



Futures Report

From disruption to business value

June 2024

Managing the business is managing disruption

Since 2000, 52 percent of Fortune 500 companies have been replaced or don't exist anymore.¹ These companies either didn't see disruption coming, waited too long to act on it, or were so focused on making defensive moves to manage downside risk that they missed the massive opportunity to disrupt themselves and unlock new business value.

Given the relentless pace of change and the multiplier effect of disruptions amplifying each other, managing the business is synonymous with managing disruption. A recent KPMG LLP Executive Pulse Survey reveals that 76 percent of executives expect the accelerating pace of change to have a significant impact on their core business in 2024.² In fact, 64 percent see opportunities to build competitive advantage by operationalizing innovation across the organization. Yet only 60 percent of executives say their companies are fully prepared to manage the business through disruption.

72%

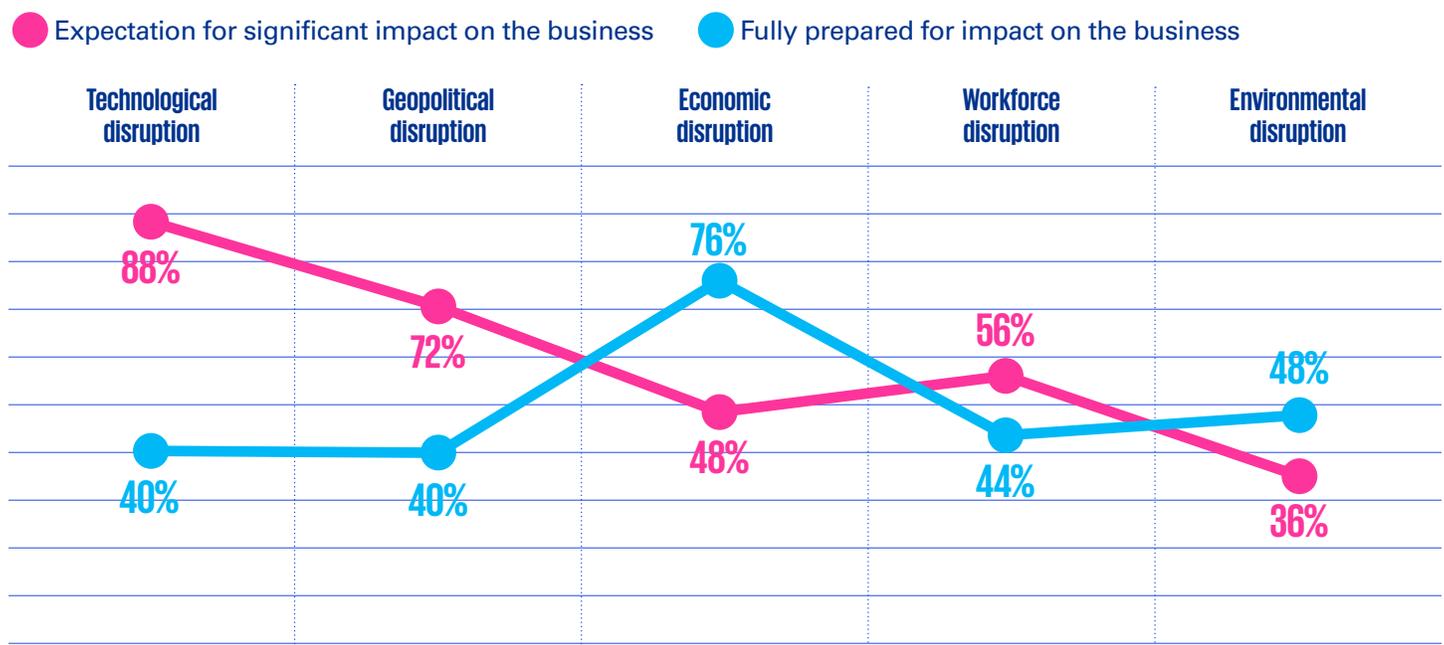
of executives say that the accelerating pace of change requires them to move planning from set strategies to continuous planning.

