Deep Tech Inflection Points

FORTIS & PEAK PERSPECTIVES | APPLIED FORESIGHT

In the Fortis & Peak framework, Deep Tech Inflection Points are the **"Engine Room" of Strategic Foresight.** While most market observers focus on software iterations, we track the fundamental shifts in physics, chemistry, and biology that rewrite the cost of existence.

An "Inflection Point" occurs when a technology moves out of pure academic research and enters the **Pilot Phase**—the high-risk, high-reward window where the first-mover advantage is won or lost.

Fortis & Peak
Shaping What's Next

The Atomic Level of Strategy

> "Strategy is often limited by what we believe is physically possible. At Fortis & Peak, we look deeper. Our 'Deep Tech Inflection Points' track the breakthroughs moving from the laboratory to the pilot phase—the exact moment where science becomes a competitive weapon."

Whether it is the 1,000x energy efficiency of Neuromorphic Computing, the generative power of Synthetic Biology, or the total electrification enabled by Solid-State Batteries, we help you identify the technical tipping points that will redefine your industry's unit economics.

⚠ Don't wait for the technology to be "proven." By then, the advantage is gone.

Neuromorphic Computing

1,000x–10,000x energy reduction at the edge

Synthetic Biology

Cells as programmable manufacturing factories

Solid-State Batteries

The Holy Grail of total electrification

Neuromorphic Computing

INFLECTION POINT #1

Current AI is constrained by the **"hardware tax"**—traditional chips (GPUs/CPUs) waste massive amounts of energy moving data between processors and memory. Neuromorphic Engineering flips this paradigm by mimicking the architecture of the human brain through **Spiking Neural Networks (SNNs)**.

The Inflection

We are seeing the move from lab prototypes—like Intel's Loihi—to edge-computing pilots. These chips only "fire" when there is a change in data, reducing power consumption by **1,000x to 10,000x.**

The Strategic Impact

This enables **"Intelligence at the Edge."** Imagine a drone or factory sensor performing complex AI reasoning for months on a single watch battery—no cloud connection required. This directly impacts Smart Manufacturing (Horizon 3) and Product Innovation (Horizon 2) by removing the energy barrier to ubiquitous AI.

