AI-04660 Gold Rush in 2026 and Beyond

Explain and delve. What is Act 1/2 in AI gold rush? List 22 realistic scenarios.

Missed AI's "Act 1"? Act 2 Could Be 16x Bigger
Most investors think they missed the AI boat because they didn't buy Nvidia in 2005.

But according to our analysts, we're only at the end of "Act 1"—the R&D phase. "Act 2" is the global rollout, a massive technology build-out that Google's CEO says could be more profound than fire or electricity.

While everyone watches the chip designers, one "backbone" company provides the critical technology that Nvidia and AMD literally cannot function without. We've detailed this under-the-radar player in our new AI Playbook.

Yes. The "Act 1 / Act 2" framing is useful—but I would **not take the "16× bigger" claim literally**. It is an investment-marketing metaphor for a real transition that is already underway: **AI is moving from building models to deploying AI everywhere.**

The evidence for that transition is substantial. The IEA says data-center electricity use grew 17% in 2025, AI-focused data centers grew 50%, and global data-center electricity consumption could roughly double from 2025 to 2030. (iea.org)

The simplest way to understand it

Think of the AI revolution as a three-act play:

Period	~2012–2025	~2025–2035+
Primary objective	Make AI capable **Act 1 — Build the brain**	Make AI ubiquitous **Act 2 — Deploy the brain**
Main bottleneck	GPUs + training	Power + chips + networking + inference + software + robots
Economic model	Sell compute	**AI becomes a production input**
Nvidia's role	GPUs	Entire AI infrastructure
AI usage	Training models	Billions of inference operations
Analogy	Building the railroad	**Building cities around the railroad**

And there is an important clue in Google's own numbers: Google said monthly tokens processed across its surfaces increased from **9.7 trillion in 2024 to more than 3.2 quadrillion in 2026**. It also said more than 8.5 million developers were building with its models monthly. (blog.google)

That's the beginning of Act 2.

Act 1: The AI Gold Rush was about building the machine

Act 1 was primarily:

Research → GPUs → gigantic training clusters → frontier models

Think:

> "Can we build an artificial intelligence that can actually do useful things?"

The winners were companies supplying the ingredients:

Nvidia → GPUs

AMD → accelerators

TSMC → advanced semiconductor manufacturing

ASML → advanced lithography

SK Hynix / Micron / Samsung → HBM memory

Broadcom / networking companies → moving enormous quantities of data

Microsoft / Google / Amazon → cloud infrastructure

The extraordinary Nvidia growth story happened because the market suddenly realized:

> **AI capability requires enormous amounts of computation.**

Nvidia became the shovel seller in the gold rush.

Act 2: The gold rush becomes infrastructure

This is where the investor thesis becomes much more interesting.

Instead of asking:

> "Who builds the best AI model?"

the question becomes:

> **"What does the world have to build so that billions of people and millions of businesses can use AI continuously?"**

That changes the investment map dramatically.

OpenAI itself describes compute as the critical input to its AI flywheel: more compute → better models → more usage → more revenue → more infrastructure. (openai.com)

And JLL estimates that almost **100 GW of new data-center capacity** could be added globally between 2026 and 2030, requiring roughly **$3 trillion of investment**. (jll.com)

That's not merely an AI-chip story.

It's an **industrial infrastructure story**.

What does "Act 2" actually require?

Imagine you put **100,000 GPUs** into a building.

Congratulations.

You now have a problem.

Those GPUs need:

electricity

↓

transformers

↓

switchgear

↓

power distribution

↓

cooling

↓

networking

↓

fiber

↓

memory

↓

storage

↓

software

↓

security

↓

maintenance

↓

land

↓

water

↓

grid connection

↓

financing

And then somebody actually has to **use the AI**.

That's Act 2.

Nvidia itself now describes AI factories as requiring advanced chips, packaging, memory, networking, land, power and the physical “shell.” (**blogs.nvidia.com**)

The really important distinction: Training → Inference

This may be the most important concept in the entire thesis.

Training

You build the AI.

For example:

> "Let's spend billions training a new frontier model."

Huge but relatively episodic.

Inference

You **use** the AI.

Every:

- question
- email
- image
- video
- coding task
- voice conversation
- autonomous agent
- robot movement
- medical analysis
- financial transaction

requires inference.

And inference happens **over and over again**.

That's why Act 2 potentially has a much larger recurring economic footprint.

JLL expects inference to become the dominant AI workload around 2027, with AI potentially representing half of data-center workloads by 2030. (jll.com)

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22 realistic Act-2 scenarios

Here is how I would translate the investment pitch into **22 concrete scenarios**.

1. AI becomes everyone's personal assistant

Instead of opening 15 applications:

> "Handle my travel arrangements, summarize my email and prepare tomorrow's schedule."

AI becomes the interface.

Beneficiaries: compute, cloud, networking, AI software.

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2. AI agents replace repetitive knowledge work

An agent doesn't merely answer:

> "How do I file this?"

It actually does it.

Accounting, purchasing, scheduling, customer service, claims processing and document processing become increasingly automated.

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3. Software development becomes massively AI-assisted

A developer says:

> "Build this application."

AI writes, tests, debugs and deploys much of it.

That increases software creation dramatically—which paradoxically can **increase compute demand**.

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4. Every company becomes an AI company

Not because every company builds its own model.

Rather:

> AI becomes embedded into every company's operations.

Banks, hospitals, manufacturers, insurance companies, retailers and governments.

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5. AI inference moves closer to the user

Instead of everything going to a distant hyperscale data center:

phone → vehicle → factory → hospital → local data center

This creates an enormous distributed inference infrastructure.

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6. AI PCs become normal

Your computer doesn't simply run Microsoft Office.

It continuously runs local AI models.

That means:

CPU + GPU/NPU + memory + storage + networking

become increasingly important.

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7. Smartphones become AI devices

The smartphone becomes less of an "app launcher" and more of an AI interface.

You ask for something rather than navigating menus.

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8. Autonomous vehicles become AI factories on wheels

A vehicle continuously processes:

- cameras
- radar
- maps
- navigation
- driver behavior
- environment

That's inference happening continuously.

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9. Robots become economically viable

This is one of the biggest Act-2 possibilities.

Factories, warehouses, agriculture, construction and eventually homes could acquire AI-powered machines.

The AI model isn't the final product.

The robot is.

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10. AI-powered factories

Manufacturing becomes increasingly autonomous:

vision → prediction → decision → robotic action → quality inspection

The factory becomes a physical manifestation of AI.

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11. AI medicine

AI can increasingly assist with:

- imaging
- clinical documentation
- drug discovery
- medical research
- patient triage
- personalized treatment analysis

The important economic point:

each patient interaction can create inference demand.

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12. AI-designed drugs

AI searches enormous chemical spaces for molecules that might work.

That could compress parts of drug discovery from years toward much shorter cycles.

This is potentially a gigantic economic market even if only a small number of discoveries succeed.

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13. AI-designed semiconductors

AI itself helps design:

- chips
- architectures
- verification
- software
- physical layouts

Which creates a feedback loop:

> AI → better chips → more AI.

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14. AI-powered cybersecurity

AI attacks and AI defense increasingly compete against one another.

Security becomes:

> continuous machine-speed detection and response.

This could become a huge inference workload.

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15. AI video generation explodes

Text inference is comparatively lightweight.

Video generation can be extraordinarily computationally expensive.

The IEA specifically notes that video generation, reasoning and agentic workloads can consume **hundreds or thousands of times more energy per query** than simple text generation. (iea.org)

That creates another enormous Act-2 demand curve.

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16. AI becomes a permanent corporate employee

Imagine a company with:

1,000 humans + 500 AI agents

The agents work:

24/7/365

They don't sleep.

They don't take vacations.

And each one consumes compute.

That's a radically different demand model from training a model once.

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17. Sovereign AI

Countries increasingly decide:

> "We need our own AI infrastructure."

That means governments build domestic:

- data centers
- GPUs
- networking
- energy capacity
- AI models

Nvidia is already describing a worldwide expansion of regional and sovereign AI infrastructure. (blogs.nvidia.com)

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18. AI creates an electricity supercycle

This is one of my favorite Act-2 investment implications.

AI doesn't just require chips.

AI requires electricity.

IEA projects data-center electricity consumption to approach **950 TWh by 2030**, more than double 2024 levels. (iea.org)

That means potential demand for:

natural gas

nuclear

solar

wind

batteries

transmission

transformers

switchgear

power-management equipment

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19. Data centers become power plants' biggest customers

This is already happening.

AI data centers increasingly need dedicated power arrangements because ordinary grid connections can take years. JLL notes that grid-connection wait times in major markets can exceed four years. (jll.com)

That creates opportunities for:

on-site generation + batteries + microgrids.

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20. Cooling becomes a strategic technology

The bottleneck isn't merely:

> "Can we get enough GPUs?"

It's:

> **"Can we remove the heat?"**

That creates opportunities in:

- liquid cooling
- immersion cooling
- heat exchangers
- pumps
- chillers
- thermal management

AI chips are becoming extraordinarily power dense.

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21. Networking becomes almost as important as computing

This is easy to underestimate.

100,000 GPUs aren't useful if they can't communicate efficiently.

Nvidia recently described networking as a **computing-power multiplier** for gigascale AI factories. (blogs.nvidia.com)

That makes:

switches + optical networking + fiber + interconnects

a major Act-2 infrastructure category.

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22. AI becomes a utility

This is the ultimate scenario.

Today we think:

> electricity
> internet
> cloud
> software

Tomorrow we may think:

> **intelligence**

as another utility.

You don't ask:

> "Which company invented electricity?"

You simply consume electricity.

Similarly, eventually you may not consciously "use AI."

AI will simply be embedded in:

your car → your phone → your bank → your doctor → your workplace → your home → your appliances → your government.

That's the real Act-2 thesis.

So what is the "16× bigger" claim really saying?

I'd translate the advertisement into something much more defensible:

> **Act 1 monetized the construction of AI.**
> **Act 2 potentially monetizes the consumption of AI.**

That's a profound distinction.

Suppose a company spends $10 billion training a model.

That's one enormous transaction.

But suppose 500 million people subsequently interact with that model every day.

Now you have:

500M users × thousands of interactions × 365 days

That's an enormous recurring computational workload.

The economic opportunity therefore moves from:

CAPEX → recurring usage

And now the mysterious "backbone company"

This is where I would be **very skeptical of the advertisement**.

The wording:

> "one under-the-radar player provides the critical technology that Nvidia and AMD literally cannot function without"

is almost certainly designed to make you click the investment newsletter.

There are several plausible companies depending on what they mean by "backbone."

If they mean semiconductor manufacturing:

TSMC

Nvidia and AMD design chips, but advanced chips must be manufactured.

