# ARTIFICIAL INTELLIGENCE

How your job is going to change
How your supply chain is going to change
How your company is going to change

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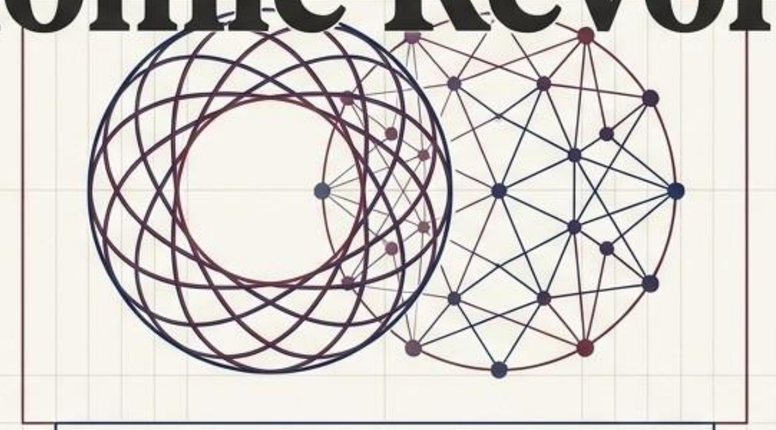
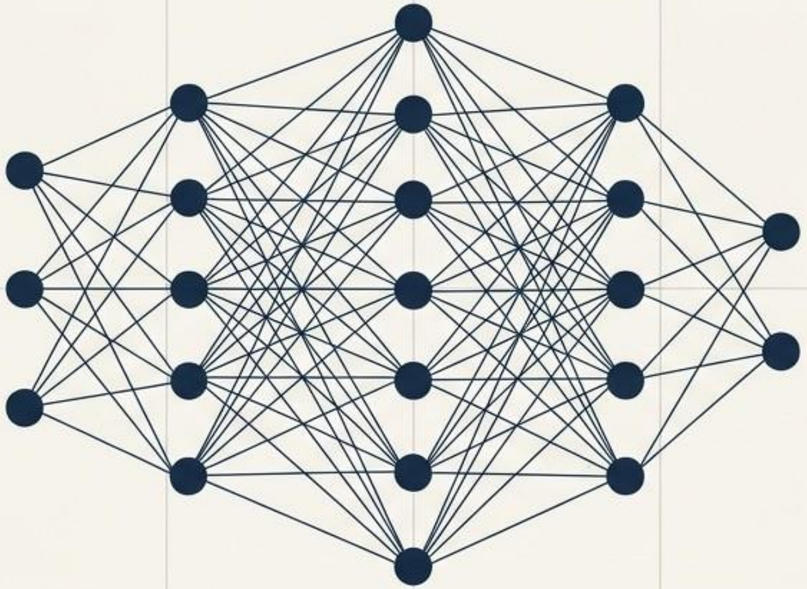
Director, Baker Tilly US

# The Next Global Economic Revolution

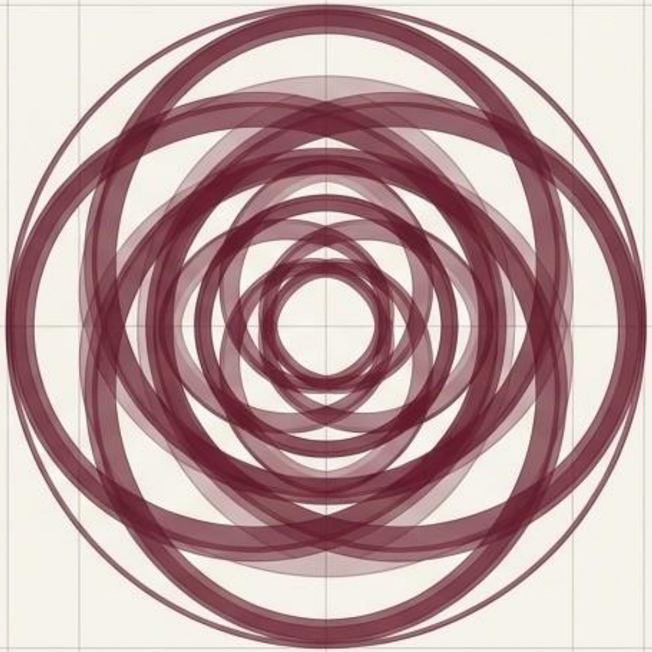


A Strategic Intelligence Briefing on the AI & Quantum Computing Convergence.

