NTT DATA

Technology Foresight 2025

Understanding today's technological trends is essential for navigating tomorrow's business landscape.

This NTT DATA Technology Foresight 2025 Report maps the technology patterns that will shape business and society over the next 3 years, based on 1,000 technology trends tracked by our team of futurists.

Find out what's illuminated in Gartner's Hype Cycle and what's fading into the shadows.

01 Enhanced humans

Imagine a future where your potential isn't limited by time, task or knowledge.

Augmentation is not only about enhancement but also about overcoming limitations and creating new possibilities for human interaction and collaboration, ultimately fostering this evolution.

Reducing the time employees spend daily on non-productive activities

Every day, the average employee spends:

20%	28%	58%
of their time searching for information	dealing with emails	collaborating

1.5 million euros

Potential annual savings per 1,000 employees if productivity is improved by just 1% through better information management.

Technology-human integration is about

- Boosting workers' productivity
- Improving the quality of human-machine interactions
- Ensuring ethical use of AI and other technologies to avoid unintended consequences

Technological advancements to continue monitoring

Low	Medium	Medium	High	Very Low
Human Augmentation	Human-machine teaming	Human-machine symbiosis	Brain-computer interfaces	Neuromorphic computing

4 strategies for success

1. Prioritize human-centric design principles
2. Implement robust data governance frameworks
3. Foster cross-disciplinary collaboration
4. Develop ethical guidelines for AI and other technologies

Navigating blind spots

Like always-seeing technologies or quantum-enhanced sensors, human augmentation is not without its challenges.

- Regulatory requirements
- Impact on employment

Where to next?

Continue to monitor	Pilot	Pilot	Pilot
Human Augmentation	Human-machine teaming	Human-machine symbiosis	Brain-computer interfaces

Neuromorphic computing remains a long-term research investment.

Do this next

5 minutes	1 day
Assess how your workforce interactions	Develop a basic human-machine interaction pilot project

3 months

- Conduct a cross-departmental workshop on human augmentation

02 Ambient intelligent experiences

Envision unlocking personalized customer journeys at every touchpoint, transforming interactions into lasting relationships.

Ambient intelligence is about creating seamless, intuitive experiences that anticipate and respond to customer needs.

Delivering adaptive customer journeys and immediate, relevant interactions

73%	70%	90%
of customers expect companies to understand their purchasing decisions	of customers expect companies to know their preferences and purchasing behaviors	of customers are willing to share data if it leads to a more personalized experience

Ambient intelligence can increase customer satisfaction by

30%

Near-real-time personalization

Ambient intelligent experiences allow organizations to

- Provide customers with personalized experiences
- Enhance customer satisfaction
- Enhance data-driven decision-making

Technological advancements to continue monitoring

Medium	Medium	Medium	Medium	Medium
Ambient Intelligent Experiences	Immersive Experiences	Digital Twins	Digital Twins of Organizations	Digital Twins of Ecosystems

4 strategies for success

1. Prioritize data quality and governance
2. Implement robust privacy and security measures
3. Foster cross-functional collaboration
4. Develop ethical guidelines for AI and other technologies

Navigating blind spots

Like always-seeing technologies or quantum-enhanced sensors, ambient intelligent experiences are not without challenges.

- Technological complexity and interoperability issues
- Customer acceptance and adoption of changes

Where to next?

Continue to monitor	Pilot	Pilot	Pilot
Ambient Intelligent Experiences	Immersive Experiences	Digital Twins	Digital Twins of Organizations

Digital Twins of Ecosystems remains a long-term research investment.

Do this next

5 minutes	1 day
Identify high-impact touchpoints	Develop a basic ambient intelligent experience pilot

3 months

- Conduct a cross-departmental workshop on ambient intelligent experiences

03 Digital sustainability for economic resilience

Envision resilience redefined by technology, harmonizing people, planet and profit.

Achieving business strategy and integrating environmental stewardship with digital agility.

Encompasses environmental, social and personal dimensions, along with the principle of technology, balancing individual and collective responsibility

20%	94%	63 - 92%
Businesses that realized significant cost savings through sustainability initiatives	of businesses are more likely to attract customers with sustainable practices	Accuracy rate in diagnosing cardiovascular diseases using AI-powered medical imaging

Specifications for monitoring sustainability are hard to ↑

59%

Increase in refrigerator temperature

By adopting digital sustainability practices organizations can

- Enhance customer satisfaction
- Meet rising sustainability expectations from regulators and investors
- Contribute to global efforts to combat climate change and ensure long-term resilience

Technological advancements to continue monitoring

Medium	Medium	Medium	Medium
Digital Twins of Ecosystems	Digital Twins	Digital Twins of Organizations	Digital Twins of Ecosystems

4 strategies for success

1. Develop robust data governance frameworks for accurate sustainability reporting
2. Leverage AI and machine learning for predictive analytics and optimization
3. Foster cross-functional collaboration between IT and sustainability teams
4. Consider ethical implications of AI-driven sustainability initiatives

Navigating blind spots

Like always-seeing technologies or quantum-enhanced sensors, digital sustainability practices are not without challenges.

