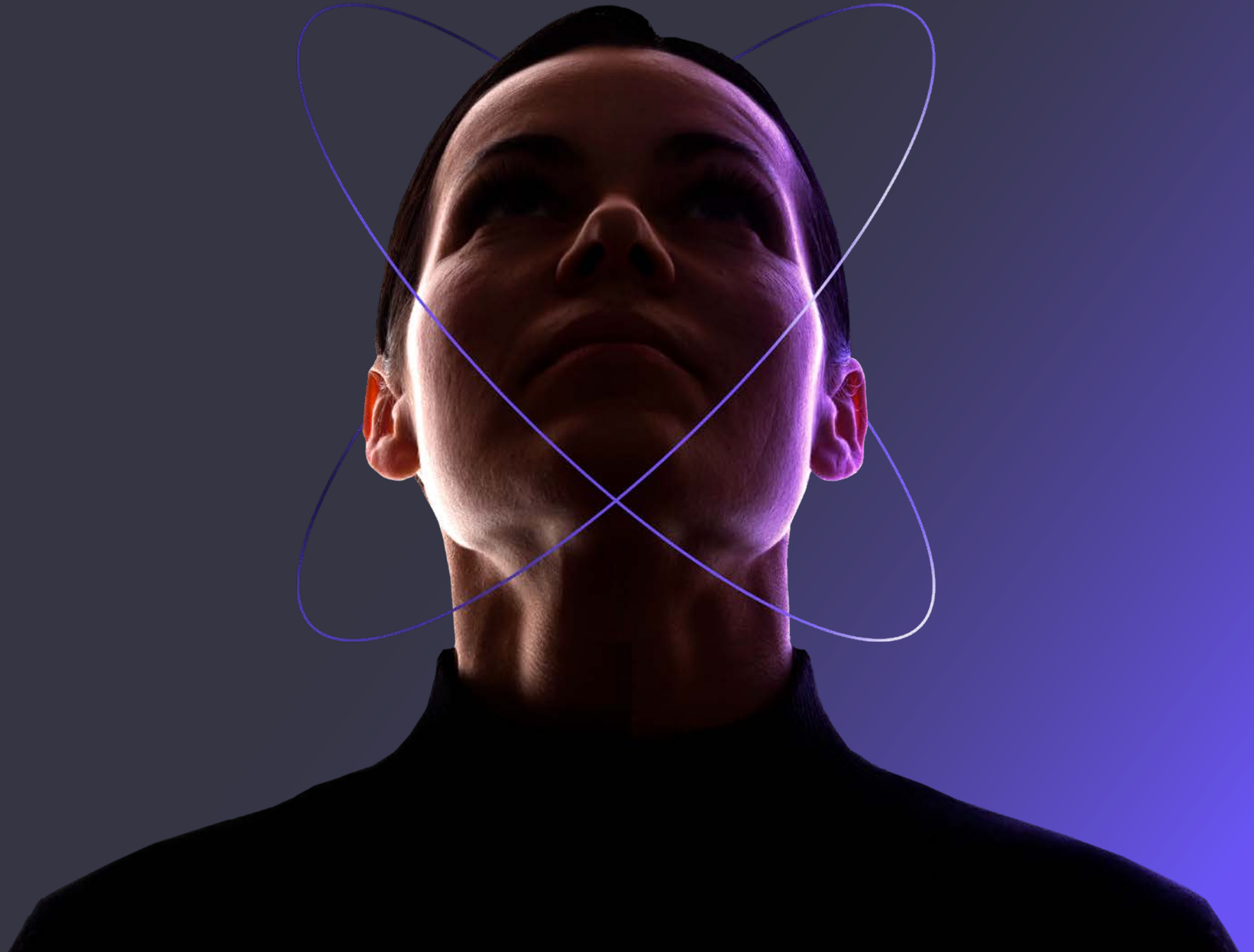




CIO Agenda 2025



Index

03 - 06

01

The Growing Multifaceted
Role of the CIO

07 - 11

02

A Panoramic View
of Technological Evolution

12 - 53

03

CIO Agenda 2025:
10 Key Challenges

01

The Growing Multifaceted Role of the CIO



By early 2024, it was already anticipated that the CIO was adopting a multifaceted, cross-departmental role as a guide for business strategy and digital innovation, as well as a provider of IT infrastructures and a team manager. Thus, this role was being consolidated as the one **responsible for creating the digital layer of the business**, carrying increasingly more weight in defining the business vision and aligning technology with the strategic objectives of companies.

This growing importance of the CIO's strategic role is particularly evident in functions such as deploying multidisciplinary teams with technological profiles, developing business profiles within those teams, increasing participation in the processes of product definition and development, and organizing their teams based on business outcomes rather than technological functions. Furthermore, the CIO must address skill shortages and align IT initiatives with organizational objectives to maintain competitiveness. Along these lines, the

CIO is a **leader of the new intelligent enterprise**, emphasizing the creation of new business models or the enhancement of existing ones.

Along with this new strategic and business-oriented character, the CIO is also a **modular or composable manager**, which involves breaking down technological systems and processes into independent and autonomous components. Thus, they are responsible for evaluating technologies and properly managing the technological architecture, as well as its providers. In this regard, the CIO must establish governance policies that regulate the creation, implementation, and maintenance of the modules, in addition to their evaluation system and continuous improvement processes.

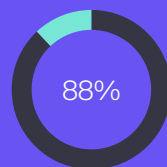
In this technological aspect, which is natural for the CIO, they play a fundamental role in **optimizing workflows and internal operations**, creating more efficient and appealing work environments, and implementing technologies

such as AI, machine learning, process automation, and data analytics. Additionally, they must manage evolving technologies, such as AI and automation, which require strategic integration into the existing infrastructure. In this context, the CIO establishes metrics and data analytics plans to evaluate the performance of initiatives and their outcomes, while also implementing internal operational improvements, defining risk mitigation programs, and enhancing organizational efficiency.

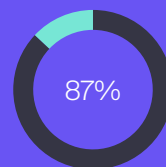
However, in an environment where technology is a cornerstone of the business, its development and adoption cannot focus solely on the needs and capabilities of IT teams. The CIO **must ensure that digital solutions are accessible and functional for all areas of the organization**, promoting intuitive tools and training strategies that enable business teams to leverage technology without relying exclusively on advanced technical knowledge. Designing initiatives with this approach not only facilitates operational autonomy and data-driven decision-

making but also ensures that technological solutions are more relevant, strategic, and aligned with the company's objectives.

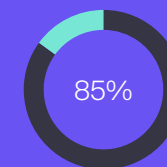
In this context, the CIO must also strengthen technological governance to ensure that the adoption of new digital capabilities is not only accessible and aligned with business objectives but **also balances innovation, security, and regulatory compliance**. Beyond enabling digital transformation, their role will be to ensure that the integration of emerging technologies, such as AI, is carried out transparently, in alignment with corporate values, and under strategic risk management.



88% of CIOs state that their role is becoming **more digital and is opening to innovation**.



87% are more involved in leading **digital transformation initiatives** compared to their counterparts in business departments.



85% believe that the role of the CIO is being redesigned to act as a **change agent**, especially by increasingly leading business initiatives.

The Consolidation of the CIO as a Business and Innovation Strategist

To achieve better business results, **CIOs must increasingly collaborate with other executives within their companies**, leveraging the ecosystem to remove obstacles such as budget constraints, talent shortages, compliance management, and risk reduction. In doing so, they can foster a culture of shared responsibility and accountability while empowering business leaders, streamlining collaboration, and effectively mitigating risks.

This relationship can take the form of collaboration, where CIOs and other executives work together to drive digital initiatives; shared responsibility, with mixed teams of IT members and business teams; or a **franchise model**, bringing together CIOs with other executives and their teams to mitigate and balance risks.

The CIO must also evolve towards a leadership style **focused on enabling digital capabilities within the organization**. This means ensuring that business areas have access to technological tools aligned with their strategic

needs. The CIO must act as a facilitator connecting technology with business priorities, ensuring that digital transformation impacts the organization cross-functionally.

Moreover, flexibility and technological scalability will be key priorities in 2025: the rapid evolution of the market and uncertainty across multiple fronts require CIOs to design **infrastructures and strategies that allow them to quickly adapt to regulatory changes, technological advancements, and new business demands**. This will entail greater investment in modular architectures, cloud solutions, and agile operating models that ensure resilience and responsiveness to disruptions.

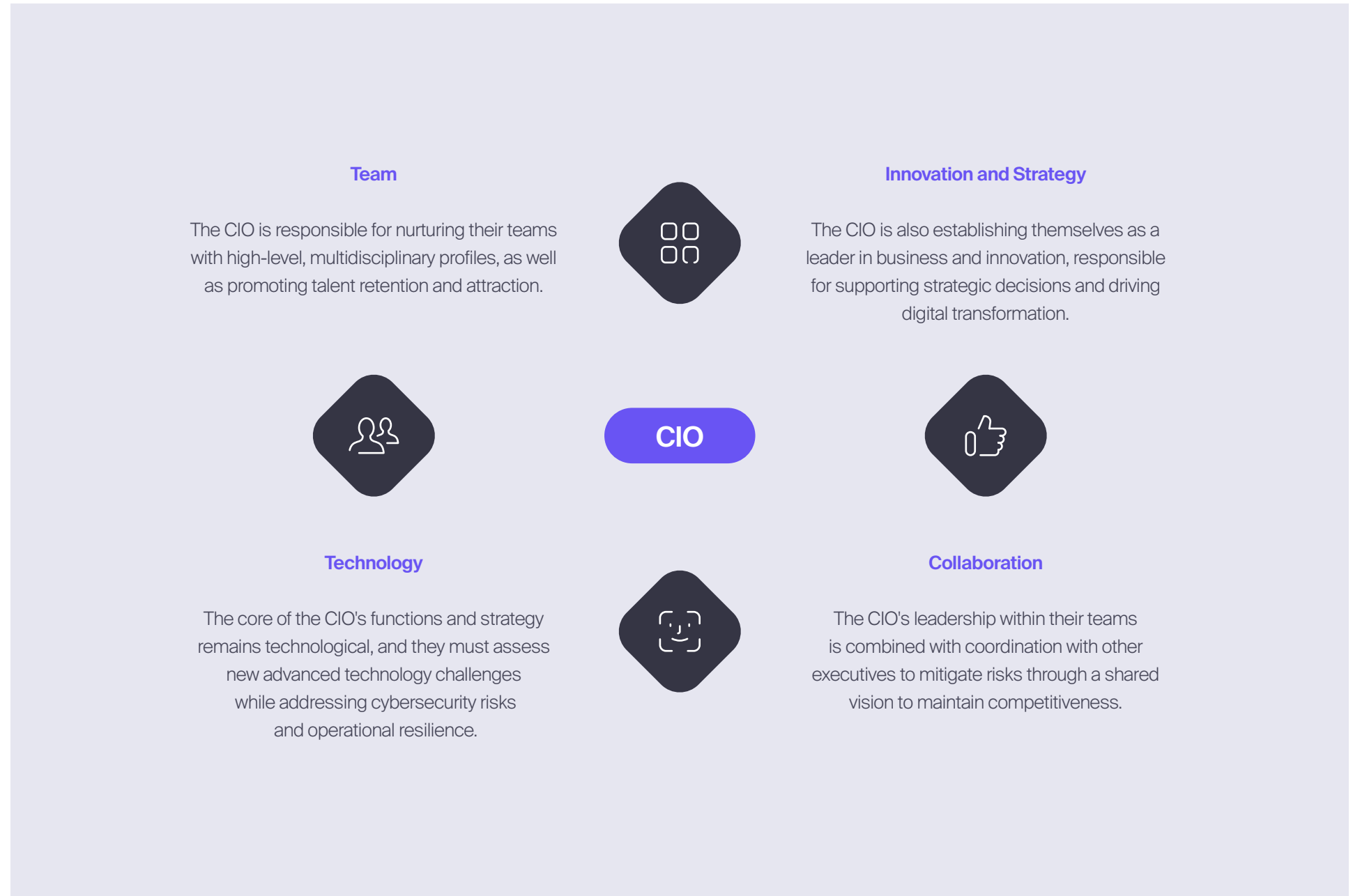


This vision represents a strategic shift toward greater efficiency and innovation, essential for navigating a constantly evolving technological environment. Ultimately, **the evolution of the CIO's role that began in 2024 will continue to solidify in 2025.**



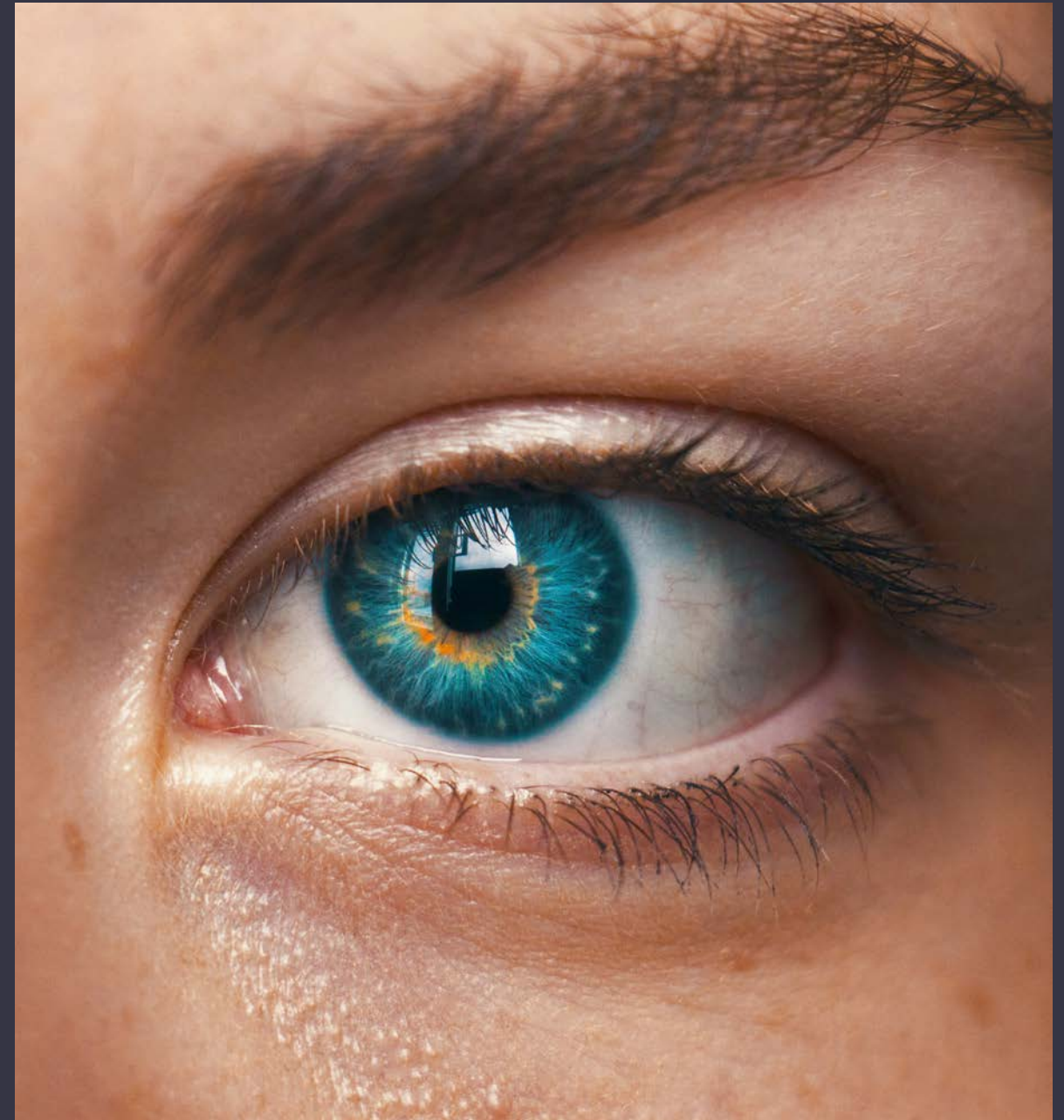
In 2025, the CIO will have **to balance business growth** with demands of operational resilience, security, and sustainability in the context of rapidly evolving AI and complex data governance requirements.

It must also ensure a **consistent alignment between IT strategies and business objectives**, focusing on agility and resilience to maintain competitiveness.



02

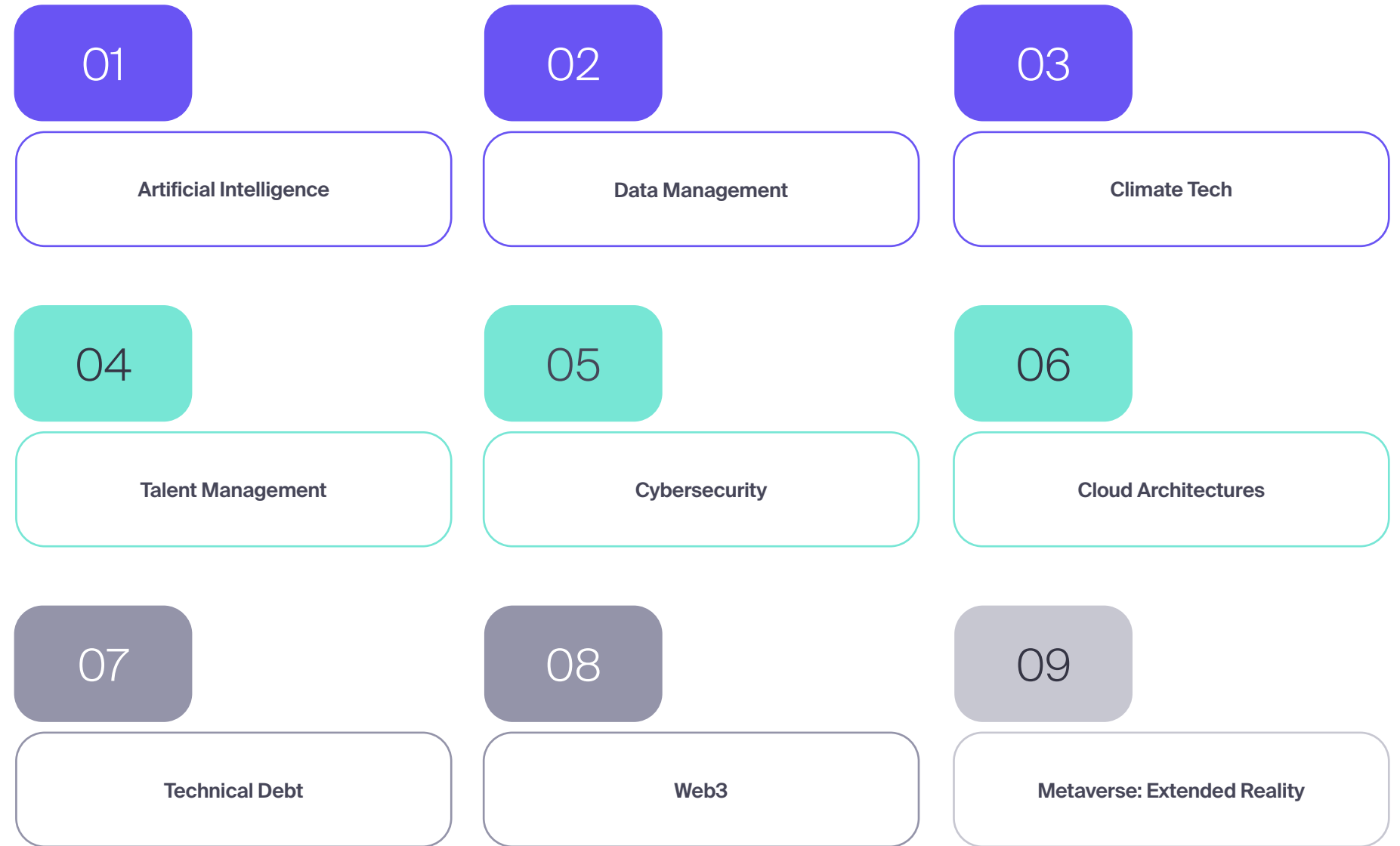
A Panoramic View of Technological Evolution



Most of the CIO's challenges from 2024 extend into 2025, albeit with new nuances and demands

In 2024, around a dozen trends were identified that would particularly impact CIOs throughout the year. Many of these challenges remain fully relevant heading into 2025, although most have experienced specific developments and advancements, such as Artificial Intelligence or Climate Tech, while others have undergone key transformations, such as the metaverse.