If they mean lithography:

ASML

The most advanced semiconductor manufacturing depends on ASML's extreme-ultraviolet lithography technology.

If they mean networking:

Companies such as **Broadcom** become extremely important.

If they mean data-center power/cooling:

Companies such as **Vertiv** and numerous electrical-equipment suppliers become important.

If they mean semiconductor equipment:

There are several critical suppliers involved in deposition, etching, inspection, packaging, etc.

So **"the one company Nvidia and AMD literally cannot function without" is not a technically precise statement.**

The AI supply chain is much more like this:

AI models

↓

GPUs / accelerators

↓

HBM

↓

advanced packaging

↓

leading-edge fabrication

↓

lithography

↓

networking

↓

power

↓

cooling

↓

data centers

↓

cloud

↓

applications

↓

billions of inference events

Here's where I think the really interesting investment question lies

Don't ask:

> **"Did I miss Nvidia?"**

Ask:

> **"What becomes scarce when AI deployment grows 10×?"**

That's a much better question.

Today the obvious scarce resources are increasingly:

⚡ **Electricity**

🏭 **Semiconductor capacity**

🧠 **HBM**

🔌 **Networking**

❄️ **Cooling**

🏢 **Data-center capacity**

🔋 **Power storage**

🗼 **Transmission**

🌎 **Land**

💰 **Capital**

The IEA specifically reports that shortages of high-bandwidth memory have emerged and could persist through at least 2027, while bottlenecks in electricity, grid connections, manufacturing and capital are constraining AI infrastructure expansion. (iea.org)

My "AI Gold Rush 2.0" map

If I were building an AI investment map rather than buying the newsletter's story, I'd think about it this way:

ACT 1

🧠 Models

↓

GPU

↓

HBM

↓

Semiconductor manufacturing

ACT 2

⚡ Power

↓

🏭 Data centers

↓

❄️ Cooling

↓

🔌 Networking

↓

☁️ Cloud

↓

🤖 Agents

↓

🚗 Robots/autonomous machines

↓

🏥 Healthcare

↓

🏦 Finance

↓

🏢 Enterprise

↓

🌎 **AI everywhere**

And there's a particularly interesting transition occurring right now:

> **AI infrastructure is beginning to resemble an industrial infrastructure buildout rather than simply a software boom.**

That's why the $3T data-center investment estimate and the enormous power requirements matter so much. (jll.com)

One caution

There is also a huge **bubble risk**.

If companies build enormous AI factories faster than customers generate economically valuable inference, we could get:

overbuilding → falling utilization → falling AI prices → infrastructure write-downs → consolidation.

So Act 2 isn't automatically bullish for *every* AI-related stock.

The winners may ultimately be the companies sitting at **hard physical bottlenecks** rather than companies whose products can be commoditized.

The 22-scenario takeaway

If you want to hunt for the next “Nvidia,” I wouldn't restrict the search to another chip designer.

I'd investigate companies exposed to these **22 demand waves**:

1. AI assistants

2. AI agents
3. AI coding
4. Enterprise AI
5. Edge inference
6. AI PCs
7. AI smartphones
8. Autonomous vehicles
9. Robotics
10. AI factories
11. AI medicine
12. AI drug discovery
13. AI chip design
14. AI cybersecurity
15. AI video
16. AI employees
17. Sovereign AI
18. Electricity generation
19. Data-center power
20. Cooling
21. Networking
22. AI-as-a-utility

That is the much more interesting interpretation of "Act 2."

And the fascinating part for an investor is that **the biggest Act-2 winner may not be an AI company at all.** It could be a company selling something boring—electricity equipment, networking, cooling, semiconductor equipment, memory, transformers, optical components or data-center infrastructure—that becomes a mandatory input to the AI economy.

If you'd like, I can next take this one step further and **identify the 15–20 publicly traded companies that best represent these Act-2 bottlenecks, rank them from "Nvidia-like opportunity" to "already fully priced," and specifically examine which ones could complement your FTEC/technology-ETF strategy.**

What Act 3 of the AI Playbook look like? When and what to expect?

Yes. If **Act 1 = invent AI** and **Act 2 = build the global AI infrastructure**, then I would define **Act 3 as the "AI Economy"**:

> **Act 3 is when AI stops being primarily something companies buy and becomes something companies organize their entire businesses around.**

This is my framework—not an established industry term—and I think it is a useful way to think about the next 10–15 years.

The important point is that **we are probably entering Act 2 now, not waiting for it.** Inference is expected to overtake training as the dominant AI workload around **2027**, while AI infrastructure spending could reach about **$1.2 trillion annually by 2030** under S&P Global's forecast. (mckinsey.com)

The AI Playbook: Acts 1 → 2 → 3

Approx. period	2012–2025	**2025–2030**	**2030–2040+**
	ACT 1	**ACT 2**	**ACT 3** **does?**
Core product	Models	Infrastructure	**AI-powered economy**
Scarcity	Compute	Power + infrastructure	**Human attention / resources / physical production**
AI role	Tool	Employee/agent	**Economic actor**
Main workload	Training	Inference	**Autonomous inference + physical action**
Winners	Nvidia, TSMC, etc.	Chips + power + cooling + networking	**Companies that capture AI-driven productivity**
Killer application	ChatGPT	AI agents	**Autonomous businesses + robots**
Investment theme	Semiconductors	Infrastructure	**Productivity + automation + physical AI**

ACT 3 starts when AI can DO things

This is the fundamental transition.

Act 1

You ask:

> "What is the answer?"

AI responds.

Act 2

You ask:

> "Do this for me."

AI agent performs a sequence of tasks.

Act 3

You say:

> **"Achieve this objective."**

And the AI determines the steps.

That is a much bigger change.

Example: Your own life

Imagine today's AI:

You:

"Find the cheapest flight to Cebu."

AI:

> Here are five options.

Act 2

You:

> "Book me the best flight to Cebu."

Agent:

1. searches
2. compares
3. checks your calendar
4. checks your preferences
5. books
6. puts it on calendar
7. emails confirmation

Act 3

You:

> **"Plan my trip to Cebu within my $3,000 budget."**

The AI:

- decides when to go
- finds flights
- books hotel
- rents transportation
- monitors prices
- changes reservations
- handles cancellation
- coordinates itinerary
- communicates with other agents

You supervise the objective.

That's the difference.

When do I expect Act 3?

My base case:

2026–2027

Late Act 1 → Early Act 2

Infrastructure explosion.

Training remains important, but inference begins taking over.

S&P expects inference infrastructure revenue to rise from approximately **$101B in 2025 to $532B in 2030**, and expects inference to overtake training/fine-tuning around **2027**. (spglobal.com)

Meanwhile, global data-center electricity consumption is projected by the IEA to roughly double from **485 TWh in 2025 to 950 TWh in 2030**. (iea.org)

Investment environment:

🔥 Infrastructure boom.

2027–2030

Act 2 accelerates

This is the period I would watch extremely closely.

AI goes from:

chatbots

→

copilots

→

agents

→

agent fleets

Businesses start allowing AI to actually execute transactions.

But there is an enormous catch.

Today, agent adoption is still early. McKinsey reports that although 62% of organizations are experimenting with or piloting AI agents, fewer than 10% report scaling agents meaningfully in any given business function. (mckinsey.com)

So:

> **The technology is ahead of organizational adoption.**

That gap is potentially enormous.

2030–2033

🚨 Act 3 begins

This is my **base-case Act-3 window**.

Not because some magic switch flips in 2030.

Rather, several curves should intersect:

1. Compute becomes abundant enough

2. Inference becomes cheap enough

3. Agents become reliable enough

4. Enterprise software becomes agent-compatible

5. Robotics becomes economically viable

6. Power infrastructure catches up

7. Companies redesign workflows around AI

And suddenly:

> **AI stops being an add-on.**

It becomes the operating system of the enterprise.

The biggest Act-3 transformation

Humans stop being the unit of economic production.

This is the really profound possibility.

Today:

Company

↓

100 employees

↓

100 people's labor

↓

economic output

Act 3:

Company

↓

100 humans

- **1,000 AI agents**
- **100 robots**

↓

economic output

The company's effective "workforce" becomes much larger than its human headcount.

Scenario #1 — The 1-person company

This could be one of the most disruptive Act-3 developments.

One entrepreneur has:

- AI CEO assistant
- AI accountant
- AI lawyer
- AI programmer
- AI marketing department
- AI customer service
- AI sales agents
- AI researcher

The human becomes:

> **capital allocator + decision maker + relationship manager**

A $10M business might eventually require dramatically fewer employees.

Scenario #2 — AI-native companies

Today companies are:

> humans + software + AI

Act 3 companies may be:

> **AI + humans**

from the beginning.

No legacy payroll system.

No giant call center.

No enormous back office.

No traditional software workflow.

Everything is designed around agents.

Scenario #3 — Autonomous corporations

This is more speculative but fascinating.

Imagine:

CEO gives objective

> "Increase profit 15% while maintaining customer satisfaction."

AI system:

- analyzes pricing
- analyzes inventory
- negotiates suppliers
- launches marketing
- optimizes staffing
- identifies new products

- forecasts demand
- allocates capital

Humans approve major decisions.

The company becomes a **semi-autonomous economic machine**.

IBM's 2030 outlook similarly anticipates significant fractions of business operations becoming automated and increasingly autonomous data systems coordinating multiple agents. (ibm.com)

Scenario #4 — Robots finally matter

This is where Act 3 gets physical.

Act 1 was:

AI brain

Act 2:

AI infrastructure

Act 3:

AI brain + body

Robots become the physical extension of AI.

Factories.

Warehouses.

Construction.

Agriculture.

Hospitals.

Restaurants.

Transportation.

Eventually homes.

IBM expects physical robots to become increasingly common and cost-effective beyond today's narrower niches, although it also expects physical deployment to progress more slowly than software AI. (ibm.com)

Scenario #5 — The factory becomes autonomous

Imagine:

Raw materials

↓

robot unloading

↓

AI quality inspection

↓

robot assembly

↓

AI optimization

↓

robot packaging

↓

autonomous warehouse

↓

autonomous trucks

↓

customer

Human workers supervise the system.

That could fundamentally change manufacturing economics.

Scenario #6 — AI discovers things humans couldn't

This may ultimately be more important than chatbots.

AI becomes a scientific discovery engine.

It searches:

- molecules
- proteins
- materials
- mathematics
- physics
- engineering designs

The loop becomes:

AI hypothesis

↓

simulation

↓

robotic experiment

↓

data

↓

AI learns

↓

new hypothesis

↓

repeat

This creates an **AI scientist**.

Scenario #7 — Engineering explodes

Today designing something complicated can take years.

AI could increasingly perform:

design → simulation → optimization → prototype → test → redesign

Potentially affecting:

- aircraft
- batteries
- chips
- buildings
- motors
- pharmaceuticals
- industrial machinery

Scenario #8 — Intelligence becomes extremely cheap

This may be the economic earthquake.