32%

of executives acknowledge that disruption has upended their three- to five-year plans.

Figure 1.

Executives expect disruption to impact the business but aren't fully prepared to manage it



Source: KPMG LLP, "KPMG Executive Pulse Survey (2024)."

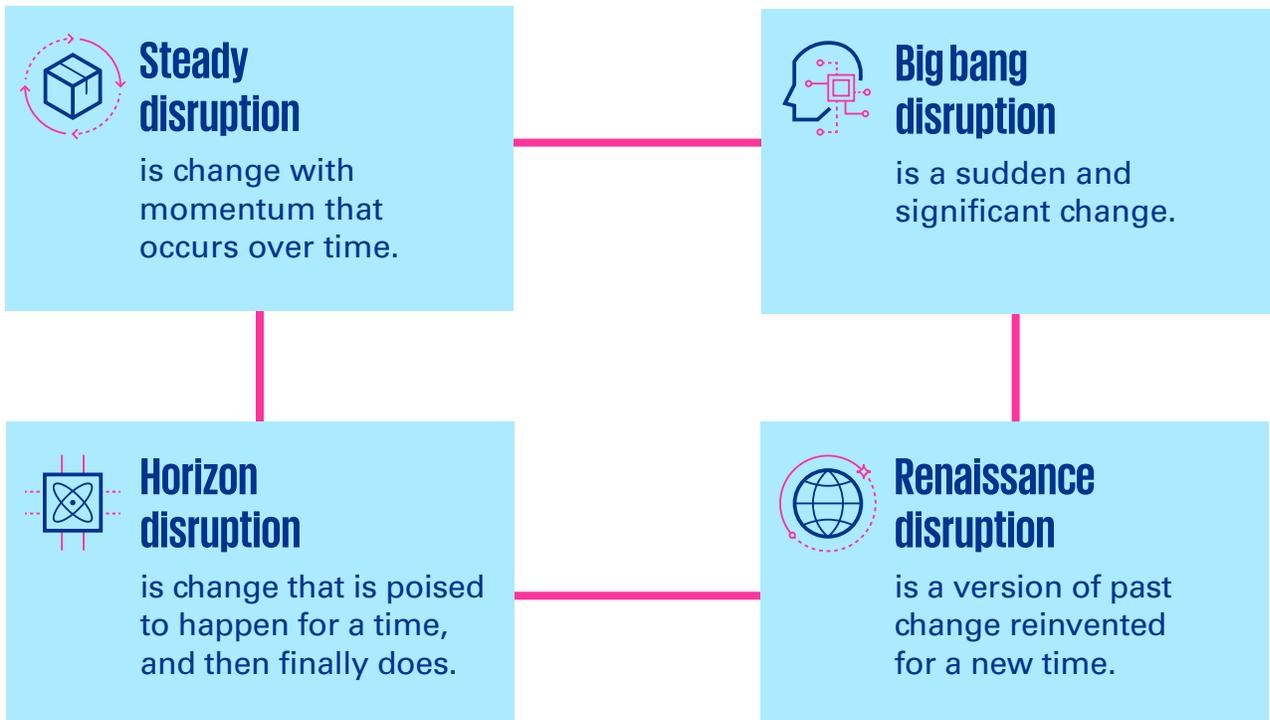
Assessing business value at the frontier

With 84 percent of executives acknowledging that maintaining a competitive advantage means operationalizing innovation across the business, there are clearly new requirements for success.

At the same time, executives are working to ramp up their ability to track signals of change in ways that connect to immediate and longer-term business value priorities. Yet only 33 percent are highly confident that their company is making the right investments to ensure future competitiveness.