**Prepared for Executive Leadership |** Structural Intelligence & Market Dynamics



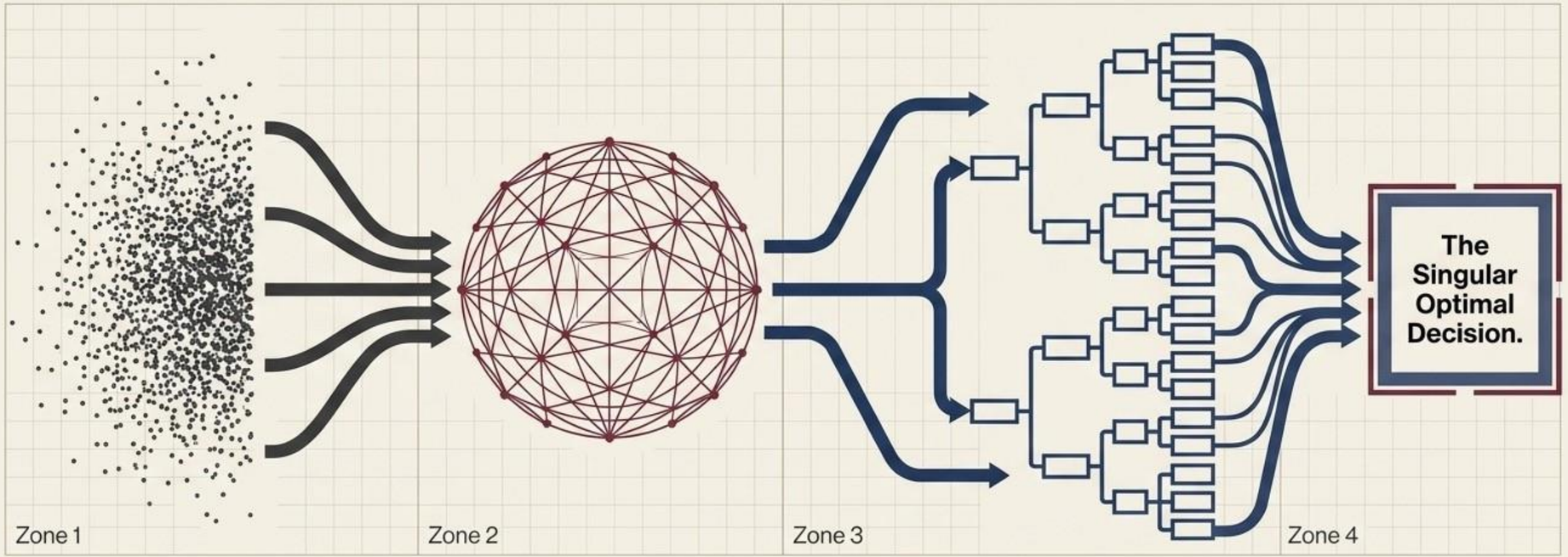
AI is transforming how humans make decisions.



Quantum computing will fundamentally change what problems can be solved.

**Unlike previous industrial revolutions, this convergence will unfold over years, not decades. Nations and enterprises that lead in both will command outsized economic, military, scientific, and diplomatic influence in the 21st century.**

# The Computation Engine




**Billions of Variables**

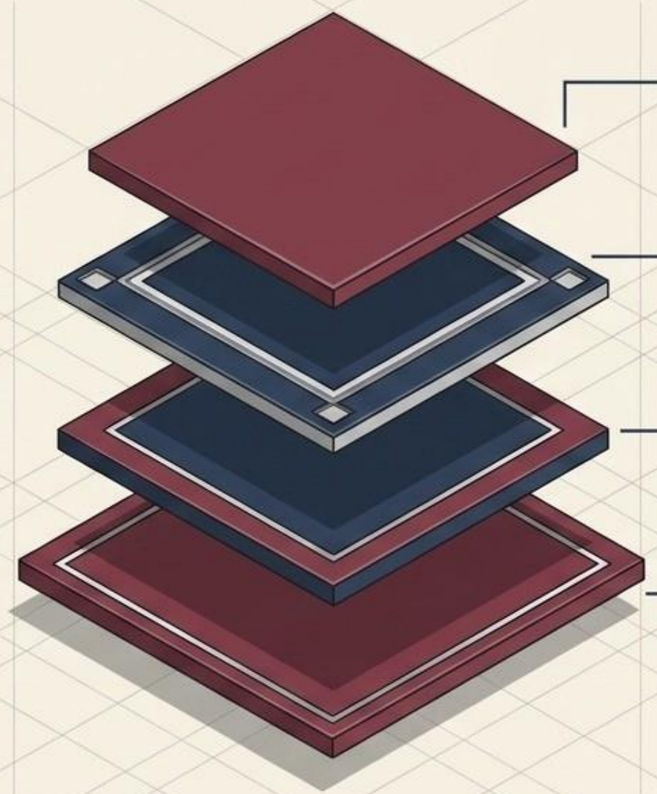
**Evaluate.** Quantum rapidly evaluates billions or trillions of possible outcomes, solving optimization and simulation problems previously considered computationally impossible.

**Select.** AI identifies patterns within those outcomes, making predictions and dictating the precise decision that should be made.

