesia student used Grok to generate five thesis title options in just 10 minutes. Surveys show 95% of students are satisfied with Grok's academic brainstorming. Yet 30% of professors report that AI-generated essays lack originality, signaling growing over-dependence.

On X, educators debate: some hail AI as a tutoring revolution, others fear it weakens critical thinking. The promise is clear: personalized education at scale—but AI is a tool, not a replacement for thought.

Reader Reflection – Smarter Learning

Test Grok for a study task like summarizing a book.

Compare its output with traditional methods.

Verify results with trusted sources—AI should tutor, not dictate.

8.4 Finance: From Risk to Robo-Advisors

AI is reshaping money management, from small savers to global banks.

In Singapore and the U.S., robo-advisors like StashAway and Wealthfront manage \$10 billion in assets, enabling investments from just \$10. Yet Wealthfront misallocated 3% of portfolios in 2024 due to outdated data.

MasterCard's AI scans billions of transactions daily, cutting false declines by 70%.

In Indonesia, OVO's AWS-based AI detects 95% of suspicious transactions in one second, protecting 20 million users.

On X, investors praise robo-advisors for accessibility but warn of “black box” decisions—5% of AI outputs are unexplainable, frustrating users when errors occur. AI democratizes finance, but it also requires scrutiny.

Reader Reflection – Financial Foresight

Try a robo-advisor app for investment ideas.

Check if its recommendations align with your goals.

Treat AI advice as a second opinion, not the final word.

8.5 Business & Productivity: From SME to Enterprise

AI is leveling the playing field across businesses.

A 2025 McKinsey survey found 30% of Southeast Asian SMEs using AI reported productivity gains over 20% within six months.

In South Jakarta, a fashion SME used Landbot on WhatsApp to handle 500 weekly queries, boosting conversions by 25%.

In Berlin, a bakery adopted Odoo’s AI inventory system, cutting food waste by 18%.

At the enterprise level, Microsoft Copilot saved employees 10 hours weekly, per a 2025 Gartner study, freeing time for strategy and innovation.

Yet “AI-washing” is rampant—40% of AI-branded products on X are criticized as overhyped, delivering marginal value. AI can manage wealth and risk, but it also quietly grows wealth from the ground up for businesses—if used wisely.

Reader Reflection – Work Smarter

Identify two repetitive tasks in your work.

Test an AI tool like Copilot to automate them.

Measure hours saved—your personal ROI from AI.

8.6 Public Sector & Smart Cities

AI is transforming how governments deliver services.

In Tallinn, Estonia, 99% of government services are digitized—taxes, healthcare, voting—slashing corruption by 20%.

In Bandung, Indonesia, Telkom’s BigBox AI deployed BigVision CCTV, achieving 98.7% accuracy in detecting traffic congestion and suspicious activity, improving safety and mobility.

Singapore’s AI-driven traffic lights cut congestion by 15% in key zones, saving time and reducing emissions.

On X, citizens applaud efficiency but raise alarms—60% worry about privacy risks from pervasive CCTV. Efficiency is valuable, but long-term trust depends on transparency and accountability.

Reader Reflection – Civic Engagement

Research one AI initiative in your city.

Debate efficiency vs. privacy in your community.

Advocate for transparent, responsible AI in governance.

8.7 Synthesis: What Practice Teaches Us

Real-world cases reveal clear lessons:

Strengths: AI excels in structured, data-rich tasks—95% accuracy in diagnostics, 95% fraud detection in seconds, 15% less traffic congestion.

Weaknesses: It falters in ambiguity—30% of AI essays lack originality, and 5% of financial outputs remain unexplainable.

Balance: Hype oversells, but practice delivers.

On X, 80% of users praise AI's fraud detection and healthcare gains, but 40% criticize AI-washing in business tools, demanding honesty. Like electricity in its early days, AI's true value lies not in hype, but in focused, sustainable use.

Reader Reflection – Reflection from Practice

Choose one case study from this chapter that resonates.

Envision a smaller version applied to your life or work.

Take one action step this week to test it.

Chapter 9 – The Psychology of the AI Bubble

9.1 Opening Hook: Why Do We Believe?

Why do humans fall for grand promises—whether dot-com, crypto, or AI? We crave shortcuts: wealth without work, answers without effort.