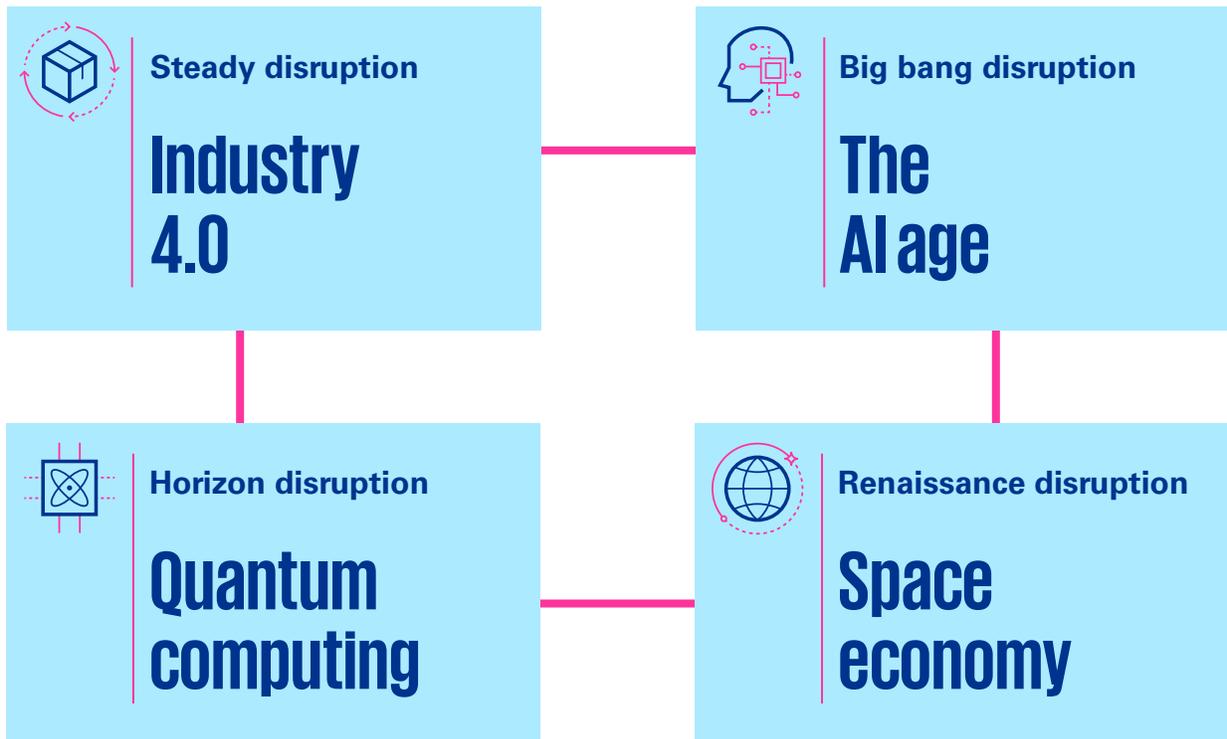
Changing this means zeroing in on **frontiers of opportunity**. These frontiers are mega trends that have the potential to profoundly disrupt the collective future of business and society. They are poised to yield greenfield business value opportunities unlike anything that is possible today.

Frontiers of opportunity fall into different categories of disruption:



Discovering these frontiers from disruption means understanding the situation, identifying the bottom- and top-line business value potential, developing clear actions, and knowing what to watch moving forward. With this insight, executives can manage their involvement in these frontiers like a portfolio, making different strategic bets and allocating investments accordingly.

Here is a snapshot of critical frontiers we are monitoring.



Steady disruption

Industry 4.0

Industry 4.0:

The unfolding has begun

The situation

Industry 4.0 marks a pivotal shift in industrial digitization, merging advanced technologies such as artificial intelligence (AI), data analytics, automation, machine learning, the Internet of Things (IoT), and blockchain to revolutionize manufacturing and production processes. This convergence fosters smarter, more localized, and highly efficient production capabilities that are resilient and tailored to meet specific consumer demands. The move toward Industry 4.0 is critical in today's political landscape, characterized by shifting economic alliances and a reevaluation of global dependencies, notably with China. The challenge is to seamlessly integrate these technologies to foster localized, efficient, and resilient production processes that meet the rising demand for faster delivery speeds and hyper-personalization.