# The Convergence Matrix

| Artificial Intelligence | Quantum Computing | The Synthesis |
| --- | --- | --- |
| Core Strength: Pattern Recognition | Core Strength: Variable Simulation | Core Strength: Predictive Optimization |
| Function: Determines what decision to make based on existing data. | Function: Evaluates trillions of simultaneous mathematical outcomes. | Function: Systems capable of modeling impossibly complex environments and autonomously executing optimal strategies (e.g., global supply chains, climate modeling, aerospace engineering). |

# The New Arms Race Stack



Layer 4: Digital Ecosystem.
Cloud Infrastructure & Delivery.

Layer 3: Physical Infrastructure.
Quantum Hardware & Patents.

Layer 2: Intellectual Capital.
Global Talent & Proprietary Data.

Layer 1: Strategic Resources.
Chips & Rare Earth Minerals.

Technology leadership is the new proxy for national power.

Expect rapidly escalating export controls and technology restrictions fragmenting the global ecosystem.

# The Superpower Rivalry

## United States - Commercial/Cloud Ecosystem

- **Major Players:** IBM, Google, Microsoft, Quantinuum, IonQ, Rigetti, D-Wave, PsiQuantum.
- **Capabilities:** 100 to 1,000+ physical qubits with rapidly improving error correction. Worldwide cloud access.
- **Strategy:** World leader in the commercial quantum ecosystem, backed by heavy government capital (DARPA, DOE, NSA, DoD).

## China - State-Driven/Military Integration

- **Major Players:** Univ. of Science and Technology of China (USTC), Origin Quantum, Baidu, Alibaba, Tencent.
- **Capabilities:** Photonic and superconducting systems.
- **Strategy:** Massive government investment with significant military integration. National strategy hyper-focused on quantum communications and encryption.

Premium Strategic Intelligence Dossier

# Global Quantum Theater Matrix

**Commercial Fault-Tolerant Leaders:** Countries closest to broad commercial rollout: US, China, UK, Canada, Germany, Japan

## Hardware & Research Hubs

**Canada**: D-Wave, Xanadu (Quantum annealing, photonic, strong university ecosystem).

**UK**: Quantinuum, Oxford QC (Hardware, software, defense partnerships).

**Australia**: Silicon QC, PsiQuantum (Silicon-based processors).

## Industrial & Telecomm Focus

**Germany**: Fraunhofer, BMW, VW, Bosch (Industrial/automotive optimization).

**Japan**: Fujitsu, NEC, Toshiba (Manufacturing, telecommunications, financial optimization).

## Specialized Domains

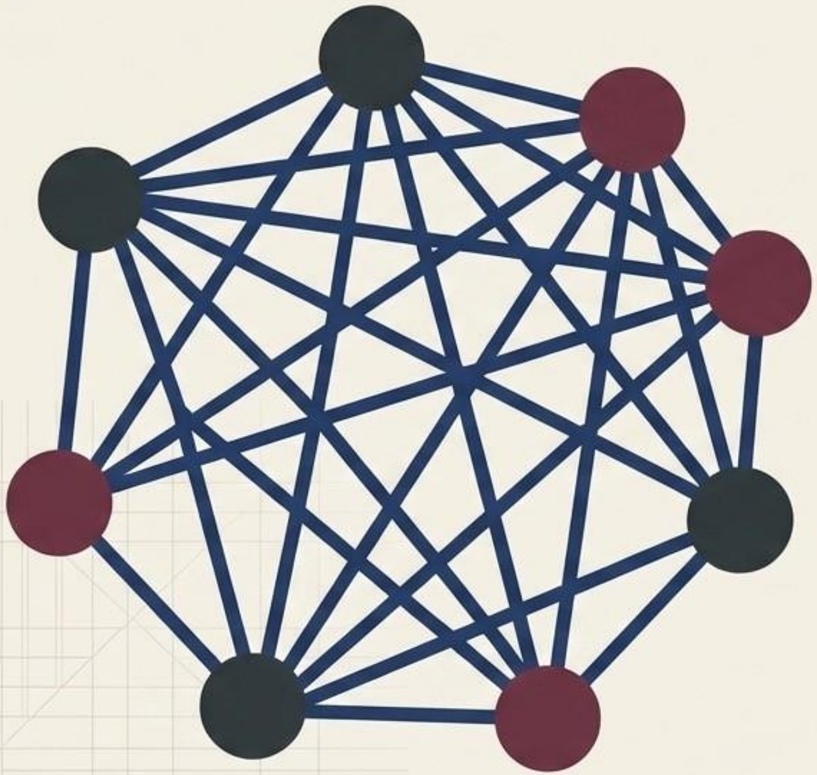
**France**: Atos, Pasqal (Neutral atom computing, integrated AI strategy).

**Netherlands**: QuTech (Quantum networking, secure communications).

**Aggressive Investors:** Billions committed by South Korea, Singapore, India, Israel, Finland, Switzerland, Denmark.

Premium Strategic Intelligence Dossier

# The Realignment of Global Alliances



Technology alliances are becoming as critical as military alliances. Access to computing power is the new measure of geopolitical influence.

