

# TREND REPORT 2025



**2025: a year for  
accelerated change**

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As 2025 approaches, businesses face a pivotal moment. Growing cyber threats, geopolitical tensions, evolving regulations, and rapid technological advancements highlight that today's decisions will shape their future competitiveness. Starting with technology alone seems out of sync with the broader global context.

**Geopolitical dynamics** are disrupting supply chains and market stability, forcing businesses to rethink their global strategies. Trade tensions, regulatory changes, and economic uncertainties not only expose vulnerabilities in traditional business models but also heighten the risk of cyber threats. These interconnected challenges demand that companies move decisively to build resilient supply chains removing single points of failure and prioritizing recoverability to mitigate the impact of potential disruptions in an increasingly unpredictable environment.

At the same time, **cybersecurity threats** are growing in volume and sophistication. As digital transformation accelerates, the opportunities for attacks by cybercriminals widens. From ransomware attacks to state-sponsored hacking, no industry is immune. The need for robust security frameworks, Zero Trust architectures, real-time threat detection, and, last but certainly not least, rapid recoverability has never been more urgent. Digital trust is now a business asset and maintaining it—alongside a clear plan for recovery—is crucial for long-term success.

**Regulatory pressures** are intensifying, particularly in areas such as data privacy, sustainability, and digital resilience, with frameworks like DORA and NIS2 setting new benchmarks. The demand for strong digital resilience is growing as organizations face growing cyber and systemic risks. Companies that fail to adapt to these evolving standards risk legal penalties and significant reputational harm, potentially eroding consumer trust and investor confidence.

Simultaneously, governments worldwide are enforcing stricter mandates on data collection, storage, and management practices, while also increasing accountability for environmental, social, and governance (ESG) performance. The convergence of these demands is creating a complex compliance landscape that businesses must navigate strategically.

The message is clear: 2025 is not the year for cautious moves. It's the year to embrace the new reality: modernize IT systems, secure digital infrastructures, build resilient operations, and adapt to a rapidly changing regulatory landscape. Those who hesitate risk being left behind in a world that's moving faster than ever.

In 2025, C-level executives must navigate a landscape defined by interlinked priorities that drive **resilience** and growth. At the forefront is **IT modernization**, which serves as both a critical enabler of business agility and a foundation for operational resilience. Key advancements, such as cloud migration, scalable architectures, and automation, will be pivotal in enhancing operational efficiency while maintaining flexibility and fostering innovation.

Equally vital is the focus on cybersecurity and digital trust. As threats evolve, AI-powered security solutions and Zero Trust architectures will play a central role in protecting operations, securing data, and safeguarding organizational reputation.

**Hybrid cloud, sovereign cloud, and edge computing** are transforming businesses by enabling scalable, secure, and compliant solutions. Hybrid cloud combines flexibility and control, while sovereign cloud ensures data residency and regulatory compliance for sensitive workloads. Edge computing brings real-time data processing closer to its source, reducing latency and driving smarter, faster decision-making. Together, these technologies empower organizations to innovate, optimize costs, and stay competitive in an ever-evolving, data-driven world.

As businesses integrate **AI** into their core operations, its true value lies in simplifying workflows, enhancing decision-making, and driving innovation. To make this scalable and sustainable, organizations must prioritize **democratizing data** access while ensuring strong governance frameworks. By embedding AI into everyday processes and aligning it with strategic goals, companies can unlock meaningful insights, improve efficiency, and build resilience—all while meeting rising demands for sustainability and compliance.

As **sustainability** becomes a core business driver, companies are rethinking how technology can balance performance with environmental responsibility. By adopting sustainable IT practices like optimizing resources and embracing ESG principles, businesses can reduce their environmental impact while driving innovation and efficiency. This isn't just about compliance—it's about making smarter choices that create long-term value for the planet, their operations, and society at large.

Addressing **talent shortages** in critical digital areas will require not only a strong focus on reskilling the workforce but also a strategic reassessment of how organizations manage and secure essential knowledge. As legislation and regulations around outsourcing and hiring freelancers continue to evolve, companies face increasing challenges in maintaining a stable talent pool. High staff turnover rates in many organizations exacerbate these issues, making it difficult to rely on historical expertise or effectively navigate complex contexts. Having access to expertise with full context and historical awareness is especially crucial during times of crisis.

This volatility poses significant risks to **knowledge retention**, increasing the likelihood of disruptions to recoverability and overall business continuity. To mitigate these risks, organizations must prioritize their core processes, ensuring that knowledge is safeguarded internally while also leveraging reliable external partners for areas where outsourcing is viable. By adopting a balanced approach to reskilling, knowledge retention, and partnerships, businesses can build greater resilience in the face of an unpredictable talent landscape.