What to do for now

- » Plan to promote sustainable development by optimizing sustainable resource use and aligning with environmental, social, and governance commitments as part of the Industry 4.0 strategy.
- » Integrate AI across business operations to establish a robust foundation for Industry 4.0, helping to ensure transformative changes are scalable and impactful.
- » Prioritize data quality, availability, and reliability to gain deeper insights into customer behaviors and support hyper-personalized Industry 4.0 manufacturing.
- » Engage with both primary (tier 1) and secondary (tier 2) suppliers to foster collaborative innovations that help ensure a cohesive transformation across the entire supply chain.
- » Explore the broader organizational, cultural, and educational changes necessary to equip employees with the skills and knowledge required for a smooth transition to Industry 4.0 practices.

Business value potential

Bottom line

-  Cost reduction
-  Efficiency
-  Productivity

Top line

-  Hyper-personalization of service
-  Customer satisfaction
-  New revenue
-  Market expansion

Measuring stability amid volatility

A robust supply chain is essential for a cohesive transition to Industry 4.0. The KPMG Supply Chain Stability Index, developed in collaboration with the Association of Supply Chain Management, utilizes market data and sophisticated analytics to assess how organizations navigate through fluctuations. It also provides valuable insights that guide future strategic decisions. The Index is grounded in machine learning algorithms fueled by 14 years of data, including nearly 30 key variables and performance indicators.³

What to expect

Industry 4.0 technologies will continue to help companies gain new manufacturing efficiencies, compete in complex global markets, and deliver “just for me” products and services for customers. The forthcoming phase of industrial evolution—Industry 5.0—will also play a significant role in driving change. Building upon the foundations of Industry 4.0, Industry 5.0 will enhance human-machine collaboration and leverage the capabilities of GenAI to address problems more swiftly, proactively, and on a larger scale.

As deglobalization progresses, there will be a growing need for more localized and agile manufacturing processes, which are central to Industry 4.0. This shift is expected to compel businesses to reevaluate the core elements of their supply chain strategy and operations to maximize the benefits of Industry 4.0. Changes may include strategic adjustments from offshoring to onshoring or right-shoring, along with increased adoption of as-a-service models for manufacturing, planning, and warehousing.