Next, we will analyze **the main challenges that shaped the CIO's agenda in 2024 and how they will evolve in 2025**, highlighting key opportunities and strategies to turn digital transformation into a driver of growth and competitiveness.



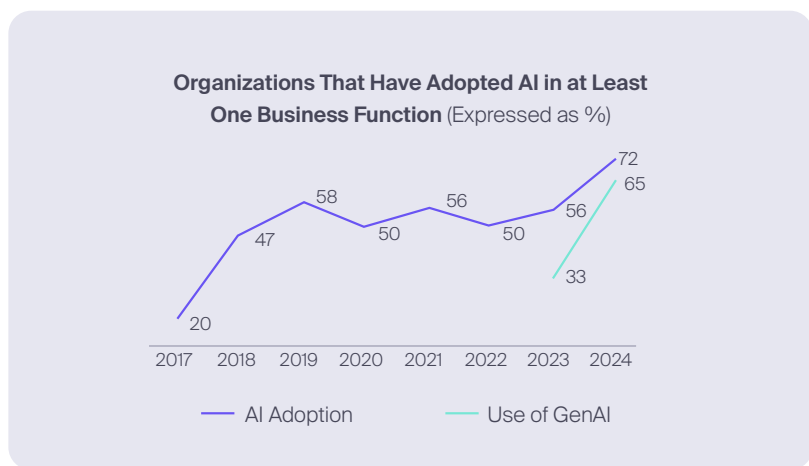
Legend: Evolution of CIO Challenges 2024 - 2025

- Very High Interest
- High Interest
- Interest Remains
- Low Interest

Trends of very high interest

01 Artificial Intelligence: Pillar of Corporate Strategy

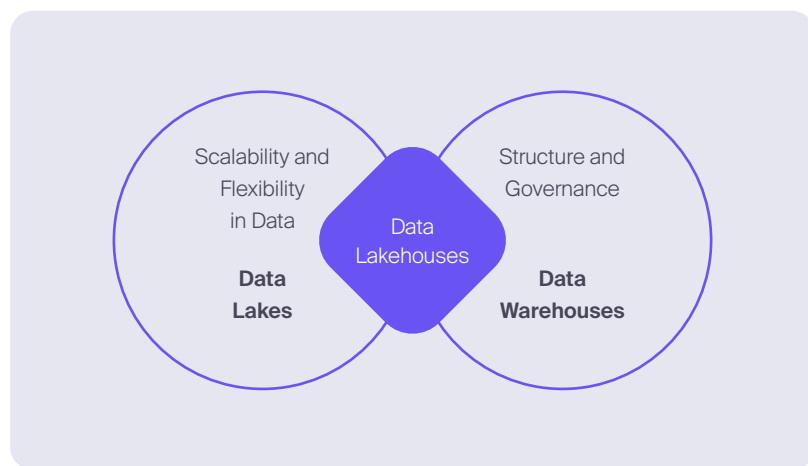
In 2024, AI was solidified as a strategic asset in the business environment. The adoption of AI in at least one business function grew globally from 55% to 72%, reflecting a greater recognition of its value in improving efficiency and supporting strategic decision-making. Within this evolution, generative AI stood out as the **fastest-growing and most widely adopted technology**, transitioning from a promise to becoming a central tool in business strategies.



In 2025, CIOs **will need to focus on integrating AI strategically, prioritizing areas with a direct impact on business objectives.** This will involve defining a clear direction that maximizes the value of AI through measurable results while establishing solid governance for responsible and sustainable use. Their success will depend on a robust infrastructure and skilled teams to fully leverage its potential.

02 Data Management: Integrated and Accessible

In 2024, data management was solidified as a strategic pillar in companies, with CIOs playing a central role in this process, maintaining oversight of key roles such as the CDO, who in 48% of cases reported directly to the CIO. Companies invested in more advanced data architectures, enabling faster access and more effective data integration for decision-making. This modern infrastructure helped CIOs ensure that **data was available in real-time at all levels of the organization**, thereby strengthening the ability to respond quickly to market dynamics.



In 2025, CIOs will need to adopt a strategic approach to data management and analytics. AI will be fundamental in transforming processes and supporting business decisions at the executive level. CIOs must **manage the complexity of the data ecosystem**, prioritizing quality and trust in information. Empowering teams with accessible and reliable data will be key to maintaining organizational competitiveness.

03 Climate Tech: From Regulation to Profitability

In 2024, investment in Climate Tech surged, driven by climate urgency and European regulations such as the CSDR. Technologies focused on energy, transportation, and the circular economy gained interest, although their adoption progressed slowly, facing scalability and governance challenges within organizations. At the same time, the rise of international sustainability standards led to the **further development of tools to assess environmental impact in real-time** and facilitate strategic decision-making.

Emissions (\$2.500M)	Energy (\$43.500M)	GHG Capture (\$3.600M)
Industry (\$14.200M)	Transport (\$27.300M)	Construction (\$10.500M)
Agriculture (\$4.800M)		Circular Economy (\$17.600M)

In 2025, CIOs will need to lead the transformation toward more sustainable operations, integrating technological solutions that optimize resource usage and reduce environmental impact. Managing climate data will be key for regulatory compliance and traceability. An effective Climate Tech strategy **will be crucial to aligning sustainability with competitiveness and strengthening business resilience** in a demanding regulatory environment.

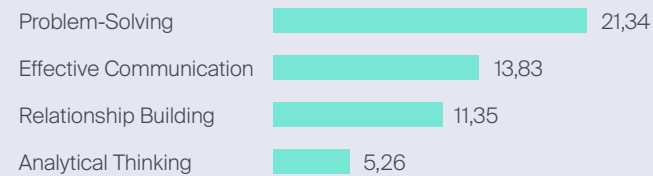
Trends of high interest

04

Talent Management: Reskilling for Competitiveness

In 2024, companies strengthened talent management as a strategic pillar, with 69% of CIOs focusing on updating their teams' skills. This effort was driven by the rapid growth of tech jobs fueled by digital transformation initiatives across all sectors.

Most In-Demand Soft Skills Among IT Professionals Worldwide in 2024 (Expressed in Expertise Scores)



In 2025, CIOs will need to lead a comprehensive IT talent strategy that balances the company's needs with the expectations of high-level technology professionals. Continuous training through upskilling and reskilling will be essential to remain competitive in a constantly evolving environment. Additionally, they must address the shortage of specialized talent and the retirement of professionals with expertise in legacy infrastructures, promoting knowledge transfer. **Redefining roles and adopting flexible work models will be key to attracting and retaining talent** in an increasingly competitive market.

05

Cybersecurity: AI, a Double-Edged Sword

In 2024, **cybersecurity evolved in response to an increasingly complex threat landscape.** The integration of AI and Machine Learning in this field became a key trend, although these same technologies were used by cybercriminals to sophisticate their attacks. In response, companies have adopted multi-layered defense strategies, including robust backups and proactive threat hunting.

The Role of AI in Cybersecurity

- Faster Detection
- Network Protection
- Anti-Phishing Measures
- Reliable Authentication
- Behavioral Analysis
- Defense Against Cybercrime

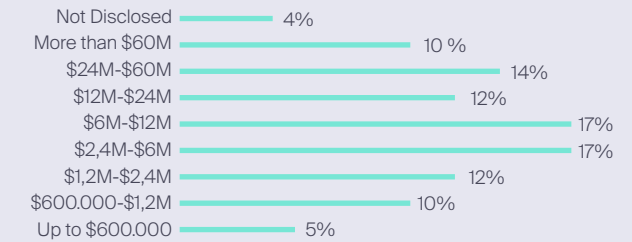
In 2025, CIOs will need to address cybersecurity with a preventive and proactive approach. The strategic implementation of AI will be key to detecting and mitigating advanced threats, while Zero Trust will enhance security by eliminating implicit trust in users and devices. Prioritizing **specialized talent, implementing automated solutions, and fostering cross-sector collaboration** will be essential to ensure data integrity and security. Looking ahead, they must prepare for the adoption of post-quantum cryptography, which will mitigate risks from quantum threats, and Self-Sovereign Identity to strengthen privacy and prevent impersonation.

06

Cloud: Strategies for Greater Resilience

In 2024, cloud computing accounted for a significant portion of technological spending on infrastructure, platforms, and applications, with public cloud services reaching \$805 billion globally. The key challenges continued to be **security, rising costs, and improving the user experience.** On the other hand, the main obstacle in using infrastructure is understanding the apps and their technical features.

Global annual business spending in 2024

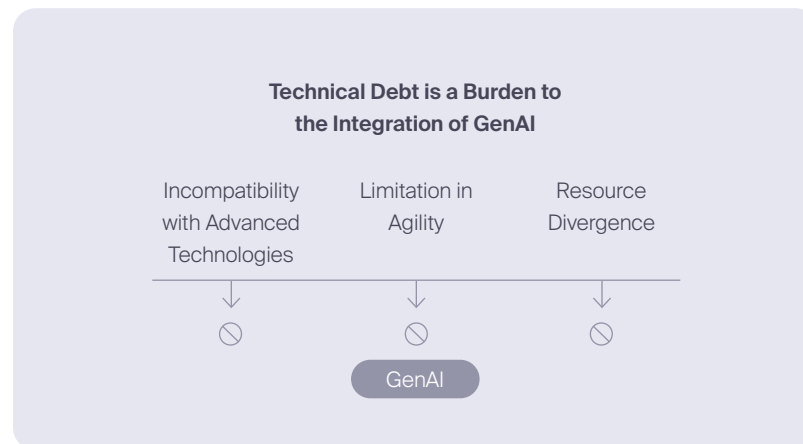


Looking ahead to 2025, cloud spending will remain high, although unnecessary costs will decrease thanks to the impact of generative AI and a more sustainable approach. In 2025, the CIO will need to assess which AI functionalities can improve efficiency and reduce costs for their company, while defining a sustainability strategy that allows compliance with regulatory pressures and optimizes infrastructure. Additionally, they will need to focus on **increasing the resilience, security, and efficiency** of their organization's cloud infrastructure.

Trends of equal and lower interest

07 **Technical Debt:** Legacies That Hinder Innovation

In 2024, technical debt continued to be a central concern for companies. Although significant resources have been allocated to modernization, many legacy systems are still hindering organizational agility and slowing growth. In fact, **64% of organizations still rely on legacy systems**, applications, and networks for at least 25% of their business functions, representing a considerable barrier to modernization.



For CIOs, addressing technical debt will be a task of strategic vision and pragmatism. Instead of focusing on a complete and immediate modernization of all systems, they will need to adopt a selective approach, prioritizing those areas of their infrastructure that truly drive competitiveness and enable the effective integration of key technologies, such as GenAI. The key will be identifying **systems whose update is not only critical but also delivers immediate value to the organization**, both operationally and from a business perspective.

08 **Web3:** The Next Step of Blockchain

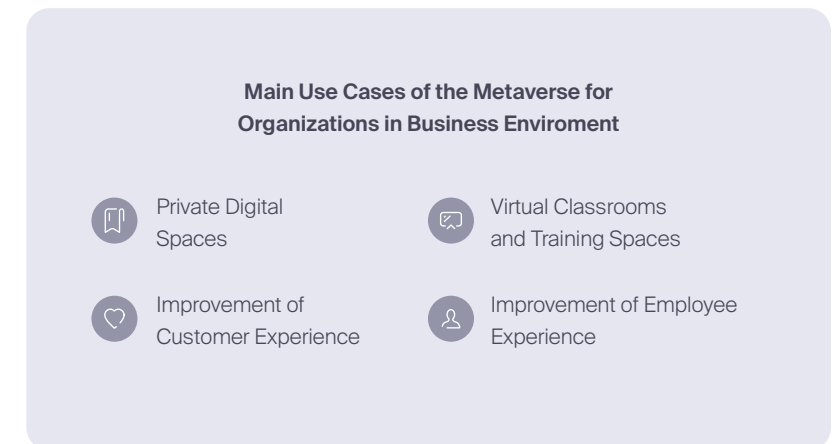
Throughout 2024, Web3 has been developing **still in an experimental phase**. Its main challenges, especially for developers, have been scalability, usability, and governance. The use cases that have been strengthened throughout the year include DeFi, NFTs, DAOs, file storage, decentralized markets, as well as greater transparency in the supply chain.



In 2025, Web3 will evolve with new technological integrations, combining Blockchain, AI, and other emerging solutions to optimize security, scalability, and data analysis in its applications. CIOs will need to **assess the feasibility of Web3 use cases** in their organizations in 2025. Those who decide to invest in them will step forward as leaders in digital security, traceability, and privacy, while gaining a competitive edge. However, it could be a risky investment, one that is only viable for those who have already addressed the other challenges on their agenda.

09 **Metaverse:** From Fantasy to Extended Reality

Throughout 2024, the main applications of the metaverse in the corporate sector focused on managing immersive infrastructures, platform interoperability, and using virtual environments to enhance user and employee experience. However, **the widespread adoption that was projected did not materialize**.



Looking ahead to 2025 and beyond, **immersive experiences will be the ones to take the lead in unlocking the metaverse's potential**. In 2025, CIOs will need to assess the real applicability of the metaverse in their businesses, evaluating the most profitable and feasible use cases, as seen in the marketing sector. Beyond the metaverse, CIOs will have to consider whether to allocate resources to XR and VR, considering their technological improvements and cost reductions.

03

CIO Agenda 2025: 10 Key Challenges



01

Multimodal AI for Strategic Decision-Making

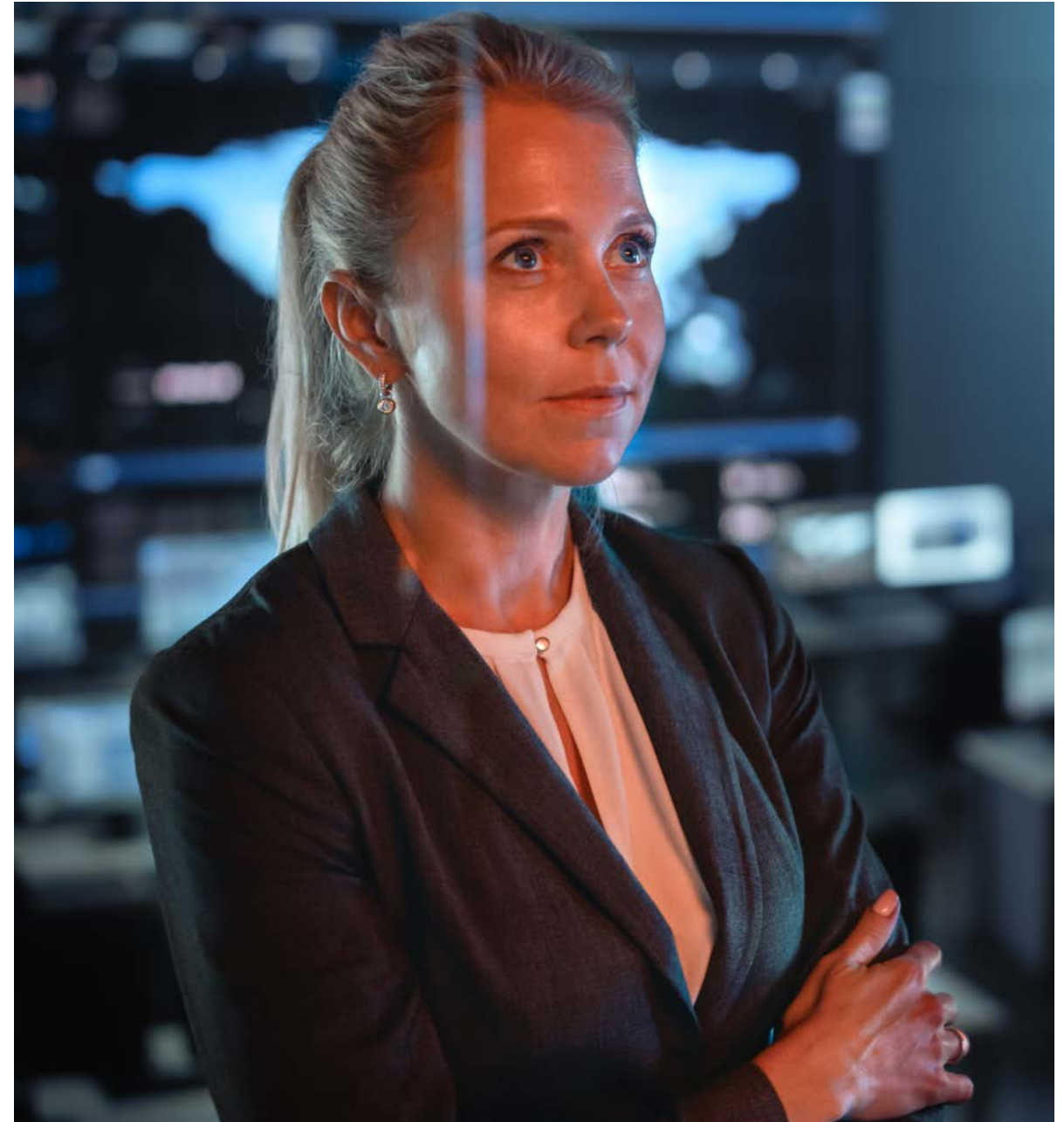
Key Insight

Multimodal AI is revolutionizing the way businesses make strategic decisions by integrating and analyzing data from multiple sources (text, images, sensors, audio, etc.) to generate **more actionable and predictive insights**. It is advancing rapidly and is expected to see adoption grow from 1% in 2023 to 40% in 2027.

By 2025, this technology will enable businesses to anticipate market changes, optimize processes in real-time, and offer hyper-personalized experiences, which will result in a sustainable competitive advantage. The CIO must lead this transformation,

ensuring the organization has scalable data infrastructure, ethical AI models, and a focus on creating business value. Their role will be critical in overcoming challenges such as integrating disparate data, mitigating biases, and ensuring privacy, while driving the adoption of advanced tools and frameworks to accelerate implementation.

Multimodal AI is a strategic lever that will redefine how businesses compete and make decisions in an increasingly complex environment.



The trajectory of AI has changed significantly in recent years, and multimodal AI is emerging as one of the most promising trends. It is expected **that 40% of GenAI solutions will be multimodal by 2027**, up from 1% in 2023, marking a decisive moment in the growth of AI. The transition from unimodal systems to multimodal systems is not just a technological achievement; it is also a strategic turning point for businesses looking to leverage AI to gain a competitive advantage.

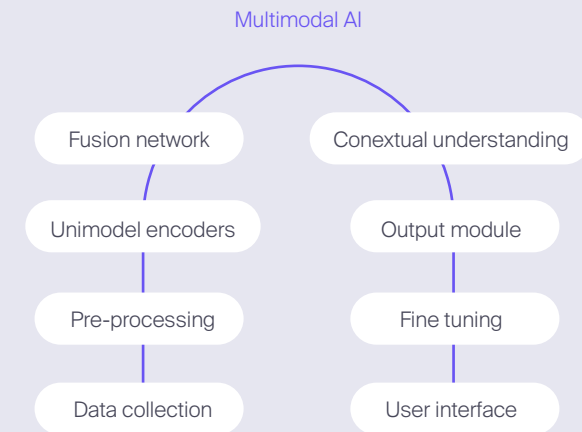
Most multimodal models currently support only two or three modalities; however, as AI capabilities expand, the scope of multimodal solutions will increase. The fusion of multiple data sources, whether visual, auditory, or textual, **will enable smoother and deeper interactions** between humans and AI, unlocking functionalities and capabilities that were previously unattainable, leading to better outcomes across a wider range of industries.