- Ensuring data quality and accuracy
- Integrating sustainability metrics into existing systems

Where to next?

Continue to monitor	Pilot	Pilot	Pilot
Digital Twins of Ecosystems	Digital Twins	Digital Twins of Organizations	Digital Twins of Ecosystems

Digital Twins of Ecosystems remains a long-term research investment.

Do this next

5 minutes	1 day
Identify environmental priorities	Develop a basic digital sustainability platform

3 months

- Develop a cross-functional sustainability committee

04 Cognitive cloud convergence

Picture a world where limitless possibilities meet you at the intersection of technology and thought.

Cognitive cloud convergence is about the ever-evolving technologies and AI-driven solutions that are transforming how we interact with the cloud.

Deriving deeper, real-time data insights that improve operations and enhance decision-making

175	+15%	75%
zettabytes	in data the number of high-quality datasets is projected to increase by 2025	of businesses are prioritizing data-driven decision-making as a key strategy for growth

Cognitive cloud convergence helps organizations to

- Enhance customer experiences
- Drive operational efficiency
- Foster innovation

Technological advancements to continue monitoring

Medium	Medium	Medium	Medium
Cognitive Cloud Computing	Edge Computing	Edge Computing	Edge Computing

4 strategies for success

1. Prioritize data quality and governance
2. Implement robust security measures
3. Foster cross-functional collaboration
4. Develop ethical guidelines for AI and other technologies

Navigating blind spots

Like always-seeing technologies or quantum-enhanced sensors, cognitive cloud convergence is not without challenges.

- Data quality and accuracy
- Integration with legacy systems

Where to next?

Continue to monitor	Pilot	Pilot	Pilot
Cognitive Cloud Computing	Edge Computing	Edge Computing	Edge Computing

Edge Computing remains a long-term research investment.

Do this next

5 minutes	1 day
Identify environmental priorities	Develop a basic cognitive cloud platform

3 months

- Develop a cross-functional team

05 Accelerated security fusion

Envision a future where security becomes an invisible, adaptive force, always one step ahead.

Accelerated security fusion is about creating a dynamic, interconnected cybersecurity ecosystem that leverages cutting-edge technologies and collaborative intelligence.

Boosting defenses by integrating threat intelligence, ML and advanced real-time analytics across multiple security domains

69%	90%	5%
of organizations are actively considering cybersecurity mesh architecture	of organizations are currently using or planning to use AI and ML in their cybersecurity strategies	Year leading to widespread adoption of post-quantum cryptography

90%	62%
of organizations are actively considering post-quantum cryptography	of organizations are actively considering post-quantum cryptography

Accelerated security fusion allows organizations to create a unified defense system that

- Automates response processes
- Leverages AI and ML for threat detection and prediction
- Enhances overall cybersecurity posture

Technological advancements to continue monitoring

Medium	Medium	Medium	Medium
Post-quantum cryptography	Post-quantum cryptography	Post-quantum cryptography	Post-quantum cryptography

4 strategies for success

1. Prioritize data quality and governance
2. Implement robust security measures
3. Foster cross-functional collaboration
4. Develop ethical guidelines for AI and other technologies

Navigating blind spots

Like always-seeing technologies or quantum-enhanced sensors, accelerated security fusion is not without challenges.

- Integration with legacy systems
- Skills gap in cybersecurity

Where to next?

Continue to monitor	Pilot	Pilot	Pilot
Post-quantum cryptography	Post-quantum cryptography	Post-quantum cryptography	Post-quantum cryptography

Post-quantum cryptography remains a long-term research investment.

Do this next

5 minutes	1 day
Identify cybersecurity security approaches	Develop a basic cross-domain threat correlation tools

3 months

- Develop a cross-functional cybersecurity team

Future scenarios

Quantum-powered post-quantum cyber-key organizations

Organizations implement post-quantum cryptography to secure their data against future quantum computer threats.

Quantum-powered post-quantum cyber-key organizations

Organizations implement post-quantum cryptography to secure their data against future quantum computer threats.

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