# Gartner

**Gartner for Data & Analytics Leaders**

# Over 100 Data, Analytics and AI Predictions Through 2030

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Our annual predictions highlight the continued impact and influence of data, analytics and increasingly AI across an ever-broadening range of industries and initiatives. IT leaders should use these predictions to enhance their strategic vision and delivery programs.

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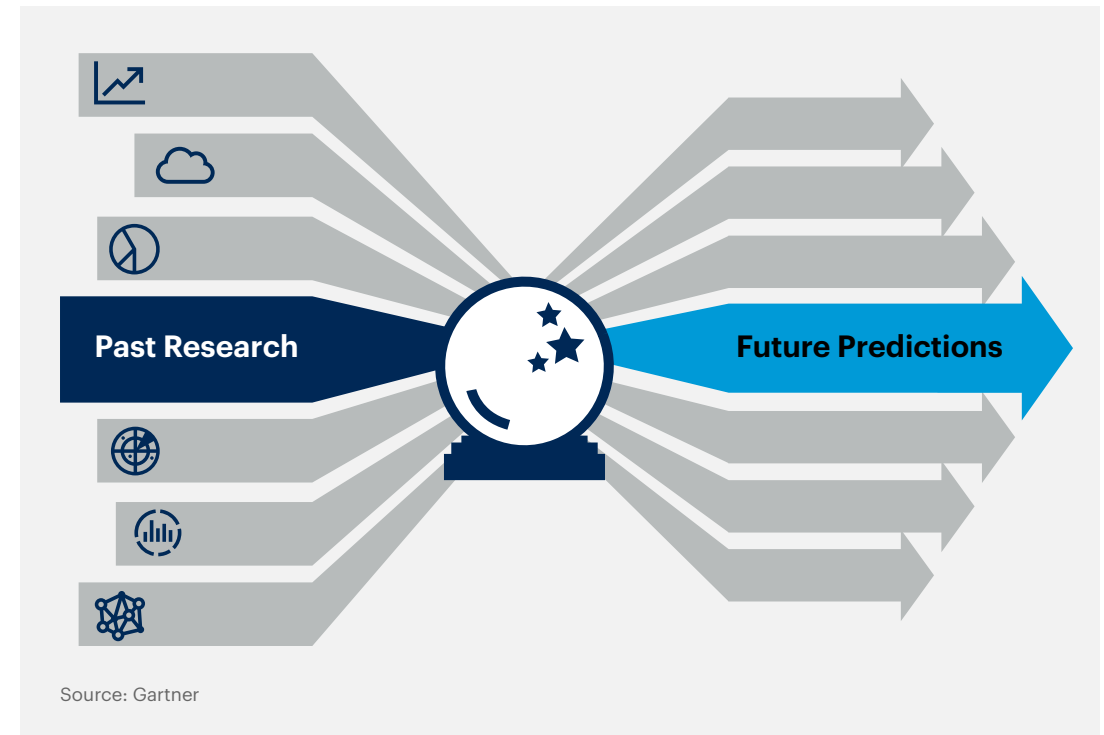**Alan D. Duncan**
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## Analysis

Strategic planning assumptions (SPAs) — also known as "Gartner predictions" — are statements of Gartner's positions and actionable advice about the future (see Figure 1).

SPAs help our clients identify, understand and plan for change, and the business and human impacts arising. In particular, our data and analytics SPAs examine how such capabilities might change in the coming years and how you might use these to innovate and strengthen your capability.

Gartner clients have come to rely on our annual predictions both as input for their strategic plans and as alerts to potentially disruptive changes. For most enterprises, investments and other business decisions during the next few years are likely to be made by finding a point of balance between the old and the new. Anticipating change is more important than ever, and predicting the point of balance then becomes a critical part of any strategic plan.

As evidenced by its pervasiveness within Gartner's published Predicts 2024 research available to Gartner clients, data, analytics and AI are critical elements across nearly all industries, business functions and IT disciplines in both the private and public sector. Most significantly, data, analytics and AI are key to a successful digital business. This collection of more than 100 data-and-analytics-related SPAs through 2030 summarizes predictions released in Gartner's Predicts 2024 series. Data and analytics leaders should include these in their planning for successful strategies.

Figure 1: Gartner's Mainstream Predicts



Source: Gartner

# Research Highlights

2023 was the year everything changed as generative AI (GenAI) exploded into the collective consciousness through ChatGPT, rapidly followed by a flurry of product innovation in the AI space. AI became immediately accessible to all as never before, and therefore highly visible across our organizations all the way up to the executive.

Data is the foundation of the promise of AI, representing a golden opportunity for chief data and analytics officers (CDAOs) and other data and analytics (D&A) leaders, potentially giving them the keys to the kingdom. Without AI-ready data, the promise of AI will fail to materialize. Foundational concepts of strong data management and governance are now on the critical path to success, and happily, these can themselves benefit from an accelerated path to impact powered by AI.

Now as AI investment and hype are at frenetic levels, 2024 is the make-or-break year for D&A. As such, these Predicts now are tinged with greater risk — the promise of success, but filled with a need for clarity, priority and realizing value. Can data, analytics and AI deliver the goods?

The intense visibility and "heat" on AI presents a new opportunity for the CDAO to bring D&A into the consciousness and interest of those who may have previously resisted, creating nearly unlimited possibilities to create business value with organizationwide influence and impact. In this rapidly evolving landscape, speed to embrace and adapt to change will be a key differentiator between data leaders who succeed and those who do not.

Note that:

Planning for possible alternative future scenarios is a vital aspect of modern leadership and required operating practices given the hopes pinned on AI and the conflicted economic situation we face.

The point of an SPA is not to be "right." The point is to provoke thinking and provide direction.

Use SPAs as a basis for defining, refining and stress-testing your D&A strategy and program planning.

Evaluate any near-term flags that indicate whether a prediction is trending toward truth or away from it in order to prioritize investment in your D&A operating model.

In general, predictions with longer time horizons have a lower probability of coming true than those with shorter time horizons.