How does multimodality work?

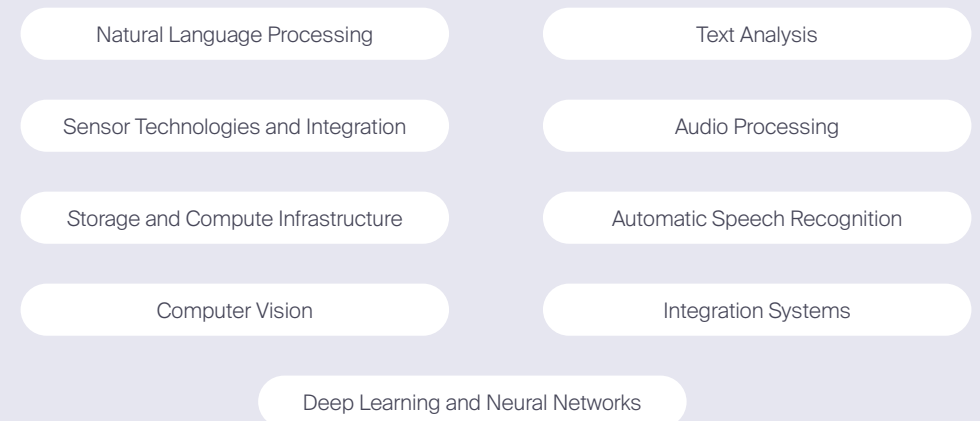
- 1. Input Module** processes different types of data separately using unimodal neural networks (for example, NLP processing for text and Computer Vision for images).
- 2. Fusion Module** integrates information from multiple modalities, combining their strengths to generate a comprehensive understanding.
- 3. Output Module** generates predictions or final results based on the processed and fused data.



Functioning in 8 steps



The underlying technologies driving multimodal AI



Why is multimodality important now?

Multimodal AI systems are becoming increasingly important due to their ability to revolutionize industries and redefine AI capabilities. As the race for AI innovation intensifies, multimodal AI is becoming a competitive necessity, as it allows large language models to process and generate results in text, image, and voice formats. By combining multiple modalities, these systems build a more holistic AI capable of processing diverse types of data, paving the way for advancements in reasoning, memory, and cognition. Additionally, **multimodal AI promises more immersive and interactive experiences.**

Multimodal AI is **applied in various industries**, driving significant transformations.

- **Gesture recognition:** translates sign language into text/voice for inclusive communication.
- **Video summarization:** extracts key content for efficient navigation and management.

- **Medical diagnosis:** integrates scans, histories, and reports to improve care.
- **Educational tools:** adapts content according to student performance.
- **Autonomous vehicles:** uses sensors, LiDAR, and GPS for real-time navigation and safety.
- **Image description generation:** creates text for accessibility and labeling.
- **Emotion recognition:** analyzes voice, text, and face to detect emotions.
- **Image generation from text:** converts descriptions into images for design and advertising.
- **Virtual assistants:** enhances interaction with voice and image recognition.



Single Modal AI

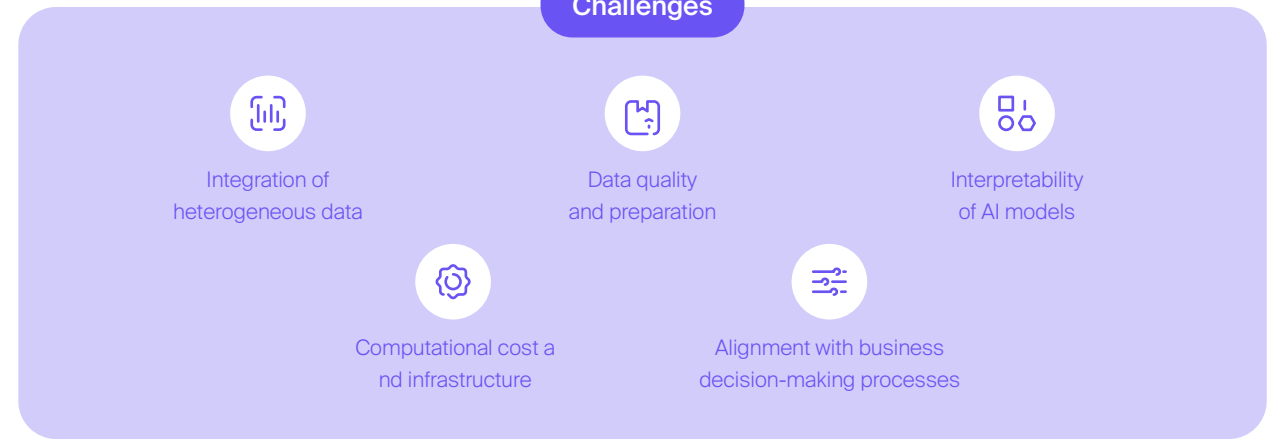
- Handles a single type of data.
- Simple processing; requires fewer resources.
- It is limited to a single communication method, such as text input.
- Specialized tasks such as OCR or text analysis.



Multimodal AI

- Integrates multiple data formats.
- Greater processing complexity requires more computational resources.
- Enables dynamic and multimodal interactions.
- Complex tasks that integrate visual, textual, and contextual inputs.

Challenges



Multimodal AI has great potential, but it requires addressing various challenges.

By harnessing the power of various types of data, such as text, images, audio, and video, and integrating these different modalities, organizations can develop more comprehensive insights, automate complex tasks, and offer more personalized customer experiences. Multimodal AI systems allow businesses to process massive amounts of unstructured data, enabling them to optimize processes, improve efficiency, and drive innovation. This integration allows for a deeper understanding of patterns and trends, resulting in better decision-making and strategic planning. The implementation of multimodal AI for strategic decision-making faces key challenges that can limit its adoption and effectiveness.

- **Integrating heterogeneous data** is one of the main challenges, as combining structured and unstructured information (text, images, audio, video) requires advanced architectures to ensure consistency and accuracy in analysis.

- Data quality and preparation are also critical, as multimodal models rely on well-labeled and contextualized data to generate reliable insights.
- The interpretability of AI models represents another challenge, as the combination of multiple sources complicates the traceability of decisions, creating barriers to adoption in highly regulated sectors.
- **Computational cost and the required infrastructure** can be high, as multimodal models require significant processing power and optimized architectures to handle large volumes of data in real-time.
- Finally, alignment with business decision-making processes is key, as AI must integrate into leadership workflows without causing friction or resistance to change.

Why is it a priority in 2025?

Competitive advantage in a dynamic market:

Companies that adopt multimodal AI will be able to stay at the forefront in a dynamic digital environment, responding more quickly and efficiently to market demands.

Customer experience transformation: By processing data in multiple formats (text, images, audio, video), richer and more personalized interactions are created, strengthening customer satisfaction and loyalty.

Intelligent decision-making: The integration of diverse data sources enables more comprehensive and contextualized analyses, minimizing risks and leveraging strategic opportunities based on accurate data.

Engine of innovation and growth: Multimodal AI paves the way for developing disruptive products and services, creating new avenues for growth and competitive evolution.



consequences of not addressing it

Loss of competitive relevance: Companies that do not use multimodal AI risk becoming obsolete compared to competitors that leverage this technology to make faster and more accurate decisions.

Poor user experience: Ignoring this trend will result in products and services that fail to deliver sophisticated and personalized interactions, reducing customer satisfaction and loyalty.

Lack of market differentiation: Without the ability to combine multimodal data, companies will miss the opportunity to create unique and highly distinctive products and services, being relegated to generic offerings.

Operational inefficiencies: The inability to integrate and analyze data from multiple sources will limit innovation in critical areas such as supply chain, customer service, and strategic decision-making, reducing efficiency.



Future reflection

Multimodal AI is not just a technological evolution; it is a paradigm shift in how companies make decisions, interact with customers, and compete in the market. By 2025, its evolution

will enable the combination of real-time data (IoT, 5G networks) and advanced learning methods, moving from simple automation to fully integrated decision-making environments with greater predictive and adaptive capabilities.

In this scenario, the CIO must lead the convergence between IT and business, orchestrating data and platforms to capture emerging opportunities and **integrating multimodal AI into the company's DNA** as a pillar of sustainable growth and lasting competitive advantage. However, success will not depend solely on technology: collective intelligence that

combines AI with human potential will be essential to building resilient organizations capable of constantly reinventing themselves in an environment marked by continuous disruption.

02

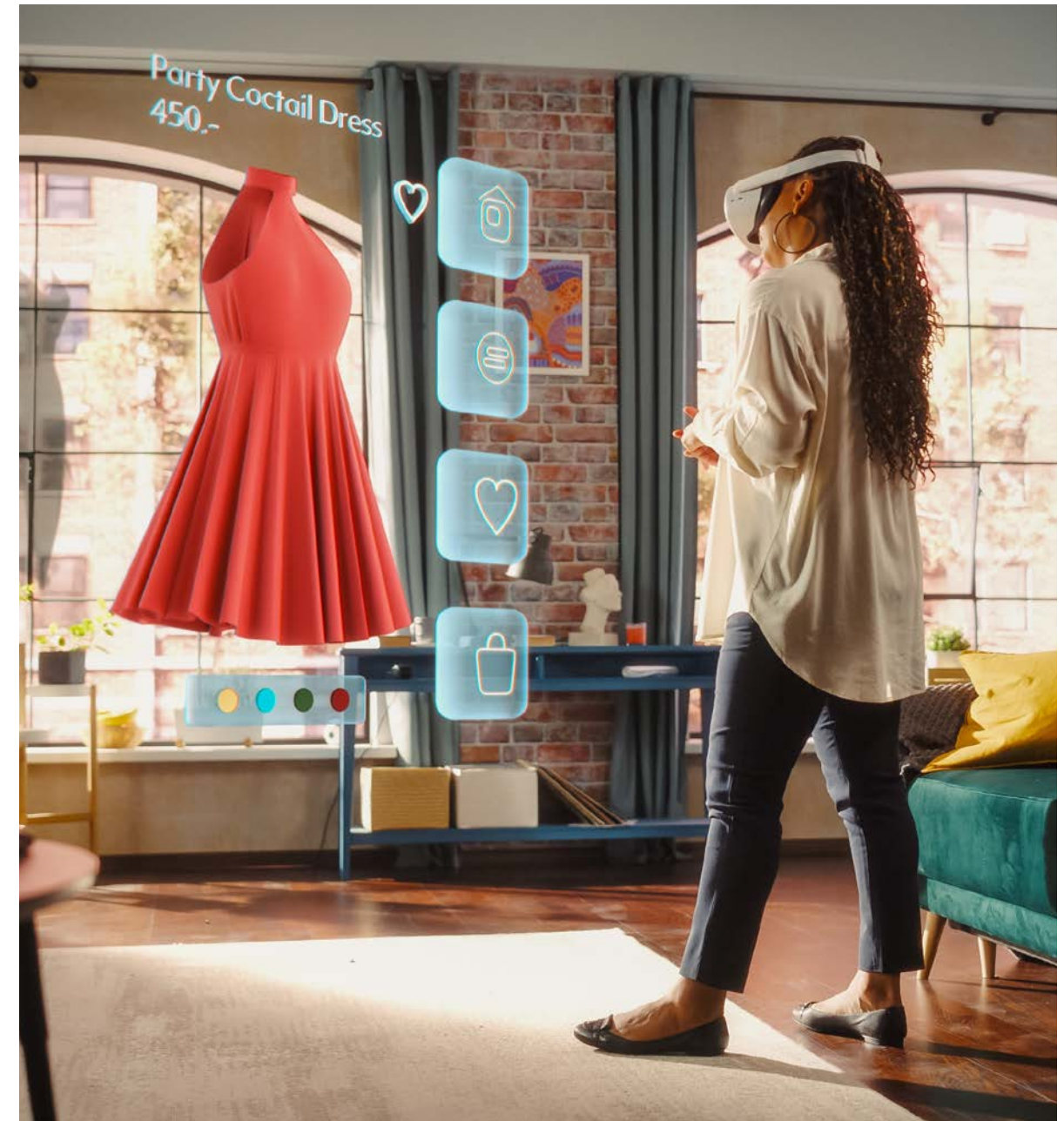
Digital Twins of the Customer: Hyper-Personalization and Predictive Vision

Key Insight

Customer digital twins are redefining the relationship between businesses and consumers, enabling unprecedented hyper-personalization and a predictive vision that anticipates customer needs and behaviors. By **combining behavioral, psychometric, and interaction data** (first-party and zero-party), they not only create a dynamic, real-time representation of each customer but also transform how businesses design and refine their engagement strategies.

By 2025, digital twins will be an indispensable tool for competing in a market where personalization and

agility are key. The CIO must lead this initiative by establishing a flexible data architecture, ensuring data quality and privacy, and fostering collaboration between business and IT teams. As a result, conversion rates and user experience will improve, while customer loyalty and engagement will increase, enabling rapid adaptation to emerging trends.

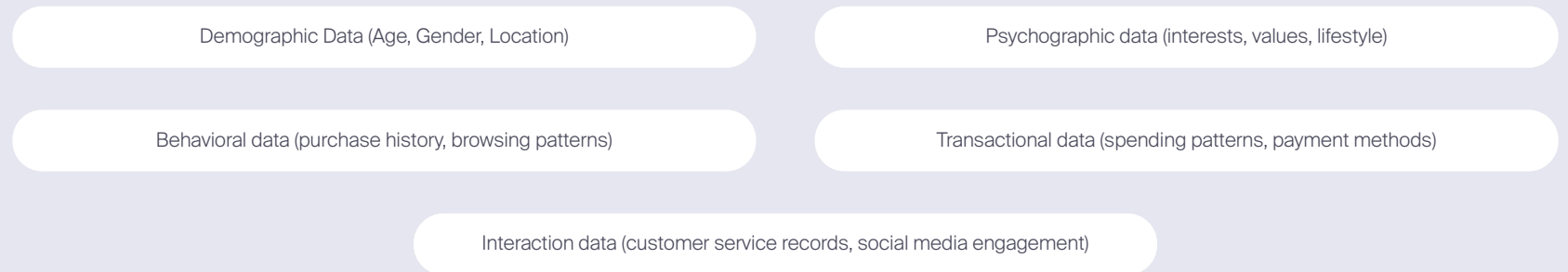


Consumer behavior is constantly changing, driven by dynamic individuals with evolving preferences. Digital Twins of the Customer (DToC) enable companies to **forecast and optimize customer interactions** with unparalleled precision by creating dynamic virtual representations of customers based on historical and real-time data.

The interest in DToC is evident, with 70% of senior executives already investing in digital twin technologies. However, a recent survey of supply chain directors revealed that only **27% of organizations plan to incorporate a DToC as part of their strategy**, despite its clear benefits. Meanwhile, the value of CX has never been higher—73% of customers prioritize it when choosing a brand, and 52% will switch to a competitor after a single unfavorable impression.

DToC bridges the gap by providing a dynamic, data-driven approach, enabling companies to adapt and increase customer loyalty. Additionally, organizations that have implemented digital twins of their customers not only strengthened customer relationships but also increased revenue by up to **10%**, illustrating the tremendous impact of this cutting-edge technology on business performance.

Data and parameters used to create dtoc

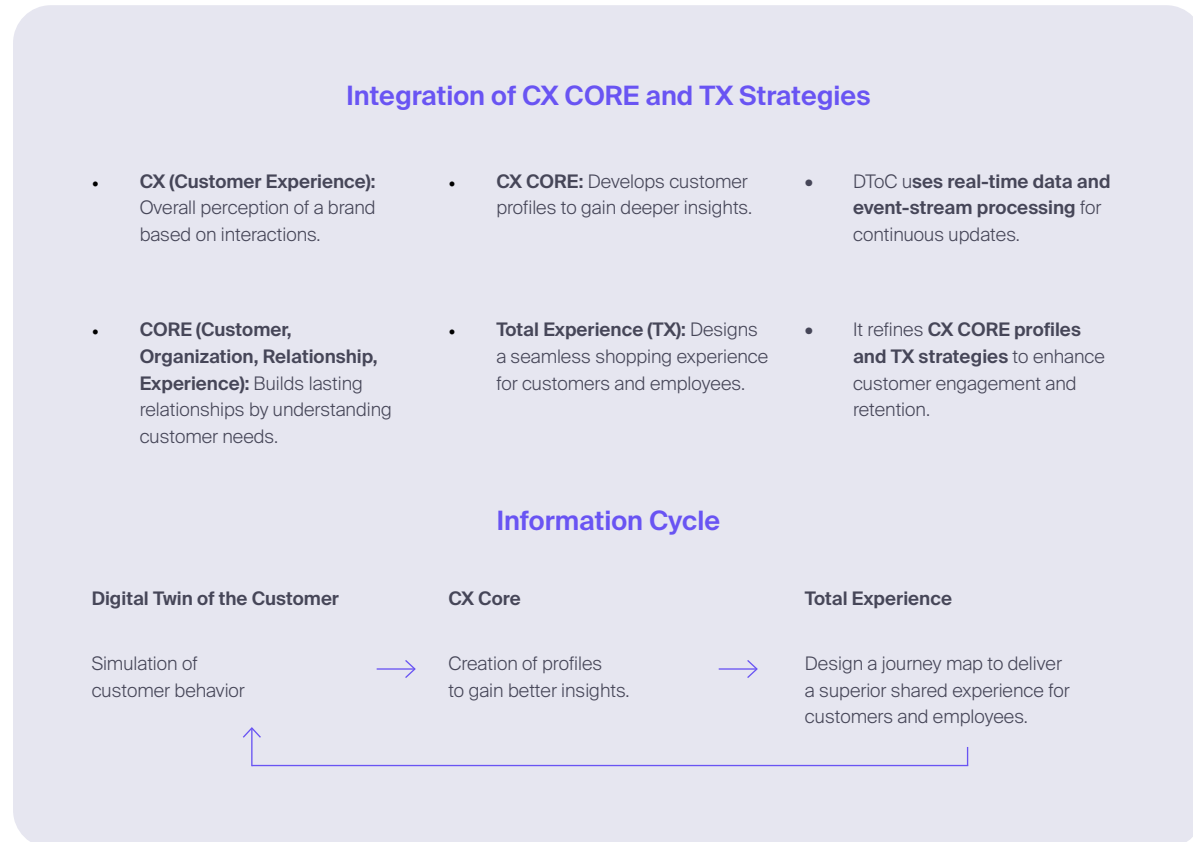


	Digital twins of the product	Digital twins of the customer
Origin	<ul style="list-style-type: none"> Engine design in CAD software (computer-aided design) Operational data in an IoT or APM service (application performance management) 	<ul style="list-style-type: none"> Person
Functioning	<ul style="list-style-type: none"> Usage conditions (e.g., frequency, location, etc.) Integration with other record systems, ecosystem/environment characteristics 	<ul style="list-style-type: none"> Physical and digital interactions IoT: location-based services or smart cameras Additional data: studies, surveys, and social analysis
Result	<ul style="list-style-type: none"> Preventive maintenance Anticipate engine behavior Enable new business models 	<ul style="list-style-type: none"> Improve products/services and customer experience Predict customer behavior Enhance new revenue models

How do brands use digital twins of the customer (DToC)?