Neuromorphic Computing: By the Numbers

10,000x

Energy Reduction

Maximum power consumption reduction versus traditional GPU/CPU architectures

1,000x

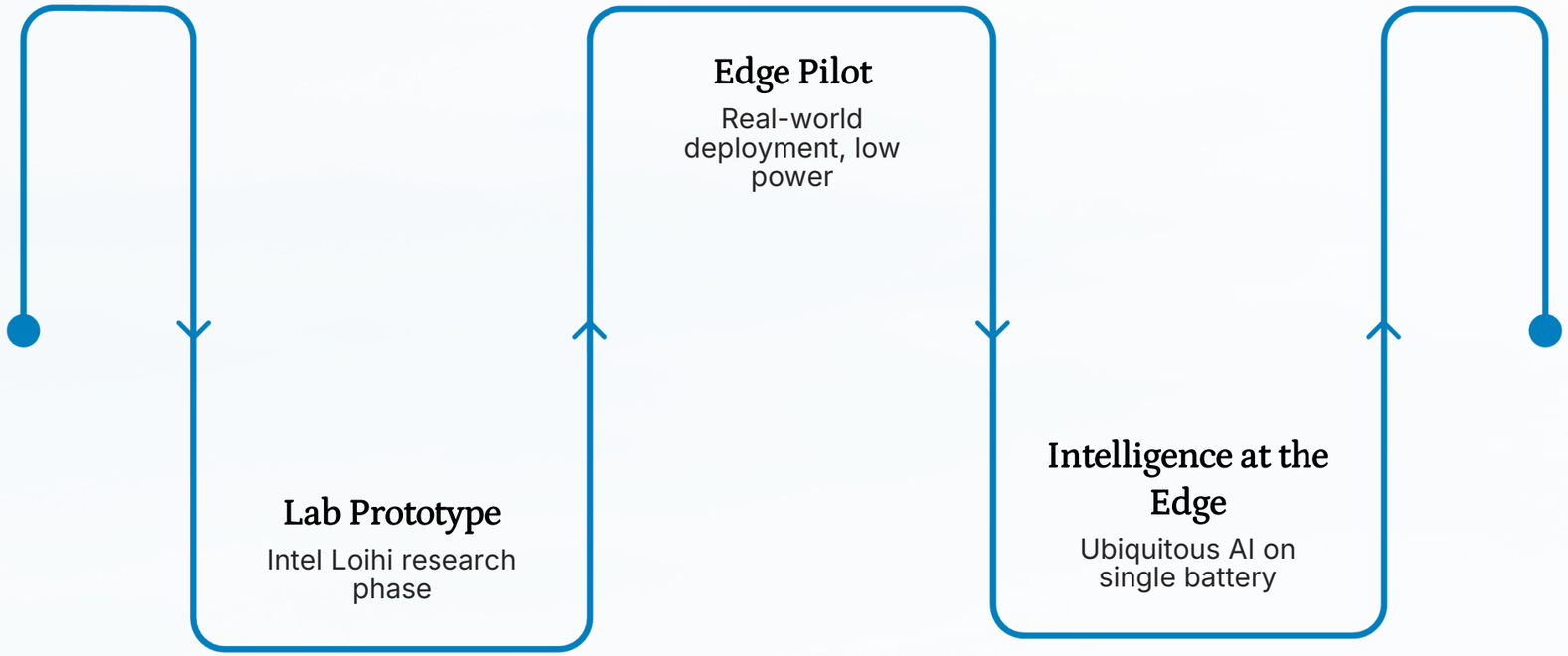
Minimum Gain

Conservative lower bound of efficiency improvement in edge-computing pilots

H2+H3

Five Horizons

Directly impacts Product Innovation (Horizon 2) and Smart Manufacturing (Horizon 3)



The neuromorphic journey from academic prototype to commercial edge deployment represents the classic Fortis & Peak inflection window—the precise moment where first-mover capital allocation yields asymmetric returns.

Synthetic Biology

INFLECTION POINT #2

The last decade was about **"reading" and "writing" DNA.** This decade is about **"Executing" it.** SynBio allows us to treat cells like programmable factories, moving from "extractive" industries—mining and farming—to "generative" ones that manufacture on demand.

The Inflection

Pilot plants are now successfully "brewing" materials. We aren't just making lab-grown meat—we are growing **self-healing concrete, carbon-negative aviation fuel,** and spider-silk fabrics stronger than steel.

The Strategic Impact

This is the ultimate **Supply Chain Resilience (Horizon 2)** play. Instead of shipping raw materials across oceans, a company can "print" its own raw materials on-site using vats of engineered microbes and sugar.

Five Horizons Link

Reshapes **ESG & Sustainability (Horizon 3)** by turning manufacturing from a carbon-emitting process into a carbon-sequestering one—a fundamental reversal of industrial economics.

Solid-State Batteries

INFLECTION POINT #3

The current Lithium-ion era is reaching its physical limits in terms of safety and energy density. Solid-State Batteries replace the volatile liquid electrolyte with a **solid ceramic or polymer**, unlocking what the industry calls the **"Holy Grail" of energy storage.**

Major automotive and energy players—including **Toyota and QuantumScape**—have moved from coin-cell lab tests to full-scale multi-layer pouch cell pilots, marking the definitive entry into the Fortis & Peak Pilot Phase.

1,000-Mile Range

Eliminates "Range Anxiety," making EVs the superior choice for long-haul logistics and consumer adoption at scale.