## Core Data and Analytics Predictions

**Data and Analytics Leaders, Strategy and Innovation**

The only constant is change. It can take many forms: cultural, technical or economic. CDAOs often confront an environment that is volatile, complex and ambiguous. To be successful, they must act as organizational champions, value drivers, change agents and innovators.

Predicts 2024: Chief Data and Analytics Officers Must Lead Change

- By 2027, 60% of multinational corporations will adopt franchise models for their regional chief data offices that address local maturity levels and regulatory environments.

- By 2026, 75% of CDAOs who fail to make organizationwide influence and measurable impact their top priority will be assimilated into technology functions.

- By 2027, more than half of CDAOs will secure funding for data literacy and AI literacy programs, fueled by enterprise failure to realize expected value from GenAI.

- By 2028, 25% of CDAO vision statements will become "decision-centric," surpassing "data-driven" slogans, as human decision-making behaviors are modeled to improve D&A value.

- By 2026, the CDAO's ability to deliver data and AI literacy, culture change and a skilled workforce will be a top three determining factor in supporting business strategy.

Many D&A governance and master data management (MDM) programs continue to fail despite decades of effort. Working harder at cataloging data issues and building large committees does not work. Successful best practices exist but are not being used. To succeed, D&A leaders should jettison outmoded practices.

Predicts 2024: Data and Analytics Governance Requires a Reset

- By 2027, 80% of D&A governance initiatives will fail due to a lack of a real or manufactured crisis.

- By 2027, 75% of data, digital or analytics products will be made redundant, or marketplaces shut down, as "too few 'customers' came to use them."

- By 2027, 60% of organizations will fail to realize the anticipated value of their AI use cases due to incohesive ethical governance frameworks.

- By 2027, 40% of CDAOs will have rebranded governance as business enablement of strategic business initiatives from the outset.

- By 2027, the application of GenAI will accelerate time to value of D&A governance and MDM programs by 40%.

**Analytics, Business Intelligence and Data Science**

Analytics and AI continue to collide, with repercussions in multiple domains. To leverage emerging opportunities and mitigate unknown risks, D&A leaders must address the impact of AI analytics and data science ecosystems, user behavior, roles and decisions.

Predicts 2024: How Artificial Intelligence Will Impact Analytics Users

- By 2025, 60% of analytics and business intelligence (ABI) platforms will claim to enable decision intelligence, but only 10% will have a decision-centric UI to model and track decisions.

- By 2025, 90% of current analytics content consumers will become content creators enabled by AI.

- By 2025, 40% of ABI platform users will have circumvented governance processes by sharing analytics content created from spreadsheets loaded to a GenAI-enabled chatbot.

- By 2027, 75% of new analytics content will be contextualized for intelligent applications through GenAI, enabling a composable connection between insights and actions.

- By 2027, 50% of data analysts will be retrained as data scientists, and data scientists will shift to AI engineers.

**By 2027**
**75%** of new analytics content will be contextualized for intelligent applications through GenAI, enabling a composable connection between insights and actions.

**Artificial Intelligence**

GenAI is poised to accelerate all aspects of a tech CEO's business. Winners will be those who adopt the technology innovation quickly to gain an advantage. From the way the organization is managed to how products and services are sold to customers, the defining characteristic is speed.

Predicts 2024: GenAI Accelerates Product Cycles

- By 2028, new feature- and function-driven software product differentiation will achieve at most a six-month competitive advantage due to rapid AI innovation.

GenAI is poised to have a profound impact on how work gets done. The implications are beginning to play out, and these predictions point the way toward a more productive digital employee experience. Not all consequences are positive, and oversight is needed.

Predicts 2024: AI's Impact on the Employee Experience

- By 2028, GenAI will be so tightly woven into personal and team productivity applications that it will scarcely merit comment by employees and will require little, if any, oversight.

- By year-end 2025, AI agents will attend over 25% of virtual and hybrid meetings, causing a shift in attendance and engagement by humans.

- By 2028, enterprises will enhance productivity by replacing 60% of SaaS workplace applications that lack GenAI-driven capabilities with those that do.

- By 2026, 50% of governments worldwide will enforce use of responsible AI through regulations, policies and the need for data privacy.

- By 2027, organizations will shift 80% of marketing content spend to GenAI services, but effectiveness will plummet by 50% due to overwhelmed consumers.

GenAI technologies are emerging at an unprecedented pace. This poses significant challenges for IT leaders as they struggle to stay abreast of industry developments and determine their evolution. We offer bold and actionable predictions on the future of GenAI technologies.

Predicts 2024: The Future of Generative AI Technologies

- By 2026, 75% of businesses will use GenAI to create synthetic customer data, up from less than 5% in 2023.

- By 2028, one-third of interactions with GenAI services will invoke action models and autonomous agents for task completion.

- By 2027, more than 50% of the GenAI models that enterprises use will be domain-specific — specific to either an industry or business function — up from approximately 1% in 2023.

- By 2027, more than half of the selection of development assets from technology marketplaces will be performed by GenAI orchestration.

**Data Management and Infrastructure**

Security and risk management (SRM) leaders need to adopt a composable view of data security. This research predicts that applying data security innovations to pain points and advanced use cases will help SRM leaders' organizations leverage their data for almost any use case.

Predicts 2024: IAM and Data Security Combine to Solve Long-Standing Challenges

- Through 2026, organizations adopting top data practices within their identity and access management (IAM) program will realize 40% improvement in time-to-value delivery for IAM and data security program objectives.

- By 2027, organizations faced with AI and data security requirements will standardize on policy-based access controls to unlock the value from more than 70% of their data.

- By 2027, 70% of organizations will combine data loss prevention and insider risk management (IRM) disciplines with IAM context to identify suspicious behavior more effectively.

# IT Leadership Predictions

2023 was the year ChatGPT and GenAI unleashed massive creativity and productivity potential. But the breadth and depth of the innovation affect everything, and there is no simple path. This research offers insights for executive leaders into understanding how predictions shape our thinking

Gartner's Top Strategic Predictions for 2024 and Beyond — Living With the Year Everything Changed

- By 2027, the productivity value of AI will be recognized as a primary economic indicator of national power.

- By 2027, GenAI tools will be used to explain legacy business applications and create appropriate replacements, reducing modernization costs by 70%.