Brands use DToC to create dynamic consumer models by combining data from different sources to forecast behavior, simulate interactions, and enhance experiences. These models include individuals, groups, personalities, and even machines to provide detailed insights into consumer journeys.

In the short term, brands must reshape customer actions, **establish transparency** around data usage, and align interactions with customer trust. In the long term, they should create a digital twin of a customer experience specialist team to assess the impact of DToC while ensuring compliance with privacy laws and effectively tracking people and dynamic relationships.



Key tools and technologies driving DToC

- **Customer journey** mapping identifies touchpoints and pain areas.
- **VoC** collects feedback from social media, surveys, and reviews.
- **CDPs:** Combine data from multiple channels for a unified customer view.
- **Cloud computing, AI, and machine learning** enable personalized insights at scale on preferences, purchasing behavior, and trends.
- **Identity resolution technologies** combine fragmented data to create a complete customer profile.

DToC drives personalized experiences, but quality and integration challenge its success

The adoption of digital twins of the customer presents key challenges that can impact their implementation and scalability. Integrating and synchronizing multiple data sources is one of the main hurdles, as it requires consolidating real-time information from various channels (digital interactions, IoT, transactional data) to build an accurate customer representation. **Behavior modeling accuracy** is also critical, as the effectiveness of the digital twin depends on its ability to precisely predict needs and preferences without generating irrelevant or incorrect recommendations. Data privacy and governance represent another significant challenge, as the massive collection of customer information must comply with regulations such as GDPR and ensure the ethical use of data. Technological adoption within organizations can be an obstacle, as scaling digital twins requires advanced analytics infrastructures and well-trained AI models, demanding investments in talent and specialized tools. Finally, personalization without being intrusive is a determining factor for the success of this technology, as poorly managed hyper-personalization can be perceived as invasive and undermine customer trust.

Why is it a priority in 2025?

Competitive differentiation in a saturated market: Digital twins enable differentiation through ultra-connected and predictive experiences in an environment where personalization is a key factor.

Demand for hyper-personalization: Customers expect real-time individualized interactions; failing to meet these expectations leads to a loss of loyalty.

Higher return on data investment: Smartly leveraging first-party and zero-party data strengthens decision-making and optimizes resources. This maximizes ROI by transforming data into actions that drive revenue.

Agile adaptability: Understanding changes in customer preferences or behavior makes it easier to pivot strategies and anticipate emerging trends.



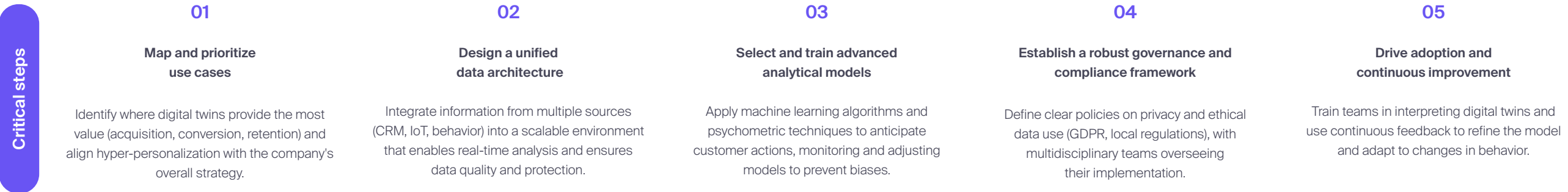
Consequences of not addressing it

Loss of competitive relevance: Without digital twins, companies fall behind competitors that offer more personalized and relevant experiences. This can result in a lower market share and reduced brand recognition.

Limited customer experience: The lack of real-time personalization leads to generic interactions that weaken user engagement. As a result, conversion rates decrease, and brand loyalty diminishes.

Low retention rates: Without predictive analytics, the company fails to detect changes in customer behavior in time, leading to customer churn toward competitors that offer value propositions better suited to their needs.

Underutilization of data: Collecting large volumes of information without a model that transforms it into actionable insights prevents generating significant ROI.



Future reflection

Customer digital twins are no longer just a data model; they have become a strategic asset for understanding and predicting the behavior of individuals or specific segments.

In the coming years, this tool **can generate new revenue streams based on the prediction and simulation** of changes in customer needs, provided that privacy is ensured and clear value metrics are designed.

The CIO must drive collaboration between departments (marketing, IT, legal) to ensure that the digital twin remains agile and scalable. Those who integrate these predictive models as a fundamental part of their business strategy will gain a significant advantage in creating unique experiences tailored to a market that demands immediacy and accuracy.

The combination of collective intelligence and digital twins will enable companies to anticipate new market trends, redesign processes in real time, and deliver differentiated value propositions in a landscape defined by constant disruption.

03

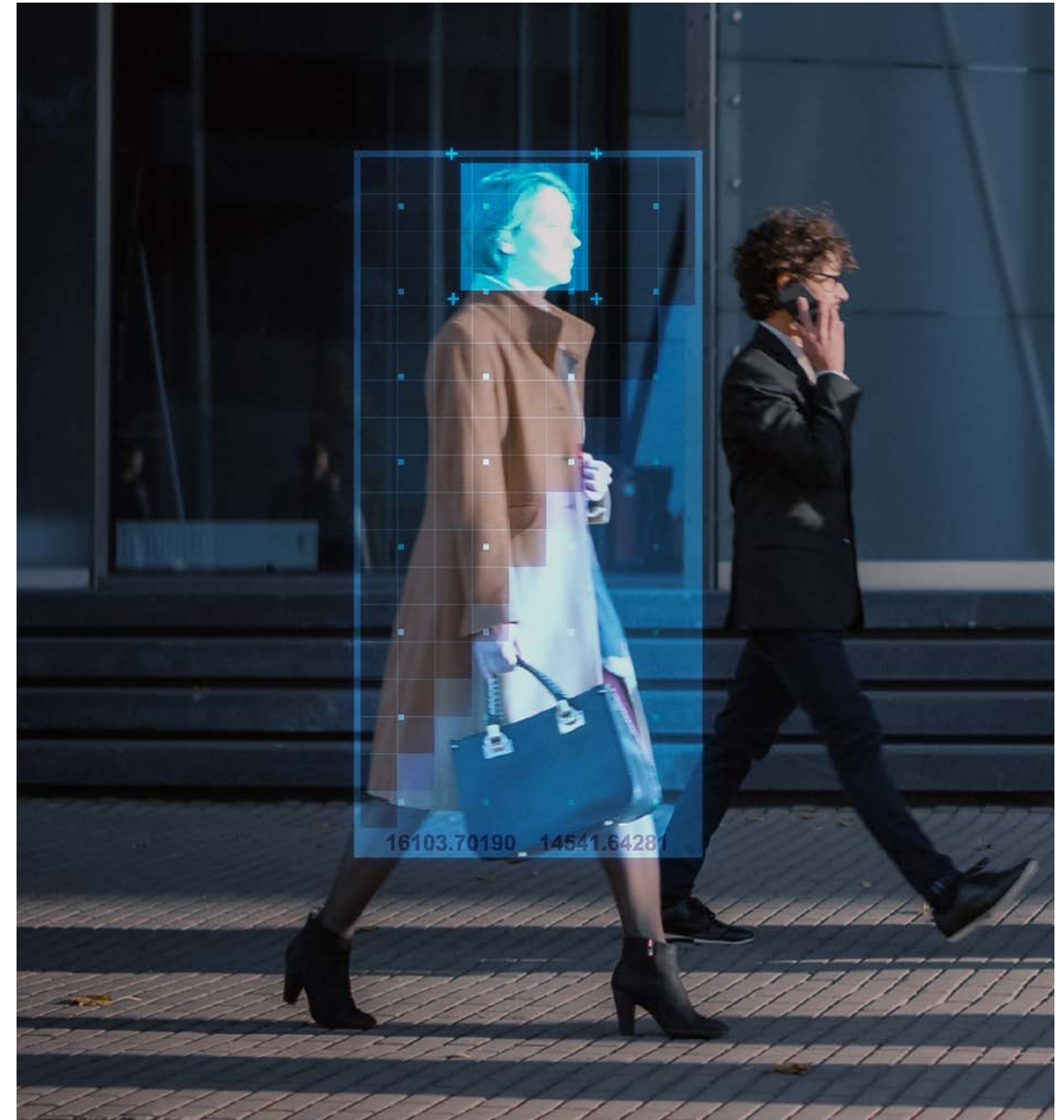
Emotional Computing: Affective Computing at the Heart of CX

Key Insight

Emotional Computing is transforming how companies interact with their customers by **enabling the interpretation and response to human emotions** in real time through biometric data, facial expressions, or voice tone.

By 2025, this technology will enable to better understand the emotional needs of the users and **anticipate their expectations** and deliver more humanized responses, leading to greater customer loyalty and competitive differentiation.

The CIO must lead this transformation by ensuring that the organization has a scalable data infrastructure, ethical AI models, and a value-driven business approach. Their role will be critical in overcoming challenges such as emotional data collection, ensuring informed consent, and creating algorithms that respect emotional diversity. To achieve this, they must orchestrate the deployment of this technology transparently and responsibly, designing clear governance models and building teams capable of translating **the potential of digital empathy** into a competitive advantage.





Emotional computing refers to the use of advanced technologies such as **AI, ML, and biometrics to detect, analyze, and respond to human emotions.**

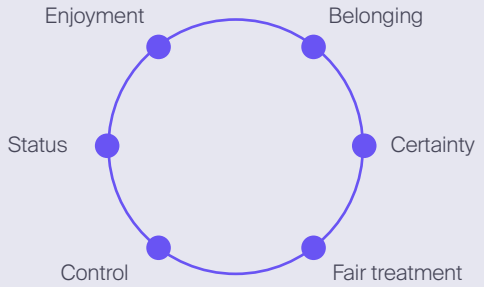
By deciphering emotional signals such as facial expressions, physiological indicators, text sentiment, and voice tones, companies can combine data with emotional intelligence, enabling deeply personalized and tailored interactions with customers.

How does emotional computing work?

- 1. Capture of affective signals:** Sensors (cameras, microphones, etc.) collect emotional signals through facial expressions, voice tone, and body language.
- 2. Features extraction:** AI analyzes the captured signals using machine learning and computer vision.
- 3. Pattern recognition:** The system classifies emotions (e.g., happiness, sadness, anger) based on learned patterns.
- 4. Evaluation:** Generation of an appropriate response to the detected emotion, enhancing real-time interaction.
- 5. Learning and optimization:** Continuous feedback enables the improvement of accuracy and emotional responsiveness over time.

CX forces

Six key dimensions that enable the understanding of customers' emotional needs



Path to Success in Experience Design with GenAI

Emotions drive 95% of purchasing decisions.
88% of consumers prefer human connections.



AI bridges the gap between digital interaction and the preference for human connections.

GenAI enhances emotional computing by recognizing, interpreting, and responding to emotions in real time.

It dynamically adapts to emotional needs.

It creates more human and engaging experiences.

It increases satisfaction and loyalty.

Key Technologies of Emotional Computing

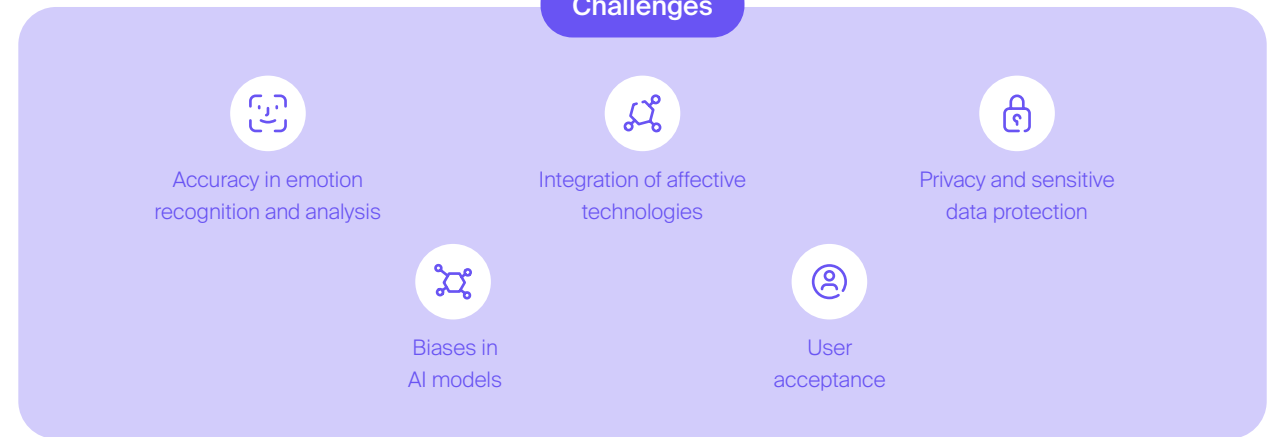
The effectiveness of emotional computing is determined by the quality and quantity of data it can access. Companies collect data from social media, reviews, customer interactions, employee tracking, and surveys. This data is processed using the following technologies and algorithms to extract emotional insights.

- **Facial recognition:** Analyzes facial expressions to detect emotions.
- **Text analysis:** Detects emotions in written text through natural language processing.
- **Voice analysis:** Infers emotions from the tone, rhythm, and pitch of speech.
- **Physiological sensors:** Measure heart rate, skin conductance, and other emotional indicators.
- **Machine learning & deep learning:** Uses CNNs for facial expression analysis and RNNs/LSTMs for speech/text processing.
- **Psychological principles:** Frameworks such as Paul Ekman's Facial Action Coding System (FACS) and Plutchik's Wheel of Emotions provide the necessary context for interpretation.

Applications of Affective Computing

<p>Customer service Smart call routing Call recommendations Continuous improvement</p>	<p>Education Measuring effectiveness Support for autistic children</p>	<p>Human resources Recruitment Employee training Employee satisfaction tracking</p>
<p>Insurance Fraud detection</p>	<p>Retail In-store shopping experience</p>	<p>Marketing Marketing communications Market research Content optimization</p>
<p>Driving assistance Safety Autonomous driving performance</p>	<p>Healthcare Patient care Medical diagnosis Counseling</p>	

Challenges



Companies must leverage the power of emotional computing, overcoming challenges related to accuracy and ethics

Emotional computing provides significant value by enabling organizations to accurately understand and respond to human emotions, optimizing both customer experience and internal productivity. Integrating it into chatbots, virtual assistants, and marketing allows companies to deliver more empathetic interactions and refine their strategies, enhancing customer satisfaction and loyalty. Internally, it also helps identify emotional patterns among employees and facilitates hiring and evaluation processes in HR. Overall, emotional computing strengthens relationships with both customers and employees, driving long-term success.

The implementation faces several challenges that may complicate its integration into customer experience strategies:

- **The accuracy of emotion recognition and analysis** is one of the main challenges, as algorithms must interpret complex and contextual emotional signals, which can lead to errors in personalizing interactions.
- **The risk of biases in the AI models** used for emotional analysis can impact fairness and effectiveness, resulting in inconsistent experiences for different user groups.
- **Privacy protection and handling sensitive data** is another critical aspect, as emotional computing involves processing highly personal information, requiring strict security measures and regulatory compliance.
- **The integration of affective technologies** with customer service platforms and existing systems presents an additional challenge, as it requires modifying technological infrastructures and internal processes.
- **Lastly, user acceptance** and perception of the technology influence its effectiveness, as customers may be reluctant to interact with systems they perceive as intrusive or non-transparent.

Why is it a priority in 2025?

Turning digital empathy into a brand differentiator:

By understanding and responding to customer emotions, companies create connections that go beyond functionality, fostering loyalty in a highly competitive environment.

Using emotional data as an innovation lever:

Detecting sentiment patterns allows organizations to design products and services aligned with deep needs, generating value propositions that are difficult to imitate.

Meeting the growing demand for well-being and closeness:

With increasing relevance placed on mental health and personalized experiences, emotional computing becomes a key resource, addressing more humanized expectations.

Anticipating regulations and ethical challenges:

As society and governments pay more attention to privacy and the use of emotional data, developing best practices strengthens reputation and reduces legal risks.



Consequences of not addressing it

Experiences that generate disconnection and churn:

Without the ability to recognize and respond to emotions, digital interactions feel cold and generic, increasing customer dissatisfaction and abandonment.

Blocking of transformative innovations:

Ignoring emotions means missing the opportunity to design new solutions based on deep feelings and motivations, falling behind more visionary competitors.

Loss of revenue opportunities:

Failing to leverage the emotional dimension results in proposals that lack relevance and closeness, limiting upselling and cross-selling potential and ultimately restricting revenue growth.

Competitive gap in sectors where empathy is key:

Not investing in emotional computing means losing ground to organizations already incorporating emotion as a differentiating factor.

Critical steps

01

Select high-value scenarios

Identify areas where emotion directly influences user behavior (customer service, marketing, HR) and prioritize initiatives with a clear ROI.

02

Design a solid data and privacy framework

Establish policies for collecting and handling emotional data with consent and transparency, protecting the company's trust and reputation.

03

Integrate technology into existing infrastructure

Select AI, biometrics, and analytics solutions that align with current systems, avoiding isolated projects and promoting scalability.

04

Drive a cross-functional vision

Form teams with professionals from IT, marketing, customer experience, ethics, and legal to align technology with business objectives and corporate responsibility.

05

Measure results and adapt the strategy

Define KPIs that reflect the impact on customer satisfaction and retention, adjusting solutions based on feedback and evolving emotional needs.

Future reflection

Emotional Computing, or the ability of technology to recognize and respond to emotional states, has the potential to become a strategic lever for transforming customer relationships. This

trend is redefining the digital user experience. Organizations that turn these capabilities into a cross-functional asset—integrating **emotion as part of products, services, and processes**—will be able to accelerate growth, strengthen consumer loyalty, and discover new revenue streams.

Success will lie in translating emotional intelligence into actionable business insights, aligning them with profitability and differentiation metrics.

The ability to anticipate and adapt to users' emotions can make the difference between a company that merely offers a product and one that evolves into solid, long-term relationships based on empathy and trust.

04

Digital Product Governance: Standardization for Global Scalability

Key Insight

Digital product governance is a structured approach to defining standards, processes, and control frameworks that ensure product quality, security, and scalability in a digital environment. Beyond oversight, its goal is to harmonize development, reduce risks, and ensure alignment with business strategies, allowing companies to innovate without compromising operational consistency.

By 2025, its adoption **will optimize the product lifecycle**, accelerate entry into new markets, and ensure regulatory compliance in increasingly regulated environments.

An efficient governance model will facilitate the **integration of products within global digital ecosystems**, reducing friction and enhancing interoperability.

The CIO must design flexible governance frameworks that balance control and agility, ensuring that standards do not become barriers to innovation. To achieve this, it will be essential to automate audits, establish clear data management rules, and adopt **platforms that enable traceability** and continuous monitoring, ensuring that each digital product maintains its integrity without losing adaptability.



In today's digital ecosystem, companies must ensure that their products are innovative, secure, and aligned with industry standards. Traditional governance models are insufficient in the face of rapid innovation, decentralized development, and constantly evolving regulations.

For this reason, adopting a well-structured digital product governance framework is crucial, establishing clear guidelines for managing products throughout their lifecycle, minimizing risks, and ensuring alignment with corporate objectives. This approach promotes consistency, transparency, and accountability, optimizing resources, accelerating decision-making, and strengthening competitiveness.