Today human intelligence is expensive.

You pay:

- lawyer
- accountant
- programmer
- analyst
- consultant
- engineer
- translator

Act 3 potentially turns portions of those services into:

> **compute costs.**

That could produce enormous **deflation in knowledge work**.

But here's the paradox

AI becoming cheaper could make us use **much more of it**.

The IEA makes exactly this point: efficiency per AI task is improving dramatically, but increasingly sophisticated reasoning, video and agentic workloads can consume vastly more energy per task. (iea.org)

So:

cost per inference ↓↓↓

but

number of inferences ↑↑↑↑↑

Total demand can still explode.

Scenario #9 — Intelligence becomes ubiquitous

Think of electricity.

You don't ask:

> "Should I use electricity today?"

You simply use it.

Eventually AI could become similar.

Your:

car

phone

house

doctor

bank

work

school

government

all continuously use AI.

Scenario #10 — AI becomes the interface to the Internet

Instead of:

Google → website → menu → form → checkout

you say:

> "Find me the best refrigerator under $1,500 that fits my kitchen."

Your AI agent negotiates with other AI systems.

The traditional website becomes less important.

Scenario #11 — AI agents negotiate with AI agents

This is particularly interesting.

Your AI:

> "Find me a hotel."

Hotel AI:

> "Here's our price."

Your AI:

> "Can you do better?"

Hotel AI:

> "Yes, if you book three nights."

Transaction completed.

Humans disappear from the middle.

Scenario #12 — AI personal finance

Eventually:

> "Maximize my family's probability of reaching financial independence while keeping our risk within my tolerance."

AI could coordinate:

- investments
- taxes
- insurance
- cash
- spending
- estate planning

Humans establish constraints.

AI continuously optimizes within them.

Scenario #13 — Personalized medicine

Your AI knows your:

- genome
- history
- labs
- medications
- imaging
- exercise
- sleep
- nutrition

and continuously searches for patterns.

The doctor becomes increasingly:

> **human + AI**

rather than human alone.

Scenario #14 — Education becomes individualized

Instead of:

30 students → 1 teacher

potentially:

1 student → 1 AI tutor

The AI adapts continuously to the student's weaknesses.

Scenario #15 — The marginal cost of expertise collapses

This might be one of the greatest economic consequences.

A poor person could potentially access:

> world-class tutor + accountant + programmer + researcher + translator + business consultant

for a few dollars per month.

That's enormously deflationary.

Scenario #16 — AI creates a massive productivity boom

This is ultimately what investors should care about.

If AI genuinely increases:

output per worker

then GDP can rise without proportional increases in labor.

That's the optimistic Act-3 scenario.

Scenario #17 — Labor displacement becomes the central political issue

The ugly version:

AI increases productivity faster than workers can transition.

Some occupations shrink dramatically.

The political response could include:

- retraining
- wage subsidies
- expanded social programs
- tax changes
- shorter workweeks
- potentially some form of income redistribution

This is why Act 3 is not simply an investment story.

It becomes a **political-economic story**.

Scenario #18 — Energy becomes the limiting factor

This may be the most important physical constraint.

IEA expects data-center electricity demand to reach approximately **950 TWh by 2030**, while Gartner projects global data-center power demand could reach **290 GW by 2030**. (iea.org)

So Act 3 could actually create:

> **an energy revolution because AI needs an energy revolution.**

That means nuclear, gas, renewables, transmission, transformers, storage and power electronics could remain important far beyond 2030.

Scenario #19 — Intelligence moves to the edge

Not everything will live in giant hyperscale data centers.

AI increasingly runs:

inside your car

inside your phone

inside robots

inside factories

inside medical devices

This produces a second infrastructure wave:

> **distributed AI.**

Scenario #20 — The AI economy becomes self-reinforcing

This is the ultimate flywheel:

AI

↓

better engineering

↓

better chips

↓

more compute

↓

better AI

↓

better robots

↓

cheaper manufacturing

↓

more capital

↓

more AI

↓

better science

↓

better technology

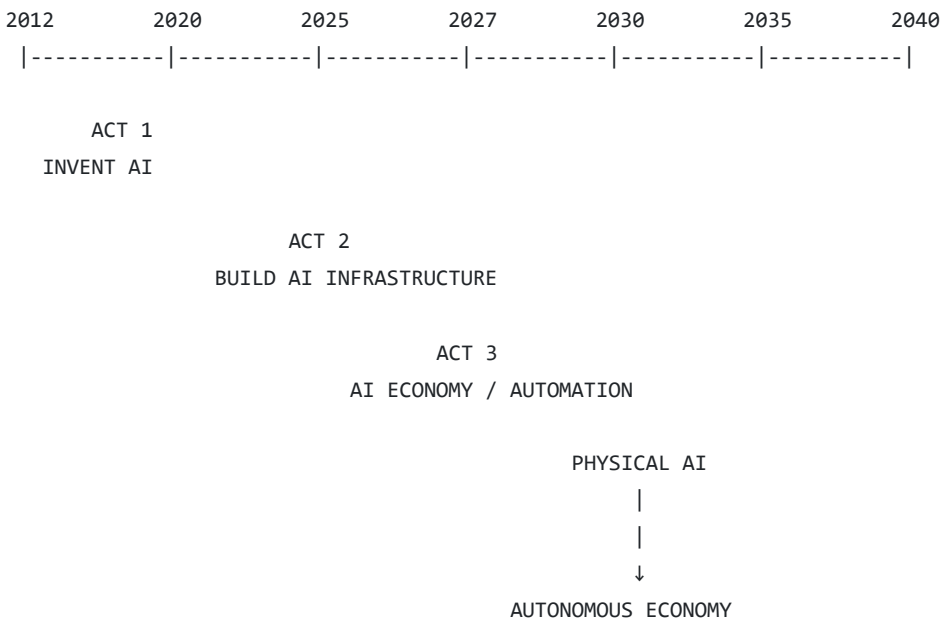
↓

even better AI

That feedback loop is what makes Act 3 potentially much larger than Act 2.

Here's my timeline

I'd think about it this way:



But I would **not** assume the dates are precise.

Technology adoption is lumpy.

The signals I would watch

Rather than trying to predict "2030," I'd watch these **eight indicators**.

🟢 Signal 1 — Inference > training

Expected around **2027**.

This is probably the most important transition in AI infrastructure economics. (mckinsey.com)

🟢 Signal 2 — Agents actually perform transactions

Not:

> "AI can theoretically do this."

But:

> **AI is actually authorized to do this.**

🟢 Signal 3 — Enterprise agent deployment explodes

Today experimentation is high but scaled deployment remains low. When that flips, we're entering serious Act 3 territory. (mckinsey.com)

🟢 Signal 4 — AI revenue exceeds AI experimentation budgets

Companies stop asking:

> "How can we use AI?"

and start saying:

> **"AI runs this part of our business."**

🟢 Signal 5 — Robots achieve positive ROI

This is huge.

Don't watch robot demos.

Watch:

> **cost per useful hour of robotic labor vs. human labor.**

When robots win economically, deployment accelerates.

🟢 Signal 6 — AI-generated products become normal

If AI designs the product, writes the software, markets it and manages sales, the economics of entrepreneurship change.

🟢 Signal 7 — AI productivity appears in GDP

This is the macro confirmation.

We should eventually see:

output ↑

while:

labor hours per unit of output ↓

🟢 Signal 8 — AI companies stop being valued primarily on "future potential"

This is ironic.

When AI becomes mature, the investment game changes.

We're no longer asking:

> "Who will win AI?"

We're asking:

> **"Who captures the economic rents created by AI?"**

And this creates a fascinating investment sequence

I would characterize the three acts this way:

ACT 1

Sell the picks and shovels

Nvidia.

Semiconductors.

HBM.

Manufacturing equipment.

ACT 2

Build the gold mine

Data centers.

Power.

Networking.

Cooling.

Transformers.

Grid.

Fiber.

Cloud.

AI infrastructure.

ACT 3

Own the businesses that become dramatically more productive

This is where it gets much harder.

Potential winners include:

software

robotics

healthcare

financial services

manufacturing

logistics

defense

pharmaceuticals

energy

engineering

consumer services

The winner might not even be an obvious AI company.

And there is a fourth possibility

I would actually add:

ACT 4 — AI becomes cheap enough to be invisible

2040+

At this point, "AI company" may become almost meaningless.

AI is simply part of everything.

Much like:

> electricity

or

> the Internet.

You don't buy "Internet companies" because you want the Internet.

You buy:

> Amazon
> Visa
> Netflix
> Microsoft
> Google
> Tesla

because they **use the infrastructure to create economic value**.

That could eventually happen with AI.

The investment implication for you

This is where I'd be particularly careful given your **FTEC-centered strategy**.

You don't necessarily need to abandon the AI/technology thesis.

FTEC already gives you substantial exposure to the **Act 1/Act 2 technology layer**.

The interesting question is whether, over the next decade, you want to add **Act-2 bottleneck exposure** or eventually **Act-3 productivity exposure**.

I'd divide the opportunity into:

ACT 1

🧠 Compute

ACT 2

⚡ Power
🏭 Infrastructure
🔌 Networking
❄️ Cooling
💾 Memory

ACT 3

🤖 Robotics
🏢 Autonomous enterprise
🧬 AI medicine
🔬 AI science
🏭 Automated manufacturing
🚚 Autonomous logistics
💻 AI-native software

The really interesting transition is:

> **Act 1 makes AI possible.**
> **Act 2 makes AI ubiquitous.**
> **Act 3 makes AI economically transformative.**

And **Act 3 is where I would expect the biggest divergence between companies that merely sell AI infrastructure and companies that actually capture the productivity gains from AI.**

One thing I'd *not* do is wait until 2030 to invest based on the label "Act 3." The market will attempt to price the transition **years before** the economic statistics make it obvious.

Put in perspective Act 3 by comparing historical events such as the invention of wheels, rubber, electricity, railroad, Air Transportation, Computing, Internet.

Absolutely. This is where the **Act 3 thesis becomes much more interesting**.

If we step back from today's AI hype and look at the last 5,000 years of technological progress, there is a recurring pattern:

> **The invention is rarely the biggest economic event. The biggest event is what happens after society rebuilds itself around the invention.**

The wheel wasn't the economic revolution.
Electricity wasn't the economic revolution.
The computer wasn't the economic revolution.
The Internet wasn't the economic revolution.

The transformation of everything built on top of them was.

And that's the best historical analogy for **AI Act 3**.

The Great Technology Pattern

Think of every major technology as having roughly three stages:

ACT 1 — INVENTION

> "Can we make this work?"

ACT 2 — INFRASTRUCTURE

> "Can we make this available everywhere?"