- By 2028, there will be more smart robots than frontline workers in manufacturing, retail and logistics due to labor shortages.

- Through 2026, 30% of large companies will have a dedicated business unit or sales channels to access fast-growing "machine customer" markets.

- By 2028, enterprise spend on battling malinformation will surpass $30 billion, cannibalizing 10% of marketing and cybersecurity budgets to combat a multifront threat.

- By 2028, the rate of unionization among knowledge workers will increase by 1,000%, motivated by the adoption of GenAI.

## By 2027
GenAI tools will be used to explain legacy business applications and create appropriate replacements, **reducing modernization costs by 70%.**

Technology innovation leaders must consider forces across seven areas of Gartner's Tapestry Framework. These forces will impact people, principles and profit while encouraging organizations to accelerate innovation to mitigate and exploit the predictions here, from the Gartner Futures Lab.

Predicts 2024: Prepare Today for the Impact of Future Forces

- By 2025, 70% of enterprises will deploy at least one enterprisewide GenAI application, but less than 10% will realize the expected ROI.

- By 2025, low trust in AI-generated content will reduce customer engagement by 50%, driving new urgency that makes engagement the top indicator of performance.

- By 2028, multiple members of the G20 will adopt regulations to clearly mitigate the risks of misuse and perceived sentience of AI, setting the groundwork for defined AI rights.

**Cloud Computing**

Cloud computing's role as a key driver of technology innovation continues unabated. Infrastructure and operations (I&O) leaders look to the cloud to drive their initiatives around GenAI, composable applications and sustainability while keeping a keen eye on cloud expenditure and sovereignty challenges.

Predicts 2024: Unraveling Tomorrow's Cloud Computing Landscape

- By 2027, 70% of enterprises adopting GenAI will cite sustainability and digital sovereignty as top criteria for selecting between different public cloud GenAI services.

- By 2027, 80% of AI-generated SaaS applications will be up to 80% composite for efficiency of human-AI digital engineering.

- GreenOps and sustainability-enabled monitoring services to manage the carbon footprint of cloud workloads will rise from 5% in 2024 to 40% by 2027.

- Through 2026, 70% of organizations will expand their cloud investments with specialty cloud providers to support specific business requirements including digital sovereignty.

**Data and AI Security and Privacy Predictions**

Gartner predicts that AI will durably disrupt cybersecurity in positive ways but also create many short-term disillusions. SRM leaders need to accept that 2023 was only the start for GenAI, and prepare for its evolutions.

Predicts 2024: AI & Cybersecurity — Turning Disruption Into an Opportunity

- By 2028, multiagent AI in threat detection and incident response will rise from 5% to 70% of AI implementations to primarily augment, not replace, staff.

- Through 2025, GenAI will cause a spike of cybersecurity resources required to secure it, causing more than a 15% incremental spend on application and data security.

- By 2026, 40% of development organizations will use the AI-based autoremediation of unsecure code from application security testing (AST) vendors as a default, up from less than 5% in 2023.

- By 2026, attacks using AI-generated deepfakes on face biometrics will mean that 30% of enterprises will no longer consider such identity verification and authentication solutions to be reliable in isolation.

## Predicts 2024: CPS Security — Turbulence Ahead

- By 2027, government advisories and novel, AI-based attacks will spur 65% of organizations to embrace CPS threat modeling, up from less than 25% today.

- By 2028, 75% of end users will have to update their Purdue model–based architectures to account for cyber-physical systems that use IP, cloud or private, mobile-networks-based communications.

**Smart assets will want to send data from the built-in smart sensors to a plant optimization platform. This platform may be on-premises or in the cloud, but it will most likely not reside within the same realm as the smart asset.**

Predicts 2024: CPS Security — Turbulence Ahead

Organizations want to benchmark their zero-trust networking progress against a maturity model. SRM leaders need to know where their peers are and how to set the baseline and future maturity goals for their zero-trust networking implementations.

## Predicts 2024: Zero Trust Journey to Maturity

- By 2027, 70% of organizations will stall in their deployments of zero trust unless better technology is developed that functions as policy decision points by vendors.

- Through 2025, over 90% of all SD-WAN, campus switching and data center switching products implemented by enterprises will not support the three primary requirements of zero-trust networking.

Augmented cybersecurity leadership ties human talent to technology capabilities to balance organizational growth aspirations and cyber risk. SRM leaders of the future will be AI-enabled, human-centric decision makers who effectively steer through turbulent times.

## Predicts 2024: Augmented Cybersecurity Leadership Is Needed to Navigate Turbulent Times

- By 2026, enterprises combining GenAI with an integrated platforms-based architecture in security behavior and culture programs will experience 40% fewer employee-driven cybersecurity incidents.

**Enterprise Architecture**

Chief enterprise architects are being asked to look beyond IT estate management alone. The advent of AI has increased the hype of opportunity and expectations, but shaping this discipline is not based on just one trend. Franchising reinvigorates enterprise architecture (EA) to deliver value to IT and business alike.

Predicts 2024: Enterprise Architecture and Franchising Delivers New Value

- By 2027, 75% of organizations will enrich business architecture by connecting financial benefits to digital investment decisions.

- By 2027, 60% of EA leaders will focus upon productivity technologies like autonomous business design and machine workforce automation to demonstrate greater value of EA to business leaders.

- By 2027, 60% of centralized EA functions will face an identity crisis as the work is increasingly delivered by adjacent business and IT functional units.

- By 2027, 60% of EA teams will centralize architecture legacy management for both IT and business processes to provide investment optimization options to decision makers.

**There is increasing distinction among executive roles such as chief data officer (CDO), chief information security officer (CISO) and chief technology officer (CTO). These distinctions may see related domain architect roles such as data architects, security architects, cloud architects and infrastructure architects report outside of the EA practice and into these dedicated executive offices.**

Predicts 2024: Enterprise Architecture and Franchising Delivers New Value

**By 2027**
**60%** of EA leaders will focus upon productivity technologies like autonomous business design and machine workforce automation to demonstrate greater value of EA to business leaders.