**Nations are increasingly aligning their foreign policy around:**

- Trusted semiconductor supply chains
- AI research partnerships
- Shared quantum computing infrastructure
- Cybersecurity pacts

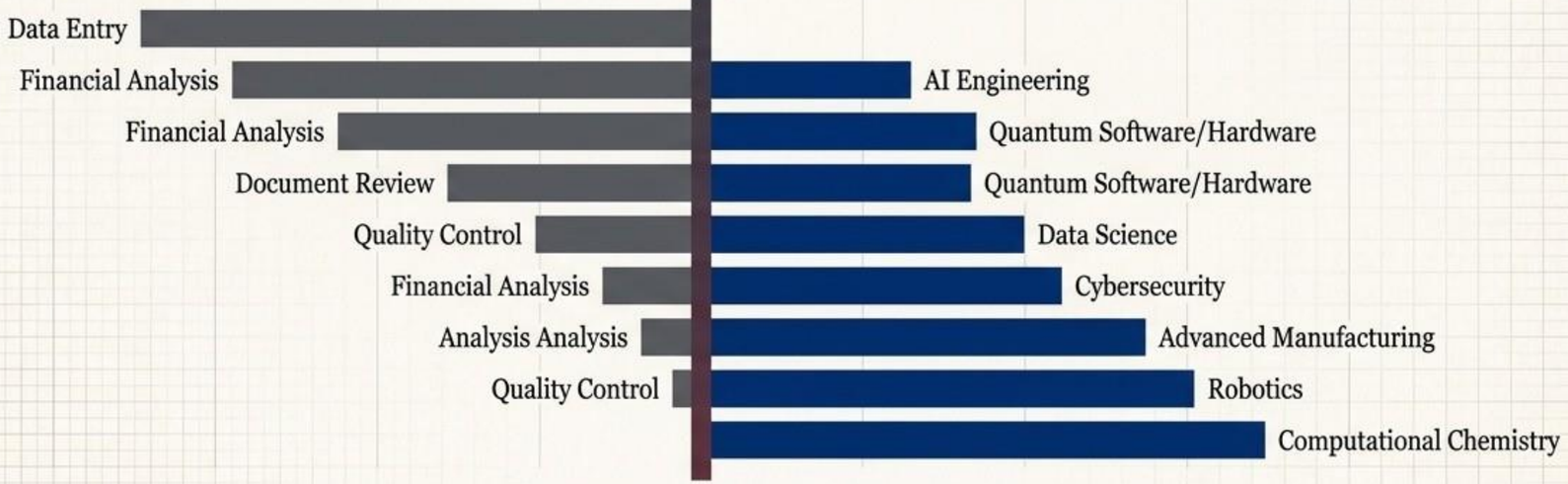
Macro Economic Value: Long-term projections estimate trillions of dollars in cumulative global economic value driven by accelerated scientific discovery, reduced research costs, and faster engineering cycles.

## The Labor Shift - Contracting

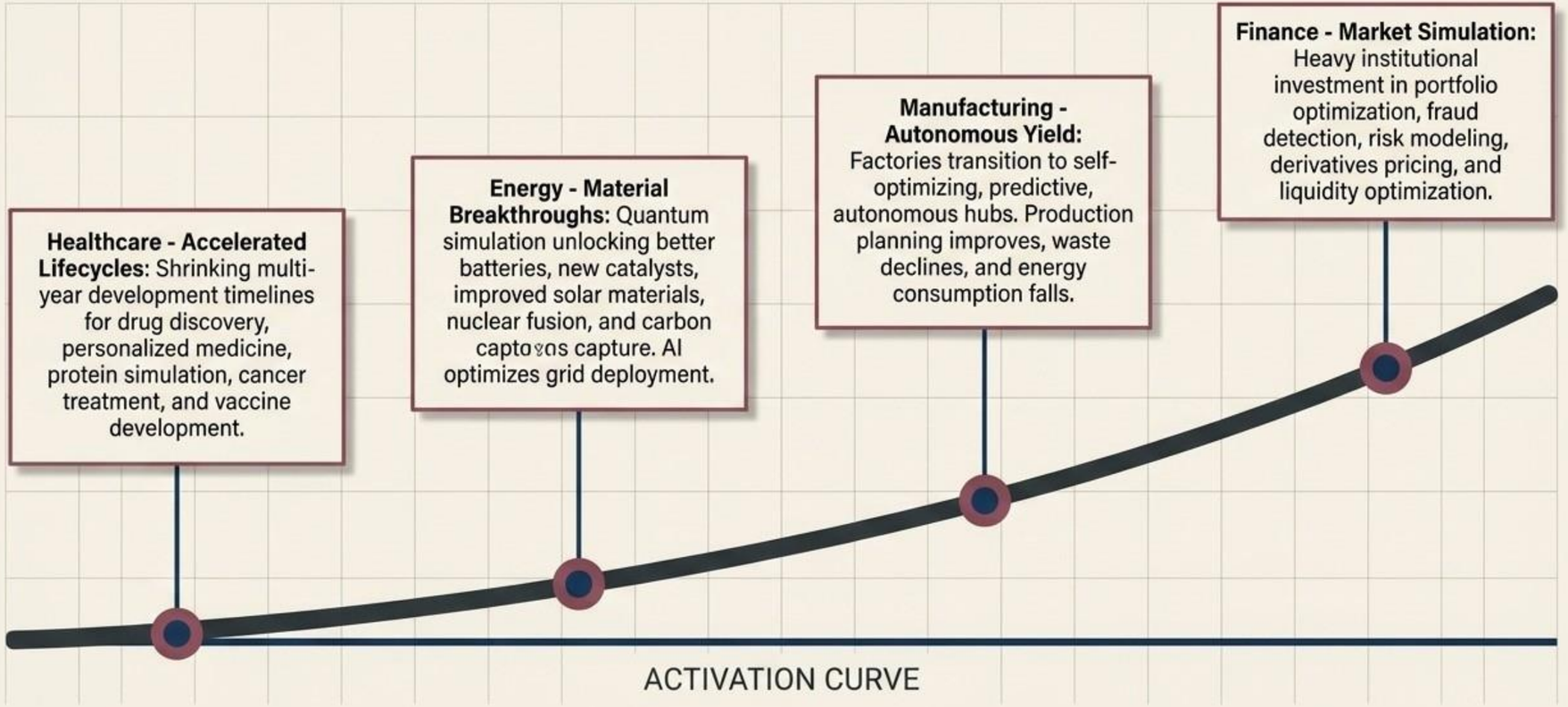
Routine analytical work will face near-total automation.