ACT 3 — REORGANIZATION

> **"What happens when the world is redesigned around it?"**

That third stage is where the really enormous economic consequences tend to appear.

The 8 technological revolutions side-by-side

🛞 **Wheel**	~3500 BCE	Roads, carts, axles	**Trade, agriculture, warfare, civilization**
Technology	**Act 1 — Invention**	**Act 2 — Infrastructure**	**Act 3 — Transformation**
	1839		**transportation revolution**
⚡ **Electricity**	1700s–1800s	Grid, generators, motors	**Modern industrial society**
🚂 **Railroad**	1800s	Rail networks	**National markets + mass industry**
✈️ **Air transportation**	1903	Airports, airlines, navigation	**Global mobility + globalization**
💻 **Computing**	1940s	Chips, PCs, data centers	**Information economy**
🌐 **Internet**	1969–1990s	Telecom, broadband, cloud	**Digital economy**
🤖 **AI**	2010s–2020s	AI factories, power, networks	**??? — Act 3**

That last question mark is the opportunity.

---

1. 🛞 The Wheel

The wheel is perhaps the simplest example.

The wheel itself isn't particularly useful.

A wheel sitting on the ground doesn't transform civilization.

You need:

wheel

•

axle

- **cart**
- **animal**
- **roads**
- **trade networks**

Then something extraordinary happens.

Act 1

> "We invented a rotating disk."

Interesting engineering achievement.

Act 2

People develop:

- carts
- wagons
- roads
- axles
- transportation systems

Act 3

Now society can move:

people + food + weapons + goods

far more efficiently.

That changes:

- agriculture
- warfare
- cities
- trade
- empires
- economic specialization

The wheel didn't merely make transportation better.

It changed what civilization could economically do.

---

2. 🛞 Rubber

Rubber is another fascinating example because the technology existed long before its enormous economic impact.

Indigenous peoples in the Americas were using natural rubber centuries before modern industrialization.

But **Charles Goodyear's vulcanization process in 1839** made rubber substantially more useful for industrial applications.

Then comes:

rubber + wheel

and eventually:

rubber tire + internal combustion engine

and suddenly:

🚗 Automobile civilization

Rubber itself wasn't the revolution.

The ecosystem built around it was.

---

3. ⚡ Electricity

This is probably the **best historical analogy for AI**.

Electricity had been studied for centuries.

But practical electrical systems emerged during the 19th century.

Then came:

- generators
- transmission
- electrical grids
- motors
- lighting
- transformers
- appliances

That was Act 2.

But here's the interesting part.

Act 3 wasn't "more electricity."

It was:

> **Businesses redesigned themselves around electricity.**

Factories stopped being dependent upon one giant steam engine mechanically driving every machine.

Instead:

electric motor → individual machine

This enabled radically different factory layouts.

And eventually:

electricity → refrigeration

electricity → elevators

electricity → communications

electricity → appliances

electricity → computers

electricity → modern life

Electricity's Act 3 took decades

This is an extremely important lesson for AI investors.

Electrification began well before its full economic impact became obvious.

A famous observation associated with the economist Paul David is that the productivity benefits of electricity required factories to be **redesigned**, rather than simply replacing a steam engine with an electric motor.

In other words:

> **The technology had arrived before the economy had adapted to it.**

That's exactly what may happen with AI.

AI's equivalent

Putting ChatGPT into an existing business is like:

> **putting an electric motor next to a steam engine.**

Useful.

But not transformational.

The real Act 3 question is:

> **What if we redesign the entire company around AI from the beginning?**

That's much more powerful.

---

4. 🚂 Railroads

Railroads provide another great example.

The railroad wasn't merely a faster horse.

It changed the geometry of the economy.

Act 1

Steam locomotive.

Act 2

Build:

- tracks

- stations
- bridges
- tunnels
- signaling
- locomotives
- maintenance systems

Massive capital investment.

Act 3

Then something extraordinary happens:

Distance effectively collapses.

A farmer can sell into a distant market.

Factories can locate differently.

Cities grow around railways.

National markets develop.

People migrate.

Resources move.

Standardized time becomes important.

Financial markets expand.

Entire industries appear.

The railroad didn't simply make trains profitable.

It reorganized geography.

That's Act 3.

---

5. ✈️ Air transportation

The Wright brothers demonstrated powered flight in **1903**.

But that wasn't the airline industry.

You needed:

- aircraft manufacturing
- airports
- navigation
- air traffic control
- jet engines
- fuel infrastructure
- international agreements
- safety standards

That's Act 2.

Then comes Act 3:

Globalization.

People can travel:

New York → London

in hours instead of days.

Goods become globally distributed.

Tourism explodes.

Multinational corporations become practical.

Global supply chains emerge.

Again:

> **The airplane wasn't the ultimate product. Global mobility was.**

---

6. 💻 Computing

This is another spectacular example.

Early computers were enormous machines.

Act 1

1940s:

> "We can make a machine perform calculations electronically."

Amazing.

But economically limited.

Act 2

Then we build:

transistors

↓

integrated circuits

↓

microprocessors

↓

memory

↓

PCs

↓

servers

↓

data centers

↓

cloud computing

That's decades of infrastructure.

Act 3

Then businesses realize:

> **We don't need computers merely to calculate. We can redesign the business around information.**

That produces:

- ERP
- databases
- automated manufacturing
- spreadsheets
- digital banking
- software companies
- electronic trading
- e-commerce

Computing became an **economic production factor**.

---

7. 🌐 Internet

This one is extremely revealing for AI.

ARPANET began in **1969**.

But almost nobody in 1970 was saying:

> "The Internet will completely restructure commerce."

The technology existed.

The infrastructure was primitive.

Then:

ARPANET

↓

TCP/IP

↓

World Wide Web

↓

broadband

↓

Google

↓

Amazon

↓

smartphones

↓

cloud

↓

social media

↓

digital economy

The Internet itself wasn't the final product.

The Internet became infrastructure for everything else.

And here's the important part:

Amazon didn't exist because someone needed another Internet.

Amazon existed because the Internet created a new economic substrate.

Google didn't merely sell Internet access.

It reorganized how humans find information.

Uber reorganized transportation.

Netflix reorganized entertainment.

Airbnb reorganized lodging.

PayPal/Visa/etc. digitized transactions.

That's Act 3.

Now put AI into this historical framework

Here's where things become fascinating.

AI Act 1

"Can machines generate intelligence?"

Early AI:

1950s–2000s

Then:

deep learning

↓

transformers

↓

large language models

↓

multimodal models

↓

reasoning models

↓

agents

We're roughly here:

🧠 "The machine works."

AI Act 2

Now we have to build the infrastructure.

Think:

GPU

↓

HBM

↓

advanced semiconductor manufacturing

↓

AI clusters

↓

networking

↓

data centers

↓

electricity

↓

cooling

↓

cloud

↓

edge devices

↓

robots

This is increasingly the **2025–2030 story**.

The physical infrastructure requirement is enormous: the IEA projects global data-center electricity consumption could roughly double between 2025 and 2030, reaching about 950 TWh.

Then comes AI Act 3

And this is where I think your question gets really interesting.

AI Act 3 isn't:

> "Better ChatGPT."

It is:

The redesign of civilization around abundant machine intelligence.

That's a fundamentally different proposition.

Compare electricity vs AI

Provides cheap energy	Provides cheap intelligence
Motor replaces mechanical transmission **Electricity**	Agent replaces portions of cognitive labor **AI**
Appliances emerge	AI-native services emerge
Grid becomes ubiquitous	AI becomes ubiquitous
Human physical productivity ↑	Human cognitive productivity ↑
Eventually embedded everywhere	Potentially embedded everywhere

Electricity multiplied **physical capability**.

AI potentially multiplies **cognitive capability**.

That's why people compare advanced AI with electricity as a general-purpose technology.

But AI has one enormous difference

Electricity doesn't think.

AI potentially does.

That's important because the previous technologies mostly automated:

Energy

Wheel → transportation

Steam → mechanical power

Electricity → physical machines

Oil → transportation/energy

Computers → calculation

Internet → information transmission

AI potentially automates:

decision-making itself.

That's new.

Consider the progression

Wheel

Human:

> "Move this."

Wheel:

> helps you move it.

Electricity

Human:

> "Operate this machine."

Electric motor:

> operates it.

Computer

Human:

> "Calculate this."

Computer:

> calculates it.

Internet

Human:

> "Find this information."

Internet:

> connects you to it.

AI

Human:

> **"Achieve this objective."**

AI:

> **figures out how.**

That is a qualitative change.