## IT Infrastructure and Operations

I&O leaders have traditionally operated infrastructure in silos, but Gartner expects an evolution to a platform-based approach to drive scale, agility and better business outcomes. This research highlights five predictions on this transition to infrastructure platforms.

### Predicts 2024: Mind the Gap Between Infrastructure and Infrastructure Platforms

- By 2028, more than 70% of enterprises will alter their data center strategies due to limited energy supplies, which is a major increase from less than 5% in 2023.

- By 2028, 50% of enterprise platforms will leverage specialized infrastructures to support AI infusion, which is a significant increase from less than 10% in 2023.

Edge computing interest and adoption are increasing across vertical industries, and enabling technologies are maturing. I&O leaders need to work with their lines of business on edge computing, and evaluate solutions that accelerate deployments and support extensibility.

### Predicts 2024: Edge Computing Technologies Are Gaining Traction and Maturity

- By 2026, at least 50% of edge computing deployments will involve machine learning (ML), compared with 5% in 2022.

- By 2027, approximately 5% of large enterprises will deploy a hyperscaler distributed cloud solution for edge computing workloads outside data centers.

- By 2027, two-thirds of Tier 1 multichannel retailers will have edge computing deployed in their stores.

## By 2027
**more than 40% of digital workplace operational activities** will be performed using management tools that are enhanced by GenAI, dramatically reducing the labor required.

### Predicts 2024: Generative AI Will Transform IT Infrastructure and Operations

- By 2027, GenAI will create more IT support and knowledge-based articles than humans will.

- By 2027, more than 40% of digital workplace operational activities will be performed using management tools that are enhanced by GenAI, dramatically reducing the labor required.

Tools like ChatGPT highlighted GenAI's potential to create new, derived versions of content, designs and methods by learning from repositories of original source content. IT leaders must understand the impact these technologies can have on the delivery of services and talent to their organizations.

## Predicts 2024: Generative AI Boosts IT Service Delivery and Productivity

- By 2028, 60% of IT services will be powered by the trifecta of GenAI, hyperautomation and metaverse, radically changing the services buyer landscape.

Disruption stemming from the shift to SaaS by enterprise software vendors, the geopolitical climate and GenAI will impact IT vendor risks. Sourcing, procurement and vendor management (SPVM) leaders should develop new perspectives and embrace change to mitigate risks and capitalize on opportunities.

## Predicts 2024: Geopolitics, SaaS and Generative AI Impact IT Vendor Risk

- By 2027, geopolitical issues will increase the defaults in SaaS contract commitments, impacting over 50% of subscribers.

- By 2028, GenAI's ability to decipher software and cloud vendor contracts will decrease the risk of noncompliance in software and cloud contracts by 30%.

> **During conflicts, SaaS providers' capacity to maintain data center loads is strained to the point where they are unable to deliver on promised service levels, such as uptime, performance and risk of service outages.**
>
> Predicts 2024: Geopolitics, SaaS and Generative AI Impact IT Vendor Risk

> **The use of artificial intelligence with AI-powered monitoring systems to identify data anomalies in traffic and telemetry, coupled with advances in root cause analysis, will see a rise in the number of incidents that can be autonomously remediated.**
>
> Predicts 2024 — Multicloud and Sustainability Drive Modernization

I&O leaders deliver stable services built upon changing technology platforms; however, business conditions are changing as rapidly as technology. I&O leaders should use these four predictions to stabilize operations as organizations further adapt to the changing conditions.

## Predicts 2024 — Multicloud and Sustainability Drive Modernization

- By 2028, 75% of organizations will have decentralized their service desks, with all support needs being met by product-centric teams.

- By 2027, 80% of organizations will see a reduction in spend on traditional network monitoring tools, due to remote work, cloud migration and improved network visibility through observability and analytics tools.

- By 2026, 50% of organizations will adopt "sustainability-enabled" monitoring to manage energy consumption and carbon footprint metrics for their hybrid-cloud environments.

- By 2027, 25% of cloud portability initiatives will be automatically migrated across multicloud platforms, driven by cost-efficiency and sustainability metrics.

**Project, Program and Portfolio Management**

Strategic portfolio leaders must plan for the future while maintaining responsiveness for the constant disruptions of the "never normal." Use these predictions and their accompanying recommendations to update your 2024 strategic plans.

Predicts 2024: Strategic Portfolio Leaders Must Plan for the "Never Normal"

- By 2026, 70% of job titles will shift from a portfolio, program, project (3Ps) hierarchy to role-based descriptors due to the increase of AI in strategic portfolio management.

> **Specialization in either portfolio, program or project management will be less relevant as AI impacts much of the data collection and manipulation carried out by these roles.**
>
> Predicts 2024: Strategic Portfolio Leaders Must Plan for the "Never Normal"

**Procurement**

IT sourcing is in the midst of an environmental revolution. Environmental performance and transparency are now core to enterprise reputation and strategy. IT leaders must set a course for sourcing transformation to select, contract and manage vendors with aligned environmental credentials.

Predicts 2024: Sustainability Reshapes IT Sourcing and Procurement

- By 2027, 50% of technology sourcing decisions will use environmental sustainability as a core selection and disqualification criterion.

- By 2027, over 50% of enterprises will pay IT premiums of 10% or more annually to purchase alternatives that satisfy sustainability objectives.

- By 2027, 50% of organizations with software and cloud contracts that lack environmental sustainability commitments will risk noncompliance with nonfinancial disclosure regulations.

> **To support competitive advantage, solutions that are proven to meaningfully address sustainability goals through independently verified data will become attractive.**
>
> Predicts 2024: Sustainability Reshapes IT Sourcing and Procurement

Sourcing initiatives are rapidly evolving toward business value and speed. SPVM leaders must diligently evolve their sourcing processes to reap the benefits of these trends when outsourcing services.

Predicts 2024: Agility, Sustainability and Value Creation Will Drive Sourcing Decisions

• By 2027, 80% of SPVM teams will utilize a dynamic sourcing approach for infrastructure and applications sourcing, shifting to a value-based metrics approach.

IT SPVM talent spans four generations, but many in leadership positions will retire within the next three years. New leaders will emerge as the talent landscape shifts, and they will transform and redefine the value brought by the IT SPVM function.