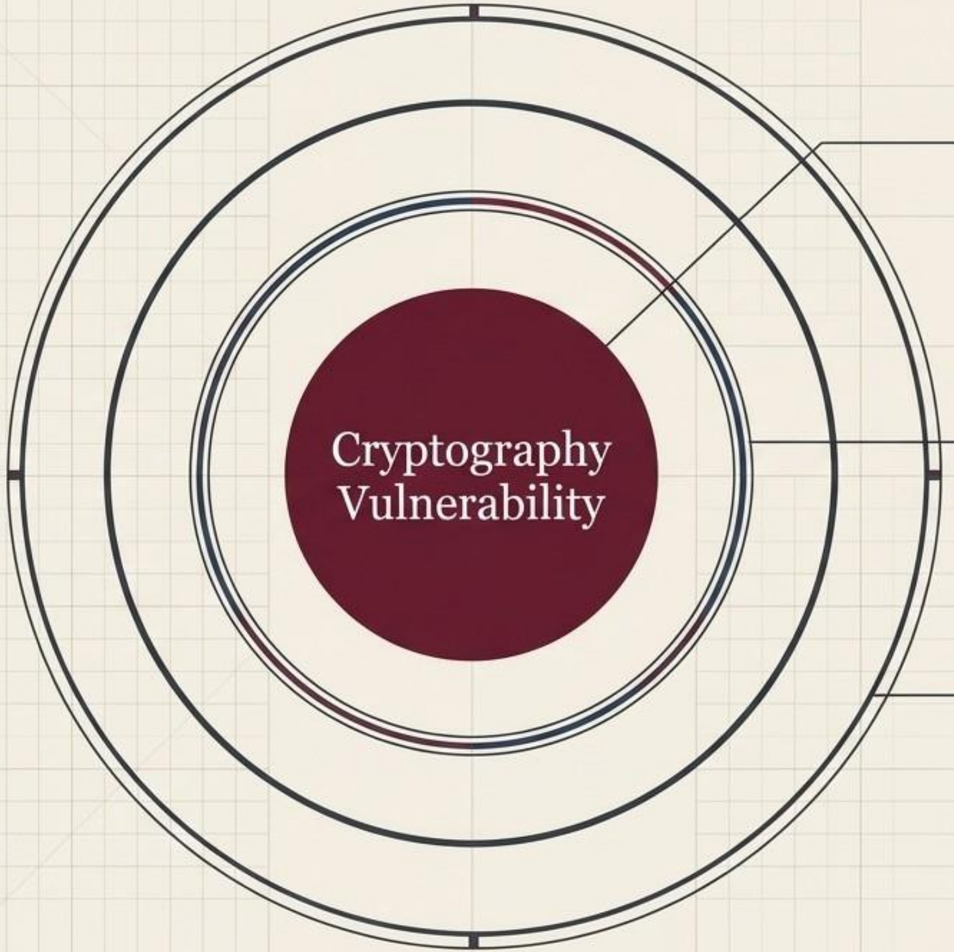
## The Labor Shift - Expanding

High-value roles will surge: AI Engineering, Quantum Software/Hardware, Data Science, Cybersecurity, Advanced Manufacturing, Robotics, Computational Chemistry.



# Time-to-Impact / Scale of Disruption Framework






## The Cryptography Threat

The single biggest concern. Large fault-tolerant quantum computers will eventually break widely used public-key encryption. Organizations must transition to post-quantum cryptography now or risk exposing sensitive data.

