

 IDC FutureScape

Predictions 2024: Industries



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About FutureScape

IDC FutureScape reports are used to shape enterprise IT strategy and planning by providing a basic framework for evaluating IT initiatives in terms of their value to business strategy now and in the foreseeable future.

IDC's FutureScapeS are comprised of a set of predictions designed to identify a range of pending issues that CIOs and senior technology professionals will confront within the typical five-year business planning cycle. Each prediction is assessed on the basis of its complexity, organizational impact, and time frame to expected mainstream adoption.

IDC FutureScape Worldwide Banking 2024 Predictions

PREDICTION 1

33%

By 2025, 33% of financial institutions will integrate enterprise intelligence in their lending operations that will reduce credit decisioning time by 50%

IT Impact

IT suppliers need to examine alternative data sources that can supplement credit bureau data, which would include spending on infrastructure and data marts and lakes to enable use of expanded data environment.

Using large language models and GenAI capability helps focus and tracks marketing campaign management for lending products.

Customer relationship management (CRM) enables a 360-degree customer view, which can help identify potential sales opportunities and increase client satisfaction and retention rates.

Guidance

Strongly recommend utilizing a combination of transaction data from existing retail customers with credit accounts to be opened and surrogates of new customers.

Utilize alternate data to enable more accounts to be digitally acquired with faster decision-making speed.

PREDICTION 2

50%

Expect 50% of the top 100 banks to hyper-personalize customer rewards and loyalty programs by 2026

IT Impact

AI & GenAI capabilities of text generation based on geolocation & spending patterns to be used in the development of increasingly personalized customer experience approaches.

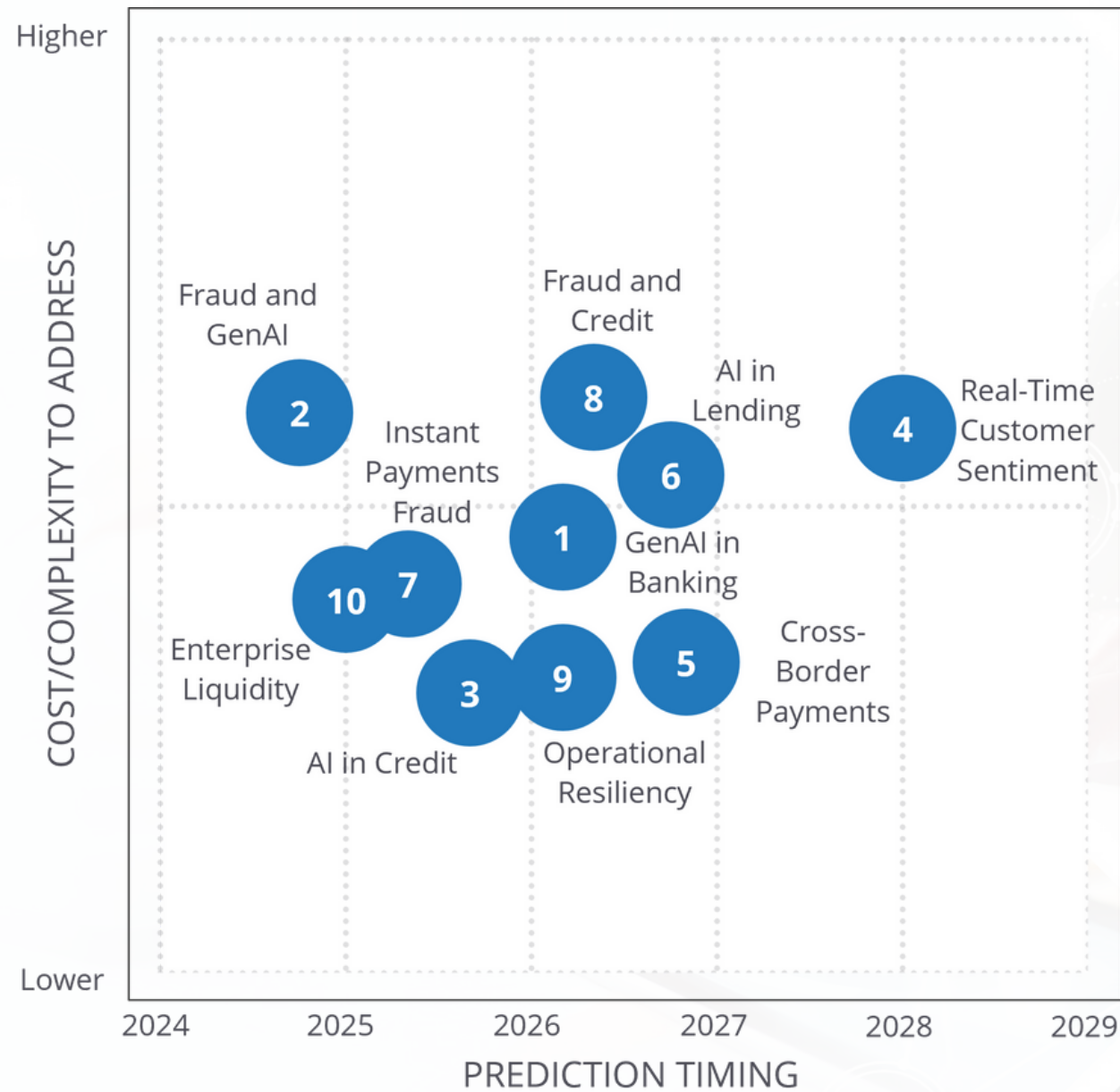
Own mobile application to engage the customer with more real-time interaction, rewards and feedback and drive a more personalized experience focused on customer wants.