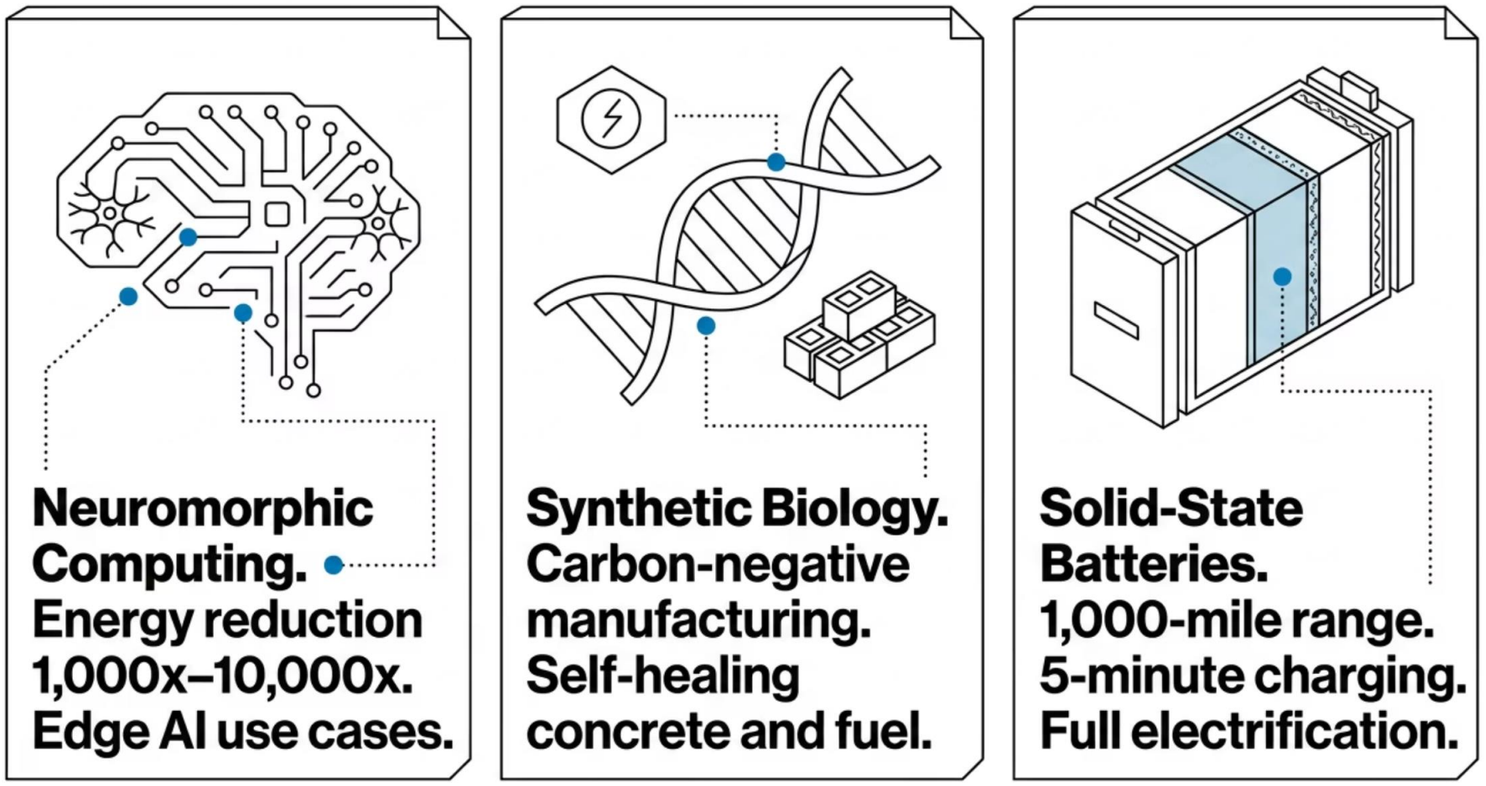
5-Minute Charging

Matches the convenience of internal combustion, triggering a collapse in the resale value of traditional fossil-fuel assets and infrastructure.

Five Horizons Link: Impacts Capital Discipline (Horizon 5) by signaling the exact moment to divest from internal combustion infrastructure and pivot toward the Electric Future of Energy.

Comparing the Three Inflection Points

Each of the three Deep Tech Inflection Points operates at a different layer of the industrial stack—yet all three share the same strategic characteristic: they are past the theoretical phase and entering the pilot window where competitive advantage is determined.



All three technologies are in the **Pilot Phase**—the high-risk, high-reward window identified by Fortis & Peak where first-mover advantage is won or lost. Waiting for "proven" status means the window has already closed.

Applied Foresight: The Fortis & Peak Mandate

> "Deep Tech Inflection Points are the 'High-Resolution' view of Strategic Foresight. They provide the technical certainty required for R&D and Capital Allocation, ensuring that when Fortis & Peak advises a pivot, it is backed by the laws of physics, not just market trends."

Fortis & Peak's Perspectives | Applied Foresight represent our forward-looking point of view on the forces shaping industries, business models, and competitive advantage. Drawing on deep strategic insight and cross-sector experience, these perspectives go beyond observation to frame what matters most—and what comes next.

They are designed to help executives interpret disruption, anticipate shifts, and make informed decisions with clarity and confidence in an increasingly complex business environment.

Interpret Disruption

Frame the signals that matter before they become consensus—when the strategic window is still open.

Anticipate Shifts

Track the pilot-phase breakthroughs in physics, chemistry, and biology that rewrite industry unit economics.

Act with Confidence

Allocate R&D and capital backed by the laws of physics—not just market trends or analyst consensus.

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