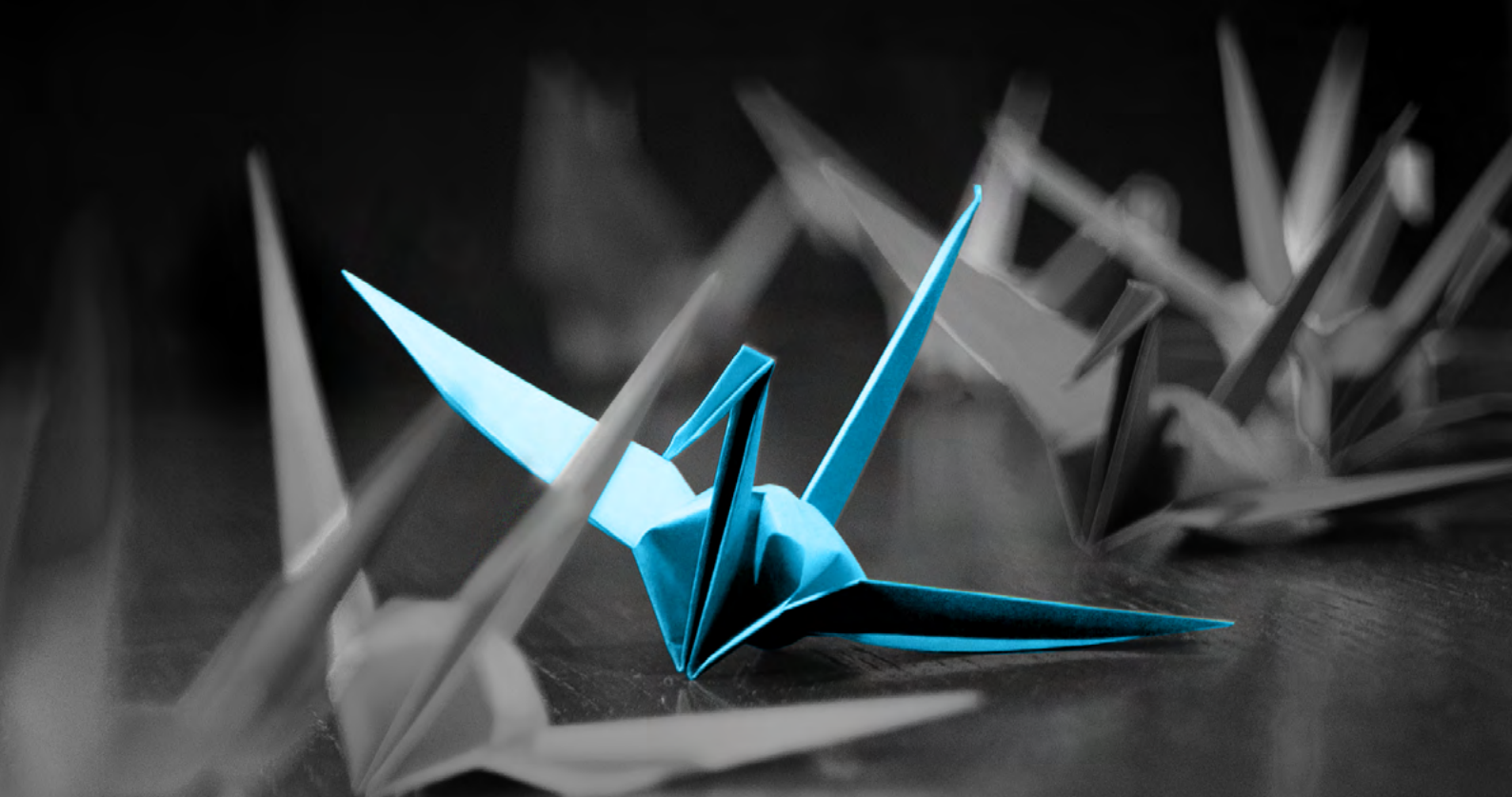
Capgemini
RESEARCH INSTITUTE

Crafting Tomorrow

Leaders' perspectives on technology



Conversations FOR TOMORROW

N°10 — 2025

Executive conversations with...