Guidance

GenAI enables instantaneous service and improved customer experience to help reduce customer attrition rates.

Hyper-personalization of rewards and loyalty programs in banks using GenAI could significantly increase response.

IDC FutureScape Worldwide Banking 2024 Predictions



Banking Expanding Beyond Digitalization

Banks are increasingly using digital architectures, including cloud, to drive automation and improve business outcomes. The evolution to digital business capabilities enables greater resiliency, faster innovation for new products and services, and ultimately supports broader ecosystem participation to open new markets.

With increasing digitalization, however, cybersecurity attacks and financial crime – which are already significant concerns – require better and faster ways of assessing risks for onboarding, transaction security, fraud, credit and lending while ensuring compliance with ever-changing heightened regulatory expectations. Environmental, social and governance (ESG) drivers have become business drivers in the bank’s technology strategy as well. The next five years will be decisive for banks, as those that fail to modernize and transform to a digital business will fall behind peers that are investing in technology today. Banks that strengthen their digital infrastructure to build in scalability and resiliency and seamlessly integrate into broader ecosystems will thrive and better meet the shifting demands of customers in this new digital era.

Note: Marker number refers only to the order the prediction appears in the document and does not indicate rank or importance, unless otherwise noted in the Executive Summary.
 Source: IDC, 2023