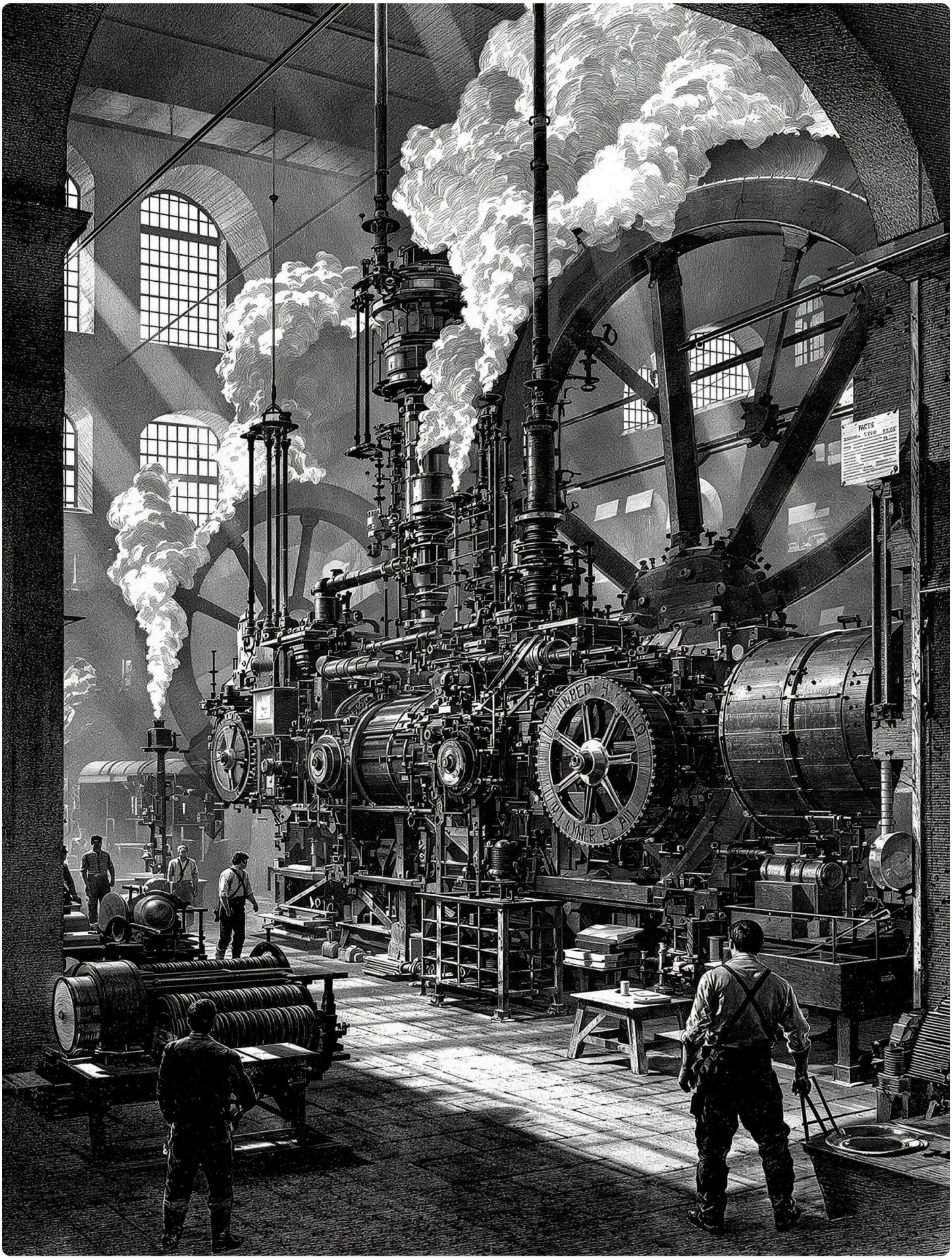
This is why Act 3 could be enormous

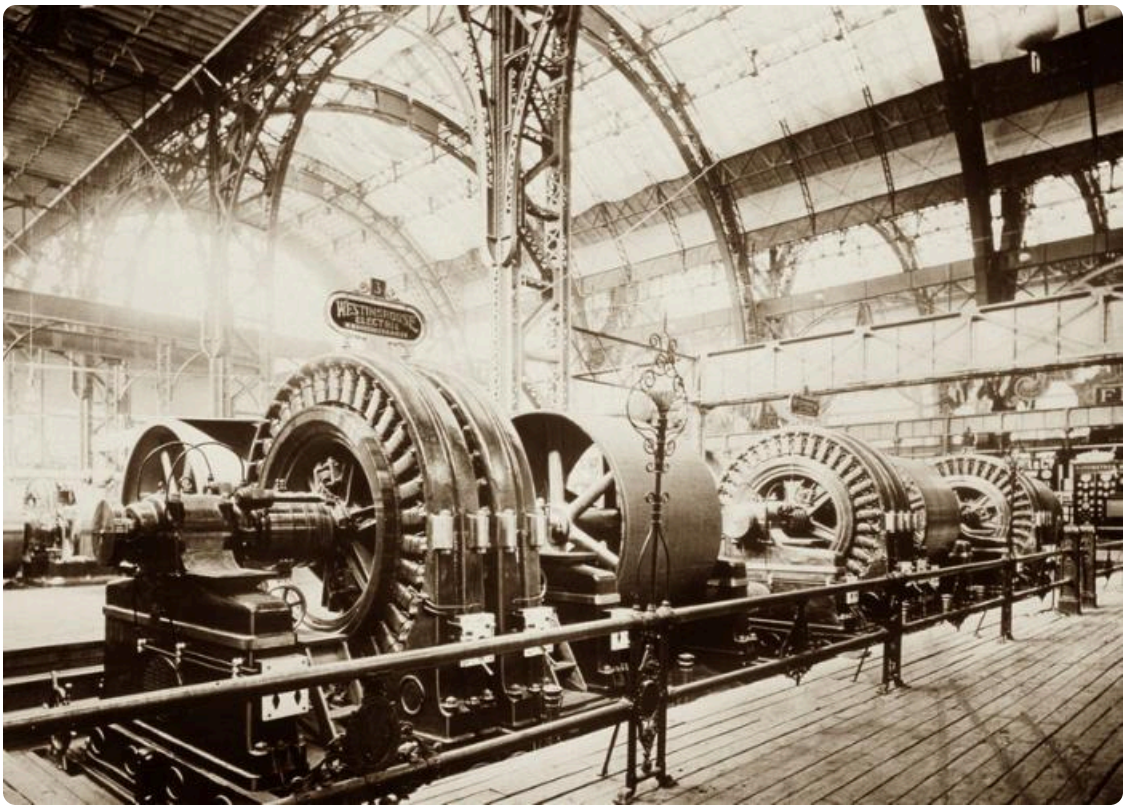
Imagine the technological progression as:

```
WHEEL
  ↓
We can move things
  ↓
ELECTRICITY
  ↓
We can power things
  ↓
COMPUTER
  ↓
We can calculate things
  ↓
INTERNET
  ↓
We can connect things
  ↓
AI
  ↓
WE CAN DELEGATE DECISION-MAKING
```

That final step is potentially enormous.

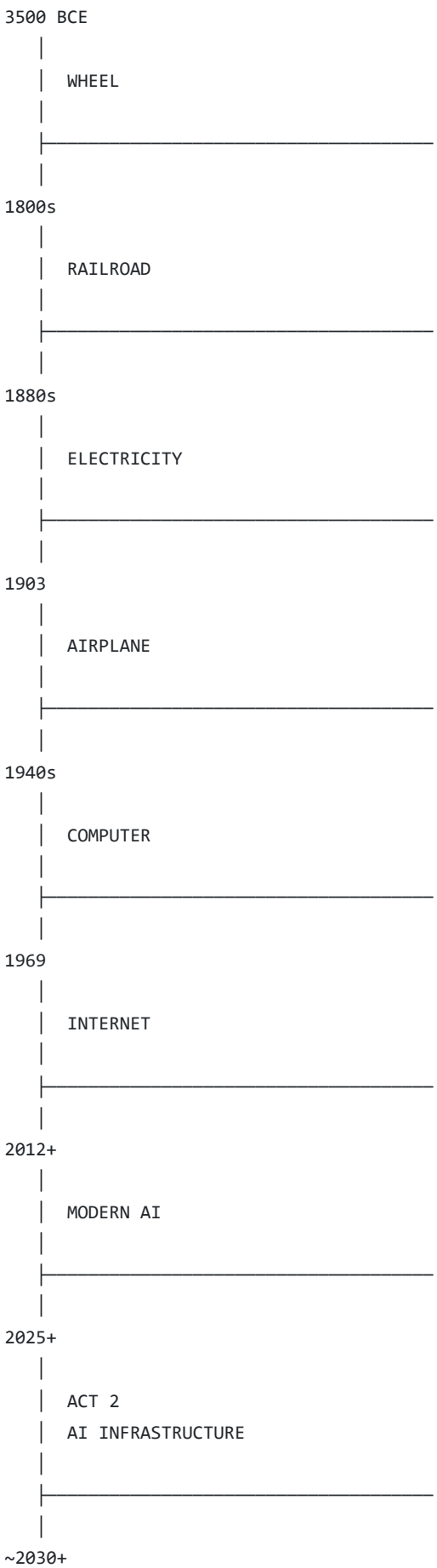
A historical timeline makes it even clearer




WESTINGHOUSE
ELECTRIC


HOTEL
LIMO

Very roughly:



```
      │
      │  ACT 3
      │  AI ECONOMY
      │
      ▼
```

The dates aren't predictions carved in stone; they're a way of visualizing the **technology → infrastructure → transformation** sequence.

The really important historical lesson

Inventions often arrive decades before their full economic impact.

Look at these examples:

Electricity

Technology existed.

Factories weren't immediately redesigned.

Computer

Computer existed.

Businesses still operated with paper.

Internet

Internet existed.

Most businesses didn't have Internet-based business models.

Smartphone

Smartphones existed.

Then suddenly:

Uber + Instagram + TikTok + mobile banking + app economy

appeared.

The important innovation wasn't necessarily the hardware.

It was:

> **What people did once the hardware became ubiquitous.**

Therefore, don't think about AI Act 3 as "another ChatGPT"

Think:

ChatGPT = printing press

Interesting.

Useful.

But not the entire revolution.

The real revolution is what happens when:

every worker

every company

every machine

every vehicle

every laboratory

every government

has access to machine intelligence.

And there is an extraordinary historical parallel

Consider the printing press.

Gutenberg didn't create the modern information economy.

He created a mechanism for **cheap reproduction of information**.

Then society eventually developed:

- newspapers
- books
- universities
- scientific publishing
- mass education
- bureaucracy
- modern political institutions

The invention created an **information explosion**.

AI potentially creates:

an intelligence explosion in the economic sense.

Not necessarily AGI or superintelligence.

Rather:

> **The marginal cost of producing certain kinds of intellectual work approaches the marginal cost of computation.**

That could be economically profound.

The "cost curve" is the real Act 3 story

Historically:

Before electricity

Mechanical power was expensive and geographically constrained.

Before computing

Calculation was expensive.

Before the Internet

Information distribution was expensive.

Before AI

Expert cognitive labor was expensive.

Now imagine the price of:

translation

coding

research

analysis

customer service

content creation

design

documentation

basic legal work

basic accounting

tutoring

falling dramatically.

That's potentially a gigantic deflationary force.

But then something strange happens

History tells us that when the price of something falls:

Consumption explodes.

When computing became cheaper:

we didn't use fewer calculations.

We used **billions more**.

When Internet bandwidth became cheaper:

we didn't send less data.

We sent **orders of magnitude more**.

When storage became cheaper:

we didn't store less.

We stored almost everything.

So with AI:

> **Cheap intelligence could cause an explosion in demand for intelligence.**

That's why Act 3 doesn't necessarily mean:

> "AI eliminates all jobs."

It could instead mean:

> **Society consumes vastly more cognitive work because cognitive work becomes cheap.**

This leads to an even more interesting analogy

Imagine the progression:

Before electricity

100 units of mechanical work.

Electricity

1,000 units.

Computers

10,000 units of information processing.

Internet

100,000 units of information exchange.

AI

Potentially:

millions/billions of units of cognitive processing.

Not because humans suddenly become smarter.

Because **machines can perform enormous amounts of cognitive work continuously.**

The Act 3 economic flywheel

This is the part I would watch as an investor:

AI gets cheaper

↓

more companies use AI

↓

productivity rises

↓

products/services get cheaper

↓

demand increases

↓

companies make more money

↓

more AI investment

↓

better chips

↓

cheaper AI

↓

more AI

↓

robots become economical

↓

physical production increases

↓

AI becomes even cheaper

↓

feedback loop

This is how a general-purpose technology can become much larger than its original market.

Compare the "unit of automation"

This may be the best way to understand why AI is historically unusual.