## Intelligence

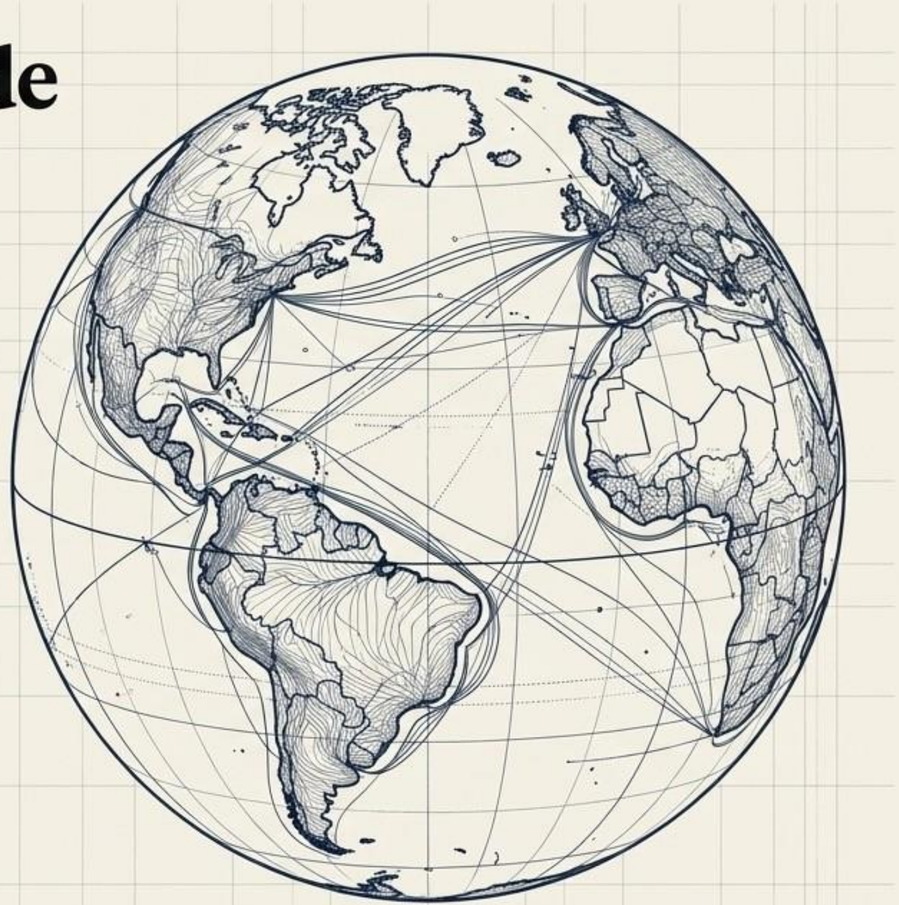
Decision-making cycles shrink from days to seconds via massive signals intelligence, faster image analysis, and threat prediction.

## Battlefield

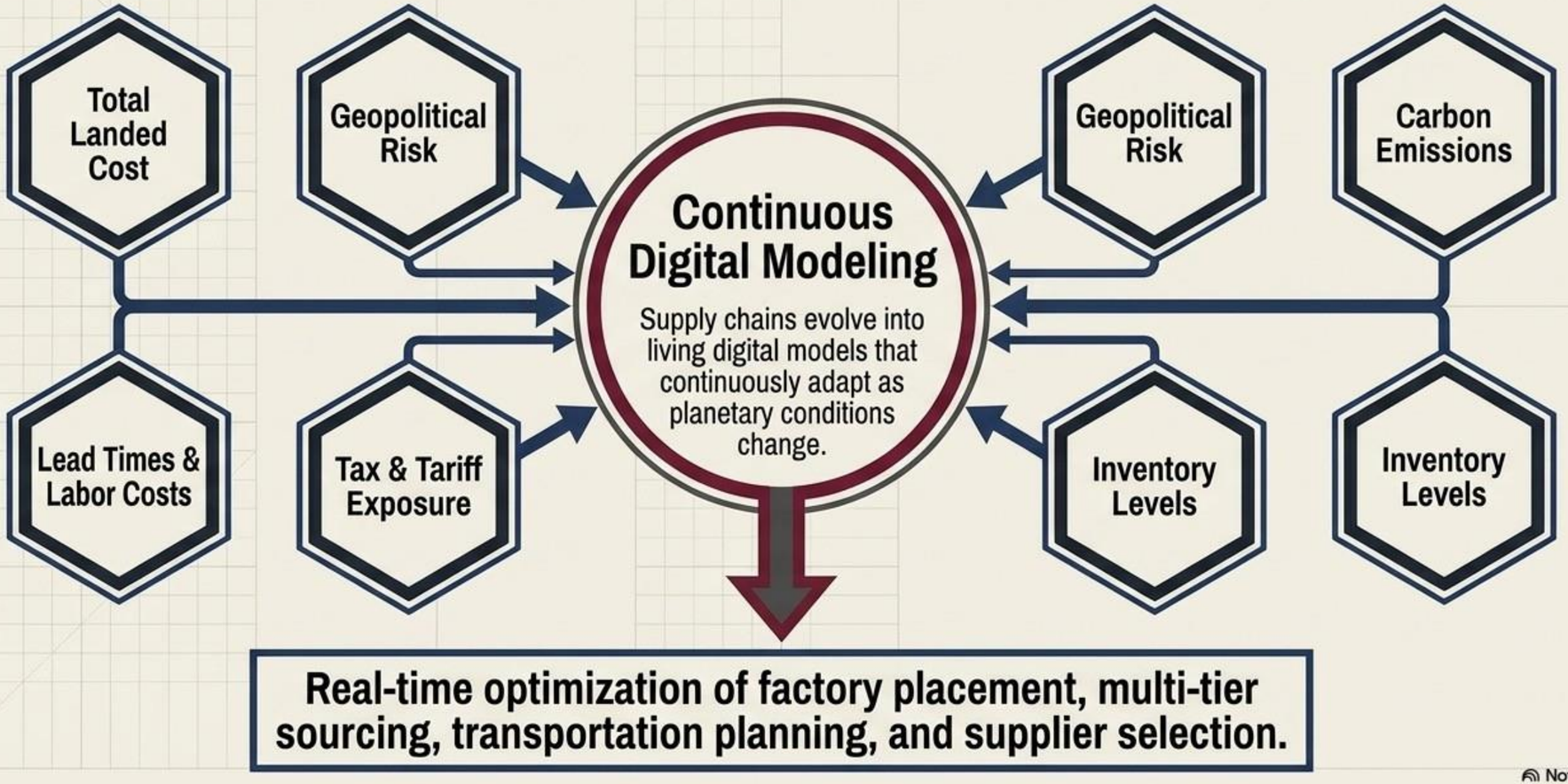
Swarm coordination, autonomous drones, missile defense, satellite operations, and electronic warfare optimization.