## IT modernization: a business-critical priority

IT modernization is no longer just a technical necessity—it is a strategic imperative for achieving long-term business success. Legacy systems, while once dependable, now often hinder growth by accumulating technical debt, slowing operations, limiting agility, and consuming resources.

Organizations must break free from the constraints of IT lifecycle management. Instead, the business calendar should drive transformation, by aligning modernization and lifecycle management with strategic priorities. This approach ensures IT not only supports but also accelerates innovation, enabling organizations to turn change into a competitive advantage.

Business continuity and agility have never been more important. IT modernization provides the foundation to respond quickly to changing market conditions while ensuring operations remain secure and resilient. Cloud-native architectures, combined with robust cybersecurity frameworks, allow organizations to scale operations and adapt to shifts without missing a beat.

We've seen how modernized systems not only protect businesses from disruptions but also enable them to thrive under pressure, whether dealing with a surge in demand or mitigating the latest cybersecurity threats. We know firsthand how modernization can build resilience and unlock new opportunities for growth.

Modernization is a catalyst for innovation. But innovation needs purpose; it's about solving real business challenges. Modern IT environments integrate advanced capabilities like AI and machine learning, turning data into actionable insights and automating complex processes. This creates space for businesses to focus on what matters most: delivering exceptional customer experiences and staying ahead of the competition. True innovation happens when technology simplifies, streamlines, and strengthens core business operations.

For us modernization is an investment in adaptability, ensuring businesses are prepared for whatever comes next, such as sustainability and future preparedness - future adoption of AI or quantum computing - while staying compliant with changing regulations.

### Modern IT as the foundation

Modern IT infrastructures—built on cloud platforms, microservices, and containerization—offer the flexibility and scalability businesses need to quickly deploy and refine digital solutions.

The shift to cloud computing has been especially transformative. Scalable cloud environments let businesses adjust resources on demand, optimize costs, and reduce or even eliminate the complexity of managing on-premise hardware.

The value of modern IT goes beyond organization's own boundaries. It connects IT across the entire value chain, integrating external partners and suppliers for smoother collaboration and data sharing. This makes establishing and maintaining control over the broader ecosystem crucial.

## IT modernisation as prerequisite for digital transformation

In IT modernization, speed is essential, but it must be guided by a clear strategic purpose. Rapid adoption of new technologies can drive innovation, but without alignment with long-term business goals, these efforts risk becoming fragmented and delivering limited impact. At Schuberg Philis, we emphasize the importance of ensuring every technology initiative is rooted in the organization's broader strategy, so each investment contributes to business value.

Achieving this balance requires more than implementing advanced technology; it demands a culture of adaptability. While development frameworks designed for continuous improvement and agile market response can be effective, they often fail to deliver on their potential. This is frequently due to a shift in focus in the way results are delivered—from delivering measurable business outcomes to prioritizing effort-based engagements and time-and-materials (T&M) models.

We advocate an outcome-driven approach from the very beginning, ensuring all efforts are strategically aligned to deliver impactful and measurable results that drive real business value.

Which means: "diagnose before you prescribe". We listen first and then co-create tailored solutions that balance stability and flexibility. This goes beyond the typical customer-supplier dynamic, creating genuine synergies that drive business progress and deliver measurable impact.

Yet, modernization is not a one-size-fits-all journey. It requires a tailored approach rooted in deep understanding and collaboration. True transformation happens at the intersection of technology and business strategy. With a clear vision and the right partners, modernization becomes a continuous process of delivering measurable outcomes, driving sustainable growth, and staying ahead of the curve.



## Being compliant or operational resilient?

Every organization faces disruptions—whether it's a cyberattack, system outage, or operational failure. These moments are critical, but they're also opportunities to demonstrate resilience and protect what matters most. IT modernization plays a crucial role in enabling and growing operational resilience. Operational resilience isn't just about bouncing back; it's about maintaining control and continuing to deliver value, even under pressure.

We believe operational resilience is a strategic advantage. It's not just about whether your systems can recover, but whether your entire organization is prepared to respond, adapt, and thrive.

### Compliance doesn't mean secure

Regulations like DORA, NIS2, and GDPR provide a critical baseline, but compliance alone won't protect your business. Too often, organizations focus on ticking regulatory boxes rather than building the operational resilience needed to withstand real-world disruptions. Compliance should be an outcome of strong resilience practices, not the other way around.

The problem with a compliance-first approach is that it encourages a narrow focus: Are we meeting the requirements a.k.a. are we ticking the boxes? Instead, organizations should be asking broader questions: Are we prepared to handle a full-scale disruption? Can we maintain operations when our systems are down? These are the measures of true resilience.