Wheel	Transportation
Steam **Revolution**	Mechanical power **What was automated?**
Railroad	Long-distance transportation
Airplane	Long-distance travel

Computer	Calculation
Internet	Information transmission
AI	**Cognitive tasks / decisions**

And then:

Robotics + AI

potentially becomes:

> **cognition + physical action**

That's the combination I would watch most closely.

Which brings us to the most important Act 3 possibility

Suppose AI becomes extremely capable.

But it can only generate text.

That's valuable.

Now connect it to:

robotics

↓

factories

↓

vehicles

↓

laboratories

↓

machines

↓

physical infrastructure

Now AI isn't merely producing information.

It can:

> **decide → act → observe → learn → repeat.**

That's much closer to an autonomous economic system.

Historical perspective on the magnitude

I'd rank the technologies roughly like this in terms of what they changed:

🛞 Wheel

Expanded physical transportation

🚂 Railroad

Collapsed geographic distance

⚡ Electricity

Made controllable energy ubiquitous

✈️ Aviation

Collapsed global travel time

💻 Computing

Made information processing cheap

🌐 Internet

Made information distribution nearly instantaneous

🤖 AI

Potentially makes portions of intelligence abundant

That's why I would **not** describe AI merely as "the next Internet."

It may be closer to a combination of:

> **electricity + computing + Internet**

with a new capability layered on top:

autonomous decision-making.

And this changes the investment game

Historically, the biggest fortunes weren't necessarily made by the inventors.

The money moved through the ecosystem.

Railroad

Not just locomotive manufacturers.

Also:

- steel
- land
- coal
- finance
- communications
- logistics

Electricity

Not just generators.

Also:

- copper
- transformers
- motors
- appliances
- factories

Internet

Not just routers.

Also:

- cloud
- advertising
- e-commerce
- software
- payments
- smartphones

AI

Therefore, don't only ask:

> **"Who makes the best AI model?"**

Ask:

> **"What industries become enormously more valuable when intelligence becomes cheap?"**

That's the Act 3 investment question.

And this is where your FTEC strategy gets interesting

Your FTEC exposure is primarily positioned around the **technology layer**.

Think:

Act 1

🧠 **Compute**

Act 2

⚡ **Infrastructure**

Act 3

🏭 **Economic productivity**

The Act 3 winners could eventually be very different from today's obvious AI winners.

For example:

AI + healthcare

AI + finance

AI + manufacturing

AI + robotics

AI + logistics

AI + energy

AI + pharmaceuticals

AI + defense

AI + software

The ultimate winner could be a company that doesn't even look like an AI company today.

My historical analogy for the three acts

If I had to compress the entire thesis into one graphic:

```
              TECHNOLOGY REVOLUTIONS

ACT 1                ACT 2                 ACT 3
INVENTION            INFRASTRUCTURE        REORGANIZATION
_____________________________________________________

WHEEL                ROADS                  TRADE
                     CARTS                  EMPIRES

ELECTRICITY          POWER GRID             MODERN FACTORY
                     TRANSFORMERS           MODERN LIFE

RAILROAD             TRACKS                 NATIONAL ECONOMY
                     STATIONS               MASS MARKETS

AIRPLANE              AIRPORTS               GLOBALIZATION
                     AIRLINES

COMPUTER             CHIPS                  INFORMATION ECONOMY
                     DATA CENTERS

INTERNET             BROADBAND              DIGITAL ECONOMY
                     CLOUD

AI                   AI FACTORIES           ????
                     POWER                   ????
                     NETWORKS                ????
                     ROBOTS                  ????

                                             ↑
                                    WE ARE HERE
```

The big idea

The **AI gold rush** may therefore be misunderstood.

People are asking:

> "Did I miss Nvidia?"

That's an **Act 1 question**.

Then:

> "What's the next Nvidia?"

That's an **Act 2 question**.

But the much bigger question is:

"What becomes possible when intelligence becomes cheap, ubiquitous and autonomous?"

That's the **Act 3 question**.

And historically, that's the stage where the technology stops being an industry and starts becoming **infrastructure for the entire economy**.

My rough probability map

I would personally think about the next 15 years this way—not as a prediction, but as a framework:

2025–2027

🧠 **AI capability race**

→ models
→ GPUs
→ HBM
→ inference

2027–2030

⚡ **AI infrastructure race**

→ data centers
→ electricity
→ networking
→ cooling
→ chips
→ sovereign AI

2030–2035

🤖 **AI economic race**

→ agents
→ autonomous software
→ robotics
→ AI-native companies
→ automated factories
→ AI science

2035+

🌎 **AI societal restructuring**

→ labor markets
→ education
→ healthcare
→ energy
→ transportation
→ government
→ capital allocation

And **the biggest uncertainty isn't whether AI will improve**.

It's **how quickly organizations and society can redesign themselves around it**.

That's exactly what history teaches us from electricity, railroads, computing and the Internet: **the technology can arrive long before the world learns how to use it.**

And that lag is precisely why I think **Act 3 could be the most economically interesting—and potentially the most disruptive—part of the AI story.**

Is our Act 3 conversation a fantasy or it will happen? Explain .

It is **not fantasy—but parts of our Act 3 conversation are definitely speculative**.

My strongest conclusion after looking at the current evidence is:

> **Act 3 is very likely to happen in some form. What is uncertain is how deep it goes, how fast it happens, and whether it looks like the futuristic version we described.**

The mistake would be to believe that *every* Act-3 scenario will happen. The opposite mistake would be to dismiss it because some scenarios sound like science fiction.

The historical pattern gives us a useful way to separate the two.

---

1. First, let's separate "certain" from "speculative"

I would divide our Act 3 thesis into four levels:

AI becomes embedded in most knowledge work	🟢 **Very high**	Already happening
Scenario	**My confidence**	**Why**
AI substantially increases productivity	🟢 **High**	Strong economic incentive
AI becomes an enterprise operating layer	🟢 **High**	Organizations are already restructuring
AI dramatically reduces cost of cognitive work	🟢 **High**	Economics strongly favor it
AI-native companies become common	🟢 **High**	Already emerging
AI-powered scientific discovery accelerates	🟢 **High**	Already occurring

AI + robotics transforms manufacturing	🟢 **Medium-high**	Technology exists; economics are the constraint
Autonomous companies	🟡 **Medium**	Technically plausible, governance is difficult
AI manages significant personal finances	🟡 **Medium**	Trust/regulation are major obstacles
General-purpose humanoid robots everywhere	🟡 **Medium**	Hardware economics remain uncertain
AI runs most physical labor	🟠 **Low/uncertain**	Physical world is much harder
Human labor becomes largely unnecessary	🔴 **Speculative**	No reliable basis for timing
Fully autonomous economy	🔴 **Speculative**	Could happen, but far beyond today's evidence

So **Act 3 itself isn't fantasy.**

Some of our *extreme Act-3 scenarios* are.

---

2. Here's the strongest evidence: Act 3 has already started

This is the part I would modify from our previous conversation.

I previously described Act 3 as roughly **2030+**.

That's too clean.

Reality is messier.

We're already seeing the beginning of Act 3 in 2026.

McKinsey's August 2026 global survey found:

- nearly **90%** of respondents report regular AI use in at least one business function;
- **44%** say AI is scaling across their enterprise;
- **40% of large enterprises** report scaling AI agents, up from 27% a year earlier;
- roughly **20%** report scaling AI agents across their organizations. (McKinsey & Company)

That's not science fiction.

That's the beginning of:

> **"Let's redesign how work gets done."**

---

3. But here's the important distinction

We're currently moving:

From:

Human does work

AI helps human.

Toward:

Human defines work

AI performs chunks of it.

Eventually:

Human defines objective

AI figures out how to accomplish it.

That third step is what I call **full Act 3**.

We aren't there yet.

---

4. Think about electricity again

This is perhaps the best way to avoid both hype and pessimism.

Suppose electricity was invented and someone asked:

> "Will electricity change civilization?"

Obviously yes.

But if they asked in 1880:

> "When will every factory, house, vehicle and appliance be redesigned around electricity?"

Nobody could give a precise answer.

There would be:

- technical problems
- financing problems
- regulatory problems
- infrastructure problems
- cultural resistance
- competing technologies

Yet electrification continued.

AI is similar.

---

5. AI has already passed the "toy" stage

This is important.

We are no longer asking:

> "Can AI write a paragraph?"

That question is basically settled.

The frontier is now:

> **Can AI reliably perform economically valuable workflows?**

And the answer is increasingly **yes**.

McKinsey's latest survey specifically finds enterprises scaling agentic AI in IT, knowledge management, software engineering, marketing, sales, supply chain and manufacturing. (McKinsey & Company)

That's exactly the transition from:

AI as a tool

to

AI as a worker/process.

---

6. The economics are what make Act 3 likely

This is the part that makes me more confident than simply looking at technological demos.

Imagine:

Human analyst

$100,000/year

versus

AI analyst

Maybe:

$5,000–$20,000/year equivalent compute/software cost.

If the AI is 80% as good, many businesses will use it.

If it becomes 95% as good?

Adoption accelerates.

If it becomes 99% as good?

The economics become extraordinary.

---

7. And then something historical happens

When technology becomes:

good enough + cheap enough + reliable enough

adoption goes nonlinear.

That's what happened with:

electricity

automobiles

computers

Internet

smartphones

The technology didn't need to be perfect.

It needed to become:

> **economically irresistible.**

AI is moving toward that point.

---

8. The biggest uncertainty isn't AI capability

It's **organizational adaptation**.

This is where I think our earlier Act 3 conversation needs refinement.

A company doesn't become AI-native just because GPT-XX becomes incredibly intelligent.

The company has to redesign:

- workflows
- databases
- permissions
- software
- security
- compliance
- management
- employee roles
- incentives

McKinsey's 2026 technology research describes exactly this shift: CIOs are increasingly redesigning operating models around AI and data rather than merely adding AI tools. (**McKinsey & Company**)

That's extremely significant.

---

9. This is exactly what happened with computers

Imagine giving a 1980 company a supercomputer.

Would it automatically become a modern digital company?

No.

You had to redesign:

accounting

inventory

manufacturing

sales

communication

management

around computing.

AI is facing the same organizational transition.

---

10. This explains why Act 3 could take 10–20 years

The hardware may advance incredibly quickly.

Organizations don't.

Consider:

AI model

can improve in months.

But:

hospital

may take years to redesign workflows.

factory

may take years to install equipment.

bank

may take years to change compliance systems.

government

could take decades.

This is why I wouldn't predict:

> "Everything changes in 2030."

Instead:

> **AI capability may advance exponentially while adoption progresses in waves.**

---

11. Robotics is the perfect reality check

This is where the fantasy starts separating from reality.

We have excellent AI.

But physical reality is difficult.