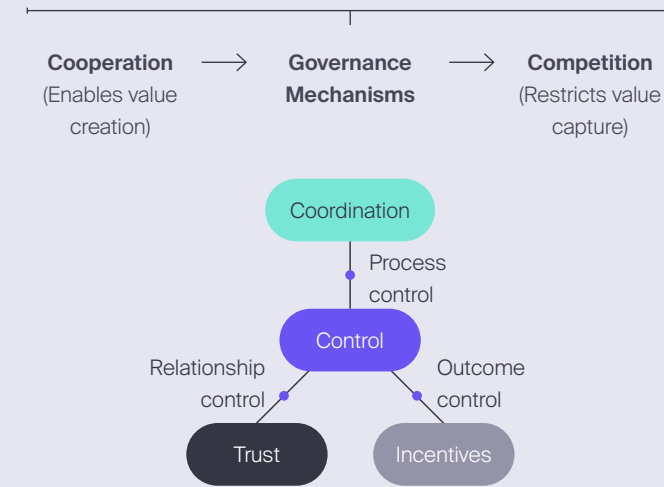
Digital Product Governance Framework

The Framework Describes Three Core Characteristics and the Integration of Five Key Principles. These elements ensure that digital product development aligns with business objectives, remains efficient, and fosters continuous improvement.

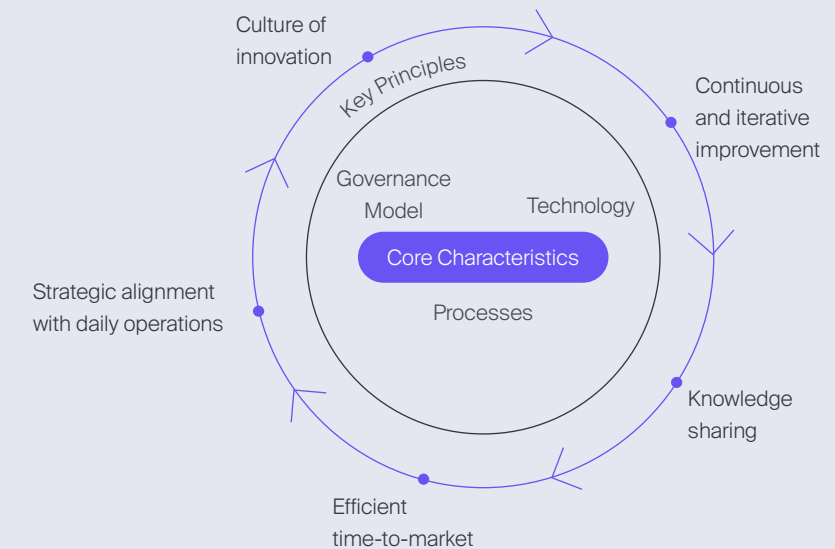
- 1. Governance model:** Defines roles, responsibilities, and decision-making processes to guide product development and ensure compliance.
- 2. Processes:** Standardizes workflows for approval, risk assessment, monitoring, and improvement, aligning them with business objectives and regulations.
- 3. Technology:** Tools to automate, monitor, and optimize governance and product performance.



Governance acts as a mediator between value creation and capture



Integration of key principles



Best Practices for Digital Product Governance



Centralized inventory of digital initiatives

Consolidate a unified repository of digital initiatives to ensure strategic alignment and more agile decision-making.



Decentralization of digital initiatives

Start with centralized leadership (CDO) and gradually delegate management to business units to promote autonomy and scalability.



Centralized evaluation

A specialized committee should validate digital products based on coherence, impact, and alignment with company objectives.



Clear KPIs

Establish specific and measurable indicators to facilitate performance tracking.



Avoid isolated developments

Implement a flexible architecture that enables interoperability and the continuous evolution of products and services.



Mapping and compliance

Implement a continuous monitoring system to ensure regulatory compliance and anticipate market or legal risks.

Challenges



Diversity of regulations and standards



Resistance to change



Technological complexity



Data quality and consistency management



Solutions scalability

Ensuring Product Excellence Requires Strategic Focus and Operational Flexibility

The implementation of a digital product governance framework provides considerable advantages for companies aiming to improve their growth processes. One of its most notable contributions is **strategic alignment**, ensuring that the products and attributes created are in line with the company's objectives and vision, fostering a more consistent and goal-oriented product portfolio. Additionally, it facilitates **resource optimization** by prioritizing projects with the greatest potential impact, minimizing wasted time, effort, and capital.

Another essential benefit is the **increase in product quality**, as governance processes establish strict quality controls and market adaptation analyses, thereby reducing the risk of errors and strengthening consumer trust in the brand. Finally, this framework **streamlines decision-making**, provides uniformity in product creation, and ensures effective and sustainable value contribution throughout all phases of the product lifecycle.

Digital product governance for achieving global standardization faces several challenges.

- In the first place, the **diversity of regulations and regional standards** complicates the creation of a unified framework, forcing companies to adapt to multiple legal and technical requirements.
- Secondly, **the technological complexity** of integrating heterogeneous systems and ensuring their interoperability can be costly and consume significant resources. A third challenge is resistance to change within organizations, where a lack of alignment between departments or reluctance to adopt new processes can slow down implementation.
- Additionally, **managing the quality and consistency of data** in a global environment presents difficulties in maintaining the integrity and reliability of information.
- Finally, **the scalability of solutions** requires a balance between flexibility and control, as an overly rigid approach may limit innovation, while an excessively loose one may compromise standardization.

Why is it a priority in 2025?

Standardization for scaling products globally:

Strong governance ensures digital products maintain consistency in quality, security, and regulatory compliance across different markets, facilitating frictionless expansion.

Reduction of complexity and duplication in development:

Without a unified framework, companies face silos, redundancies, and difficulties integrating products, slowing innovation and increasing operational costs.

Regulatory compliance and digital risk management:

The proliferation of data, privacy, and security regulations demands a proactive governance approach to avoid sanctions and reputational risks.

Greater alignment between IT and business:

A clear governance model ensures digital product evolution aligns with business strategy, prioritizing initiatives with real business impact.



Consequences of not addressing it

Disconnection between products and business strategy:

Without clear governance, digital product development becomes reactive and uncoordinated, leading to solutions that do not align with the company's strategic objectives.

Regulatory uncertainty and compliance risks:

The lack of a governance model leaves companies unprepared for regulatory changes, increasing the likelihood of sanctions and commercial restrictions.

Barriers to innovation and difficulty in scaling:

Without defined standards, teams lose agility in decision-making, slowing product evolution and limiting their ability to expand into other markets.

Obstacles to scaling into new markets:

Companies without governance standards struggle to adapt their products to different regulations and local requirements, hindering expansion and limiting growth.

Critical steps

01

Define a clear governance framework

Establish governance policies and standards that align digital product management with strategic objectives, ensuring consistency and scalability.

02

Integrate observability in hybrid environments

Implement frameworks that optimize the creation, evolution, and maintenance of digital products, ensuring consistency throughout their lifecycle.

03

Automate response to critical failures

Implement tools that enable auditing and managing the evolution of digital products, ensuring regulatory compliance and operational efficiency.

04

Improve observability data traceability and quality

Foster collaboration between IT, business, and compliance to ensure governance evolves in alignment with market needs.

05

Optimize capacity and performance with predictive models

Adapt governance regulations and standards based on technological advancements, new regulations, and market expectations.

Future reflection

Digital product governance will evolve from a regulatory framework to a strategic enabler for scalability and differentiation in global markets. In an environment where

digital products expand across multiple geographies with changing regulations and expectations, organizations that structure agile and automated governance will be able to accelerate product launches, reduce adaptation costs, and minimize regulatory risks.

In the coming years, automation and standardization will play a central role. **AI will enable real-time governance rule management, adapting to changing regulations** and ensuring interoperability between products and platforms.

Additionally, companies that adopt integrated governance models will optimize decision-making, accelerate expansion into new markets, and minimize regulatory risks.

05

Generative AI-Assisted Innovation Models: Creating Value in Real Time

Key Insight

Generative AI-assisted innovation models are transforming how companies ideate, design, and execute opportunities by generating a wide range of possibilities that human judgment refines and aligns with business goals. This technology goes beyond automation: it **fuels creativity** and strategic decision-making, allowing organizations to rethink their product and service development processes—from the initial concept to market execution.

By 2025, generative AI will provide companies with the ability to prototype, iterate, and deploy solutions quickly, anticipating the needs of a constantly

evolving environment. The CIO must lead this transformation, ensuring the adoption of agile methodologies and the creation of teams capable of collaborating with AI while staying focused on business objectives.

Their role will be crucial in structuring this process, placing long-term innovation at the core of corporate strategy. In this way, generative AI becomes a pillar **for scalable growth, competitive differentiation,** and continuous organizational evolution.



GenAI enables companies to innovate faster and more effectively by generating content, prototypes, and proposals from minimal inputs. According to recent reports, **65% of executives consider GenAI to be the most disruptive technology of the next five years**, 89% have made it one of their top three investment priorities for 2024, and 86% of surveyed companies are at least experimenting with GenAI in their innovation efforts. These investments highlight its ability to transform industries and stimulate large-scale innovation.

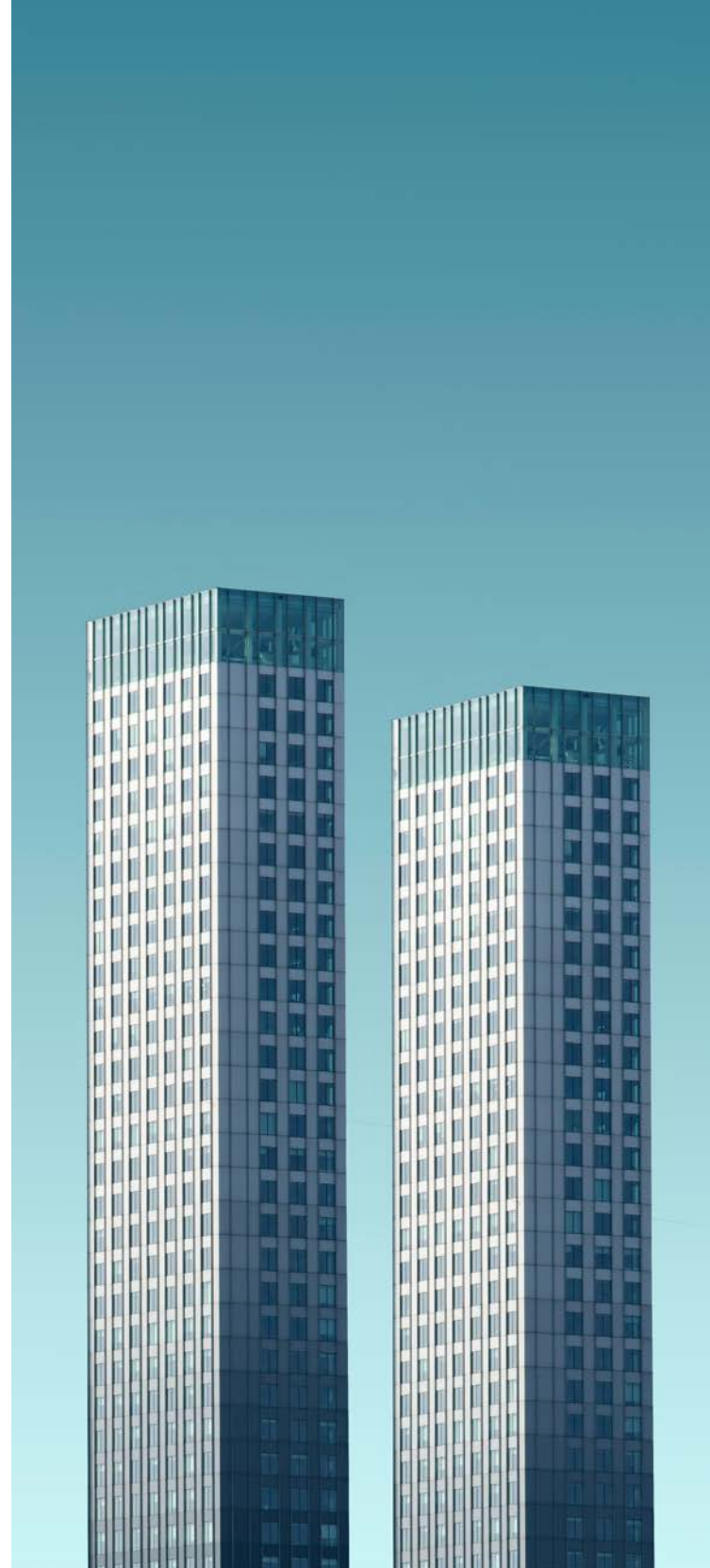
GenAI complements predictive AI by merging creativity with analytical rigor. While predictive AI facilitates data-driven decision-making and optimization, GenAI **drives innovation, creativity, synthesizes large datasets, and proposes novel solutions**. Through this synergy, organizations can identify new opportunities and enhance workflows.

Companies that successfully implement AI generate **5X more ideas** and incubate **2X more MVPs**. Some are already using generative AI in the **idea creation phase**, stimulating creativity. As adoption increases, organizations that integrate GenAI into their innovation strategies will gain a **competitive advantage, driving faster and more impactful advancements** while transforming their industries.

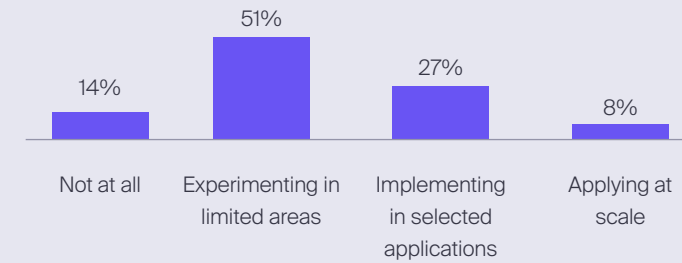
Use of Generative AI in Business Innovation

Generative AI revolutionizes every stage of the innovation funnel. By accelerating processes, fostering creativity, and driving efficiency, companies can gain significant benefits in terms of speed, scalability, and market adaptation by integrating generative AI tools into their strategies.

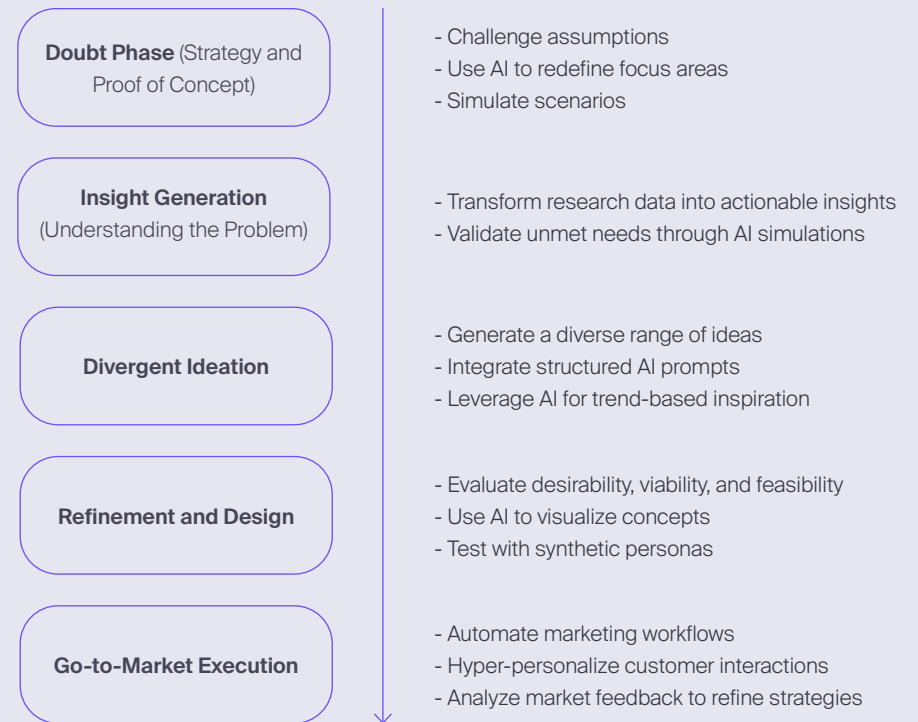
Source: BCG



Almost all companies are experimenting with generative AI for innovation, but most are still in the early stages of their journey



Use of Generative AI in Business Innovation



Generative AI Transforms Every Stage of the Innovation Funnel

Genai use cases for restructuring the innovation cycle

Define ambition

- Evaluate strategic assumptions
- Identify investment areas
- Support scenario planning

Identify/explore domains

- Detect trends and opportunities
- Deeply understand ecosystem dynamics
- Evaluate the competitive landscape and identify data patterns

Shape the funnel

- Assess portfolio health
- Investigate reference products
- Gain insights and analyze the ecosystem for partnerships

Ideate

- Generate new ideas
- Examine ideas from different perspectives
- Develop detailed specifications

Prototype/ Design

- Generate images, UX, 3D models, and videos
- Create and refine designs
- Write and debug code
- Suggest optimal materials

Test/Validate

- Analyze code to detect errors
- Create variations in testing
- Adjust designs and summarize test results
- Simulate audiences to validate assumptions

Manufacture/ Develop

- Optimize designs and processes
- Develop multimedia POEs
- Assist virtual operations

Commercialize

- Create sales presentations
- Support personalized experiences
- Develop e-commerce content
- Define audience segments for targeted campaigns



Generative AI drives ideas but requires ethics and direction

Generative AI **offers significant advantages** throughout the innovation process. One of its most notable benefits is the speed and efficiency it provides, allowing companies to produce concepts, prototypes, and strategic insights much faster than before. It also reduces costs by automating repetitive tasks and simplifying processes, making innovation more accessible and cost-effective. Additionally, it fosters divergent thinking, generating a wide range of ideas and creative solutions, pushing teams beyond conventional limits. On the other hand, its ability to analyze large datasets and provide data-driven insights enables companies to make more precise and confident decisions. Generative AI **offers scalability, adapting easily to growing innovation needs**, and also democratizes innovation by enabling non-experts to contribute meaningfully to the creative process. The implementation of generative AI-assisted innovation models presents specific challenges that may affect their adoption and effectiveness:

- The difficulty of **integrating AI into existing innovation processes** creates frictions within organizations with traditional methodologies, limiting its impact on idea generation and concept validation.
- The **quality and reliability of the generated outputs** is another key challenge, as AI may produce inaccurate or biased results if not trained with adequate data and human oversight mechanisms.
- The **lack of clear criteria** to evaluate the success of innovation complicates the measurement of its real value, making it difficult to align with the company's strategic objectives.
- Challenges in **privacy and data governance** are also critical, as these models require access to large volumes of information, which poses risks in terms of data protection and regulatory compliance.
- Finally, the challenge of **scaling generative AI beyond isolated experiments limits** its corporate adoption, preventing it from becoming a recurring tool within innovation processes.

Why is it a priority in 2025?

Accelerating innovation capacity: Generative AI drastically reduces ideation and prototyping cycles, enabling companies to launch products and services faster and adapt better to changing markets.

Discovering new sources of value: By generating multiple scenarios and solutions, new business opportunities arise that were previously unconsidered, fostering diversification and the reinvention of value propositions.

Boosting team creativity: Rather than replacing human talent, generative AI enhances collaboration and enables the creation of more sophisticated ideas, keeping organizations at the forefront of innovation.

Efficiency and cost savings: Task automation and process optimization reduce operational expenses, allowing companies to focus on strategic priorities, even in times of uncertainty.



Consequences of not addressing it

Slowdown in disruptive idea generation: Ignoring generative AI limits the ability to experiment quickly, keeping innovation processes anchored in slower, traditional methodologies.

Loss of competitiveness against agile rivals: Competitors that adopt this approach will be able to launch solutions more aligned with current demand, leaving behind those who do not join this transformation.

Operational inefficiency: Traditional methods hinder scalability, creating bottlenecks that not only increase operational costs but also limit the ability to respond to market opportunities.

Reduced synergies with other technologies: Generative AI naturally integrates with data analytics, automation, and agile design tools –not leveraging its potential means missing out on cross-cutting innovations.