### Testing NO-IT scenarios

The only way to know if you're prepared is to test for the worst-case scenario. Testing a "NO-IT" scenario, where you operate without your core systems, isn't just an IT exercise; it's a reality check. Recent incidents show how even small technical errors can cascade into global disruptions. The goal of testing isn't just to uncover vulnerabilities and blind spots but also to refine your recovery processes.

How quickly can you get back in operation? What functions can keep running during a crisis? Testing these scenarios is essential for ensuring that your organization is prepared and can recover under pressure.

## Breaking down silos

One of the biggest obstacles to operational resilience is the siloed nature of many organizations. Cyber risks don't respect departmental boundaries, so your response can't be confined to IT only. You need everyone at the table: IT, operations, legal, risk management, and external partners. This "whole system in the room" approach ensures that everyone is aligned, strengthening defense and improving the ability to respond collaboratively.

## The importance of the role of leadership

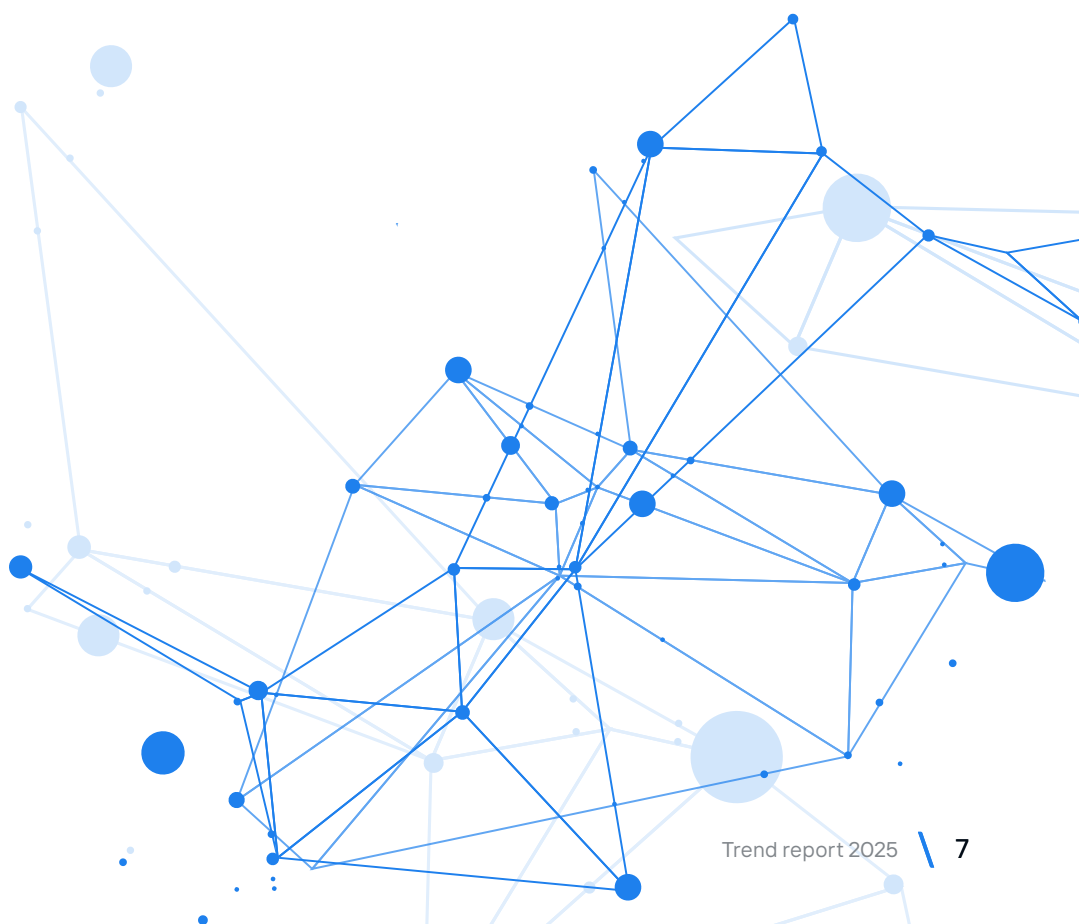
Resilience isn't just a technical challenge—it's a leadership responsibility. Leaders need to move beyond compliance checklists and focus on embedding resilience into the organization's DNA. This means asking the tough questions: Are we ready for a total systems failure? How quickly can we recover? Do we have the right people, processes, and structures in place to manage a crisis?

Leadership sets the tone. When resilience is a priority at the top, it becomes a priority throughout the organization. It's not about avoiding every disruption but ensuring your business can weather them and emerge stronger.