Predicts 2024: Generational Change Will Drive IT Sourcing and Procurement Transformation

• By 2027, 40% of IT SPVM functions will evolve evaluations and metrics to address shifting definitions of "value" driven by generational change.

The use of GenAI tools and techniques in IT projects will likely carry long-term pricing implications, license compliance costs and contractual risks. SPVM leaders must negotiate contractual concessions and protections to gain long-term benefits from GenAI use.

Predicts 2024: Demand for Generative AI Will Drive Higher IT Contracting Risks and Costs

• By 2027, a majority of organizations' enterprise application software costs will increase by at least 40% due to GenAI product pricing and packaging.

• By 2027, software license compliance fees will increase by at least 20% due to a failure to address GenAI-related risks in contracts.

• By 2027, 80% of IT contracts that do not explicitly call for responsible use of GenAI will fail to deliver desired outcomes.

Procurement technology is rapidly evolving and changing how procurement will be executed in the future. This research helps chief procurement officers understand how technology is impacting the future of procurement and make plans now to address predicted impact on process, staffing and execution.

Predicts 2024: CPOs Adjust to Technology's Impact on Procurement

• By 2026, advanced proficiency in data and technology competencies will be equally as important as social and creative competencies (i.e., soft skills) for procurement staff.

• By 2027, 50% of organizations will support supplier contract negotiations through the use of AI-enabled contract risk analysis and redlining tools.

• By 2029, 80% of human decisions will not be replaced, only augmented by GenAI, as humans will maintain their comparative advantages in ingenuity, creativity and knowledge.

**Software Engineering**

Software engineering leadership roles and responsibilities are affected by organizational constraints, industry shifts, technology advancement and societal change. Software engineering leaders should use these risk and disruption predictions to lead in their roles with continuity and confidence.

Software Engineering Predicts 2024: Leadership During Disruption

- By 2027, 25% of software defects escaping to production will result from a lack of human oversight of AI-generated code, which is a major increase from less than 1% in 2023.

- By 2027, a digital backlash against new software solutions and experiences will prompt organizations to cut their budgets for application development in half, compared with 2024.

> **For 40% of the respondents in Gartner's 2024 CIO and Tech Executive Survey, budgets are already stagnant or decreasing. At the same time, the priorities of IT budgets are toward securing existing technology or better utilizing current assets, such as data, through higher investment for data and analytics initiatives, indicated in the same survey.**
>
> Software Engineering Predicts 2024: Leadership During Disruption

The hype around GenAI in software engineering has shifted to code generation, which is only one aspect of the software development life cycle. Software engineering leaders must prepare to adopt GenAI in other areas such as skills acquisition, testing and accessibility, and application modernization.

Predicts 2024: Generative AI Is Reshaping Software Engineering

- By 2026, 90% of organizations will rank AI/ML features as the most important selection criterion for test automation technology.

**Emerging Tech**

Organizations adopting earth intelligence need help deriving value from existing data rather than in acquiring more data. Product leaders should examine implementation, use-case, industry and business value trends to identify and successfully pursue emerging market opportunities.

Emerging Tech: Adoption Trends for Earth Intelligence

- In 2025, over 50% of venture capital investment into NewSpace technologies will be for analyzing data from space, up from 31% in 2021.

- By 2030, over 60% of outdoor asset insurance claims will be subject to validation by automated Earth observation (EO) data analysis, compared with less than 5% in 2022.

**Digital Business Function Predictions**

**CRM Sales and Digital Commerce**

IT leaders continue to optimize and invest in their CRM strategy and machine customers, digital experience and customer experience initiatives. This research highlights predictions on the potential impacts in 2024 and beyond.

Predicts 2024: Machine Customers, GenAI for CX, Composable DXP

- Through 2026, 30% of large companies will have a dedicated business unit or sales channels to access fast-growing machine customer markets.

- By 2026, those organizations employing GenAI in their CX will achieve 10% higher CX maturity than those that do not.

B2B sales can evolve into a more inclusive, tech-forward and versatile profession. Chief sales officers (CSOs) leveraging neurodivergent talent, the growth of GenAI and a bottom-up approach to unified commercial strategies will be more likely to hit revenue goals with existing resources than their peers.

Predicts 2024: Evolving the B2B Seller Role

- By 2025, 35% of CSOs will resource a centralized "GenAI operations" team as part of their go-to-market (GTM) organization.

**By 2026**
those organizations employing GenAI in their CX will achieve **10% higher CX maturity** than those that do not.

**Digital Workplace**

Digital workplace I&O leaders have four priorities: improve sustainability to meet ESG goals, digital employee experience, create collaborative workspaces and incorporate DEI initiatives. In 2024, I&O leaders must advance their strategy to properly balance these objectives.

Predicts 2024: Build a Sustainable and Collaborative Digital Workplace Infrastructure

- By 2027, 80% of digital workplace leaders will integrate digital workplace tools with ESG management and reporting tools, up from less than 5% today.

## Human Resources and Talent Management

New waves of innovation in AI, ongoing talent challenges and macro trends such as climate change make managing HR technology portfolios more challenging. HR technology leaders should use this research to prepare for the next set of capabilities that will challenge the status quo.

Predicts 2024: The Impact of AI on HR Technology Transformation

- By 2027, less than 15% of customers with access to GenAI summarization or content creation in their talent management applications will enable either of these capabilities.

- By 2028, 35% of talent analytics teams in large global organizations will perform predictive analysis on the impact of extreme weather events on talent, recruitment and overall worker productivity.

- By 2026, a new AI-native core HR application will emerge to challenge incumbent cloud human capital management (HCM) suites.

## Legal and Compliance

Legal leaders are facing increased pressure to adapt and respond to the opportunities and risks that GenAI imposes on legal technologies. This research offers insights into how GenAI could transform the future of the legal technology market.

Predicts 2024: The Transformative Impact of Generative AI on Legal Technologies

- By 2027, the global legal technology market will double in size as a result of GenAI, reaching a value of $50 billion.

- By 2027, 80% of vendors will incorporate GenAI platform capabilities into their governance, risk and compliance (GRC) technologies.