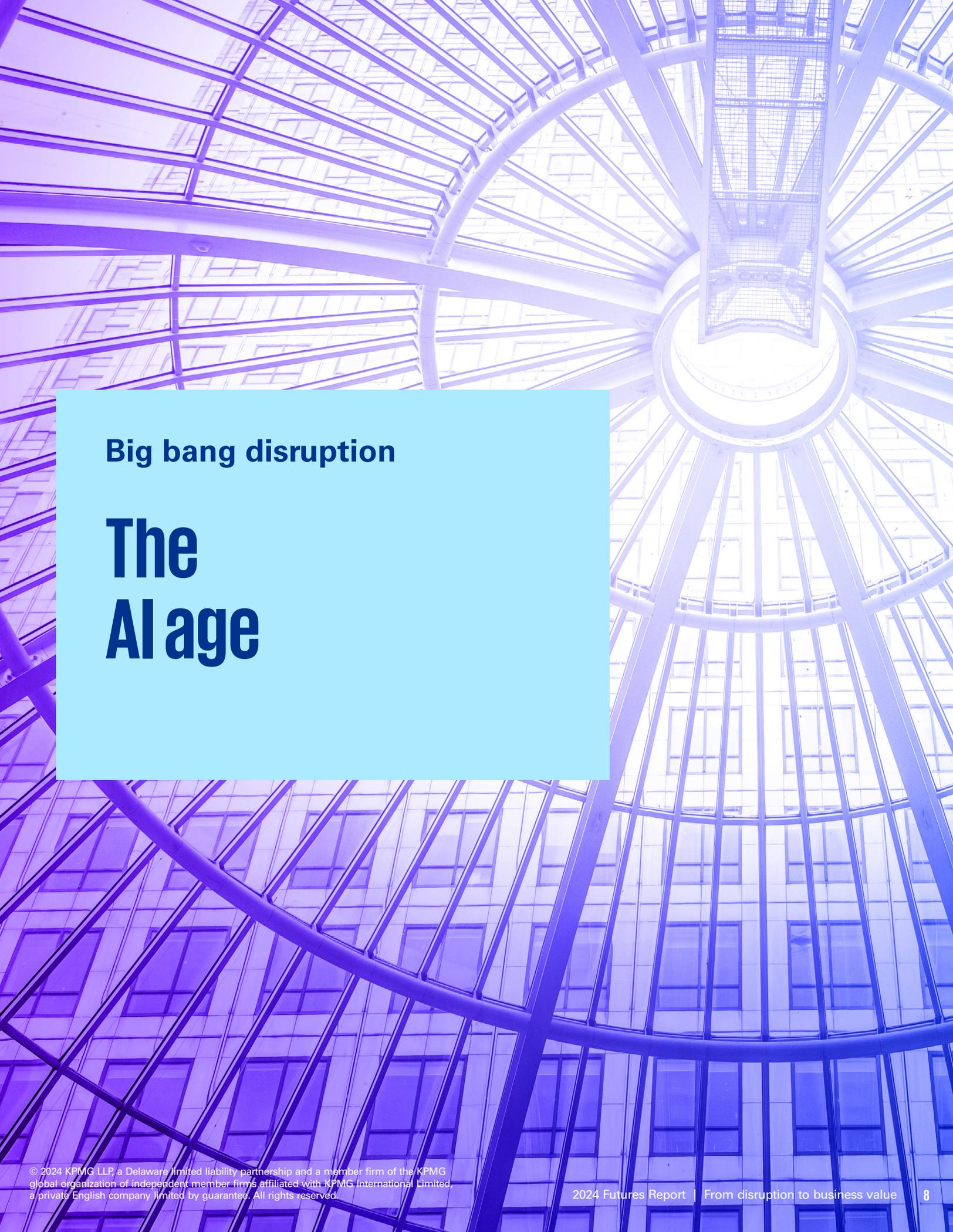
What to watch

1. Continuous changes in the geopolitical landscape, especially concerning China
2. Rapid advancements in automation and robotics within manufacturing and supply chains
3. Expansion of ecosystems to facilitate as-a-service models throughout supply chain function
4. Human-machine collaboration

Executive snapshot

79% of executives are highly confident that their company is making the right investments in supply chain resilience.

84% of executives are confident in their company's assessment of the long-term value of supply chain resilience.



Big bang disruption

The AI age

The AI age:

Riding the wave means doing it responsibly

The situation

Consumers adopted GenAI at twice the rate of tablets and smartphones.⁴ It moved rapidly from the consumer wave to the enterprise wave. The enterprise wave began with experimentation and proofs of concept. Now, first movers are implementing for scale. Executives overwhelmingly point to GenAI as the top emerging technology that will impact their business—72 percent of US chief executive officers (CEOs) say it is a top investment priority despite an uncertain economy.⁵ As companies scale its use, Trusted AI is paramount. It will ultimately dictate how, when, and where companies create new value from GenAI. Trusted AI will be the ultimate business outcome of responsible, ethical AI programs. Having humans in the loop and regulatory guardrails will be key to stopping data misuse from becoming institutional bias.

Business value potential

Bottom line

-  Cost reduction
-  Efficiency
-  Human augmentation

Top line

-  Competitive advantage
-  Faster innovation
-  New market entry
-  Data monetization

What to do for now

- » Take a rigorous approach to data, ensuring data quality and explainability.
- » Design, build, and deploy systems in a safe, trustworthy, and ethical manner by developing an operating model and governance structure to establish accountability and transparency.
- » Take a company-wide investment approach to GenAI that centers around creating sustainable value for customers and rewarding careers for the workforce.
- » Prepare for a GenAI future now by investing in training and education, equipping the workforce to use it securely and responsibly.
- » Adopt a continuous learning approach to fully understand the risks and challenges.