A robot has to deal with:

- friction
- gravity
- unpredictable objects
- humans
- weather
- damage
- batteries
- maintenance
- safety

The International Federation of Robotics says AI is already expanding robot capabilities, particularly in vision, inspection, optimization and interaction. (IFR International Federation of Robotics)

And the numbers are real:

542,000 industrial robots were installed globally in 2024, more than double the number a decade earlier. (IFR International Federation of Robotics)

The U.S. installed about **38,000 industrial robots in 2025**, an 11% increase. (IFR International Federation of Robotics)

So:

> **AI + robotics is real.**

But:

> **"One humanoid robot replaces every worker" is still speculation.**

---

12. Energy is another reality check

Our Act 3 vision requires enormous computation.

And computation requires electricity.

The IEA estimates data-center electricity consumption will roughly double from **485 TWh in 2025 to about 950 TWh in 2030**. (**IEA**)

That's an enormous infrastructure buildout.

But notice something important:

950 TWh is only about **3% of global electricity consumption**.

So AI doesn't appear to be physically impossible.

Instead:

> **AI creates a huge new demand center that the energy system has to accommodate.**

That's an infrastructure problem—not necessarily a fundamental barrier.

---

13. Here's where I become much more cautious

There are three things I **wouldn't** confidently predict.

A. "AI will eliminate most jobs."

No.

We don't have enough evidence.

Technology historically:

destroys some jobs

while

creating new jobs

and

changing existing jobs.

The mix is difficult to predict.

B. "AI will make humans economically unnecessary."

Absolutely not something I'd treat as a base case.

That's a possible long-term scenario.

It isn't a reliable investment forecast.

C. "AGI arrives in 2030."

That's speculation.

Anyone giving you a precise date is selling certainty they don't possess.

---

14. But something much less dramatic is almost certain

And it may actually be more economically important.

One person will increasingly be able to accomplish what previously required a team.

That's already beginning.

Imagine:

2020

Entrepreneur

↓

developer

↓

designer

↓

marketing

↓

accountant

↓

customer service

2030

Entrepreneur

↓

AI workforce

That doesn't require AGI.

It requires AI that is:

good enough + cheap enough + reliable enough.

That's a much more defensible prediction.

---

15. Here's another reason I'm bullish on the *concept*

AI has a peculiar property.

Software can replicate almost instantly.

If an AI system can perform a useful task:

You don't have to hire another 100,000 people.

You can deploy:

100,000 copies of the software.

That's fundamentally different from human labor.

---

16. Imagine an AI engineer

Suppose an AI engineer becomes capable of performing:

80% of a competent software engineer's work.

You don't need:

1 AI engineer.

You can deploy:

1,000 copies.

And they can work:

24/7.

This is why the economics potentially become enormous.

---

17. But there is a hidden bottleneck

Trust.

Imagine giving an AI:

> access to your bank account.

Or:

> permission to prescribe medicine.

Or:

> authority to purchase $10M of inventory.

Or:

> control of a factory.

Suddenly reliability matters enormously.

A human can make mistakes.

But autonomous AI can potentially make:

10,000 mistakes very quickly.

McKinsey's 2026 AI trust research identifies security and risk as major barriers to scaling agentic AI, with governance and agentic controls lagging technical progress. (**McKinsey & Company**)

This is probably one of the biggest constraints on Act 3.

---

18. So I would revise our Act 3 timeline

Instead of:

> 2030 = Act 3

I'd say:

2024–2027

🟢 **Act 1 → Act 2**

AI capability + infrastructure explosion.

2026–2030

🟢 **Early Act 3**

AI agents begin taking over workflows.

This is already happening.

2030–2035

🟢 **Act 3 acceleration**

AI-native enterprises.

Large-scale agent fleets.

AI-driven scientific discovery.

Increasing robotics.

2035–2045

🟡 **Potential deep Act 3**

AI + robotics + autonomous systems.

This is where the more radical scenarios become plausible.

---

19. And now the historical analogy becomes powerful

Here's how I would classify our Act 3 thesis:

The wheel

Certain: transportation improves.

Uncertain: exactly how civilization changes.

Electricity

Certain: electrification happens.

Uncertain: which industries become dominant.

Internet

Certain: digital communication expands.

Uncertain: Google, Amazon, Facebook, Uber, etc.

AI

Certain: AI becomes much more deeply embedded.

Uncertain: who captures the economic value and how radically society reorganizes.

That's the distinction.

---

20. The biggest mistake would be assuming the future will look exactly like our scenario

For example, we said:

> "AI personal financial manager."

Maybe.

But perhaps the actual product is:

> AI embedded inside Fidelity/Schwab/Vanguard/banks.

We said:

> "Autonomous corporation."

Maybe.

But perhaps the actual outcome is:

> every corporation has 20–50% fewer administrative employees.

We said:

> "Humanoid robots everywhere."

Maybe.

But perhaps the actual outcome is:

> specialized robots dominate warehouses and factories.

Technology frequently arrives in a form **different from the futuristic prediction**.

But the underlying economic transformation can still happen.

---

21. This is why I believe Act 3 is more likely than not

I'd assign rough subjective probabilities—not scientific forecasts:

AI becomes a major general-purpose technology

>95%

Already essentially happening.

AI materially changes knowledge work

>90%

Already underway.

AI agents become major business infrastructure

~85–90%

Strong current evidence.

AI significantly increases productivity

~80–90%

Strong economic incentives, although magnitude remains uncertain.

AI + robotics substantially changes physical work

~70%

Likely, but timing uncertain.

Autonomous companies become widespread

~50–70%

Plausible, but governance/trust matter.

Most human labor becomes unnecessary

<50%

Highly uncertain.

Fully autonomous AI economy

Unknown

That's beyond responsible forecasting.

---

22. Here's the most important distinction for your investing

You don't need to believe in:

> **"AI will become superintelligent and replace humanity."**

to have an extremely bullish AI thesis.

You only need to believe:

> **AI will make useful cognitive work cheaper and more abundant.**

That proposition is much easier to defend.

And if that happens, the economic consequences can still be enormous.

---

23. In fact, I think the boring version is more likely—and still huge

Forget humanoid robots taking everyone's jobs.

Imagine this instead:

Today

A 100-person company has:

100 employees + software

2032

Same company:

70 employees + 300 AI agents + specialized robots

Revenue:

2×

Profit:

3×

Employees:

70 instead of 100

That's not science fiction.

That's a plausible Act 3 outcome.

Multiply that across millions of companies.

That's an economic revolution.

---

24. And here's the historical lesson I think matters most

When electricity arrived, people didn't stop using human beings.

When computers arrived, people didn't stop working.

When the Internet arrived, people didn't stop communicating.

Instead:

> **The amount of economic activity increased.**

AI could do something similar.

It may not simply replace intelligence.

It may make **intelligence so inexpensive that society uses vastly more of it.**

That's potentially the most important Act 3 scenario.

My bottom line

No, our Act 3 conversation isn't fantasy.

But I'd separate it into:

🟢 Highly probable

AI becomes ubiquitous, agents perform substantial workflows, knowledge work becomes cheaper, companies reorganize around AI, and AI infrastructure becomes enormous.

🟡 Probable but timing uncertain

AI-native companies, major productivity gains, AI scientists, large-scale robotics, autonomous supply chains.

🔴 Plausible but speculative

Autonomous corporations, AI-managed personal lives, widespread humanoid robots.

🔴 Science-fiction territory for now

Most human labor becomes unnecessary, fully autonomous economy, predictable AGI timelines.

And here's the part I find most compelling:

We don't have to wait for Act 3 to know whether the thesis is working.

The leading indicators are already appearing:

AI adoption ↑

agent deployment ↑

AI infrastructure ↑

data-center electricity demand ↑

robot deployments ↑

AI-native workflows ↑

organizational redesign ↑ (McKinsey & Company)

So I would characterize 2026 as:

> **We're not standing outside Act 3 imagining it. We're standing at the entrance, watching the first pieces of it being assembled.**

The fascinating investment question is therefore no longer **"Will Act 3 happen?"**

It is:

> **"Which parts of Act 3 are already priced into the market—and which parts haven't been recognized yet?"**

That is where this becomes particularly relevant to your **FTEC strategy and your "forever technology ETF" approach**: the next question isn't whether to believe in AI; it's figuring out **where along the Act 1 → Act 2 → Act 3 value chain you want your money exposed.**

I'm turning 60 in September; I early retired at age 55 (2021). List 22 future-proof to my 60 yo self and beyond. I'm into quality living, health, finance, investing, cloud engineering.

At 60, I would define **future-proofing very differently** from how I would have defined it at 30 or 40.

You don't need to maximize your career anymore. You need to maximize **healthspan, optionality, financial resilience, intellectual relevance, and quality of life**.

And because you're already retired, the goal isn't "prepare for retirement."

> **You're preparing for the next 30+ years of an increasingly AI-driven world.**

I would build your personal **Age-60+ Operating System** around these 22 things.

Your 22 Future-Proof Priorities

#	Future-proof asset	Why it matters after 60
		ability to do things
2	🚴 **Endurance**	Preserves independence, mobility and quality of life
3	🏋️ **Strength**	Muscle becomes increasingly important as you age
4	🧠 **Cognitive fitness**	Your brain needs continual challenge, not retirement
5	😴 **Sleep & recovery**	Enables everything else
6	🥗 **Nutrition**	Long-term metabolic resilience
7	🧑‍🤝‍🧑 **Relationships**	Social capital becomes more important, not less
8	💰 **Financial independence**	Freedom from needing employment
9	📈 **Long-duration investing**	Your remaining lifetime is still long
10	🛡️ **Downside protection**	Prevents one event from destroying decades of freedom
11	💵 **Cash-flow design**	Converts wealth into a sustainable lifestyle
12	📜 **Estate/legacy architecture**	Makes your wealth transferable and manageable
13	🤖 **AI literacy**	Becomes basic literacy, like computing
14	☁️ **Cloud engineering**	Keeps you technically relevant
15	🔐 **Cybersecurity**	Your digital identity becomes an increasingly valuable target
16	🏠 **Digital sovereignty**	Own/control your data, backups and infrastructure
17	🛠️ **Hands-on competence**	Electronics, automotive, tools, home systems = independence
18	📚 **Continuous learning**	Prevents intellectual stagnation
19	🔬 **Scientific literacy**	Helps distinguish genuine breakthroughs from hype
20	🌎 **Geographic optionality**	Don't let one location determine your future
21	🎯 **Purpose/projects**	Retirement without purpose can become surprisingly empty
22	⏳ **Time sovereignty**	The ultimate luxury: control of your days

Now let's go deeper, because I think **#13–16 are particularly interesting for you.**

---

1. 🫀 Future-proof your healthspan

At 60, don't optimize for living to 100.

Optimize for:

> **being capable at 70, 80 and 90.**

The metric isn't simply lifespan.

It's:

What can I still do?