Cybersecurity is no longer just an IT issue; it's a shared business risk that affects every stakeholder. The impact of cyber incidents extends beyond financial loss to societal and operational consequences.

Operational resilience isn't a one-time achievement—it's an ongoing process requiring foresight, governance, and adaptability.

A key question for boardroom discussions is: How can we, as a board, take ownership and responsibility for addressing these challenges? This requires proactive and actionable leadership, embedding resilience at the heart of the organization. By fostering a culture of preparedness and ensuring disruptions are effectively managed.



## Hybrid Cloud, Sovereign Cloud and Edge Computing - driving business value

Cloud computing is an essential enabler of business growth, operational efficiency, and regulatory compliance. Organizations fully embrace hybrid, multi-cloud, and edge computing strategies to address critical challenges such as cost management, scalability, data sovereignty, and sustainability. These strategies help them stay competitive while navigating an increasingly complex regulatory landscape.

Our focus is on providing tailored, robust cloud solutions that align with business objectives. By integrating cloud technologies into core strategies, we empower organizations to innovate, adapt, and achieve measurable outcomes with confidence.

### Hybrid and multi-cloud: flexibility and scalability

Hybrid cloud serves as a robust foundation for balancing scalability, control, and security. By integrating the flexibility of public cloud platforms with the security and compliance advantages of private and sovereign clouds, this model enables organizations to deploy workloads strategically—aligning resources with operational demands while adhering to regional regulations and industry standards.

Expanding on this, multi-cloud strategies take flexibility a step further, empowering businesses to distribute workloads across diverse environments, including on-premises systems, sovereign clouds, and public cloud platforms. This approach ensures that sensitive or mission-critical workloads can be managed within secure, controlled environments, while non-sensitive workloads can leverage the potential of public cloud resources.

A well-executed multi-cloud strategy also mitigates the risks of vendor lock-in, fostering greater agility in responding to evolving market conditions. It provides businesses with the freedom to optimize performance and costs by selecting the best cloud solutions for specific use cases. Research by McKinsey and Gartner underlines the value of multi-cloud architectures in driving digital transformation, highlighting their role in enabling scalable, dynamic workload management while safeguarding security and operational efficiency.

### Sovereign cloud: ensuring compliance and security

As data protection regulations such as GDPR and industry-specific compliance standards become increasingly stringent, sovereign cloud solutions have emerged as essential for modern businesses.

These solutions ensure data residency by keeping sensitive information within defined geographic boundaries, thereby meeting local legal requirements and safeguarding privacy.

Industries with high regulatory demands—such as healthcare, finance, and government—depend on sovereign clouds to maintain complete control over critical data. These environments not only enable compliance with strict regulatory frameworks but also provide enhanced security measures, creating a fortified space for mission-critical workloads. From encrypted communications to advanced access controls, sovereign clouds offer protection for sensitive operations.

Adopting a sovereign cloud strategy enables organizations to meet rigorous compliance standards while improving operational efficiency. This approach ensures that cloud environments are designed to align with both business objectives and regulatory requirements. By leveraging the cloud's flexibility, businesses can innovate with confidence, without compromising security or compliance. The sbp.cloud platform demonstrates this balance, providing customized environments that combine sovereign capabilities with advanced automation, scalability, and resilience.

## Edge Computing: real-time insights & low latency

Edge computing is reshaping how businesses process and act on data, bringing computation closer to its source—whether it's IoT devices, sensors, or autonomous systems. By reducing the need to send data back and forth to centralized systems, it minimizes latency, cuts bandwidth costs, and enables real-time decision-making where speed is critical.

Industries like manufacturing, healthcare, and logistics are already seeing the benefits. In manufacturing, edge computing ensures production lines are monitored and optimized in real time, reducing costly downtime and boosting efficiency. Healthcare providers can accelerate diagnostics and improve patient care by analyzing data instantly at the point of need. For logistics, real-time tracking and route optimization streamline operations and ensure better service delivery.

What sets edge computing apart is its ability to work smarter, not just faster. Integrating AI and machine learning, it processes local data intelligently, enabling predictive maintenance, personalized solutions, and dynamic decision-making right at the source. This localized approach ensures businesses can act on insights immediately while reserving centralized cloud systems for broader data processing and analytics.

The real power of edge computing comes from its role in hybrid and multi-cloud strategies. It bridges the gap between localized, real-time processing and the scalability of cloud infrastructure, creating a system that's both agile and efficient. By aligning edge capabilities with broader IT strategies, businesses can unlock faster responses, smarter operations, and tangible value in their day-to-day operations.

The growth of edge computing is fostering new business models, including edge-as-a-service offerings. Companies are exploring innovative services that leverage edge infrastructure to deliver real-time analytics, localized content delivery, and enhanced user experiences.