IDC FutureScape Worldwide Payments 2024 Predictions

PREDICTION 1

>1% Less than 1% of payments will be processed using Generative AI by 2028

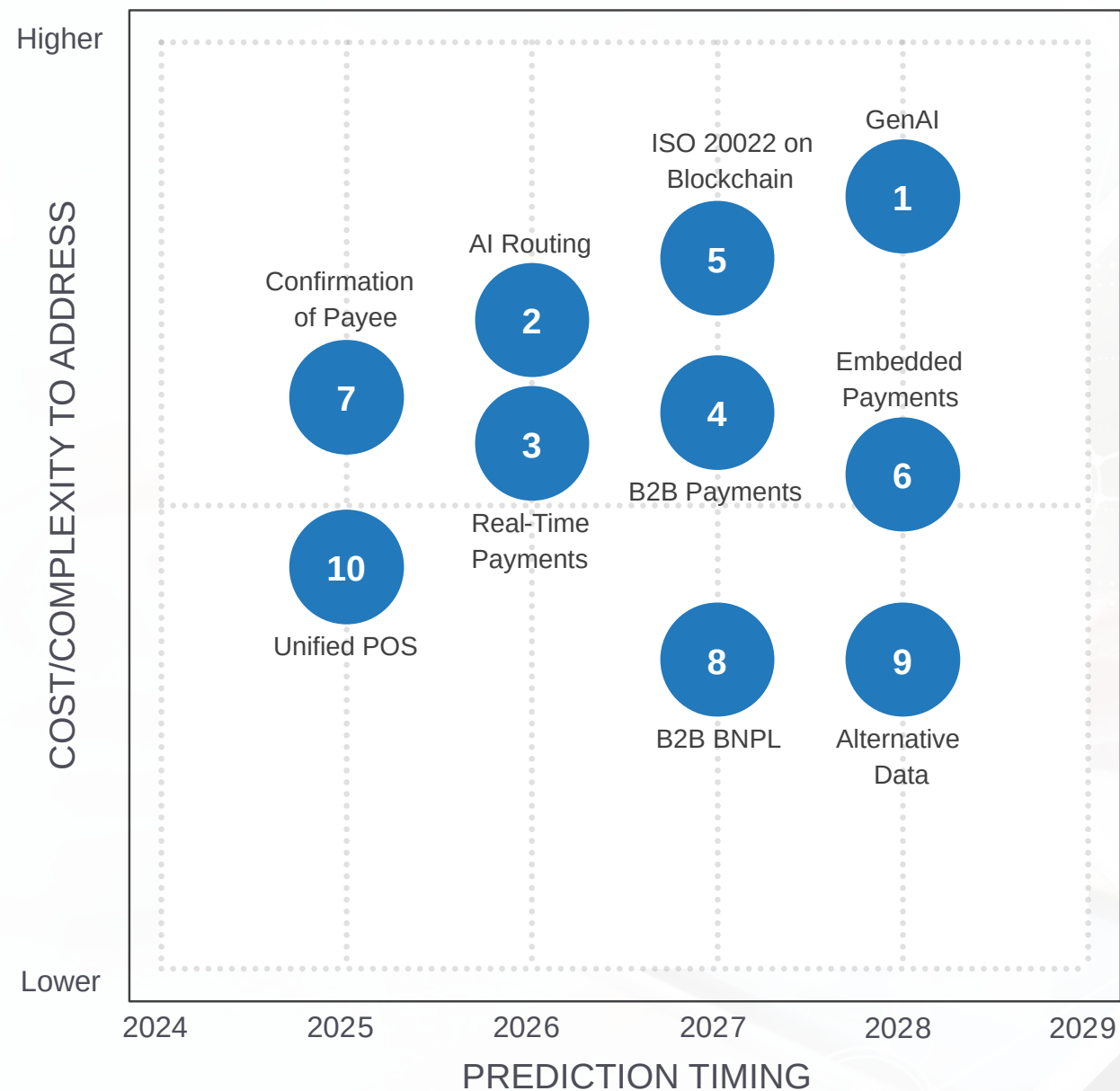
| IT Impact | Guidance |
|---|--|
| <p>Generative Artificial Intelligence (GenAI) is taking the world by storm. Rapid advances in the development of large language models (LLMs) are causing a seismic shift across the technology industry. Experimentation and operationalization of GenAI is exploding across a range of personal and business use cases, from writing correspondence to interactive customer service to accelerated system integration to diagnosing disease.</p> <p>The execution of payments, however, is not among those use cases, and likely will not be in the near future.</p> <ul style="list-style-type: none"> • While payments may not be processed using GenAI, payments modernization efforts will benefit from the technology, speeding implementation and deployment. • The payment process itself may not be handled by GenAI, but adjacent systems and personnel will benefit from the technology and must be taken into account. | <p>For payment processing use cases, focus on non-generative AI optimization and automation technologies that leverage proven, structured data.</p> <p>Experiment with GenAI for business processes that can benefit from the technology, such as system integration, customer service, and exception handling. Digital payment systems may not be moving to GenAI, but the overall process can benefit from the technology.</p> |