# Logistics and Global Trade will be the earliest and largest commercial beneficiaries of the AI + Quantum convergence.

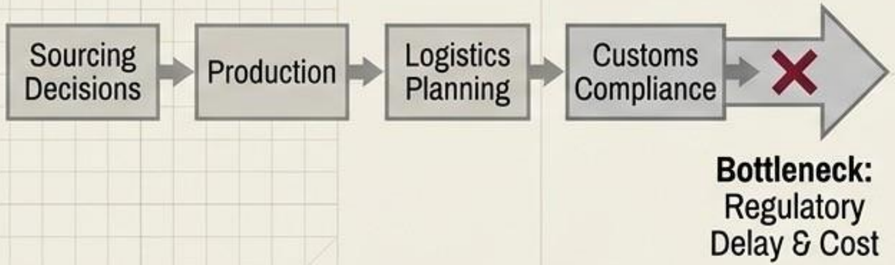
- Evaluating millions of logistics scenarios simultaneously.
- First-movers will achieve compounding advantages in pricing, forecasting, inventory reduction, and faster product engineering.
- Competitive gaps will widen dramatically.



# The Living Supply Chain



## Reactive Trade




## Predictive Trade

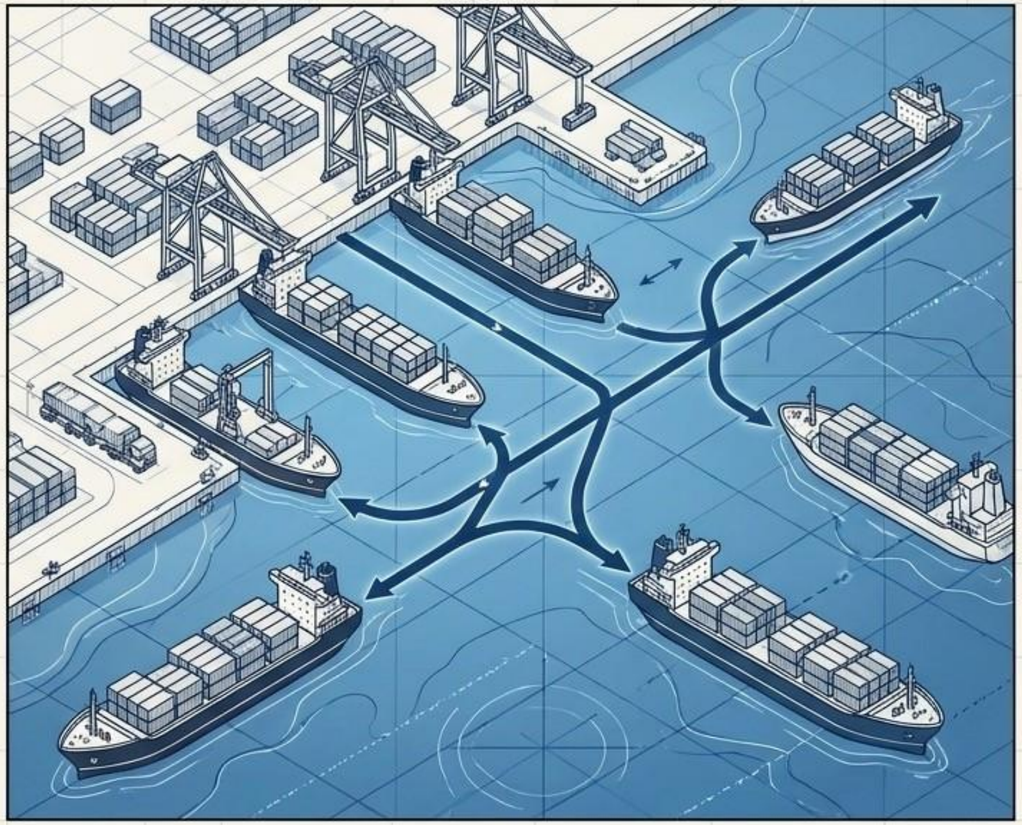
**Trade professionals gain near real-time intelligence to preemptively navigate:**