What to expect

As AI continues to advance, it will not only automate tasks, but also create new capabilities, experiences, and growth trajectories that will redefine what humans are capable of at work and in daily life. This is a transformative technology at every level. Whole industries will change.

We expect to see the integration of different types of AI, including GenAI, multimodal AI, and neurosymbolic AI pushing AI's capabilities to where it will reach human intelligence. The impact will be so pervasive—and will move so fast—that companies that aren't shifting their strategies across technology and talent, culture, learning, and innovation today are already behind. What will remain unchanged in all this advancement is the primary importance of Trusted AI.

What to watch

1. Signals for how the advancement and adoption of AI will manifest into markets and business models that the company hasn't previously explored
2. Partnerships that can maximize GenAI benefits with less up-front investments: training data, computing power, risk and evaluation, data, and privacy
3. Public scrutiny of the environmental impact of GenAI

Executive snapshot

64% of executives are confident in their company's assessment of the long-term value of GenAI.

52% of executives are highly confident that their company is making the right investments in GenAI.



Horizon disruption

Quantum computing

Quantum computing:

Tech that eats complexity for breakfast

The situation

Quantum computers tap into properties of quantum physics to solve problems in new ways. Quantum bits (qubits) can evaluate many possibilities at once and perform complex calculations faster than classical computers can. The global market is expected to reach \$7.6 billion in 2027, with a 48.1 percent compound annual growth rate over five years.⁶ Industries including financial services, industrial manufacturing, life sciences, and aerospace have especially strong quantum use cases. While quantum computers promise exponential computing power, they won't completely replace classical computing. Quantum is for specific, computationally intensive use cases. It's not too early for enterprises to explore their quantum sweet spots. At the same time, it's imperative to prepare for the data security vulnerabilities of the quantum world.

What to do for now

- » Understand the organization's cryptographic footprint as the first step in preparing for quantum encryption, which is key to prepare data in a postquantum world.
- » Look across the enterprise to determine where quantum can shine, spotting the use cases it can handle even if the technology is not yet available.
- » Determine if the organization's current information technology (IT) architecture is a foundation for quantum as a service.
- » Prepare to design the IT landscape to parcel out what quantum will do well in the future.
- » Hold quantum awareness training, so that the workforce understands what it is, and to provide the learning and cultural foundation needed to support cybersecurity in a quantum world.

Business value potential

Bottom line

- 📉 Cost reduction
- ⚙️ Efficiency
- 🗑️ Waste reduction

Top line

- 🌟 Competitive advantage
- 🔍 New discovery
- 💰 New revenue

Q-Day and the urgency of now

With a “steal now, decrypt later” approach, criminals and nation states are holding on to hacked data until “Q-Day”—when computers will be able to break the code that protects our data. Now is the time to start mobilizing. The federal government has acted with legislation that requires federal agencies to migrate to and acquire IT systems with postquantum cryptography.⁷

What to expect

With the National Institutes of Standards and Technology set to release postquantum encryption standards this year,⁸ quantum encryption is likely to be the most immediate quantum priority. While it may be years out, quantum computers will become more accessible for general use. Experimenting around quantum use cases today is a good way for companies to get a head start in entering this space.

Talent shortages may prove to be a big challenge for companies in the quantum world, at least initially. Quantum computing is very complex. Quantum experts are a rare breed. They have backgrounds in computer science, physics, mathematics, and electrical engineering.

What to watch

1. Organizations that move first to use quantum as part of their operations rather than just investing in quantum-related research
2. Venture capital funding trends as a signal of where investors see the most promise
3. Merger and acquisition activity for consolidations and mergers as signposts of where the market is going

Executive snapshot

24% of executives are highly confident that their company is making the right investments in quantum computing.