Perspectives from Capgemini

THE AGE OF CONVERGENCE

Pascal Brier
Group Chief Innovation Officer, Capgemini

THE AGE OF CONVERGENCE

Pascal Brier
Group Chief Innovation Officer, Capgemini

Pascal Brier is Group Chief Innovation Officer and a member of the Global Executive Committee at Capgemini. Since 2021, he has led the Group's global Technology, Innovation & Ventures agenda, overseeing how emerging technologies are identified, explored, and applied across industries. Under his leadership, the company helps organizations harness technological progress to create new forms of business value and positive impact for society.

From technologies to systems

When the Gutenberg Bible was printed around 1455 – a masterpiece of clarity and beauty – the world changed forever. Knowledge could finally be reproduced and shared at scale. Gutenberg's genius lay not in inventing something new, but in combining existing elements: movable metal type, oil-based ink, and a screw-press adapted from wine presses. His work marked a new era through convergence, not isolation.

> **"We have entered an era where innovation no longer happens within technologies, but between them"**

What was exceptional in the fifteenth century has now become the norm. We have entered an era where innovation no longer happens within technologies, but between them. AI learns to reason, robots to collaborate, and energy systems to think. Each breakthrough is impressive, but true power emerges when they interact: intelligence meets embodiment, computation meets physics, digital meets biological.

> **"Progress now depends on connecting what we have already invented"**

The new frontier lies in orchestrating these convergences. How do we make technologies work together coherently, safely, and responsibly? How do we design interfaces – technical, human, and ethical – that enable this intelligence to operate across systems?

Progress now depends on connecting what we have already invented.

The new logic of innovation – From mastery to orchestration

In the twentieth century, industrial success was mainly built on the mastery of a single technology. Companies specialized and scaled around one domain: electricity, computing, telecommunications, materials, and so on. Innovation was linear: invention led to engineering, engineering led to production, which led to distribution. Competitive advantage came from depth of expertise and control over a well-defined value chain.

Today, that logic no longer holds. In the twenty-first century, value lies in connection. Disruptive innovations now emerge from the interplay: when AI meets robotics to create autonomous systems; when biology merges with computing to enable precision health and sustainable manufacturing; when new materials meet advanced energy systems to accelerate decarbonization. The frontier is now a fluid, cross-disciplinary network.

This shift transforms how organizations must think and operate. It moves innovation from R&D silos to open ecosystems, from patents to partnerships, from vertical integration to horizontal collaboration. Companies shaping the next decade will orchestrate across boundaries, linking technologies, industries, and expertise into coherent systems.

Convergence also reshapes interdependence. Industries blend into shared value networks. Humans and machines evolve toward hybrid collaboration. Public and private sectors co-architect common infrastructure – from digital platforms and shared data spaces to interconnected energy and mobility systems. Innovation, once the prerogative of a few, is now a collective act.

This transformation also challenges how public research is organized. Most institutions still reflect a logic of specialization, with labs structured by discipline. Yet today's problems rarely fit such boundaries. Designing next-generation prosthetics, for instance, requires collaboration across medicine, engineering, acoustics, computer vision, and robotics. Convergence calls for research that breaks silos, fosters multidisciplinary collaboration, and aligns inquiry with real-world complexity.

"Convergence calls for research that breaks silos, fosters multidisciplinary collaboration, and aligns inquiry with real-world complexity"

Convergence in practice

Three arenas illustrate how technologies now evolve in partnership.

First, AI and quantum computing: two revolutions increasingly intertwined. Quantum offers a new way to process information; AI provides reasoning to navigate that complexity. Together, they open new frontiers in materials science, logistics, and drug discovery. AI designs efficient quantum algorithms; quantum models accelerate AI training and optimization. This mutual reinforcement is not just computational, it signals the beginning of a new intelligence infrastructure that will redefine how we simulate, predict, and decide.