- Tariff exposure and duty minimization
- Country-of-origin optimization
- Free trade agreement qualification
- Forced labor risk and sanctions exposure
- Export controls

## Automated Customs

Customs compliance becomes purely intelligence-driven, featuring automated classification, entry validation, risk scoring, audit prediction, and dynamic tariff calculations.

# Unlocking Billions in Annual Efficiency



## Data Points - Predictive Routing

- Vessel routing and weather optimization
- Port congestion prediction
- Fuel efficiency maximization

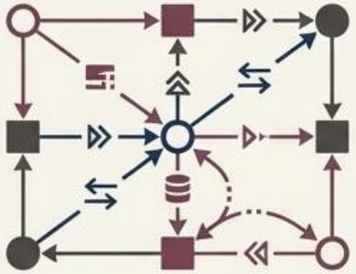
## Data Points - Asset Utilization

- Precise container positioning
- Empty container reduction
- Automated carrier selection and schedule reliability

## Economic Modeling

Simulating inflationary effects and estimating employment changes with unprecedented accuracy.

## Trade Tactics



Modeling tariff impacts before implementation and running trillions of scenarios to simulate international trade negotiations.

## Strategic Security

Identifying hidden supply chain vulnerabilities and assessing strategic dependencies on foreign adversaries.

# Structural Risks and Vulnerabilities

### Cybersecurity

Exponential increase in threats and AI-generated misinformation.

### Codebreaking

Legacy encryption rendered obsolete by quantum capabilities.

### Talent Scarcity

A severe shortage of quantum-capable engineers acting as a strategic constraint.

### Ecosystem Split

Export controls fragmenting global technology ecosystems.

### Inequality

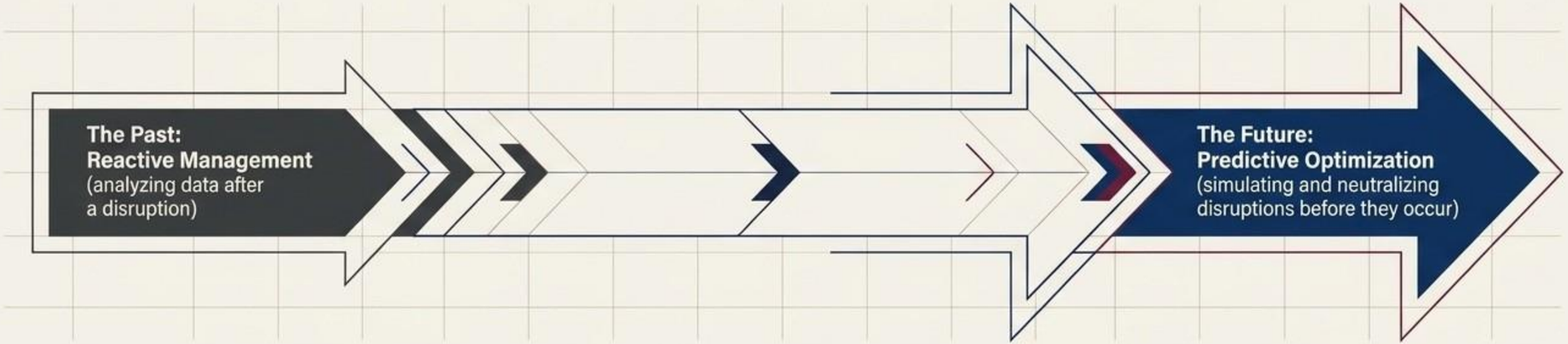
Massive economic widening between technology leaders and laggards.

### Compute as Power

Access to computing power dictating geopolitical leverage.

# The Predictive Enterprise

## The convergence of AI and Quantum Computing represents a foundational shift in economic capability and national security.




For global commerce, logistics, and defense, the era of managing uncertainty after the fact is over. Organizations that successfully integrate these technologies will continuously predict, model, and optimize operations before disruptions occur. Those who adopt these capabilities first will permanently redefine competitive advantage across the global economy.