28% of executives believe there is significant potential to drive productivity and efficiency gains through in quantum computing.

22% of executives are confident in their company's assessment of the long-term value of in quantum computing.

Renaissance disruption

Space economy

Space economy:

The second space race is going corporate

The situation

The rapid decline in launch costs led by innovators like SpaceX has opened access to space for more organizations than ever. The domain of governments is going commercial, signaling a future with a robust space economy driven by corporate players. There are opportunities to leverage satellite networks, geospatial intelligence, space-based broadband, on-orbit manufacturing, microgravity research, and more. Space represents an entirely new territory with few legacy players. This greenfield situation creates opportunity now for companies to make bold strategic moves if space can benefit them. As such, corporate strategy leaders who embed space awareness into their innovation plans could gain advantage over time. Regulation will be a significant influence, but it's in flux as the pace of change is faster than regulation can keep up.

Business value potential

Bottom line

-  Cost reduction
-  Efficiency
-  Optimization

Top line

-  Competitive advantage
-  New discovery
-  New revenue
-  New market entry
-  Data monetization

What to do for now

- » Understand the policies, regulations, and legal dynamics of commercial space to identify opportunities and risks.
- » Send envoys to engage with start-ups and established players at leading space conferences to absorb trends, innovations, and partnership opportunities.
- » Begin scoping space-related industry, business model, and operations use cases related to space-sourced data, connectivity, and monitoring.
- » Explore partnership opportunities for affordable space access, collaborating via contracts, consortiums, and public-private partnerships to spread cost and risk.
- » Evaluate starting small with pilot projects or minimally viable services enabled by today's small satellites and launch economics rather than waiting on speculative long-term capabilities.

A galaxy of industry possibilities

The space economy presents many opportunities across industries.

Logistics, supply chain, and transportation: Filling connectivity gaps with space-based broadband and using satellites to track assets in real-time to optimize routing, shipment times, inventory management, and more.

Agriculture: Monitoring crop health and soil conditions daily from orbit.

Energy, utilities, mining, and construction: Increasing automation, predictive equipment maintenance, and project planning via continuous overhead satellite monitoring and analytics.

Cellular networks: Using space-based broadband as a backbone for expanding reach, IoT connectivity, and premium analytics.

Retail: Evolving next-hour shipping and drone delivery with low-cost, space-enabled logistics tracking orders.

What to expect

With falling launch costs, an expanding talent pool, and new risk-sharing partnerships that can lower costs, entering space as a corporate player isn't the stuff of science fiction. The more that executives educate themselves, the more they will see that near-term opportunities exist.

While regulation is still a step behind progress, there is a lot of support from the US government for developing the commercial space sector and making NASA "one of many customers." We expect the pieces to come together for a space economy that can bolster industries, create careers, strengthen security, and inspire the next generation.

What to watch

1. Launch costs, small satellite builds, and space deals reflect access and commercial viability
2. Top engineers and entrepreneurs moving to space segments
3. Patent filings related to space technology innovations
4. Capital flows across joint ventures, new companies, and carve-outs that signal market direction

Executive snapshot

8% of executives are highly confident that their company is making the right investments in the space economy.

5% of executives are confident in their company's assessment of the long-term value of the space economy.

A future of frontiers

From disruption to business value

Identifying frontiers of opportunity is essential for executives to manage the business amid so much uncertainty. But it can't be an annual, or quarterly, exercise. Following frontiers and tracking signals should be an ongoing activity defined by clear responsibilities and full executive visibility.

Executives should also be realistic about business value creation. Tremendous potential exists. Business value can be achieved both top-down and bottom-up. But not always at the same time. There's often a phase of proving out and perfecting cost reduction, efficiency, and productivity gains that sets up the foundation needed for expanding the top line later.