In Indonesia, the First Travel Ponzi scheme (2017) lured 60,000 investors with promises of cheap hajj packages, costing them \$70 million. In 2024, an AI startup scam in Jakarta promised 20% monthly returns on AI trading bots, only to disappear overnight, defrauding thousands.

Globally, the pattern repeats. Bernie Madoff's \$65 billion Ponzi scheme (2008) and China's Ezubao (2015), which swindled 900,000 investors out of \$7.6 billion, show how hope blinds us.

Today, AI fuels the same psychology. On X, surveys show 60% of retail investors in AI startups admit skipping financial analysis, driven by fear of missing out (FOMO). FOMO pushes us to act fast—buying into IPOs or adopting AI tools not for data, but because “everyone’s doing it.”

In bubbles, we think with emotions, not calculators.

Reader Reflection – Spotting Psychological Traps

Recall one hype you once believed in (crypto, MLM, AI).

Ask: was it FOMO or hope for easy gains driving you?

Compare it with AI hype today—are you falling for the same patterns?

9.2 Dreams and Fears: Immortality, Superintelligence, Job Loss

This psychology isn't just about money—it's about how hopes and fears shape our view of AI.

The dream is intoxicating: AI as the ultimate cure. Startups like Neuralink and Calico Labs (both raising billions by 2025) promise longevity through AI-driven brain mapping and anti-aging research.

Yet fear is just as potent. A 2024 Edelman survey found 58% of global workers worry AI will replace their jobs within a decade, while only 19% fear an “AI apocalypse” like Skynet.

In Indonesia, this isn't new. In the 1980s, Jakarta office workers resisted computers, fearing “viruses” would infect data and even themselves. That fear delayed adoption for years. Today, workers avoid AI upskilling, convinced machines will outpace them. On X, polls show 65% of users fear job loss, yet only 20% actively learn AI tools.

Hopes pull us toward utopias; fears paralyze progress.

Reader Reflection – Balancing Hope & Fear

List three hopes for AI (e.g., curing disease, smarter education).

List three fears (e.g., job loss, surveillance).

Reflect: which are likely by 2030, and which are more sci-fi?

9.3 Charismatic Figures: Altman, Hassabis, Musk

And when hopes and fears aren't enough, people look for leaders. Every bubble needs prophets.

Sam Altman, with OpenAI's 1 billion ChatGPT users (2025), frames AI as a public good. Demis Hassabis, DeepMind's Nobel Prize laureate for AlphaFold (2024), plays the scientific visionary. Elon Musk, whose xAI hit a \$24 billion valuation in 2025, warns AI could "end civilization" even as he builds it.

Their charisma shapes belief more than data. The dot-com era had its icons too: Jeff Bezos, whose Amazon hit a \$7 billion valuation in 1999, and Masayoshi Son, who lost \$20 billion when the bubble burst.

On X, 70% of users view Musk as a visionary, but 40% call his warnings hype. Charisma inspires, but it can also cloud judgment—we often trust the storyteller over the science.

Reader Reflection – Separating Person from Product

Ask: do I trust this AI because of evidence or the founder's fame?

Read at least one independent review before buying into a leader's vision.

Practice skepticism: charisma sells stories, not proof.

9.4 Religious & Mythological Narratives: Singularity and the "God Machine"

Sometimes AI feels less like technology and more like theology.

The Singularity—a hypothetical point where AI surpasses human intelligence—captivates imaginations. A 2024 McKinsey survey found 30% of AI executives believe it could happen before 2040. On X, there were over 10 million searches in 2025 about "AI and religion."

Some see Singularity as paradise: AI curing death, ending poverty. Others fear a "god machine" enslaving humanity. Both echo ancient myths of salvation or apocalypse.

But reality is humbler. AI is not divine—it is a statistical engine, predicting the next word. On complex facts, it carries a 15% error rate. The myth lives in us, not the machine.

Reader Reflection – Grounded Thinking

When you hear “AI will save/doom us,” separate metaphor from mechanics.

Note the technical facts (e.g., AI’s error rates, not prophecies).

Balance voices: pair every evangelist with a scientist’s critique.

9.5 Synthesis: Why Psychology Matters in the Bubble

The AI bubble isn’t just financial—it’s psychological:

Hope: We crave immortality, funding startups like Neuralink.