- By 2027, the percentage of legal requests answered by self-service tools designed for the business will increase from low single digits to at least 20%.

- By 2027, the average organization will increase its adoption of anomaly detection and misconduct reporting solutions by 50% due to GenAI capabilities, which will fuel regulator and enforcement agency pressures.

**By 2028**

# 35%

of talent analytics teams in large global organizations will perform predictive analysis on the impact of extreme weather events on talent, recruitment and overall worker productivity.

**Marketing**

GenAI capabilities are being adopted primarily for marketing efficiency gains or speed. To prepare for more fundamental shifts beyond their direct control, product marketers must address disruptions in key marketing channels, engagement approaches and required investments.

Predicts 2024: How GenAI Will Reshape Tech Marketing

- By 2027, GenAI will accelerate the development and adoption of immersive customer engagement for 70% of technology and service providers.

Chief marketing officers (CMOs) are bracing for an AI-powered future as AI radically reshapes social media and search landscapes, creative work, brand positioning and perceptions of truth. Use this research to prepare and position your organization for disruption.

**Brands and their customers will demand transparency on the sources for GenAI being used. Data hygiene will be fundamental to success when using large language models (LLMs) because these models are only as accurate as the data used to feed them.**

Predicts 2024: How AI Will Reshape Marketing

Predicts 2024: How AI Will Reshape Marketing

- By 2026, 60% of CMOs will adopt content authenticity technology, enhanced monitoring and brand-endorsed user-generated content (UGC) to protect their brands from deception unleashed by GenAI.

- By 2025, a perceived decay in the quality of social media sites will push 50% of consumers to significantly limit their use of major platforms.

- By 2028, brands' organic search traffic will decrease by 50% or more as consumers embrace GenAI-powered search.

**A majority of consumers (53%) believe the current state of social media has decayed compared to either the prior year or to five years ago. The spread of misinformation, toxic user bases and the prevalence of fake accounts/bots were top reasons listed for this perceived decay.**

Predicts 2024: How AI Will Reshape Marketing

**Supply Chain Planning and Operations**

Technology is seen as a critical enabler of competitive advantage, and leaders often cite improving their position as a key driver for investing in supply chain technology. Supply chain technology leaders can use this research to discover where future risks and opportunities lie.

Predicts 2024: Supply Chain Technology

- By 2028, 25% of supply chain KPI reporting will be powered by GenAI models.

- By 2026, 15% of supply chain software offerings will actualize software bills of materials (SBOMs) to thwart cyberattacks.

> **SBOMs give the cyber defender the traceability data required to continuously monitor blocks of software code (regardless of origin) to determine if there are known vulnerabilities. Armed with this knowledge, cyber defenders can continuously update and patch software code to thwart cyberattacks.**
>
> Predicts 2024: Supply Chain Technology

**By 2028**

**25%** of supply chain KPI reporting will be powered by GenAI models.

GenAI promises a new solution to an age-old problem: costly assisted service. We expect that customer service and support leaders who leverage GenAI to enable human contact will be more successful than those who leverage it to reduce human contact by eliminating assisted service.

Predicts 2024: Customer Service and Support Strategy and Leadership

- By 2027, a company's GenAI chatbot will directly lead to the death of a customer from bad information it provides.

Companies challenged with optimizing logistics operations need more foresight into macro trends and developing technologies that improve efficiencies and agility. Logistics leaders should incorporate the actionable predictions in this research to optimize logistics strategies.

Predicts 2024: Logistics

- By 2028, 25% of all logistics KPI reporting will be powered by GenAI, enabling new value from vast stores of content.

**Industry Predictions**

**Automotive and Smart Mobility**

In 2024, automakers will still wrestle with shifts caused by software and electrification's increasing roles. This research helps automotive CIOs understand key industry trends, including LEO satellite connectivity, electric vehicle (EV) cost reductions and the obstacles autonomous vehicles face.

Top Automotive Trends for 2024

- By 2030, the average automaker will use AI in 80% of its high-value processes, up from 20% today.

- By 2027, the market for car data sales will be dominated by organizations and marketplaces not exclusively focused on data brokerage.

- By 2027, 30% of software-defined vehicles will feature a digital twin 2.0 of at least one vehicle system as opposed to less than 1% today.

**Banking and Investment Services**

Investment firms are looking at this period of uncertain economic environment and falling revenue as an opportunity for strategic investments to improve performance and growth. CIOs will need to prioritize initiatives targeted toward significantly enhancing productivity of, and from, IT initiatives.

Predicts 2024: Investment Management Drives Productivity Amid Uncertainty

- By 2025, 50% of investment firms will adopt data ecosystems to automate the data life cycle from discovery to delivery, reducing the cost of attaining and managing data by 40%.

**By 2027**
**30%** of software-defined vehicles will feature a digital twin 2.0 of at least one vehicle system as opposed to less than 1% today.

**Communications Service Providers (CSPs) and Telecommunications**

CSPs' intense focus on digital acceleration and business transformation requires tech providers to reinvent product design and delivery models. Product leaders' strategies must anticipate disruption from GenAI, API exposure, sustainability demands and techno-nationalism.

Predicts 2024: Reinvent Product Design and Delivery for the Communications Industry

- By 2027, 80% of CSP network applications will expose network functionality or data through APIs for monetization.

- By 2027, 70% of CSPs will include a sustainability mandate in their procurement processes.

- By 2028, 70% of vendors to CSPs will have revised their product manufacturing and specifications to address techno-nationalism-based mandates.

> **Suppliers ... need to develop a roadmap for automated data exchange and real-time data that can be provided to CSPs, for a range of sustainability-related metrics.**
>
> Predicts 2024: Reinvent Product Design and Delivery for the Communications Industry

CSP CIOs and tech leaders are investing in technologies (e.g., the cloud, AI and ML) that scale operational efficiency. They need a long-term business vision, an appropriate operating model and organizational capabilities evolution.

Predicts 2024: CSP Technology and Operations Strategies

- By 2028, a global market for communications equipment will devolve into two or more regional markets, each with its own technology stack.

- By 2028, 70% of current CSP workforce technical skills will be made obsolete by automation, augmented intelligence and delayering.