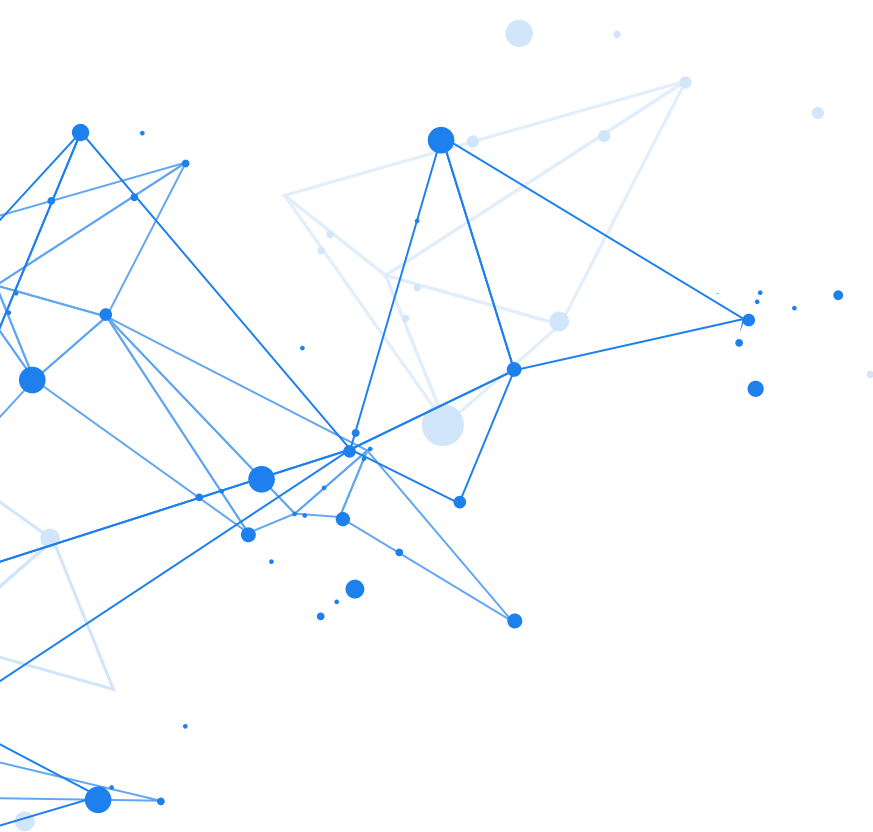
Edge computing isn't just a technical upgrade—it's a practical solution for businesses looking to stay competitive in a fast-paced, data-driven world.

## Driving value

The adoption of hybrid, multi-cloud, sovereign cloud, and edge computing strategies enables businesses to achieve key outcomes:

- > **Increased revenue:** Cloud solutions accelerate time-to-market and create opportunities for growth.
- > **Cost optimization:** Hybrid and edge computing reduce expenses by optimizing energy use and resource allocation.
- > **Regulatory compliance:** Sovereign clouds ensure data residency and adherence to local regulations.
- > **Enhanced flexibility:** Multi-cloud and edge computing improve responsiveness and adaptability to changing demands.
- > **Improved continuity:** Hybrid cloud architectures offer built-in redundancy and disaster recovery capabilities.

By integrating cloud technologies into core business strategies, sustainable growth, operational resilience, and the flexibility to succeed in a competitive, interconnected world is achieved.



## Sustainable IT, green technology, and ESG

As we move into 2025, sustainability is no longer just a strategic goal—it's a key driver of innovation and growth. The IT industry has a unique role to play in this shift, finding practical ways to reduce environmental impact while maintaining performance, scalability, and reliability.

By focusing on smarter resource use, adopting cloud scheduling, and leveraging targeted AI tools, we're addressing the challenges of sustainable IT in a hands-on way. These efforts not only cut waste and lower costs but also show that responsible technology can benefit both businesses and the planet.

This work goes beyond technical solutions. It's about fostering collaboration, promoting diversity and inclusion, and ensuring transparency across supply chains. By embedding sustainability into everything we do, we're helping to create systems that work better—for people, businesses, and the environment.

### Optimizing the IT stack

Sustainability extends deep into how IT systems are designed and managed. While Greencode is now a basic expectation, true impact comes from refining processes like batch processing vs. singleton tasks, improving data ingestion frameworks and optimizing SQL vs. cursor processing. Businesses that evaluate trade-offs between cost, latency, and sustainability can make smarter, more informed decisions about their IT strategies. Location-based shifting of workloads to areas with renewable energy availability further enhances sustainability and reduces operational costs.