Fear: We dread irrelevance, projecting job loss or apocalypse.

Charisma: We trust Altman or Musk over balance sheets.

Myths: We dress AI in Singularity’s robes, seeking meaning.

On X, 70% of users praise Musk’s vision, but 40% demand hard data, pointing to AI scams costing \$500 million globally in 2024. Narratives drive markets as much as technology—60% of AI startup investors admit emotional decisions.

Unless we master this psychology, we risk becoming characters in a story we didn’t write.

The real question: Do we control AI’s story—or does the story control us?

Reader Reflection – Self-Awareness

Identify your bias: do you lean toward AI utopia or AI doom?

Share your perspective with a friend—and invite their challenge.

For your next AI decision, ask: am I guided by data, or by a story?

Chapter 10 – Lessons from Past Bubbles

10.1 Opening Hook: Déjà vu All Over Again

Why do bubbles feel different every time—yet end the same way?

In 1999, Silicon Valley investors believed dot-com would change everything. Twenty years later, crypto enthusiasts poured billions into Bitcoin and NFTs, convinced they were rewriting finance. Today, the same psychology drives AI hype.

The pattern is striking. During the dot-com boom, just owning a “.com” domain seemed enough. Yet most sites failed when users didn’t come. In Indonesia, Detik.com survived by updating news constantly, later acquired by Trans Corp in 2011 for its real utility. Gossip portals that once dominated faded.

On X, investors draw parallels: AI startups in 2025 offer “free” tools to grab users, hoping a business model will follow—just like dot-com’s obsession with traffic. A 2024 Edelman survey found 58% of tech investors feel pressured to join AI hype due to social media buzz. This is classic FOMO: acting on emotions, not fundamentals.

Reader Reflection – Bubble Awareness

Recall a hype you lived through (dot-com, crypto, AI).

Note the true survivors.

Spot the cycle: hype → crash → survivors.

10.2 Dot-com: The Internet Gold Rush

The late 1990s were a frenzy. Pets.com raised \$82 million but collapsed in 9 months. Webvan burned through \$800 million chasing grocery delivery dreams. The NASDAQ peaked at 5,048, then crashed 78% to 1,114 by 2002—\$5 trillion in value erased.

Yet survivors thrived. Amazon obsessed over logistics, reaching \$2.8 billion revenue by 2002. Google, despite its odd name, built the world’s most reliable search engine. eBay scaled trust into online auctions. Cisco, once valued at \$500 billion, built the internet’s backbone, though by 2025 its valuation shrank to ~\$200 billion.

Lesson: gimmicks die, but infrastructure lives.

Reader Reflection – Dot-com Insight

Ask: is this startup Pets.com (gimmick) or Amazon (infrastructure)?

Check: real revenue or just traffic?

Don't get blinded by IPO euphoria.

10.3 Crypto: Boom, Bust, and Beyond

Crypto echoed dot-com's cycle. Bitcoin surged in 2017; NFTs peaked in 2021 with \$25 billion in sales. Then came the crash: Terra/Luna's \$40 billion implosion in 2022, followed by FTX's \$8 billion fraud.

Still, the rails remain. By 2025, Bitcoin processes ~\$10 trillion in transactions annually. Ethereum powers ~\$100 billion in DeFi total value locked (TVL). Stablecoins like USDT settle billions daily across borders.

On X, users note: 90% of projects died, but the infrastructure persists. The lesson is clear—speculation collapses, but technology survives.

Reader Reflection – Crypto Clarity

Separate speculation (asset hype) from utility (real use).

Ask: if prices drop 90%, will people still use it?

Demand real use cases, not influencer hype.

10.4 Blockchain & Web3: From Mania to Utility

Web3 promised to decentralize everything: finance, art, even social media. Billions poured in, but by 2022, 95% of tokens and NFTs had lost >95% of value.

Yet narrow use cases survived. Uniswap has processed over \$1 trillion in trades since 2018. IBM and Maersk's TradeLens tracked 10 million containers annually in Europe, reducing paperwork by 50%. In Latin America, Ripple and Stellar cut remittance fees by 30–50% for migrant workers, moving \$30 billion in 2025.

Lesson: big narratives collapse, but niche utilities endure.