- By 2025, 70% of CSPs will implement optimization tools and practices to reduce cloud operations cost, compared with 5% in 2022.

5G monetization and digital channels to scale growth and increase digital service penetration across B2B segments are key priorities for CSPs. CSP product leaders can identify enterprise and ecosystem behavior changes that can be leveraged to accelerate growth.

Predicts 2024: Enterprise Communication Services

- By 2027, Tier 1 CSPs deploying a self-service digital path to purchase and fulfill security services will grow from 1% in 2023 to 25%.

# By 2028
**over 70% of teaching, research and student-submitted content** at all levels of education will be developed with support from GenAI.

## Education

Education CIOs are evaluating GenAI's potential and managing its risks. This challenge, along with the continued need for operational efficiency, student experience and competitiveness, creates a complex landscape that education CIOs must plan to navigate.

Predicts 2024: Education Automation, Adaptability and Acceleration

- By 2028, over 70% of teaching, research and student-submitted content at all levels of education will be developed with support from GenAI.

- By 2028, 65% of higher education CIOs will identify improving operating margins as the critical digital technology investment outcome, up from 32% in 2024.

## Environmental, Social and Governance (ESG)

Increasing regulation and market requirements are magnifying the business impact of sustainability risks and opportunities. Executive leaders need to project the ways in which the upcoming changes will disrupt their industries and use this insight to their competitive advantage.

Predicts 2024: Paving the Way for Long-Term Progress in Sustainability

- By 2026, 50% of G20 members will experience monthly electricity rationing, turning energy-aware operations into either a competitive advantage or a major failure risk.

- By 2027, 20% of the S&P 500 will cite greenwashing as a risk factor in 10-K reports, strengthening rigor in sustainability commitments.

# Government

## Government Digital Transformation

Government CIOs will continue to respond to GenAI hype, risk and opportunities in 2024. Along with the pressure to help their organizations achieve their mission through the strategic use of technology, they will see new approaches to governance and decisions around these technologies.

Predicts 2024: Government CIOs Must Prepare for an AI-Enabled Future

- By 2027, less than 25% of government organizations will have GenAI-enabled citizen-facing services.

- By 2026, more than 60% of government organizations will prioritize investment in business process automation, up from 35% in 2022.

To manage AI, software supply chain security and zero trust, the U.S. federal government issued bold policies that pose new challenges in resourcing and implementation for CIOs. The background and recommendations in this research can assist CIOs in achieving policy objectives.

Predicts 2024: U.S. Federal Government

- By 2027, the U.S. Office of Management and Budget (OMB) will establish mandated scorecards to promote agency AI maturity and risk management.

Automation is key to justice and public safety organizations facing shifting public expectations while, in many regions, dealing with shrinking talent pools. CIOs must focus on ethically expanding the use of data and technology to lead their organizations in achieving mission outcomes.

Predicts 2024: Automation and Data Improve Justice and Public Safety

- By 2027, public safety and justice organizations will support 30% more data-sharing partners, necessitating the implementation of automated data discovery.

- By 2026, over 65% of public safety organizations will establish an ethics framework to guide the use of predictive analytics for proactive incident response.

Human and social services have deep organizational challenges, as economic stresses and geopolitical instability continue to put pressure on families. Through 2024, CIOs should use available technologies to reduce costs, align risks and deliver externally recognizable societal and mission outcomes.

Predicts 2024: Prioritize Business Outcomes in Human Services Technology Investments

- By 2027, 40% of human services organizations will focus on outcome-based analytics, with process-based analytics used only for internal operational management.

**Transportation**

Airports are at the heart of an ecosystem of data-consuming partners across the aviation industry. If one plane is late, all organizations must adapt. Airport CIOs should develop a data-driven ecosystem framework to optimize logistics and promote and standardize exchanges within the entire ecosystem.

Use an Airport Ecosystem Framework to Monetize Passenger Services

- By 2025, 30% of the airport organizations in the world will have data monetization products and services, up from less than 10% in 2022.

**Defense**

Defense organizations face challenges with investments in emerging space technologies, advances in quantum computing and new policies related to AI supporting military operations. IT leaders, including defense CIOs, will gain insights into addressing these challenges with this research.

Predicts 2024: Emerging Defense Technology and New Domains

- By 2026, 75% of defense organizations will publish AI policies that address bias, accountability and the law of armed conflict.

**Healthcare**

Workforce shortages, the rising cost of care and pressure to deliver better experiences are forcing U.S. healthcare payers to reconceptualize how they do business. Payer CIOs can use these predictions to protect against rising risks, identify how to capitalize on investments and sustain growth.

Predicts 2024: U.S. Healthcare Payers' Future Demands Bold Change

- By 2027, payers who have increased investments in employee experience will see at least a 10-point improvement in customer experience and quality metrics — and increased revenue.

- By 2025, 80% of the value realized by payers that have invested in GenAI will be in employee productivity, engagement and retention.

- By 2027, payers — not life science manufacturers or venture capital firms — will be the primary investors in, and proponents of, digital therapeutics.

- By 2025, 25% of payers will divert funding from acute case management to focus resources on algorithmically defined rising-risk populations.

- By 2025, 50% of core administrative platform RFPs will specify a requirement for a composable architecture to enable a "build your own platform" approach.

**The piecemeal approach that payers must take to obtain data from providers is costly, administratively demanding and abrasive to providers. Data sharing between providers and payers will continue to worsen their relationships until payers' core systems can ingest and use unstructured data in a meaningful way.**

Predicts 2024: U.S. Healthcare Payers' Future Demands Bold Change

Healthcare providers are actively evaluating AI technologies and use cases. The potential is metamorphic and will help reduce clinician burnout, improve patient experiences and democratize data. Provider CIOs should use these predictions to prepare for the impact of AI on care delivery.

Predicts 2024: Healthcare Delivery, AI's Proving Grounds

- By 2027, clinicians will have reduced the time spent on clinical documentation tasks by 50% through the use of GenAI technologies integrated into the electronic health record (EHR) improving clinician and patient experience.

- By 2027, the average daily amount of data collected from inpatient rooms will exceed that of the average ICU bed today.