### Certified sustainability and transparency

The rising demand for third-party certifications that validate sustainability efforts underlines the importance of credibility and trust. These certifications not only prove compliance but also serve as a mark of excellence for organizations committed to greener operations. Transparency across the supply chain—emphasizing fair payment practices, whether through nearshoring or offshoring—ensures every player contributes to sustainability efforts and builds a culture of accountability.

### Measuring success and building reputation

As businesses make strides in sustainable IT, they're finding new ways to share their progress. Real-time monitoring of sustainability metrics and transparent reporting are empowering organizations to track and communicate their impact.

Real-time monitoring of sustainability KPIs at the application level, combined with transparent reporting, ensures accountability and continuous improvement. Models like “polluter pays” align financial responsibility with environmental impact. These efforts, paired with impactful success stories and authentic marketing, strengthen brand reputation and attract customers who value responsible innovation.

### ESG integration in IT

Integrating ESG (Environmental, Social, Governance) principles into IT is no longer just about regulatory compliance. ESG encourages IT departments to reduce their environmental footprint through practices such as:

- > **Circular economy models:** Refurbishing and recycling older IT hardware to minimize e-waste and extend equipment lifecycles.
- > **Diversity and inclusion initiatives:** Promoting social responsibility by fostering an inclusive work environment and ensuring employee well-being.
- > **Transparency and accountability:** Implementing strong governance frameworks that emphasize ethical decision-making and responsible technology use.

By integrating ESG into IT strategies, organizations can enhance their brand reputation, demonstrating a commitment to global sustainability, and appeal to socially responsible investors and stakeholders.

### Green software engineering

Sustainability in IT isn't just about physical infrastructure—it's in the software we build and the processes we design. Green software engineering is becoming a cornerstone of sustainable IT. Developers are embracing practices like optimizing code for efficiency, prioritizing batch processing over single operations, and rethinking data processing frameworks to minimize resource use. These changes, while subtle in execution, have profound impacts on energy consumption, helping businesses meet their sustainability goals from the ground up.

By aligning technology with sustainable practices, organizations are not only reducing environmental impact but also driving efficiency, resilience, and long-term business value.

Real progress comes from practical actions: optimizing resources, integrating ESG principles, and designing systems that balance performance with responsibility. It's about making smarter choices today to deliver stronger outcomes tomorrow—for businesses, the planet, and society.

## Unlocking the full potential of Data & AI for your business

The transformative power of AI is undeniable, yet the challenge for many organizations lies in harnessing this power in a sustainable, secure, compliant and scalable way. By 2025, AI will no longer sit on the sidelines of innovation; it must be embedded into the core of how businesses operate, driving efficiency, growth, and innovation.

### From novelty to necessity: AI as enabler

AI is reshaping business operations, becoming a cornerstone of innovation, efficiency, and adaptability. No longer just a standalone tool, AI must become a critical enabler integrated into workflows and decision-making. When implemented effectively, it streamlines operations, enhances customer experiences, and uncovers new growth opportunities. With our secure, scalable AI platform, organizations can confidently adopt AI while adhering to regulations like the EU AI Act and building a robust, future-proof foundation.

Unlocking AI's potential starts with a different mindset. Instead of treating proof-of-concepts (POCs) as isolated experiments, we begin by understanding the core processes and operational constraints where AI will ultimately need to fit. By designing POCs with these real-world limitations in mind, we ensure that successful outcomes aren't just theoretical—they can be seamlessly integrated into the business, delivering measurable value and aligning with long-term priorities from the start.

Success demands more than experimentation—it requires disciplined execution. It begins with clearly defined goals and challenges, followed by lightweight applications and iterative testing to validate feasibility. Prototyping and training facilitate smooth integration into workflows, while continuous monitoring and optimization ensure systems deliver consistent value.

Our AI platform turns this vision into reality by providing real-time insights and actionable intelligence. It empowers businesses to optimize decision-making, improve operational performance, and focus on high-value activities.

AI's true power lies in its ability to scale and evolve alongside the business. By embedding it into core processes and aligning it with strategic objectives, organizations can achieve sustainable growth and innovation.

## AI that scales, secures, and complies

The transition from AI experimentation to enterprise-wide adoption is a transformative journey that requires addressing three critical pillars: scalability, security, and compliance. Organizations must deploy AI systems that not only meet current operational demands but also scale effectively with the business, adhere to stringent regulatory requirements, and maintain stakeholder trust.

Modern AI systems need to do more than perform—they must adapt, safeguard, and build trust. Scalable AI ensures organizations can expand their capabilities effortlessly, maintaining top performance as they adapt to new functions, locations, and demands. This scalability not only supports growth but also future-proofs investments, unlocking opportunities for innovation and efficiency.

