

WHITEPAPER

# Dual-Engine Transformation: The Future of Enterprise Intelligence

How Human and Machine  
Collaboration Redefines Velocity,  
Capacity, and Capability

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## Executive Summary

From 2015 to 2022, enterprises deployed AI but failed to absorb it: rigid architectures, siloed knowledge, and episodic change models could not keep pace with technology's exponential curve.

Artificial Intelligence (AI) has entered a **metabolic phase**—accelerating not only what we can automate, but how fast knowledge, insight, and innovation circulate through society. Global investment in AI is **tracking toward \$500 billion annually** across infrastructure and enterprise spending by the end of the decade<sup>1</sup>. AI could contribute **up to \$15.7 trillion to global GDP by 2030**<sup>2</sup>—making it the single largest economic value-creation engine in history.

Yet **over two-thirds of organizations** still admit they are not ready to deploy AI at scale<sup>3</sup>. At the same

time, research shows that **roughly 40 percent of work activities** across advanced economies will be transformed by AI-driven automation and augmentation<sup>4</sup>. From 2022 to today, AI deployments have met with strong results in some companies, but failed to scale to their expectations in others.

What's needed now is not another digital project but a **dual-engine transformation**—a continuously adapting system where **human** and **machine intelligence** learn, create, and evolve together. The fuel for this intelligence is tacit knowledge, that our new AI capabilities will harvest at scale.

The challenge, therefore, is not simply “What can AI do?”—but **how fast can enterprises learn, adapt, and evolve alongside it?**

At the core of this answer lies the **Velocity-Capacity-Capability (VCC)** model:



### Velocity

how fast information  
becomes action



### Capacity

how much transformation  
the enterprise can run in  
parallel



### Capability

how effectively people  
learn to operate and  
co-create with AI

These three levers define an organization's **metabolism**—its ability to evolve continuously in the age of intelligent systems.



## 01. AI's Pivotal Moment

Every technological revolution has extended human power—steam extended muscle, electricity extended reach, the internet extended connectivity. **AI extends cognition itself.**

Annual AI investment already surpasses **hundreds of billions of dollars**, and IDC projects enterprise AI spending to exceed **\$630 billion by 2028**, with

infrastructure-level capital outlays approaching the **\$500 billion-per-year mark by 2030<sup>1</sup>**.

And yet, most organizations have not built the **organizational metabolism** to absorb such exponential capability. The opportunity is no longer about the next algorithm—it is about how humans and machines **co-evolve**.

## 02. From Stanley to Ford—and Now to the Modern Bank

When Henry Ford re-imagined manufacturing, he didn't invent the automobile; he re-invented the system around it. The **assembly line** converted invention into scalable production.

Today, most financial institutions resemble **Stanley Motor Carriage Co.**: highly precise, but rigid and built for an earlier era. Their processes are masterpieces of control, but brittle in change.

The modern **"Ford moment"** for banking is about shifting from innovation as craft to intelligence as workflow—embedding AI directly into decision-making loops, linking data, people, and processes into a single adaptive system.

Those who succeed will democratize intelligence across the enterprise—creating **decision factories** as fluid and scalable as Ford's assembly line of mobility.

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## 03.

### The Dual-Engine Model: Humans + Machines

The industrial age was defined by machines that multiplied our strength. The AI age is defined by systems that multiply our **understanding**.

The future is no longer **humans versus machines, but humans and machines**. Every employee will soon collaborate with **digital coworkers**—copilots, assistants, and autonomous agents.

But these AI teammates are only as smart as the **knowledge they**

**can access**—and that knowledge largely resides in people's heads. To make AI intelligent, we must teach it what we know. To make humans adaptive, we must teach them how to work with AI.

This reciprocal learning cycle is the essence of the **dual-engine system**:

Humans make machines smarter. Machines make humans smarter. Together, they form **collective intelligence**.

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## 04.

### People-Powered Growth

When people grow, organizations grow. When people stop learning, transformation stops.

Accelerated reskilling and upskilling could deliver **\$6.5 trillion in additional global GDP by 2030**<sup>5</sup>, while Japan alone could unlock more than **\$1 trillion in new capacity by 2035** through

combined AI adoption and workforce upskilling<sup>6</sup>.

AI transformation is, therefore, **people transformation**. Every time employees learn to co-create with AI, they reclaim time for creativity, analysis, and judgment—the domains of human advantage.

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## 05.

### Rethinking Learning: From Training to Synapse

Most corporate learning remains episodic, classroom-based, and disconnected from daily work. Humans, however, learn best **in context** and **in the flow of work**.

**Synapse**—SMBC Group's AI-native skilling and knowledge platform—brings learning into that flow. It embeds **AI tutors** across enterprise systems, guiding

employees through real tasks while capturing and redistributing **tacit knowledge**.

Inspired by the **Asian mentorship lineage** (Sensei → Senpai → Kohai), Synapse creates a living **"supermind"**—a workforce where human and machine learning continually reinforce each other.



## 06.

### Agency in the Age of AI

The goal of automation is not replacement—it's **agency**. Agency empowers every employee to shape AI rather than fear it.

When people have the tools to configure agents, prompt systems,

and codify their expertise, they become innovators. This cultural shift—from passive users to active creators—ensures that technology amplifies human potential rather than displacing it.

## 07.

### Connecting the Dots: Dual Engines and the VCC Model

The Velocity-Capacity-Capability framework operationalizes the dual-engine vision:

| Lever      | Meaning                                          | How Dual-Engine Transformation Delivers                                                                                     |
|------------|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Velocity   | The rate at which information becomes action     | AI agents shorten decision cycles, automate feedback, and accelerate enterprise metabolism                                  |
| Capacity   | The amount of change an organization can sustain | Automation and augmentation free human bandwidth; shared AI infrastructure scales initiatives without linear cost           |
| Capability | The quality of learning and adaptation           | Platforms like Synapse capture tacit expertise and teach humans to work with AI, compounding intelligence across the system |

By raising **Velocity, Capacity, and Capability** together, transformation becomes not an event but a **living process**.

### Conclusion: The Future Belongs to Dual-Engine Leaders

AI will not replace people—but leaders who master dual-engine transformation will define the next economy.

Technology gives us power; human agency gives us purpose. Together, they create progress.

Organizations that align Velocity, Capacity, and Capability will not merely adapt to the AI era—they will set its pace.





## References

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