- » **With the future coming fast, stop planning based on where the business has been and start planning based on the signals that reveal where it can go next.**

How to unlock frontiers of opportunity

- » Look beyond technology to social, economic, environmental, and political indicators.
- » Combine signals and trends that can yield clear actions.
- » Consider diverse perspectives.
- » Balance research and stakeholder dialogues.
- » Position as a leader in some frontiers and a fast follower in others.
- » Focus on the long term with a full view of the implications of now.

How KPMG can help

The KPMG Enterprise Innovation group focuses on building the next generation of businesses. Our mission is to identify, incubate, invest in, work with, and scale innovative solutions that address the evolving needs of our clients and the market at large. Our diverse team of strategic thinkers, scientists, technologists, designers, and analysts uses a combination of powerful firm technologies and innovations to problem-solve ways to help unlock new value, make ideas actionable, and achieve measurable outcomes for the firm and our clients.

This 360-degree innovation strategy encompasses:

1. Scan the horizon for emerging trends and identify the most promising opportunities to guide our innovation efforts.

2. Incubate and accelerate the next generation of high-growth businesses, fostering an innovation mindset while providing the resources needed.

3. Build enduring relationships with start-ups and invest in early-stage start-ups in strategic areas.

4. Shape commercialization opportunities for new offerings through co-innovation with alliances, academia, start-ups, and clients.

5. Focus on early adoption, brand permissions, thought leadership, community building, and go-to-market strategies with clients.



Sources

¹ Ilan Mochari, "Why Half of the S&P 500 Companies Will Be Replaced in the Next Decade," Inc. (March 23, 2016)

² Unless otherwise noted, data is from the KPMG LLP Executive Pulse Survey (2024).

³ KPMG LLP, "Supply Chain Stability Index" (2024)

⁴ Sara Lebow, "Generative AI Adoption Climbed Faster Than Smartphones, Tablets," eMarketer (August 11, 2023)

⁵ KPMG LLP, "KPMG 2023 CEO Outlook" (2023)

⁶ Michael Shirer and Heather West, "IDC Forecasts Worldwide Quantum Computing Market to Grow to \$7.6 Billion in 2027," IDC, (August 17, 2023)

⁷ Quantum Computing Cybersecurity Preparedness Act (December 21, 2022)

⁸ NIST to Standardize Encryption Algorithms That Can Resist Attack By Quantum Computers" (August 24, 2023)

Methodology

About the KPMG Executive Pulse Survey

KPMG conducted the online survey of 25 US senior-level executives between March 1, 2024 and March 13, 2024.

The survey included questions about the relationship between disruption and business value and the frontiers of opportunity that executives are monitoring.

Contributors

Lee Anderson, Kevin Bolen, Brad Brown, Swami Chandrasekaran, Steve Chase, Matteo Colombo, Greg Corlis, Per Edin, Richard Entrup, Steve Hill, Htike Htike Kyaw Soe, Aaron Kemp, Eric Logan, Thomas Mackenzie, Brian Miske, Sanjay Sehgal

Contact authors



Cliff Justice

National Leader of Enterprise Innovation, KPMG LLP

E: cjustice@kpmg.com



Stephanie Kim

Executive Director, Enterprise Innovation, KPMG LLP

E: jiseonkim@kpmg.com

Learn about us:



kpmg.com

Some or all of the services described herein may not be permissible for KPMG audit clients and their affiliates or related entities.

The views and opinions expressed herein are those of the [interviewees/survey respondents/authors] and do not necessarily represent the views and opinions of KPMG LLP.

The information contained herein is of a general nature and is not intended to address the circumstances of any particular individual or entity. Although we endeavor to provide accurate and timely information, there can be no guarantee that such information is accurate as of the date it is received or that it will continue to be accurate in the future. No one should act on such information without appropriate professional advice after a thorough examination of the particular situation.

© 2024 KPMG LLP, a Delaware limited liability partnership and a member firm of the KPMG global organization of independent member firms affiliated with KPMG International Limited, a private English company limited by guarantee. All rights reserved. The KPMG name and logo are trademarks used under license by the independent member firms of the KPMG global organization.