Second, humanoid robotics, driven by AI, spatial intelligence, and advanced materials. What we are witnessing, particularly in China, is a rapid migration of knowledge from adjacent industries (notably drones, autonomous vehicles, and consumer electronics) toward robotics. Companies are repurposing their expertise in sensors, batteries, and vision models to create robots that can perceive, adapt, and operate in real-world environments. The result is not only a new generation of machines, but a new industrial fabric: robots are now assembling robots.

Robots are now assembling robots

Finally, we see convergence in energy transition. The interplay between electric vehicles, battery innovation, and solar technologies is reshaping both mobility and infrastructure. Advances in one domain trigger leaps in another: better batteries enable cheaper solar storage; AI-optimized grids stabilize renewable production; circular materials science extends the lifespan of components. What were once three distinct industries are increasingly one ecosystem.

Converging away from sovereignty

Converging technologies reveal a deeper truth about technology sovereignty. As nations and companies seek control over critical technologies (chips, models, energy systems), they discover profound interdependence. The more we strive for independence, the more we uncover our interdependencies. Quantum breakthroughs rely on global semiconductor supply chains; AI depends on semiconductors, shared data, and open science; cloud relies on complex infrastructures, routers; clean energy transitions hinge on rare materials mined globally.

True sovereignty in the age of convergence will not come from isolation, nor from collaboration alone. It will depend on mastering, securing, and strategically integrating technologies that underpin interdependence. Resilience means developing know-how, talent, and infrastructure to contribute meaningfully to shared systems. Sovereignty must be redefined as the power to choose and limit dependencies: to collaborate from strength, grounded in mastery and trusted partnerships.

Leadership in a converging world

If convergence defines innovation's new logic, it also redefines leadership. The innovation model emerging today is collaborative by design. It demands not just technical mastery, but the ability to translate complexity into direction. Leadership is no longer about commanding technologies; it is about orchestrating relationships between them.

From silos to ecosystems. Innovation is networked. No single company – however large – can own the full stack of capabilities required to compete in a convergent world. The most successful organizations are those that cultivate open ecosystems: partnerships with startups, academic institutions, and even competitors. Their advantage lies not in exclusivity, but in connectivity, in the speed with which they can combine technologies and scale new ideas across domains.

> **"Leadership is no longer about commanding technologies; it is about orchestrating relationships between them"**

From speed to coherence. For years, innovation was measured by velocity: how fast a company could move from prototype to product. But when technologies converge, the challenge shifts from speed to synchronization. Progress in AI is meaningless if it outpaces progress in energy efficiency or cybersecurity. The race is not just to move fast, but also to move in harmony. Leadership, therefore, becomes an exercise in alignment, ensuring that strategy, talent, and technology evolve in concert.

> **The most successful organizations are those that cultivate open ecosystems: partnerships with startups, academic institutions, and even competitors"**

From invention to intention. Convergence multiplies potential – and consequences. As systems grow more intelligent and autonomous, the boundaries between technical choice and ethical responsibility blur. The question is no longer whether we can build it, but should we, and under what conditions. Responsible innovation is not a constraint; it is the foundation of long-term trust.

> **The race is not just to move fast, but also to move in harmony"**

Ultimately, leaders who will shape this century are those who understand that innovation is no longer a solitary act of creation, but a continuous act of connection – balancing ambition with responsibility, and curiosity with coherence.

> **As systems grow more intelligent and autonomous, the boundaries between technical choice and ethical responsibility blur"**

As technologies converge, progress will come not from mastering individual tools, but from engineering the relationships that connect them: between data and matter, intelligence and energy, humans and machines. This is the new frontier of leadership: not simply to innovate faster, but to build coherence out of complexity, to shape ecosystems where intelligence, purpose, and impact evolve together.

We are entering the age of intelligent systems and autonomy, where AI reasons, quantum computes, robots act, and energy networks self-optimize. Our task now is not only to harness these systems, but to give them direction: to align intelligence with intention, power with responsibility, and progress with planetary limits. The true measure of innovation will not be the sophistication of our technologies, but our ability to make them work in concert, creating prosperity that endures, and intelligence that serves humanity.

As technologies converge, progress will come not from mastering individual tools, but from engineering the relationships that connect them"