Future reflection

Generative AI-Assisted Innovation Models Are Reshaping Creation and Development Processes in Organizations. Their impact goes beyond operational efficiency—they represent a fundamental shift in how ideas emerge, evolve,

and materialize. In this new landscape, **the ability to transform concepts into applicable solutions** quickly will determine which companies lead the market and which fall behind. Success in adopting this technology will depend on organizations' ability to integrate it into their innovation strategy, combining agile methodologies with hybrid work structures

that leverage both human creativity and the potential of artificial intelligence.

As generative AI becomes more established, new business models are emerging, driven by the automation of creativity, accelerated product iteration, and advanced personalization. In

this context, companies that adopt a strategic and structured approach in implementing this technology will not only optimize their innovation capacity but will also redefine their competitive advantage in an increasingly dynamic market.

06

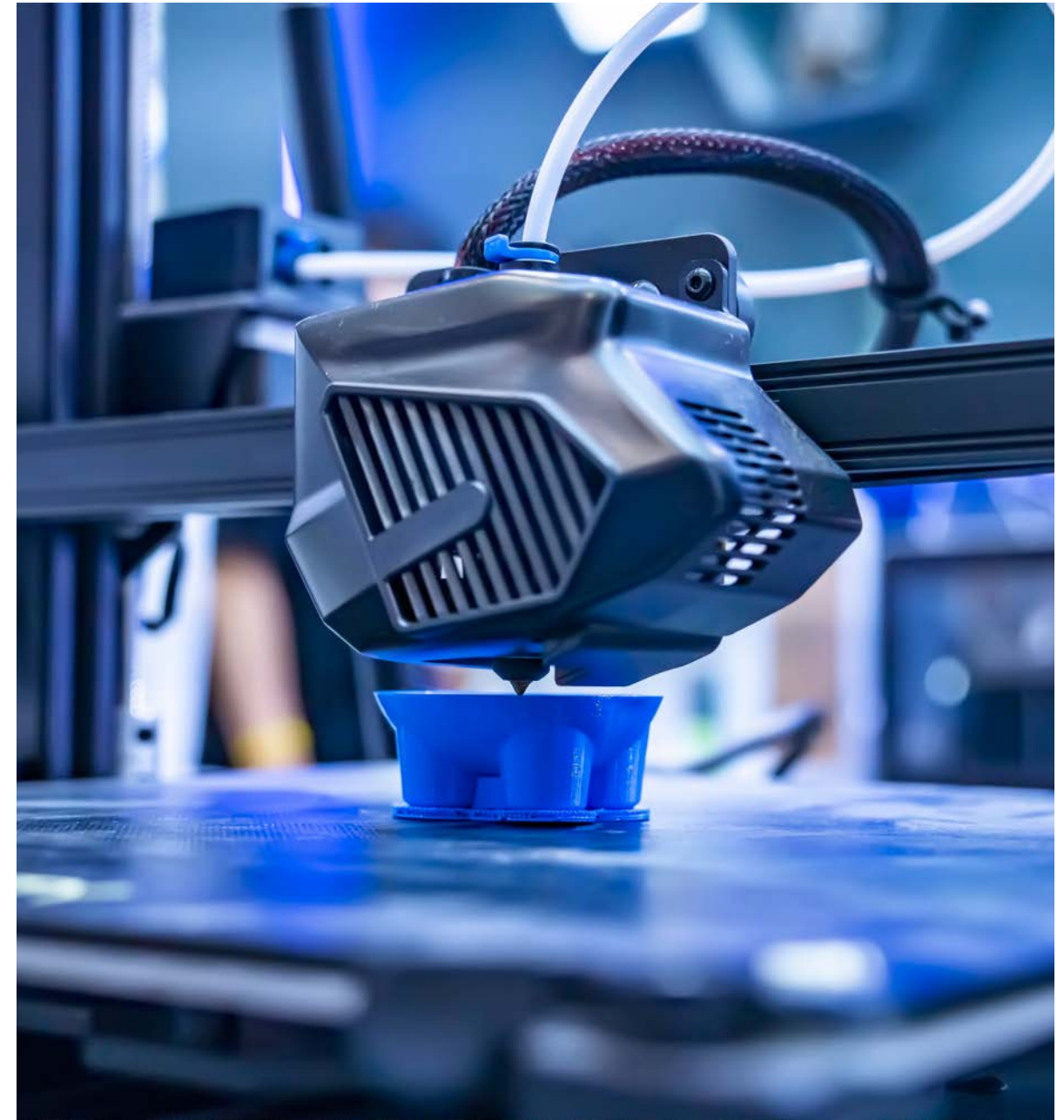
Accelerated Prototyping: From Concept to Market in Record Time

Key Insight

Accelerated prototyping is revolutionizing product development by reducing design, testing, and validation cycles. Technologies such as generative AI, 3D printing, and advanced simulations allow for more precise and faster iterations, minimizing costs and risks associated with launches.

By 2025, this capability will be essential for adapting to dynamic markets, validating ideas in real time, and adjusting products according to consumer needs before large-scale implementation.

Looking ahead, CIOs must integrate prototyping into the early stages of the innovation cycle, ensuring a **structured strategy that combines speed with technical and commercial viability**. This involves defining clear metrics for each iteration, adopting advanced simulation tools, and consolidating methodologies that facilitate experimentation without compromising scalability. Their role will be crucial in ensuring that prototyping becomes a strategic driver of innovation and differentiation.



Accelerated prototyping is redefining how companies transform ideas into products, offering a **faster and more efficient route** from conceptualization to launch. Technologies such as generative AI, 3D modeling, additive manufacturing, and advanced simulations enable agile iterations, virtual environment validations, and real-time adjustments before production, reducing costs and development times.

Industries are leveraging this capability to **bridge the gap between concept and final product**, minimizing risks and ensuring that products meet market demands with precision. As these technologies evolve, accelerated prototyping will become a key driver for mass customization, resource optimization, and continuous innovation, positioning companies with a competitive advantage in constantly changing environments.

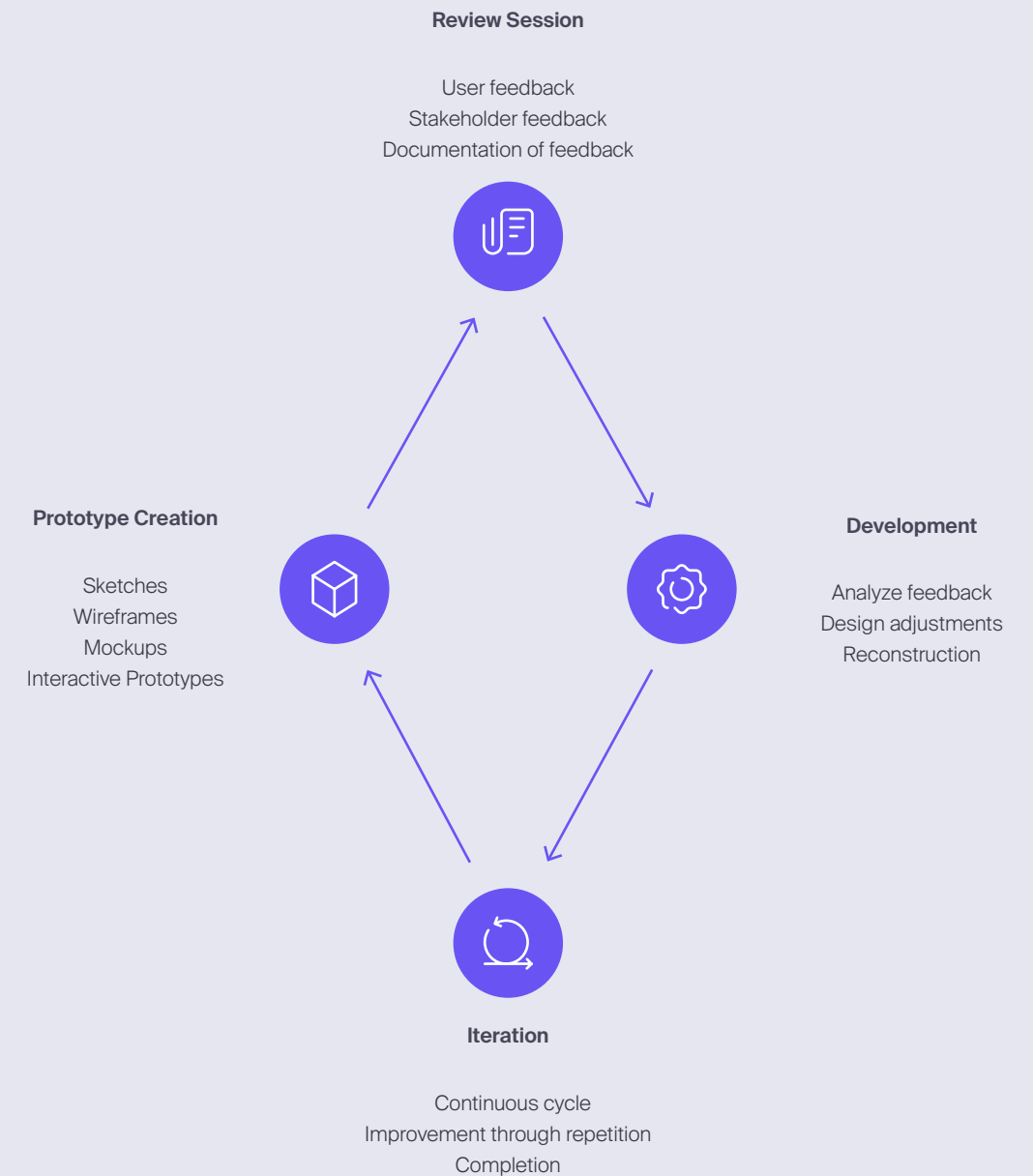
The Rapid Prototyping Process

The rapid prototyping process is an iterative methodology focused on feedback, allowing for the quick creation of prototypes, incorporating input from stakeholders and users, and continuously refining the design until it meets usability and functionality requirements, ensuring that the final product is effective and user-centered.

1. The process **begins with basic wireframes and sketches**, followed by more complex mockups and interactive prototypes, providing a visual foundation for initial testing.
2. The prototype is **evaluated by users and stakeholders**, who provide key feedback on usability, functionality, and alignment with objectives.
3. The feedback is **analyzed, prioritized, and applied** to refine the design, incorporating improvements in functionality, interface, and user experience before the next test.
4. This process is **repeated in agile iterations** until the prototype meets expectations, ensuring it is optimized for commercialization and ease of use.

The key to success is continuous improvement through iterations, using agile sprints for refinement and fostering collaboration between teams to gain a comprehensive vision.

The rapid prototyping process



Innovation Value Chain with Tool Integration

Idea Generation. Generative AI, Design Thinking: Accelerates creativity and collaboration.

Concept Validation. Low-Code Platforms, Design Thinking: Reduces cost and validation time for ideas.

Prototyping. Digital Twins, Low-Code, Cloud Computing, CAD, Model3D: Improves flexibility in iteration, precision, and detailed design.

Testing and Feedback. RPA, Agile Frameworks: Accelerates refinement.

Implementation. DevOps, Cloud Platforms: Ensures a seamless transition to production.

Commercialization. GenAI, RPA: Reduces time to market.

Use Cases in Cutting-Edge Technologies and Innovation

Generative AI

Automatic idea generation, conversational prototypes, and code suggestions.

Robotic Process Automation (RPA)

Workflow creation for user testing or feedback collection, task automation.

Cloud Computing and DevOps

Hosting of prototypes, serverless computing to reduce overhead.

Low-Code/No-Code Platforms

Rapid creation of functional mockups or MVPs, bridge between technical and non-technical teams.

Edge Computing

Real-time processing for autonomous systems and IoT.

Digital Twins

Prototype simulation, scenario testing in a virtual environment.

Challenges



Integration with traditional processes



Technological and infrastructure limitations



Real-time user validation of prototypes



Balancing speed with commercial viability



Organizational resistance to iterative methodologies

Success lies in combining the strengths of accelerated prototyping with conscious execution

The advantages of rapid prototyping are significant for product development. By facilitating early testing and feedback, it accelerates the design process and time to market. Identifying failures and usability issues at an early stage reduces the need for costly changes later, thus improving profitability. Additionally, rapid prototyping fosters better collaboration among teams, ensures alignment with project goals, and minimizes risks. Its iterative nature promotes continuous improvement, resulting in a polished, user-centered final product.

The adoption of **accelerated prototyping** strategies presents **key** challenges that may limit its impact on product development.

- **The lack of integration with traditional processes** hinders alignment between agile methodologies and

conventional development cycles, slowing the transition from concept to market.

- **Technological and infrastructure limitations** can hinder the implementation of advanced tools such as digital simulations, 3D printing, or generative AI, restricting rapid iteration capability.
- **Difficulty in validating prototypes with users in real time** prevents agile feedback and adjustment of solutions according to market expectations.
- **Failing to balance speed with commercial viability** can lead to prototypes that are not scalable or that compromise the final product's quality.
- **Finally, organizational resistance to iterative methodologies** may affect the adoption of accelerated prototyping, especially in industries with strict regulations or traditional business cultures.

Why is it a priority in 2025?

Reduced time-to-market: Adopting accelerated prototyping enables transforming ideas into functional products in record time, optimizing development, and reducing risks in early phases.

Greater market adaptability: Rapid iteration allows for design and functionality adjustments based on real-time feedback, ensuring that products precisely meet customer needs.

Optimization of costs and resources: Testing concepts before production reduces R&D expenses and minimizes the risk of investments in developments that do not generate value or have low acceptance.

More accurate validation and improved user experience: Technologies like augmented reality and digital twins allow testing products in simulated environments, optimizing functionality before production.



Consequences of not addressing it

Longer development time and market delays: Without rapid prototyping tools, companies take longer to validate ideas and adjust designs, losing agility against competitors who iterate faster.

Increased costs due to late iterations: Without early validations, design errors are detected in advanced development stages, generating higher correction costs and production delays.

Lower ability to respond to market changes: The lack of agile processes prevents adapting products to new trends and consumer needs in real time, reducing competitiveness.

Limitations in customization and differentiation: Without technologies like generative AI, 3D modeling, or advanced simulations, companies have less capacity to personalize and optimize products before launch.



Future reflection

The convergence of generative AI, advanced simulations, and 3D printing is redefining innovation cycles, enabling **faster**

iterations, products more aligned with demand, and an unprecedented ability to adapt. Organizations that integrate an agile prototyping approach will be able to anticipate emerging trends, reduce risks, and optimize development costs.

Additionally, the integration of AR/VR will provide more immersive testing environments, allowing for **more intuitive interactions between users and stakeholders with prototypes.** Companies that implement rapid prototyping will be strengthened by this

continuous feedback cycle, leading to the development of products that better respond to market changes.

07

Dynamic Measurement of ROI in Innovation

Key Insight

The measurement of ROI in innovation is evolving to adapt to a business environment where disruption and digital transformation demand more dynamic indicators. Dynamic ROI measurement inactionable redefines how companies evaluate the impact of their initiatives, shifting **from static metrics to real-time, data-driven models**. In 2024, 83% of companies consider innovation a strategic priority, compelling CIOs to rethink how they assess the impact of their initiatives beyond traditional financial metrics.

By 2025, organizations will need to adopt real-time, data-based

measurement models, incorporating AI and advanced analytics to capture both the tangible and intangible value of innovation.

The CIO will play a key role in implementing technology platforms that consolidate data from multiple sources, apply agile methodologies to iterate on the impact of innovation, and balance short-term profitability with sustainable growth. However, the challenge is not just technological but strategic—**ensuring that the collected data is actionable** and that measurement is aligned with business objectives.



Innovation is essential for growth and competitiveness in today's business environment. However, measuring the effectiveness of innovation projects has always been challenging. While traditional ROI models work well for regular investments, they cannot adequately represent the complexity, unpredictability, and long-term benefits that innovation projects typically provide.

Therefore, a more holistic and multidimensional approach is required—one that goes beyond traditional financial metrics to assess the effectiveness and profitability of innovation in real-time. Unlike static models that rely on fixed assumptions and historical data, this **dynamic approach embraces adaptability, continuous feedback, and a broader vision** of success, reflecting the ever-changing nature of innovation.

Comprehensive Metrics Drive Sustainable Innovation Success

When measuring the success of innovation initiatives, it is essential to look beyond conventional financial indicators like ROI. Using a set of metrics that evaluate both the innovation process and its outcomes provides a more comprehensive approach. From ideation to market impact, these indicators help organizations unlock the full potential of their innovation initiatives. Below are some key metrics used to track innovation success:

- **Revenue from new products or services:** Measures the proportion of revenue generated by new innovations.
- **Customer satisfaction:** Tracks the impact of new offerings on customer satisfaction and loyalty.
- **Innovation portfolio metrics:** Evaluates the quantity and quality of ideas within the innovation pipeline.
- **Time-to-market:** Measures the time required to bring new products or services to market.
- **Innovation portfolio diversity:** Assesses the balance between incremental, breakthrough, and radical innovations.
- **Long-term value creation:** Captures broader, non-financial impacts such as brand strength and market positioning.

Actionable KPIs guide innovation activities

Static Metrics



Metrics that may appear impressive but often do not provide actionable insights or effectively guide next steps.

- Profitability
- Number of patents
- ROI
- R&D expenditure

Actionable Metrics



Metrics that directly inform business decisions by linking inputs to meaningful outcomes

- R&D-to-product conversion
- Idea-to-margin conversion
- Idea pipeline metrics
- Time to obtain information
- Time to adoption
- Customer satisfaction

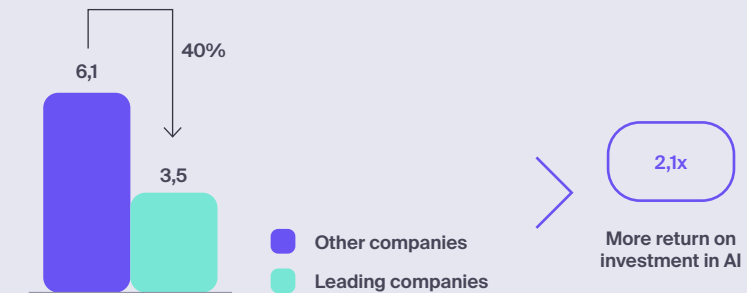
Key Strategies for Measuring ROI in Innovation:

- **Clear objectives and KPIs:** Align innovation objectives with customized KPIs to measure the impact that supports organizational strategy.
- **Comprehensive scorecards:** Evaluate performance from financial, customer, process, and learning perspectives, recognizing the value of innovation beyond immediate returns.
- **Qualitative insights:** Use customer feedback and market perception to complement quantitative data.
- **Benchmarking:** Track performance changes, ensuring they can be directly linked to innovation efforts.
- **Long-term perspective:** Adopt a balanced vision to validate innovation investments and achieve sustained competitive advantage.

Additionally, Technologies Like AI Optimize ROI Tracking

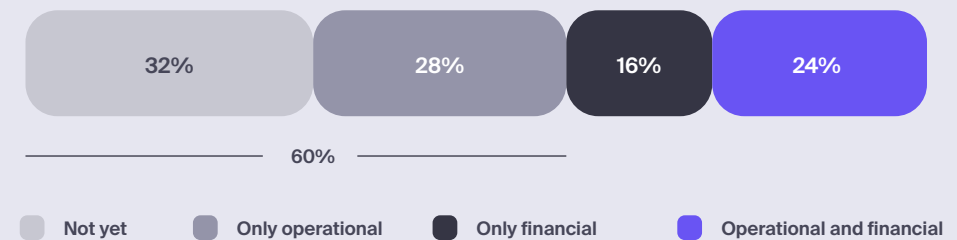
- **AI models** predict ROI potential, while ML optimizes decisions by analyzing historical data.
- **Tools like Power BI and Tableau** provide instant access to performance metrics and KPIs for quick adjustments.
- **Cloud platforms** manage large datasets, simplifying ROI tracking.
- **IoT sensors** collect real-time data on product performance and operational efficiency.
- **Digital twins** simulate project outcomes, refine strategies, and accurately forecast ROI before full implementation.
- **Automation tools** streamline operations, improving ROI tracking.
- **Sentiment analysis** evaluates customer feedback, enriching ROI measurement with qualitative insights.