**By 2025**

# 20%

of insurers will enhance their CX strategies to focus on customer value to support market differentiation.

**Insurance**

Gartner's 2024 insurance SPAs focus on technologies such as GenAI and hyperautomation that go beyond the tried and true and shift the balance to a more innovative portfolio of IT spending. Insurance CIOs must rebalance their technology spending to achieve new ROI.

Predicts 2024: Insurance CIOs Must Adopt Ambitious IT Agendas to Achieve ROI

- By 2026, approximately 40% of insurers will have invested in copilot technology to fuel productivity enhancements in underwriting, claims, distribution and service.

- By 2028, the early advantage in productivity and operating costs created by GenAI will be commoditized and will no longer be differentiating.

- By 2028, one-third of insurers will offer autoadapting products that change their construct in response to customer data.

- By 2025, 20% of insurers will enhance their CX strategies to focus on customer value to support market differentiation.

**Life Sciences**

Life science organizations are embracing advanced technologies, including AI, automation and digitization, to drive greater efficiency, productivity and sustainability across the entire value chain. CIOs can use these predictions to prepare for how these advances will shape the industry.

Predicts 2024: Generative AI Brings New Value to Life Sciences

- By 2026, investment in experimental and computational lab integration and translational capabilities will double, due to subpar real-world performance of AI-generated drugs.

- By 2026, use of virtual assistants in 30% of life science organizations will decrease the number of sales representatives while accelerating business growth.

- By 2027, 25% of life science organizations will implement IT solutions that enable holistic sustainability decisions across the entire product life cycle.

**By 2027**

**25%** of life science organizations will implement IT solutions that enable holistic sustainability decisions across the entire product life cycle.

**Manufacturing**

Gartner predicts that consumer goods (CG) companies will leverage AI and GenAI with other technologies, such as IoT and digital twins, to profitably transform themselves. CG CIOs must prioritize digital investments to scale personalized products and improve customer experiences for margin and revenue growth.

Predicts 2024: AI Powers Personalization, Revenue Growth and Efficiency in Consumer Goods

- By 2027, adoption of AI-based tools to capture and deliver personalized products will grow three times up to 80% from less than 25% in 2024.

**Oil and Gas**

Oil and gas companies are refocused on traditional value chains, and digital transformation efforts show technology is essential for future operational excellence. To prepare for growing tension between old and new notions for exploiting technology, CIOs can use this research to align strategies.

Predicts 2024: Oil and Gas — Traditional Value Chains and Transformed Operations

- By 2028, more than 50% of oil and gas companies will modernize their strategy for operational excellence by making intelligent assets the primary objective of digital investment.

- By 2026, GenAI will unlock radical productivity gains for 30% of oil and gas companies by providing low-friction pathways for silo-spanning collaboration.

**Technology and Service Providers (TSPs)**

Rapid adoption of GenAI and increasing sustainability expectations from businesses across industries are intensifying competition among industry tech vendors. To survive and thrive in challenging market conditions, product leaders must remain focused on solving industry-specific problems.

Predicts 2024: Industry Providers Win With GenAI, Marketplaces and Sustainability

- By 2026, M&A among TSPs will have increased by 50% from 2023 levels due to higher demand for industry-specific applications that use GenAI.

- By 2025, 70% of support requests initiated through GenAI-powered chatbots will demand human oversight due to customers' mistrust, increasing service costs by 40%.

- By 2026, TSPs without an LCA module will lose 50% of the total addressable market for this solution.

**Products' life cycle assessment (LCA) data will be a critical differentiator as part of the bidding and contracting process. Customers are moving toward a circular economy and expecting greater transparency on how vendors help to meet their greenhouse gas (GHG) emissions goals.**

Predicts 2024: Industry Providers Win With GenAI, Marketplaces and Sustainability

Composable modularity remains a growing architecture and investment objective for tech buyers, as it serves the increasingly urgent demand for greater business agility. Gartner's SPAs guide product leaders to respond to the changing markets for early competitive advantage.

Predicts 2024: Composable Modularity Shapes the New Digital Foundation

- By 2027, 30% of enterprises will use data ecosystems enhanced with elements of data fabric supporting composable application architecture to achieve a significant competitive advantage.

After 2022's endorsement of analyst relations (AR) as a strategic function, AR leaders must now deliver greater commercial impact. Stakeholder demand will drive fundamental change in AR's relationship with revenue contribution, from performance metrics to evaluations, even threatening the very existence of regional AR.

Predicts 2024: Analyst Relations Must Rethink Its Relationship With Revenue

- By 2027, revenue contribution will be AR's top performance metric, up from sixth place in 2023.

- By 2027, AR teams will participate in 30% fewer annual evaluation reports than in 2023.

## Utilities

As the number and range of distributed energy resources (DERs) connecting to power networks grow, so does the complexity of their integration and management. These predictions highlight the evolving challenges of DERs and how utilities CIOs play a key role in their successful integration.

Predicts 2024: Power and Utilities, Disruption of DERs

- By 2026, 50% of power companies will use monthly electricity rationing to manage demand volatility, losing commercial and industrial (C&I) revenue to self-generation.

- By 2027, 20% of power utilities will use open energy data, exchanged on country-specific cloud infrastructure owned by utility consortiums to secure energy availability.

**By 2027**

# 20%

of power utilities will use open energy data, exchanged on country-specific cloud infrastructure owned by utility consortiums to secure energy availability.

# Actionable, objective insight

Explore these additional complimentary resources and tools for data and analytics leaders:

**eBook**
**Get AI Ready — What IT Leaders Need to Know and Do**
Ready your enterprise to capture AI opportunities and bolster your cybersecurity.

**Roadmap**
**Enhance Your Roadmap for Data and Analytics Governance**
Learn how your peers are executing effective data and analytics governance initiatives.

**Tool**
**Gartner CDAO Effectiveness Diagnostic**
Design an operating model that deploys the right D&A skills and work in the right places.

**Tool**
**Gartner Data and Analytics Maturity Score for CDAOs**
Establish good governance practices to enable key business outcomes.

**Access other insights from Gartner:**

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