Can you:

- travel?
- ride?
- swim?
- climb stairs?
- carry luggage?
- get up from the floor?
- maintain balance?
- live independently?

That's your **functional wealth**.

---

2. 🚴 Preserve endurance

This is an enormous advantage if you've already developed endurance as a lifestyle.

Don't think:

> "I'm exercising."

Think:

> **"I'm maintaining my transportation system."**

Your cardiovascular capacity gives you a larger **quality-of-life radius**.

The goal isn't necessarily ever-faster performance.

It's:

> **Still being able to do long rides at 70.**

---

3. 🏋️ Strength becomes increasingly valuable

If endurance is your **engine**, strength is your **chassis**.

Future-proof:

- legs
- hips
- back
- grip
- shoulders
- core

The goal isn't bodybuilding.

It's:

> **Never becoming physically fragile.**

A 75-year-old who can comfortably squat, carry, climb and balance has vastly more freedom than a 75-year-old who needs assistance for basic tasks.

---

4. 🧠 Cognitive fitness

This is where your daily AI questions, Sudoku, reading and technical projects become more important.

Don't retire your brain.

Give it increasingly difficult problems.

For you:

AI

- **cloud**
- **finance**
- **automotive**
- **electronics**
- **reading**

= an excellent cognitive gym.

Your goal isn't to know everything.

It's:

> **Remain intellectually dangerous.**

---

5. 😴 Recovery

At 60, recovery becomes part of training.

Your operating system needs:

stress → activity → recovery → adaptation

rather than:

stress → activity → stress → activity → breakdown.

Future-proofing means learning when **not** to push.

---

6. 🥗 Nutrition

Don't chase every longevity fad.

Future-proof nutrition is boring:

> **Maintain a healthy body composition while preserving muscle and metabolic health.**

The more extreme the longevity industry becomes, the more valuable basic nutrition discipline becomes.

---

7. 🧑‍🤝‍🧑 Relationships

This is an underappreciated retirement asset.

Money buys options.

Relationships give those options meaning.

Future-proof:

- marriage
- family
- friendships
- cycling community
- technical community
- intellectual community

Don't allow retirement to become:

> **me + screens + house.**

---

8. 💰 Financial independence

You've already accomplished the hardest part:

> **You don't need employment to survive.**

Now the objective changes.

It's no longer:

accumulate

to

efficiently convert wealth into a great life.

That's an important psychological transition.

---

9. 📈 Long-duration investing

At 60, some people psychologically shift into:

> "I'm old, so I need to get conservative."

That's not automatically correct.

You potentially have **30+ years** of financial life ahead.

Your portfolio therefore needs:

growth + resilience + liquidity + simplicity.

The danger isn't simply market volatility.

It's:

> **running out of purchasing power over a very long retirement.**

---

10. 🛡️ Protect against catastrophic mistakes

This is more important than squeezing out another 1% of return.

Future-proof against:

- fraud
- cybercrime
- excessive leverage
- concentrated bets
- uninsured risks
- bad contracts
- poor estate planning
- forced asset sales during crashes

Think:

> **Don't let one stupid event erase 30 years of good decisions.**

---

11. 💵 Build a cash-flow machine

This is psychologically powerful.

Instead of thinking:

> "I have $X million."

think:

> **"My assets can reliably fund my life."**

Your financial system should answer:

How much can we spend?

From which account?

When do we sell?

What happens during a 40% market decline?

When do guaranteed income sources begin?

That converts wealth into **permission to spend**.

---

12. 📜 Estate architecture

At 60, estate planning stops being something "old people do."

You want:

documents

beneficiaries

accounts

- **property**
- **digital assets**
- **password/access strategy**
- **instructions**

to be understandable by someone else.

Your future self should be able to say:

> **"If something happens to me tomorrow, my family knows exactly what to do."**

---

13. 🤖 Become AI-native

This is probably the most important **career-like skill** you can develop during retirement.

You don't need to become an AI researcher.

Become an:

AI power user.

Learn:

- prompting
- agents
- automation
- AI coding
- APIs
- local AI
- AI security
- AI-assisted research
- AI workflows

Your daily AI questions are actually a very good habit.

Don't merely ask:

> "What is AI?"

Ask:

> **"How can AI make my life better?"**

---

14. ☁️ Keep cloud engineering

This one is particularly valuable for you.

You don't need to become a full-time cloud engineer.

Instead:

Become the 60-year-old who understands modern infrastructure.

Your DockerLab/GCP work is perfect for this.

I'd keep developing:

Linux

→ Docker

→ networking

→ Cloudflare

→ GCP

→ Terraform

→ Kubernetes *selectively*

→ APIs

→ AI infrastructure

→ automation

The objective isn't employment.

It's:

> **technical sovereignty.**

---

15. 🔐 Cybersecurity

As your wealth and digital footprint grow, cybersecurity becomes increasingly important.

Future-proof:

password manager

→ MFA/passkeys

→ hardware security keys

→ encrypted backups

→ account recovery

→ device security

→ financial account monitoring

→ family emergency access

Think of cybersecurity as:

> **digital home security.**

---

16. 🏠 Digital sovereignty

This is a particularly good fit for your personality.

Own/control important pieces of your digital life.

For example:

local backups

cloud backup

your domain

your data

your Docker infrastructure

your documentation

your identity

The goal isn't to build a gigantic homelab.

It's:

> **Don't become helpless because one cloud provider, platform or AI service changes its rules.**

---

17. 🛠️ Hands-on competence

Your interest in tools, automotive work, electronics, networking and home projects is more valuable than it looks.

At 60+:

> **Competence is independence.**

Knowing how to diagnose:

- a vehicle
- network
- appliance
- electrical problem
- computer
- home project

reduces dependence on others.

And it's mentally stimulating.

---

18. 📚 Continuous learning

Don't have a retirement bucket list.

Have a:

Learning backlog.

Something like:

2026: AI + cloud

2027: Terraform + automation

2028: AI agents

2029: robotics

2030: energy/AI infrastructure

The subjects can change.

The habit shouldn't.

---

19. 🧪 Scientific literacy

This is going to become extraordinarily important.

Why?

Because the next 20 years will bring an avalanche of:

> **"AI breakthrough!"**
>
> **"Longevity breakthrough!"**
>
> **"Cancer cure!"**
>
> **"AGI is here!"**
>
> **"This supplement adds 20 years!"**

Your defense isn't cynicism.

It's:

epistemic discipline.

Ask:

What's the evidence?

What's the base rate?

What's correlation vs causation?

What's the economic incentive behind the claim?

That's a superpower.

---

20. 🌎 Geographic optionality

You don't need to constantly travel.

The deeper concept is:

> **Don't become geographically trapped.**

Maintain the ability to live in different places if circumstances change.

That could mean:

U.S.

↔

Philippines

↔

somewhere else.

The future could bring changes in:

- healthcare
- taxes
- climate
- politics
- cost of living
- family needs
- technology

Optionality is valuable.

---

21. 🎯 Build projects, not just hobbies

This might be the **most psychologically important** one.

Retirement creates a dangerous question:

> "What am I supposed to do today?"

Projects solve it.

You already have excellent project candidates:

DockerLab

AI learning

cloud engineering

cycling

swimming

automotive

cabinet building

investing

writing

Don't just consume.

Build.

A project gives you:

purpose + learning + challenge + accomplishment.

---

22. ⏳ Protect your time

This is ultimately the greatest asset of retirement.

You spent the first 55 years of your life accumulating:

skills

money

relationships

experience

Now you get something extraordinarily valuable:

control over your time.

Don't fill it with meaningless obligations.

Your future-proof retirement should maximize:

Health

Freedom

Learning

Relationships

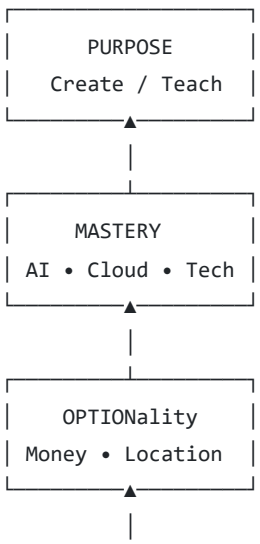
Adventure

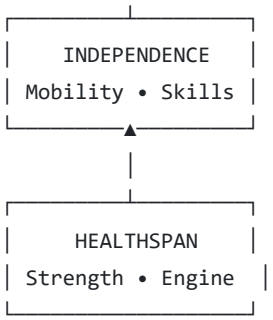
Creation

Peace

The 60-year-old version of the Maslow pyramid

I'd actually redesign Maslow for your situation:





And there's something interesting about being 60:

You don't need to climb the pyramid anymore.

You've already accumulated many of the lower layers.

Your next decades can increasingly be about:

> **mastery + purpose + enjoyment.**

Your personal "Act 3"

Remember our AI Act 3 discussion?

I think there is a beautiful parallel.

Your first 55 years

Act 1 — Build

Education
Career
Skills
Family
Wealth

55–60

Act 2 — Freedom

Retirement
Health
Travel/family
Investing
Projects
Technology

60–90+

Act 3 — Leverage

You now leverage everything you've accumulated.

Money → freedom

Technology → capability

Health → experiences

Knowledge → wisdom

AI → leverage

Cloud → technical independence

Time → quality of life

That's a much better retirement philosophy than simply:

> **"I have enough money to stop working."**

The 22 in one sentence each

If I had to put your entire **60+ Future-Proof Playbook** on one page:

1. **Protect healthspan.**
2. **Keep your endurance engine.**
3. **Build/maintain serious strength.**
4. **Exercise your brain.**
5. **Treat recovery as training.**
6. **Eat for long-term resilience.**
7. **Invest in relationships.**
8. **Protect financial independence.**
9. **Keep long-term growth exposure.**
10. **Avoid catastrophic financial mistakes.**
11. **Engineer sustainable cash flow.**
12. **Make your estate understandable.**
13. **Become AI-native.**
14. **Stay fluent in cloud engineering.**
15. **Harden your digital security.**
16. **Own your data and infrastructure.**
17. **Maintain practical hands-on skills.**
18. **Keep a permanent learning backlog.**
19. **Develop scientific skepticism.**
20. **Preserve geographic optionality.**
21. **Build meaningful projects.**
22. **Protect your time.**

The ultimate goal

At 60, **future-proofing isn't about predicting the future.**

It's about making yourself **adaptable to almost any future**.

If AI becomes enormous → you're ready.

If markets crash → you're resilient.

If technology changes → you can learn it.

If you live to 90 → you're financially prepared.

If your interests change → you have time.

If the world changes → you have optionality.

If technology becomes increasingly complex → you understand enough to remain independent.

And perhaps most importantly:

> **Don't make your goal to "retire successfully." Make your goal to remain capable, curious, financially free and physically independent for as many decades as possible.**

That's a much more powerful definition of **future-proof at 60**.