Leading Companies Extract More Value by Focusing Their AI Investments Correctly



However, 60% of companies do not define or monitor any financial KPI related to AI value creation.

How does your organization track AI value creation?





Challenges



Misalignment between metrics and strategic objective



Reliance on historical data



Difficulty in measuring long-term returns



Integration of multiple data sources



Bias in result interpretation

Dynamic ROI Measurement Enhances Innovation, but Requires Strategy and Precision

One of the greatest benefits of dynamic ROI measurement is **optimizing decision-making** by providing real-time insights to detect opportunities and risks quickly and accurately. Additionally, it improves resource allocation, directing investments toward high-potential projects and discarding those that do not produce the expected effect. Another fundamental advantage is aligning innovation efforts with the company's strategic objectives, ensuring a positive impact on overall performance.

At the same time, this method enhances business flexibility and adaptability, allowing companies to react quickly to changing market demands and maintain competitiveness. Ultimately, **dynamic ROI assessments also foster long-term value creation**, balancing immediate financial benefits with intangible benefits such as customer loyalty, sustainability, and brand strengthening.

Dynamic ROI measurement in innovation faces **specific challenges** that can limit its effectiveness:

- **The lack of alignment between metrics and strategic objectives** makes it difficult to link the return on innovation to business growth, which could lead to erroneous investment decisions.
- **The reliance on historical data** continues to dominate impact assessment, preventing real-time capture of the value generated by emerging initiatives.
- **The difficulty in measuring long-term returns** complicates the justification of investments in disruptive innovation projects, which may take years to produce tangible benefits.
- **Integrating multiple data sources** is another challenge, as consolidating information from different areas and systems requires advanced infrastructure and robust analytical models.
- **Finally, a biased interpretation of results** can lead to a distorted view of impact, favoring immediate metrics over those that drive sustainable advantages.

Why is it a priority in 2025?

Strategic decision-making based on real-time data: A dynamic approach allows for evaluating the impact of innovation without relying on delayed reports, facilitating immediate adjustments.

Justification of the innovation budget: Measuring ROI in real time and relying on dynamic metrics helps demonstrate the true value of innovation and secure continuous funding.

Optimization of the innovation project portfolio: Agile tracking enables resource reallocation to high-potential initiatives and the elimination of those that generate no impact.

Alignment with business growth: A dynamic measurement model allows for responding to strategic objectives instead of operating in isolation, ensuring that each initiative contributes to the company's competitive advantage.



Consequences of not addressing it

Difficulty in justifying innovation investment: Without dynamic metrics, demonstrating the real value of initiatives becomes harder, making it difficult to secure budgets and slowing down new developments.

Risk of maintaining low-impact projects: Without real-time measurement, companies may continue investing in underperforming initiatives without detecting the need to redirect resources in time.

Competitive disadvantage in decision-making: Companies without agile measurement will react slower to market changes, while their competitors optimize their innovation with real-time data.

Loss of monetization opportunities: Failing to properly measure innovation ROI makes it difficult to identify solutions with scalability and commercialization potential, limiting new revenue streams.

Critical steps

01

Define metrics beyond financial ROI

Incorporate impact indicators such as customer retention, product adoption, brand perception, and sustainability to reflect the true value of innovation.

02

Implement advanced analytics platforms

Adopt AI and predictive models that allow for real-time measurement of innovation impact and forecast future profitability.

03

Connect ROI measurement with business strategy

Ensure that insights obtained from measurement directly impact strategic decision-making and resource allocation..

04

Establish a continuous evaluation and adjustment cycle

Shift from static reports to iterative reviews that allow for real-time project adjustments based on performance and market evolution..

05

Automate data integration across the organization

Break down information silos by unifying innovation, operations, sales, and finance data in a common platform.

Future reflection

The measurement of ROI in innovation can no longer be limited to static financial indicators. In an environment where speed of change and uncertainty are the norm, companies

need dynamic models that capture the impact of their initiatives in real time and allow for agile adjustments. The combination of AI, advanced analytics, and automation is redefining how organizations evaluate the return on their innovation investments.

Furthermore, **as personalization, cutting-edge technology, and data-driven decision-making gain relevance**, the entities that train their leaders to analyze metrics and make strategic decisions will be the ones leading the market. By prioritizing an active approach to evaluating the impact of

innovation, companies will be able to anticipate opportunities, reduce risks, and ensure a beneficial effect, both in their profitability and customer satisfaction.

08

Predictive Observability Systems

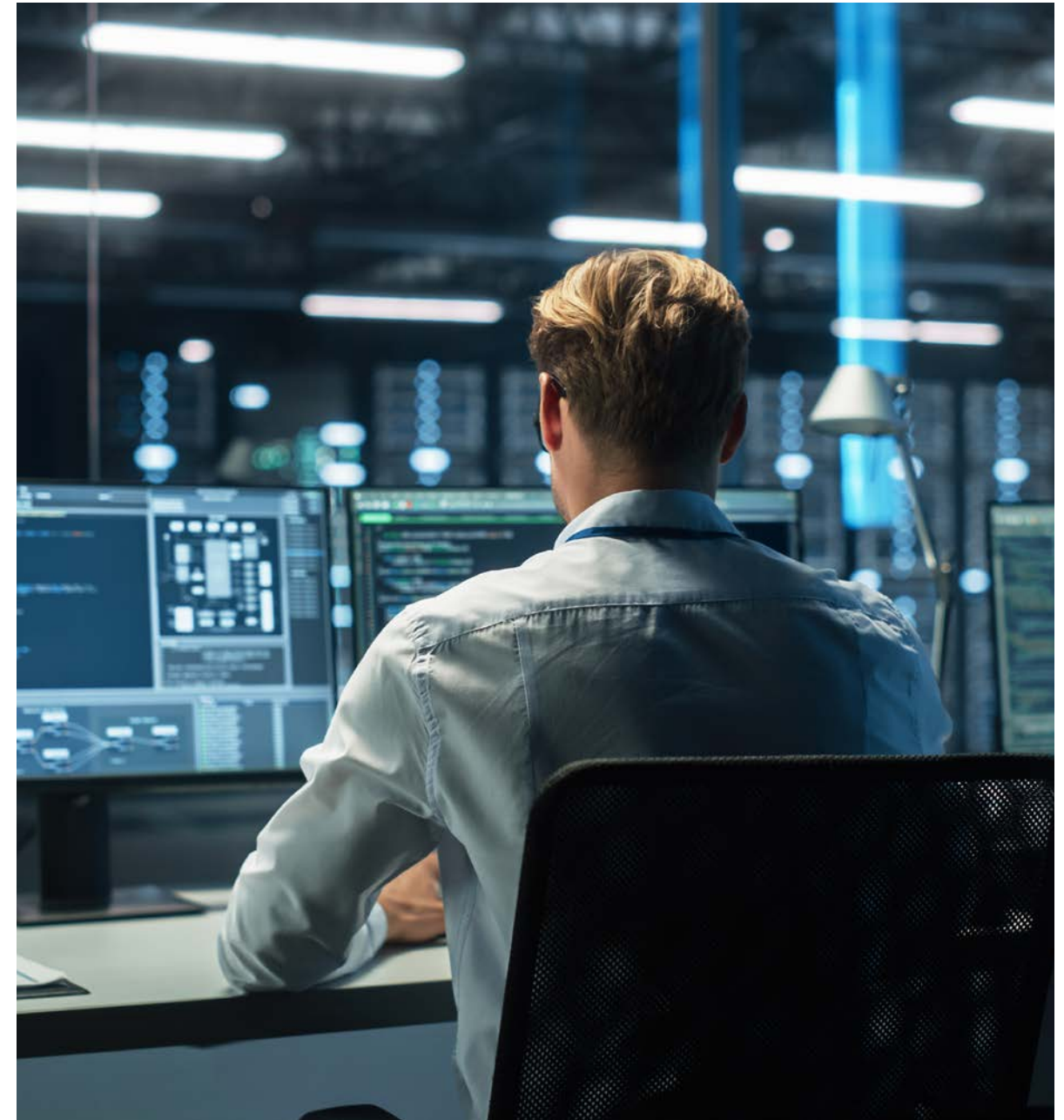
Key Insight

Predictive observability is transforming the way companies monitor and optimize their operations, shifting from a reactive approach to a **model based on anticipating and preventing failures**. Thanks to the combination of AI, Machine Learning, and advanced analytics, organizations can detect patterns, predict incidents, and automate responses, minimizing risks and improving operational efficiency at all levels.

By 2025, companies that integrate predictive observability into their business strategy will be able to reduce maintenance costs, prevent supply chain disruptions, and ensure better resource allocation in critical

areas such as production, logistics, and customer service.

The CIO must focus on three key areas for the effective adoption of predictive observability: infrastructure, data, and business strategy. First, ensuring that the company has the right tools and integration into key processes. Then, structuring data governance models to turn information into actionable decisions. Finally, aligning observability with business objectives, applying it to risk management, resource optimization, and customer experience. Their challenge will be to transform predictive observability into a strategic pillar for the entire organization.



In an increasingly technology-dependent environment, organizations manage complex systems and applications, making **observability** key to optimizing performance and anticipating issues before they occur. Thanks to advances in AI and machine learning, observability has evolved beyond traditional monitoring.

Predictive observability enables organizations to foresee and mitigate failures, bottlenecks, or resource shortages before they impact operations. By leveraging AI and machine learning models, companies can reduce downtime, optimize resource usage, and improve user experience, shifting from reactive management to a proactive approach.

Additionally, frameworks such as the **Observability Maturity Model** help organizations assess and strengthen their practices, allowing them to evolve from basic monitoring to data-driven decision-making, enhancing system reliability and performance.

AIOps y DataOps as key enablers

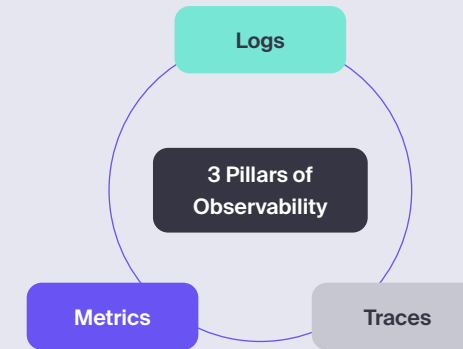
With the **evolution of AIOps, predictive observability becomes more precise and efficient**, using AI to detect, diagnose, and resolve issues in real-time. By analyzing system performance with greater depth, it enables quick identification of root causes and accurate incident mapping.

Integrated throughout the infrastructure, it facilitates **proactive failure detection and prevention**, increasing reliability and reducing downtime. This allows companies to make faster decisions and ensure operational continuity of their critical infrastructure.

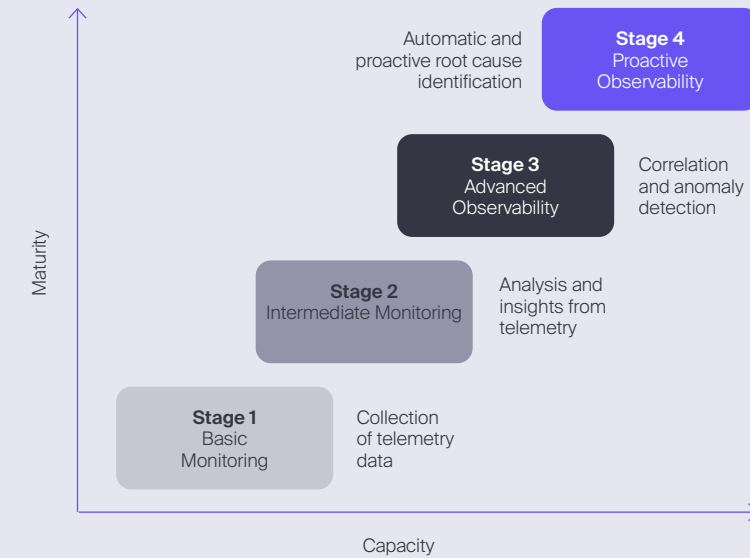
Meanwhile, **DataOps enhances predictive observability** by automating data flows, integrating sources, and ensuring data quality. This provides structured and reliable information, ensuring that predictive models detect problems early and recommend proactive solutions.

As a result, **predictive observability** delivers insights at the right moment, optimizing operational efficiency and improving strategic decision-making.

3 Pillars of observability



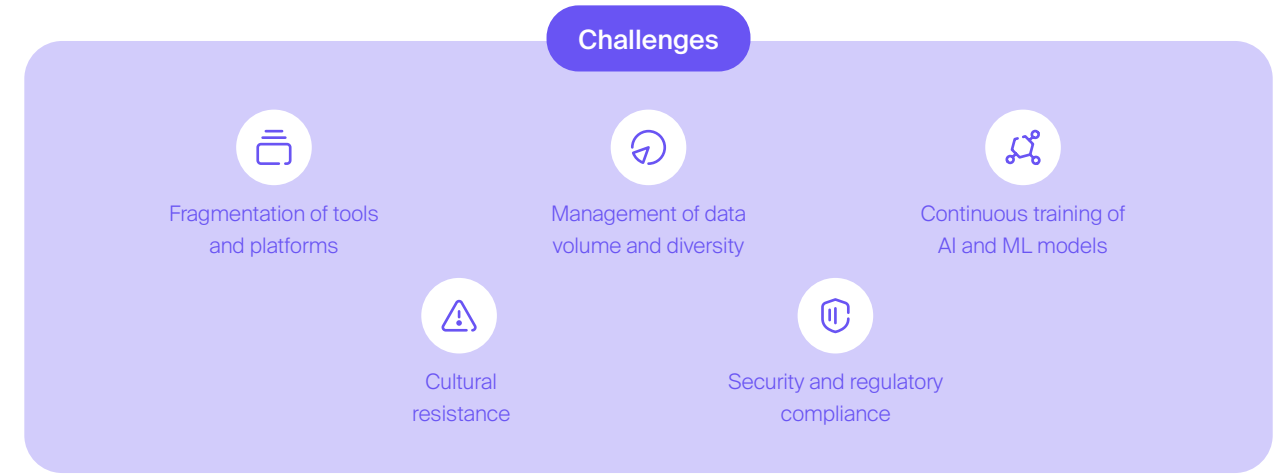
Maturity model of observability



Modern observability platforms incorporating predictive capabilities

Various tools, solutions, and platforms are enabling organizations to efficiently manage and optimize their systems through predictive observability.

- **AI-driven monitoring solutions** (such as IBM Instana) offer proactive problem resolution, anomaly detection, and real-time observability. With capabilities like intelligent alerts, root cause analysis, and scalable monitoring, they help maximize performance and reduce downtime.
- **Predictive observability platforms** (such as New Relic) use AI to proactively detect anomalies and predict system performance. This allows teams to accelerate problem resolution through data-driven insights, improving user experience and operational reliability.
- **Platforms integrating predictive, causal, and generative AI** (such as Dynatrace Davis AI) in enterprise and security environments enable automatic anomaly forecasting, dynamic resource adjustment, and detailed reporting. Additionally, these solutions automate actions, from notifications to process orchestration, optimizing system management.



Success lies in leveraging predictive observability while overcoming implementation challenges

Predictive observability systems provide significant benefits for organizations seeking to enhance their operations and remain competitive in a rapidly evolving digital environment. One of their key advantages is the ability to **anticipate and resolve issues before they impact operations**, reducing downtime and ensuring seamless service delivery.

Additionally, these AI-powered systems optimize resource utilization, accelerate processes, and lower operational costs. They also contribute to regulatory compliance and security by providing continuous monitoring to meet regulations and detect risks in real time. Predictive observability further supports sustainability goals by optimizing energy consumption and reducing the carbon footprint. Lastly, by minimizing disruptions, it **enhances customer experience and strengthens brand loyalty**.

Tool fragmentation complicates data consolidation within a unified analytical framework, affecting visibility into performance and potential failures. Moreover, managing high volumes and diverse data requires filtering and correlation to prevent false alerts and operational overload. Implementing AI and Machine Learning for predictive anomaly detection demands continuous training, algorithm adjustments, and bias elimination to improve accuracy. Security and compliance are also critical, as observability involves monitoring sensitive operational data, requiring **strict protection measures and alignment with regulatory frameworks** such as GDPR. Finally, resistance to change can slow adoption, especially in teams still relying on reactive incident management. Overcoming these challenges is essential to unlocking the full potential of predictive observability and transforming operational management with greater resilience and efficiency.



Why is it a priority in 2025?

Prevention of critical disruptions: Predictive observability allows for anticipating failures in systems, networks, and applications, preventing unexpected outages that impact business continuity.

Early anomaly detection: Identifying unusual patterns in transactional data, production flows, or application performance reduces risks before they escalate into major problems.

Automated incident response: Integration with AIOps enables proactive action on alerts, reducing resolution times and preventing unnecessary escalation of problems.

Greater control in hybrid and distributed IT environments: The growing complexity of technology ecosystems makes predictive monitoring indispensable for unified supervision across clouds, data centers, and edge environments.



Consequences of not addressing it

Unexpected failures affecting critical services: Without predictive monitoring, incidents can impact the availability of essential applications, affecting operations and customer experience.

Greater exposure to cyberattacks: The absence of predictive detection prevents the identification of anomalous behaviors or unauthorized access, leaving security gaps unaddressed in time.

Delays in identifying systemic issues: Without predictive capabilities, teams rely on manual methods to diagnose failures, prolonging response time and affecting business continuity.

Inability to scale infrastructures: Without predictive observability, capacity and resource planning becomes reactive, which can lead to system overload or underutilization of critical infrastructure.

Critical steps

01

Adopt AIOps for anomaly detection

Implement platforms that use AI and machine learning to analyze patterns, anticipate failures, and automate responses before incidents occur.

02

Integrate observability in hybrid environments

Ensure that predictive monitoring systems cover the entire infrastructure, including public, private, on-premise clouds, and edge environments.

03

Automate response to critical failures

Configure self-recovery mechanisms that trigger corrective actions without human intervention to minimize the impact of incidents.

04

Improve traceability and quality of observability data

Optimize real-time data collection, classification, and analysis to generate accurate and reliable insights that guide decision-making.

05

Optimize capacity and performance with predictive models

Use advanced analytics to predict infrastructure needs, optimize resource consumption, and prevent scalability issues.

Future reflection

In a context where digitalization is rapidly advancing and operational resilience becomes an essential factor, the application of predictive observability will no longer be

merely a competitive advantage but a strategic necessity. Companies will need to implement proactive strategies to anticipate errors, enhance performance, and ensure service continuity in increasingly complex environments. The incorporation of AI and advanced analytics will facilitate the precise identification of irregularities, the reduction of

operational costs, and the strengthening of security, thus ensuring system stability and efficiency.

In the coming years, the ability to integrate advanced predictive models into hybrid and distributed environments will be key to ensuring a scalable and adaptable infrastructure.

Observability will no longer be limited to IT monitoring but will extend to business processes, supply chain, and customer experience, becoming a strategic pillar for resource optimization and risk mitigation.

09

Open Data Ecosystems: Promoting Multisectoral Collaboration

Key Insight

Open data ecosystems are transforming how businesses, governments, and strategic sectors share, analyze, and use information to create value. These environments facilitate **standardized, secure, and accessible data exchange**, fostering innovation, process optimization, and the development of new business models.