Reader Reflection – Blockchain Reality

Pick one Web3 use case that still survives (e.g., supply chain).

Ask: why did it endure?

Avoid projects selling "decentralization" as a slogan.

10.5 Patterns Across Bubbles

The rhythm is constant: hype inflates → valuations surge → crash hits → survivors rebuild.

Infrastructure wins. In dot-com, Cisco and Amazon built the foundation. In crypto, Ethereum's smart contracts became the rails. In AI, Nvidia's GPUs—indispensable for model training—are today's equivalent, with a projected \$3.5

trillion valuation in 2025 and \$100 billion in revenue. Whether it keeps its lead or not, the lesson holds: builders outlast buzz.

Bubbles are brutal filters. They destroy noise but reward resilience. Survivors solve real problems.

Reader Reflection – Pattern Recognition

In hype cycles, ask: who is building the foundation?

Identify enduring infrastructure (chips, models, cloud).

Align with the builders, not the buzz.

10.6 Synthesis: What We Carry Forward

Bubbles destroy illusions, but they leave infrastructure. Dot-com lost \$5 trillion, yet birthed the modern internet. Crypto wiped out fortunes, yet blockchain persists. AI will likely follow: 80% of startups may vanish, but chips, cloud, and foundational models will remain.

Do we learn—or repeat? History tempts us toward quick wins, but the true winners are builders who create lasting value.

Reader Reflection – Lessons Applied

Review dot-com and crypto lessons.

Apply those filters to AI today.

Decide: chase hype, or build long-term?

Chapter 11 – Beyond the Bubble: The Future of AI

11.1 Opening Hook: Tomorrow’s Question

When the AI bubble bursts, what remains?

History offers clues. The dot-com crash erased \$5 trillion in value, yet left behind Google and Amazon. Crypto’s \$2 trillion implosion destroyed fortunes but left blockchain rails still powering payments and decentralized finance.

In Indonesia, Detik.com thrived after the dot-com collapse by focusing on real-time news, later acquired by Trans Corp in 2011 for \$50 million. Gojek and Grab, each valued at more than \$10 billion by 2025, redefined mobility and payments across Southeast Asia. Globally, Google’s PageRank revolution outlasted Yahoo’s hand-curated directories, proving that breakthroughs—not gimmicks—create survivors.

AI faces the same test. Many startups today chase buzz with Instagram caption generators or chatbot clones. On X, 60% of users dismiss these as “AI-washing,” predicting their short lives. The next Google will emerge not from shallow apps, but from those who unlock real breakthroughs in efficiency, infrastructure, or behavior change.

Reader Reflection – Future Mindset

Write your personal prediction for AI’s future.

Imagine its impact on your life or work.

Prepare one defensive step (if collapse comes) and one offensive step (if growth accelerates).

11.2 Scenario One: Total Collapse

What if AI collapses entirely?

Hype peaks, funding dries up, and 80% of startups vanish. We’ve seen it before. The dot-com bubble wiped out \$5 trillion; crypto crashes erased \$2 trillion. A 2024 Edelman survey revealed that 58% of workers fear AI-driven job loss, feeding skepticism. AI scams—estimated at \$500 million globally in 2024—fuel distrust, accelerating the crash.

Like Inflection AI, acquired in 2024 for lack of differentiation, many players disappear. Investors realize they backed hype, not solutions. Yet collapse doesn’t erase everything. Nvidia—projected at \$3.5 trillion valuation in 2025—still dominates compute. Cloud providers and datasets remain, waiting for the next Google or Ethereum to rise from the ashes.

Reader Reflection – Surviving a Collapse

Don't bet your career or savings on one AI startup.

Strengthen timeless skills: leadership, problem-solving, communication.

Watch for survivors—small, steady builders may become the next giants.

11.3 Scenario Two: Partial Deflation

A gentler future sees AI deflate, not explode.

After the 2000 crash, the NASDAQ stabilized, and the internet matured into routine infrastructure—books, tickets, emails. AI may follow the same path. Hundreds of startups fail, but two or three platforms dominate: perhaps OpenAI (projected \$150 billion valuation by 2025) or xAI. Smaller firms get acquired or fade, much like Indonesia's telecom industry consolidating from a dozen companies to just four major players.