Security and compliance go hand in hand to build trust and reliability. By adhering to global standards like GDPR and the EU AI Act, businesses safeguard customer and organizational data while demonstrating their commitment to ethical AI use. Robust governance structures, proactive risk management, and real-time monitoring ensure systems remain secure and transparent.

With compliance frameworks like the EU AI Act setting clear expectations, organizations can confidently integrate AI into their operations. Embedding strong safeguards and accountability measures into AI-systems not only minimizes risks but also ensures responsible innovation.

## Engineering excellence: avoiding tech debt

The rapid adoption of AI offers transformative potential, but it also introduces significant hurdles. One of the most common pitfalls is the creation of fragmented, poorly connected systems—a tangled “spaghetti” of disjointed tools and processes. While this may yield quick results initially, it is neither a sustainable nor a scalable approach, often leading to inefficiencies and escalating technical debt.

To prevent this, prioritizing a foundation of robust engineering is essential. By focusing on thoughtful system design and implementation from the beginning, organizations can ensure their AI solutions are built to last, scalable, and easy to maintain. This requires following [key principles of clear data organization](#), seamless system integration, and modular architecture. Careful planning during the design phase helps to avoid piecemeal solutions that are challenging to manage or expand.

A strong focus on engineering discipline also minimizes long-term costs. Systems developed without strategic foresight often require expensive rework as teams grapple with convoluted implementations. In contrast, AI solutions constructed with sound engineering practices become a dependable and integral part of the organization’s operations, enabling continuous innovation without introducing unnecessary complexity.

Investing in engineering excellence ensures that AI functions as a lasting driver of business value, seamlessly support organizational goals. By avoiding fragmented and short-sighted development, businesses can harness the full potential of AI while maintaining clarity, efficiency, and long-term scalability.

## Empowering engineers and securing knowledge

The shortage of skilled engineering talent continues to challenge organizations striving to remain competitive in an innovation-driven economy. As the demand for technical expertise outpaces the supply of qualified professionals, businesses face a pressing need to maximize the potential of their existing teams while simultaneously ensuring operational resilience. AI offers a powerful and practical solution, enhancing the scalability, efficiency, and impact of engineering teams by transforming how they work and addressing critical gaps in talent and knowledge retention.

Rather than assigning engineers to repetitive, time-consuming tasks like deep research, manual monitoring, or analyzing vast datasets, AI takes on these responsibilities, enabling teams to focus on high-impact work. Engineers can redirect their expertise toward solving business challenges, designing innovative solutions, and optimizing systems. It fundamentally changes the engineering role, empowering professionals to engage in more creative and impactful tasks that drive business success.

At the same time, it improves job satisfaction for engineers. Talented professionals thrive when given opportunities to solve complex problems and innovate. When engineers are freed from mundane responsibilities and can focus on meaningful work, they are more likely to remain engaged, motivated, and loyal to their organization. This not only reduces turnover but also preserves a company's ability to attract and retain top-tier talent in a highly competitive market.

However, the value of AI extends beyond immediate efficiency gains. One of the greatest risks in today's volatile talent landscape is the loss of institutional knowledge when key employees leave. High turnover, combined with evolving regulations around outsourcing and freelancer hiring, exacerbates the difficulty of maintaining a stable talent pool. Without a plan to safeguard critical expertise, organizations risk losing context and insights that are essential for effective decision-making and continuity during crises. AI addresses this challenge by embedding knowledge within systems and processes, capturing critical context, and ensuring that expertise remains accessible even as team dynamics change.

For example, an AI platform integrated into core processes can document workflows, analyze past decisions, and provide contextual insights that allow new or remaining team members to step in without disruption. This capability mitigates the risk of knowledge loss and helps businesses recover quickly, ensuring resilience in an unpredictable environment. By acting as a repository of institutional knowledge and a tool for process optimization, AI strengthens organizational continuity and safeguards operational integrity.

The adoption of AI also provides a path for scaling engineering teams in a way that aligns with business needs and market demands. As organizations grow, their engineering capacity often becomes a bottleneck. AI alleviates this by expanding the capabilities of existing teams, allowing them to manage larger and more complex workloads without the need for proportional increases in headcount. This scalability is especially critical in industries where talent shortages are acute, and hiring new engineers at the required pace is not feasible. AI empowers teams to meet escalating demands efficiently while maintaining high standards of performance and innovation.

By capturing and retaining critical knowledge, AI also strengthens an organization's ability to navigate transitions and recover quickly from disruptions, ensuring long-term stability and continuity.

## Quantum agility: preparing for a world of new possibilities

Quantum technology is no longer just a science experiment—it's becoming a game-changer. Quantum computing is bringing solutions to problems that were previously unsolvable. But along with these opportunities come risks, especially for cybersecurity.