By 2025, the adoption of open data will be key to improving interoperability across sectors, accelerating digitalization, and enhancing data-driven decision-making. Organizations that actively participate in these

ecosystems will be able to access real-time information, identify market opportunities, and **optimize their strategies** with greater precision.

The CIO will play a fundamental role in integrating open data platforms, **ensuring that the company leverages external data sources without compromising privacy, security, or regulatory compliance.**

Additionally, the CIO must define quality and governance standards to ensure that the use of open data remains reliable, scalable, and aligned with the organization's strategic objectives.



In a constantly evolving business environment, **data management and exchange** have undergone radical transformation. Historically, companies have closely guarded their information, but the rise of artificial intelligence and other emerging technologies has led to the development of open data ecosystems, redefining the rules of the game.

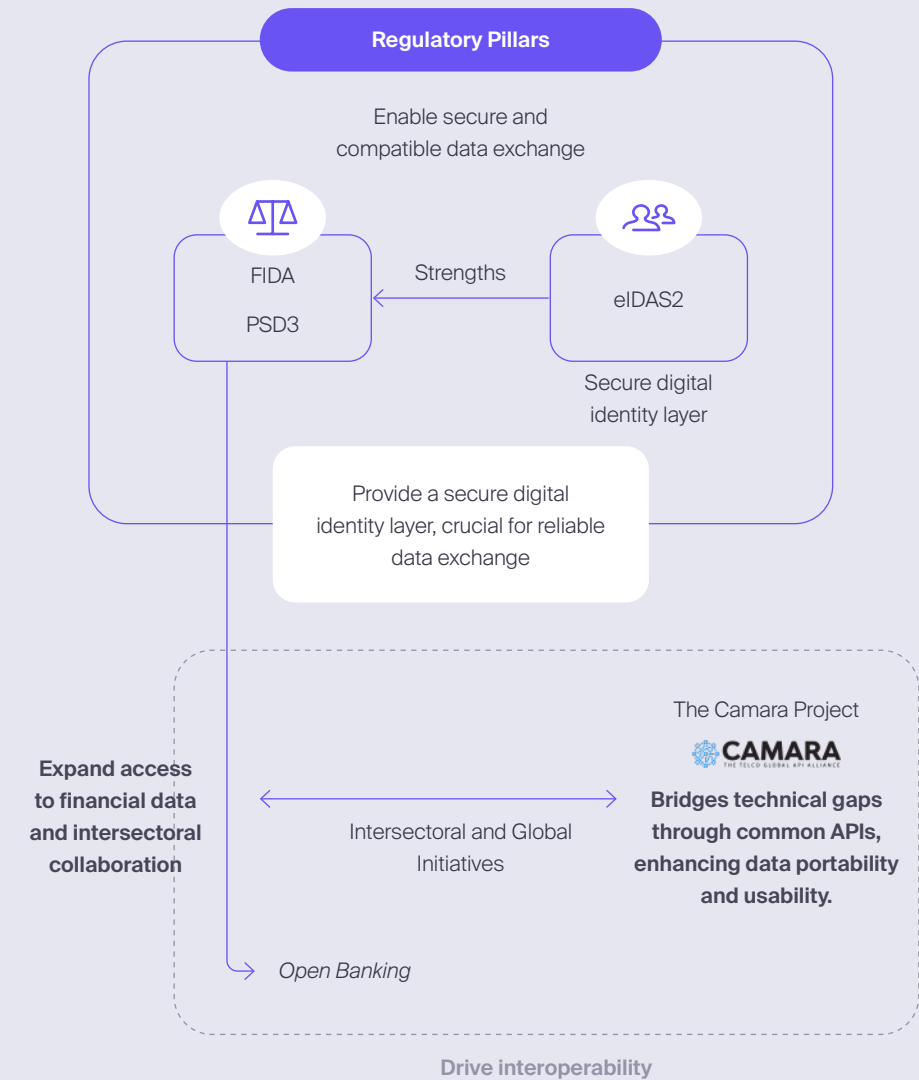
These environments enable data sharing across industries, driving **innovation, operational efficiency, and the creation of new business models.**

Adopting an **open and interoperable approach** not only optimizes internal processes but also strengthens collaboration, accelerates the development of advanced solutions, and enhances customer experience in an increasingly connected market.

Open data will play a key role

- Open data is essential for producing high-quality outcomes, allowing companies to **leverage diverse data sources, improve public administration operations, and empower citizens** to participate in decision-making.
- In **Europe**, open data adoption has significantly increased, with EU member states improving policies by 28.6% and reaching **64% maturity in open data portals.**
- This progress is further reinforced by **new regulations** such as **FIDA, eIDAS, and PSD3**, ensuring fair data access, fostering a competitive data market, and driving innovation.
- The impact will be seen in new and innovative services at competitive prices. The **European data strategy** will play a key role in digital transformation, supporting digital objectives for 2030.
- Additionally, growth is also driven by key trends such as **open banking**, which is revolutionizing the financial industry and enabling innovative and personalized financial products.

Secure, interoperable, and innovative open data ecosystems



Open data ecosystems can be leveraged in several impactful ways

Open data ecosystems foster synergies that benefit both organizations and society by driving more efficient operations, stronger partnerships, and a dynamic and competitive environment. By leveraging these ecosystems, companies can:

- Build predictive models that forecast trends, improve decision-making, and reduce risks, enhancing efficiency and planning.
- Collaborate with governments to create smart city solutions using open data on traffic patterns, energy consumption, or public safety.
- Create targeted campaigns by obtaining more detailed insights into customer preferences, locations, and online behavior.
- Form strategic partnerships with other organizations, expanding market reach and unlocking new opportunities.

Key enabling technologies that support open data ecosystems

- **IA.** Plays a key role by enabling companies to analyze large volumes of data from different sources, extract insights, predict trends, and automate processes.
- **GenAI.** Enhances data quality, identifies gaps, and improves metadata. Fosters collaboration within the ecosystem by providing interactive tools that support ideation, feedback, and the creation of new solutions..
- **Data Clean Rooms.** Ensure privacy and security in open data ecosystems, allowing secure data sharing for analysis.
- **APIs.** Facilitate integration and data exchange across systems.



To drive financial innovation, companies must overcome security, governance, and standardization challenges in open data ecosystems

Open data ecosystems are revolutionizing the financial sector, driven by regulations such as PSD2, PSD3, and FIDA, which promote secure and efficient access to financial data. The implementation of these open models not only enhances market competitiveness but also presents a significant economic opportunity.

Expanding access to financial information enables **more accurate risk assessments**, simplifying credit issuance for individuals and businesses with limited financial histories. This is particularly crucial for micro, small, and medium-sized enterprises, which often face challenges in securing funding.

Additionally, data standardization and the use of open APIs reduce friction in financial intermediation, accelerating processes such as mortgage applications and digital identity verification.

Open data ecosystems face several challenges, such as the fragmentation of data standards, which hinders interoperability across sectors. Privacy protection and data security remain critical concerns, especially in light of breach risks and compliance with regulations like GDPR. Additionally, there is cultural and organizational resistance to data sharing due to fears of losing competitive advantages or exposing sensitive information.

The scalability and sustainability of these ecosystems also pose challenges, as they require continuous resources to maintain data quality and accessibility. Lastly, the lack of clarity in governance models can create uncertainty about who is responsible for managing, updating, and verifying shared data. Overcoming these challenges is essential to fully harness the potential of **cross-sector collaboration through open data ecosystems**.

Why is it a priority in 2025?

Better decision-making based on external data: Access to open data improves predictive models and machine learning, optimizing fraud detection, demand forecasting, and strategic decision-making.

New data-driven business models: Open data enables the development of products and services tailored to market needs, facilitating the creation of new revenue streams through data analytics.

Personalized offerings and customer experience: Access to open data on consumption trends, mobility, or digital behavior allows for the adjustment of products and services based on real user preferences.

Market access and regulatory compliance: Regulations such as the EU Data Act drive the use of open data to ensure transparency and interoperability, facilitating expansion in regulated sectors.



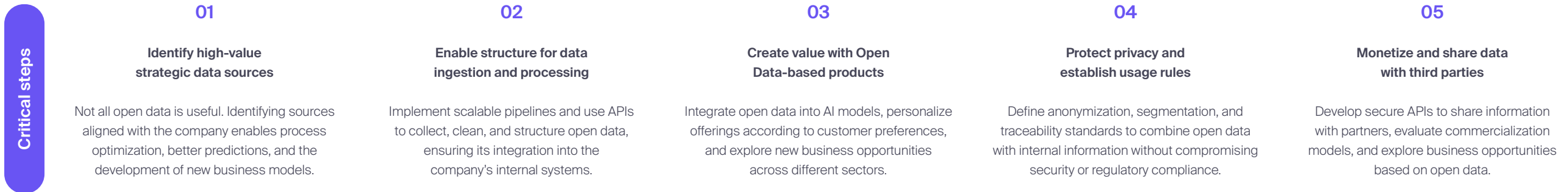
Consequences of not addressing it

Limitations in AI development and advanced analytics: Without open data, AI models will be less accurate, affecting prediction and operational optimization capabilities.

Lower adaptability to market demands: Not utilizing open data will hinder real-time service personalization, potentially reducing customer loyalty.

Isolation from innovation and collaboration ecosystems: Companies without open data strategies may be excluded from initiatives with key stakeholders, limiting access to new business opportunities.

Greater dependence on private data and increased costs: Without access to open data, companies may become dependent on closed providers with high costs, impacting scalability and profitability of digital products.



Future reflection

Open Data will no longer be just a publicly accessible resource but will become a **strategic pillar of innovation and business growth**. Companies that integrate it into their

business models will be able to create more personalized products, optimize operations, and generate new revenue streams based on open data analysis. Automation in Open Data management will allow organizations to make real-time decisions, develop hyper-personalized services, and anticipate market changes with greater precision.

In the coming years, we will see new cross-sector collaboration ecosystems where the **combination of open data with artificial intelligence will lead to innovative solutions** in mobility, healthcare, sustainability, and commerce.

Companies that successfully transform Open Data into a strategic asset will not only enhance their competitiveness but also lead the creation of business models based on shared information and the data economy.

Strategic Compliance: The New EU Legislative Framework

Key Insight

The new EU regulatory framework is redefining how companies manage privacy, AI, and cybersecurity. Regulations such as the AI Act, the Data Act, and the Digital Services Act establish strict requirements for transparency, interoperability, and data protection, making regulatory compliance a central pillar of digital strategy. Well-managed compliance can become a competitive differentiator, enabling companies to **operate more securely in digital environments** and access markets with high technological governance standards.

By 2025, proactive compliance integration will be key to **operating in global markets without friction**, reducing risks, and building trust with customers and partners.





The CIO will play a critical role in aligning technology with regulations, driving the implementation of automated compliance frameworks, integrating digital auditing tools, and designing strategies that balance security, transparency, and growth. Their ability to anticipate regulatory changes and adapt technological infrastructure will be essential to **ensuring business scalability in an evolving regulatory landscape**.



The European Union has introduced new regulations such as the **AI Act, PSD3, FiDA, and eIDAS2**, aimed at strengthening digital security, transparency, and innovation across various sectors. These regulations create a standardized legal framework for digital payments, AI governance, financial data access, and electronic identity verification.

For companies, these new regulations present an opportunity to gain a competitive advantage by ensuring **greater consumer trust** through secure and efficient digital services.

However, they also require careful investment in compliance procedures, particularly those related to **data protection and cross-border transactions**. The harmonization of standards will reduce market fragmentation, facilitating expansion into other EU markets, but companies must be proactive in understanding and implementing evolving requirements.

Law	Corporate Sustainability Reporting Directive (CSRD)	AI Act	Payment Services Directive (PSD3)	Digital Finance Act (FiDA)	eIDAS2 (Regulation on Electronic Identification and Trust Services)
Year of Enforcement	2023	2024	Planned for 2025	Planned for 2027	2024
Scope					
Brief Description	Requires large companies to report on their environmental, social, and governance impacts, improving transparency.	Aims to promote the responsible development and deployment of AI across the EU.	Builds on PSD1 and PSD2, further refining and enhancing the digital payments landscape within the EU.	Regulates the secure exchange of financial data and establishes rules on consent and data protection.	EU member states must provide digital identity wallets within 24 months of the law's adoption, allowing identification, storage, and electronic signatures across Europe.

Compliance and trust as growth enablers

Compliance as a Competitive Advantage

- **Compliance as a strategic asset** to enhance positioning, efficiency, and trust.
- **Facilitates business growth and scalability.**
- **Strengthens** reputation in regulated sectors such as banking and AI.
- **Optimizes processes** and reduces operational risks.

Trust-Centered Design

- **Trust by Design and Responsible AI** promote transparency and reliability.
- **Integrated risk management** from the start.
- **Ensures long-term sustainability** and trust.

Stronger Regulations and Readiness

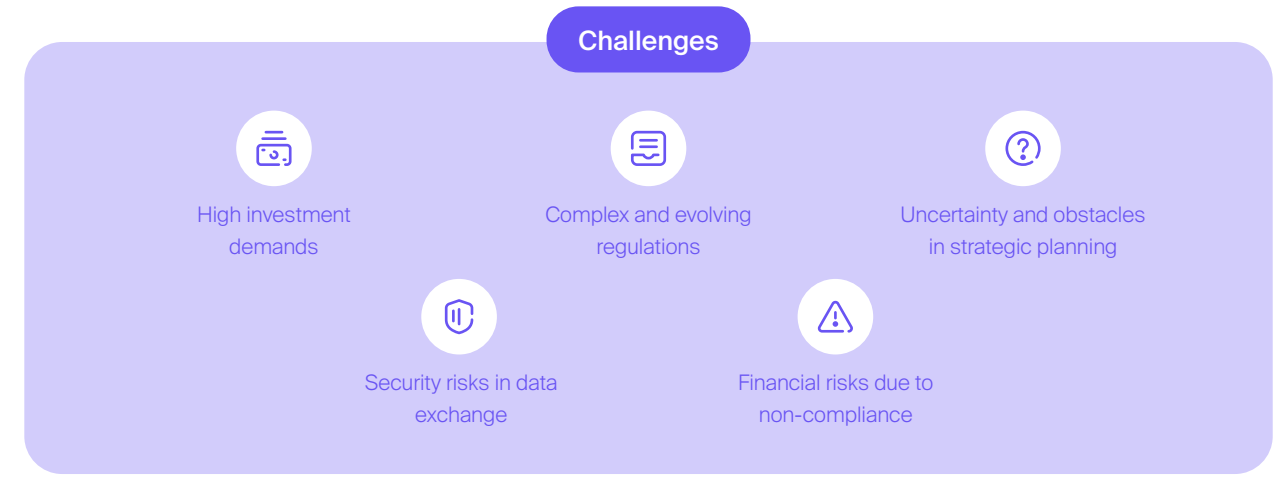
- **Evolving regulations**, such as the AI Act, drive adaptation.
- **Proactive approach** to meeting new requirements.
- **Opportunity** to enhance credibility and trust.
- **Streamlines** compliance and enables responsible growth.

Security, Privacy, and Data Governance

- **Data security and privacy**, key priorities.
- **Protection of confidential data** with effective governance.
- **Encryption and access controls** to meet regulations.
- **Proactive approach** to mitigating risks.

Cross-Sector Collaboration

- **Key collaboration** between companies, regulators, and technology leaders.
- **Trusted environments (TEs)** and interdisciplinary governance bridge gaps.
- **Active engagement** with stakeholders strengthens transparency and resilience.
- **Encourages compliance** and drives responsible innovation.



Companies must balance the opportunities and challenges of the new EU regulatory framework

The implementation of the **new European Union regulatory framework** brings significant advantages in terms of security, transparency, and innovation. Regulations such as the AI Act and PSD3 strengthen data protection through sophisticated authentication systems and risk monitoring, significantly reducing vulnerability to fraud and cyberattacks.

Meanwhile, the **CSRD promotes corporate responsibility** by requiring comprehensive sustainability reporting, increasing investor and customer trust. On the other hand, FiDA and eIDAS2 drive interoperability between financial and digital services, fostering a more accessible and competitive data ecosystem.

The harmonization of these regulations at a European **scale removes regulatory barriers and promotes innovation** by encouraging tailored product development and more efficient business models. In short, this regulatory framework not only strengthens market stability but also creates new opportunities for digital transformation and sustained business development.

Moreover, the **complexity and constant evolution of regulations** can create uncertainty and hinder strategic planning, forcing entities to continuously adjust their internal processes. Likewise, the requirement to share financial information under FiDA raises concerns about cybersecurity and interoperability with third parties.

Ultimately, the **risk of non-compliance penalties** can have a severe financial impact, compelling companies to take a proactive approach to regulatory management to avoid sanctions and maintain their competitiveness in the market.

Why is it a priority in 2025?

Key regulations shaping the market: The AI Act will regulate AI usage in products and services, while the Data Act will establish interoperability requirements. Adapting in time will prevent market restrictions.

Avoiding fines and operational restrictions: New regulations impose multi-million-dollar penalties and trade limitations on companies failing to meet data governance and algorithmic transparency standards.

Competitive differentiation through trust and security: Companies that strategically manage compliance will position themselves as trusted partners, where transparency and regulatory compliance are key factors.

Compliance automation to improve efficiency: The adoption of advanced tools for automated audits, data traceability, and risk management will enable companies to comply with regulations without slowing down innovation.



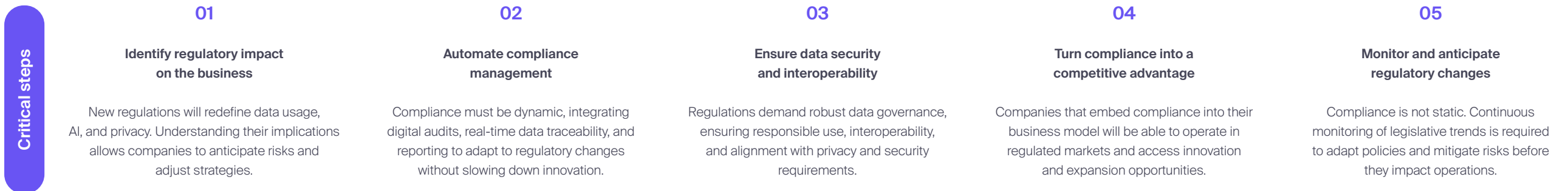
Consequences of not addressing it

Regulatory market barriers and expansion challenges: Companies that fail to comply with new interoperability and data protection standards will face difficulties entering regulated markets.

Financial risks due to fines and litigation: Non-compliance with regulations like the AI Act and Digital Services Act will lead to significant fines, lawsuits, and operational restrictions, impacting financial stability.

Loss of business opportunities: Certain industries will require regulatory certifications to integrate technological solutions. Failing to meet these requirements will limit participation in bids and strategic agreements.

Obstacles to scaling and innovating with new technologies: Without an integrated compliance framework, companies will face delays in adopting new technologies, losing their competitive edge.



Future reflection

The implementation of new regulatory frameworks goes beyond mere compliance. It represents a transformation in how companies manage security, transparency, and

innovation. The adoption of the AI Act, PSD3, FIDA, CSRD, and eIDAS2 will reshape business operations by 2025, fostering more resilient business models with automated processes, secure access to information, and stronger sustainability and cybersecurity standards.

Regulatory compliance will no longer be just a legal requirement—it will become a competitive differentiator. Companies that integrate compliance into their digital strategy will be able to access regulated markets, strengthen trust with customers and partners, and accelerate the adoption of AI, data, and automation without legal risks. As regulations evolve,

new business models will emerge based on compliance monetization, such as transparency certifications, automated audits, and secure data exchange platforms. Organizations that take a proactive approach will transform compliance into a driver of growth and innovation.



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