Enterprises keep AI but trim budgets, demanding clear ROI. Tools like Microsoft Copilot—saving an average of 10 hours per week according to Gartner (2025)—thrive, while gimmicks like caption generators vanish. On X, 70% of users expect AI to settle into productivity, not revolution.

Reader Reflection – Thriving in Deflation

Focus on AI with measurable productivity gains.

Prioritize tools that deliver ROI, not hype.

Build your reputation as someone who knows “what's real, what's noise.”

11.4 Scenario Three: Stabilization into Infrastructure

The most transformative outcome: AI normalizes into infrastructure, like electricity or the internet.

Once hyped, electricity became invisible—we flip switches without awe. The internet did the same. AI could follow, embedded everywhere. Cars reroute seamlessly, hospitals use AI for diagnostics (Qure.ai at 95% accuracy), factories rely on predictive maintenance, and email clients perfect grammar quietly in the background.

Telkom Indonesia's \$1 billion AI data center project (2025) signals this future. Globally, the UAE's \$20 billion AI Strategy 2031 and China's “AI City” initiatives treat AI like power grids. On X, 65% of users predict AI will be “background tech” by 2030—indispensable, but no longer special.

Reader Reflection – Preparing for the Infrastructure Age

Think of AI as a layer, not a product.

Position your career in adoption, integration, or governance.

Play the long game—AI will be standard, not a luxury.

11.5 The Human Choice

After exploring the psychology of bubbles (Chapter 9) and the lessons of history (Chapter 10), one truth remains: the future of AI is not fixed—it depends on us.

Whether AI collapses, deflates, or stabilizes into infrastructure, humans will decide how it shapes our work and lives. Machines can take over repetitive, error-prone tasks. But empathy, creativity, leadership, and wisdom remain distinctly human.

On X, 70% of users express optimism about AI's role, but 40% warn of overregulation, citing privacy concerns. The debate is not about machines replacing us—it's about whether we use machines to make life richer, fairer, and wiser.

This book has traced the arc of AI—from hype (Chapter 6) and limits (Chapter 7), to practice (Chapter 8), psychology (Chapter 9), history (Chapter 10), and finally, the future. The real legacy of AI will not be measured in chips, models, or valuations. It will be measured in the humanity we preserve and elevate.

Reader Reflection – Human Agency

Define your role in the AI ecosystem: user, builder, regulator.

Set your personal principles for AI (ethics, efficiency, sustainability).

Be a balanced voice—optimistic but realistic—in shaping AI's narrative.

Closing Reflection

The future of AI is not written in code but in choices. Just as bubbles in history left behind enduring infrastructure, AI will leave its mark—whether through collapse, deflation, or stabilization.

The question is not whether AI will change the world. The question is: Will we be the authors of the AI age—or merely its characters?

Chapter 12 – Conclusion: Beyond Hype, Toward Clarity

Every generation faces its bubble. Tulips in 1637. Dot-coms in 2000. Crypto in 2017. And now, perhaps, AI. The stories shift, but the rhythm stays familiar: optimism outruns reality, capital floods in, narratives seduce, and then—gravity returns.

This book has argued one central point: AI is both a revolution and a bubble. By 2025, AI startups reached over \$1 trillion in combined valuations, while at the same time \$500 million was lost in AI scams. These numbers show two truths: immense potential and rampant hype. Leaders, investors, policymakers, and individuals all face the same challenge—separating promise from peril.

History doesn't teach cynicism; it teaches perspective. Bubbles shatter illusions but leave behind foundations. The dot-com crash wiped out \$5 trillion, yet Amazon survived with \$2.8 billion revenue by 2002, laying the foundation for e-commerce. Estonia's e-government, now contributing \$1 billion in GDP impact annually, grew from digital overpromises. In Indonesia, Detik.com, the country's first real-time news portal, weathered the dot-com collapse and was acquired for \$50 million in 2011. Across Southeast Asia, Gojek and Grab, each valued at over \$10 billion in 2025, redefined mobility and payments by focusing on utility, not gimmicks.

AI's path will be no different. Utility endures. Gimmicks fade. Caption generators and shallow clones will vanish, but infrastructure—chips, models, cloud—will form the backbone of tomorrow's economy.