The issue is simple but serious: quantum computers will eventually be able to break the encryption that keeps our digital world safe. The systems we use today for secure communications, financial transactions, and data storage won't hold up when quantum computing reaches full strength. This isn't a distant problem—it's time to start preparing now.

### The opportunity and the challenge

Quantum computing is already showing potential in industries like finance, healthcare, and logistics, for example, in optimizing supply chains and improving investment strategies. But the same power that makes quantum so exciting also creates vulnerabilities. Encryption methods like RSA and ECC, which underpin most of today's cybersecurity, are at risk of being broken by quantum algorithms.

If organizations wait until "Q-day" (the day quantum computers can break current encryption), it will be too late. Historically, transitioning to new cryptographic standards has taken years, sometimes decades. Given the pace of quantum advancements, businesses no longer have that luxury.

### What does quantum agility mean?

Quantum agility is about being ready to adapt. It means preparing your organization for the risks and opportunities quantum will bring, without waiting for the crisis to hit. This includes:

- > **Mapping your encryption:** Know where and how encryption is used across your systems.
- > **Building hybrid models:** Prepare to handle both classical and quantum-safe cryptography during the transition.
- > **Securing long-term data:** Focus on protecting sensitive data that needs to stay secure for 5-10 years or more.

The transition to quantum-resistant cryptography isn't something you can do overnight. It requires coordination across your IT systems, supply chain, and business processes. Organizations like Google and Chrome are already adopting Post-Quantum Cryptography (PQC) standards to get ahead. However, many tools and systems—like PQC certificates from Certificate Authorities—are still catching up. Starting now gives you a head start and avoids scrambling later.

## A simple fix: Immutable backups

Quantum's ability to crack digital signatures could also compromise data integrity, not just confidentiality. Immutable backups—where data can't be changed once it's saved—offer a straightforward solution. They ensure your data remains trustworthy, even if traditional methods fail. This isn't just a smart move; it's an essential safeguard for the future.

Here's a practical roadmap to prepare for the quantum era:

### Immediate actions:

- 1 Conduct a comprehensive audit of cryptographic assets: Start by identifying all areas across the organization where encryption is used. Knowing exactly where encryption is applied and understanding its dependencies is crucial for a smooth and agile transition to quantum-resistant protocols. Additionally, ensure that Post-Quantum Cryptography (PQC) is on the agenda of your IT supply chain and incorporated into tenders to guarantee alignment with future-proof security standards.
- 2 Prioritize long-term data protection: Identify sensitive data requiring confidentiality or digital integrity over the next 5-10 years. Prioritizing this data ensures that critical information remains secure and trustworthy, even as encryption standards evolve.
- 3 Ensure these actions are durable – the actions presented are not one-offs but need to become part of regular change process to ready your organization when sudden implementation is required.

### Future preparations:

- 4 Implement post-quantum solutions and hybrid models: Prepare for the future by adopting hybrid models that facilitate a gradual transition. This means ensuring that hardware and software can seamlessly handle PQC as it becomes available at scale. Building crypto agility now will minimize disruptions as quantum capabilities mature. Furthermore, crypto agility in suppliers should be a hard requirement in XaaS assessments and procurement conditions to ensure your supply chain is equally prepared for the quantum shift.

The responsibility lies with every CISO to assess their own landscape and begin preparing today. Waiting until **Q-day** is not an option. CISOs need to move now to ensure their systems are ready for a world where quantum computers are a reality.

## The bottom line

Quantum isn't just for labs or think tanks anymore—it's coming to your industry, whether you're ready or not. The good news? By starting now, you can turn a major risk into a competitive advantage. The question isn't if quantum will affect your business but how prepared you are when it does.

Getting ready for quantum doesn't have to be overwhelming. Focus on the basics: know your vulnerabilities, start transitioning to quantum-safe encryption, and ensure your data stays secure no matter what. The sooner you act, the better positioned you'll be to thrive in a quantum-enabled world.

## A blueprint for 2025

The time for C-level executives to act is now. To thrive in 2025, companies must:

- > **Modernize IT** to drive digital transformation.
- > **Build digital trust** by reinforcing cybersecurity measures.
- > **Leverage hybrid and edge computing** to manage data more effectively.
- > **Scale AI adoption** as a business driver.
- > **Prioritize sustainable IT** and ESG compliance.
- > **Quantum agility:** Preparing for a world of new possibilities.

Each of these trends plays a critical role in defining a company's ability to innovate, adapt, and stay resilient in the face of emerging challenges. The decisions made today will determine success in 2025 and beyond.