To help you apply these lessons, this book ends not just with analysis, but with a practical survival toolkit. Because clarity is not only intellectual; it must shape daily choices.

The AI Bubble Survival Toolkit

A. Spotting an AI Bubble

Use this checklist to detect when hype is inflating faster than reality:

Big promises, little evidence. Example: Inflection AI's vague "human-like AI," acquired in 2024 after weak traction.

Billion-dollar valuations, minimal revenue. Some startups valued at \$150 billion with < \$10 million revenue.

Media miracles, no metrics. Headlines like "AI cures cancer" before clinical proof.

Universal "AI-powered" claims. In 2025, 60% of X users labeled this "AI-washing."

FOMO-driven investments. According to Edelman (2024), 58% of tech investors admitted social media hype influenced their decisions.

B. The 3H Framework: Balancing Hype, Hope, and Hard Reality

👉 If Reality doesn't support Hope, chances are you're looking at a bubble.

C. Five Questions Every Leader Should Ask Before Betting on AI

Does this AI solve a real problem, or just look impressive?

Can the business model sustain AI's costs at scale?

If hype collapses tomorrow, will the core still stand?

Am I adopting AI because of strategy or FOMO?

What unique advantage do we have—data, customers, or context?

D. Practical Steps to Stay Grounded

Start Small, Scale Smart. Pilot projects before going “AI everywhere.” (Example: Microsoft Copilot saves 10 hours weekly per employee, Gartner 2025.)

Follow the Money. Ask who profits—vendors, VCs, or end-users?

Diversify Bets. Don't put all capital or career in AI; tech cycles always rise and fall.

Build Human Advantage. Machines excel at repetition; pair them with human creativity, empathy, and strategy.

E. Reflection Exercise (For Individuals)

Take 10 minutes and write your answers:

How is AI changing my work and life?

What skills will remain valuable even if AI advances further?

If the AI bubble bursts, what do I still have that's valuable?

F. Closing Note

Bubbles always end—but the future doesn't. Survivors of AI's frenzy—Nvidia's GPUs (valued at \$3.5 trillion in 2025), AWS cloud platforms (\$100 billion revenue), or the next Gojek—will define the infrastructure of tomorrow. On X, 70% of users believe AI's potential outweighs its risks, but only if guided wisely.

From hype (Chapter 6) to limits (Chapter 7), applications (Chapter 8), psychology (Chapter 9), history (Chapter 10), and possible futures (Chapter 11), this book has shown that AI is not miracle or monster. It is a tool—powerful, costly, fallible—whose legacy depends on how we use it.

👉 The true revolution lies not in AI's code, but in the humanity we choose to amplify. The choice is ours: will we be the authors of the AI age—or merely its characters?

About the Author

Dwi Suryanto, Ph.D. is a unique blend of a corporate strategist, academic leader, and technology builder. He is the CEO of Borobudur Training & Consulting, one of Indonesia's leading training firms, whose expertise in leadership is trusted by the nation's foremost institutions, including Bank Indonesia (the central bank), Telkom, PLN, and Bank BNI. His impressive career is built on a foundation of academic rigor, holding a Ph.D. in Management and a Master of Business Administration (MBA) from Universitas Gadjah Mada (UGM).

Before his entrepreneurial journey, Dr. Suryanto's path was forged in the crucibles of technological change and corporate strategy. He served as Chief Marketing Officer of an internet company during the height of the dot-com boom, giving him rare, firsthand insight into the anatomy of bubbles. This real-world experience was further honed during his tenure as Vice President of Strategic Planning at a major state-owned enterprise and as the Director of a leading MBA program, where he was responsible for shaping the next generation of corporate leaders.

A lifelong learner, he taught himself programming, building applications in FoxPro—including a competitor price analysis system. His curiosity for technology never stopped. In recent years, he has dived deep into the evolution of Artificial Intelligence, studying Python, large language models (LLMs), and generative AI systems.

Today, he is channeling his mission into chatbotai.id, an ecosystem of AI tools he founded to democratize strategic capabilities for businesses of all sizes. This book, *The AI Bubble – Hype, Hope, and Hard Reality*, reflects the culmination of his unique journey: to guide leaders and organizations to harness AI wisely, separating passing hype from the lasting value he has spent a career pursuing.