PREDICTION 2

15% By 2026, 15% of cross border payments will settle in real time

| IT Impact | Guidance |
|--|--|
| <p>Real time payments are expanding around the world. There are now at least 75 countries with live real time networks, and some countries have more than one such network in place. Cross-border transactions, meanwhile, remain primarily the domain of older systems, many of which depend on correspondent banking, and can take days to settle. But that is poised to change.</p> <p>Payers and payees alike will have to modify systems to manage both incoming and outgoing real-time payments.</p> <p>Real-time payments require real-time operations. Financial institutions must be prepared to operate 24/7 and improve automation across the payments environment.</p> | <p>Corporates should look to their financial platform partners to understand their current capabilities and plans to support cross-border payments.</p> <p>Financial institutions should have real-time integrations on their roadmaps and be monitoring developments by SWIFT and other networks to enable more streamlined settlement options. As new options come online, consider a Payments as a Service (PaaS) partner to speed up implementation.</p> |

IDC FutureScape Worldwide Payments 2024 Predictions



Worldwide Payment Strategies

As has been true for years, payment technology remains one of the most active segments driving change, and investment, across financial services. New payment infrastructure and the technology required to enable it are reinforcing each other to enable evolution across the industry.

The growing complexity of digital payments is undeniable. New payment rails are launching around the world. Established payment systems are modernizing. Cross-border payments are increasing in frequency, while at the same time leveraging the newer rails. In many cases, this modernization involves the adoption of ISO 2022 message formats, which carry far more data than older message types.

All this change and complexity is in turn creating risk and opportunities that require new, advanced technologies. And while the changes seem to be coming at a dizzying pace, actual adoption will take time. Understanding timelines and planning for change are essential to ongoing success in payments.

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Source: IDC, 2023*

IDC FutureScape Worldwide Retail, Media & Travel 2024 Predictions

PREDICTION 1

95%

Through 2027, 95% of retailers will test/invest in GenAI to enhance product data, customer support, and customer experience initiatives

IT Impact

Initially GenAI technology will require compute resources, which are expected to decrease over time due to higher levels of competition, more narrow AI application, and continued improvement in prompt engineering and maturity.

GenAI will require expertise and GenAI-specific understanding of prompts, as well as implications of data science and analytics based on the specific problem use cases that are solved.

Process mechanisms such as portfolio management, stage-gate project evaluation, and program management must be in place to enable effective flow-through of GenAI initiatives from design to experimentation phase and prototype deployments.

Guidance

Expand GenAI experimentation through pilots, POCs, and deployed GenAI applications to validate realizable value objectives such as sales, margins, or customer satisfaction.

Execute GenAI and evaluate results across different types of retail applications within the organization, without limiting opportunities without further study.

Build ROI readiness by ensuring that infrastructure and data are accessible, accurate, and sufficient for GenAI systems to drive appropriate decisions and recommendations. This means clean, relevant, actionable data sets and related AI training up front.

PREDICTION 2

10%

By the End of 2023, Real-Time NFT Creation and Auction with Live OTT/CTV Programming and eCommerce Marketplace Will Be Implemented by 10% of All Major Global Media Providers and Broadcasters

IT Impact

M&E technology vendors must address this use case and create services that together provide a comprehensive NFT-based business cycle throughout the content chain and marketplace.

The IT department must address advancements in recommendation engines for content NFT decisioning and dynamic creation based on user profile preferences and demand generation.

IT department must be able to use AI/ML technologies to perform video analysis for metadata extraction, tagging, and discovery by recommendation engines for real-time NFT decisioning and creation. IT must implement, support, and manage the marketplace gateway applied to OTT/CTV ecosystem for NFT processing, rights assignment, and transaction.

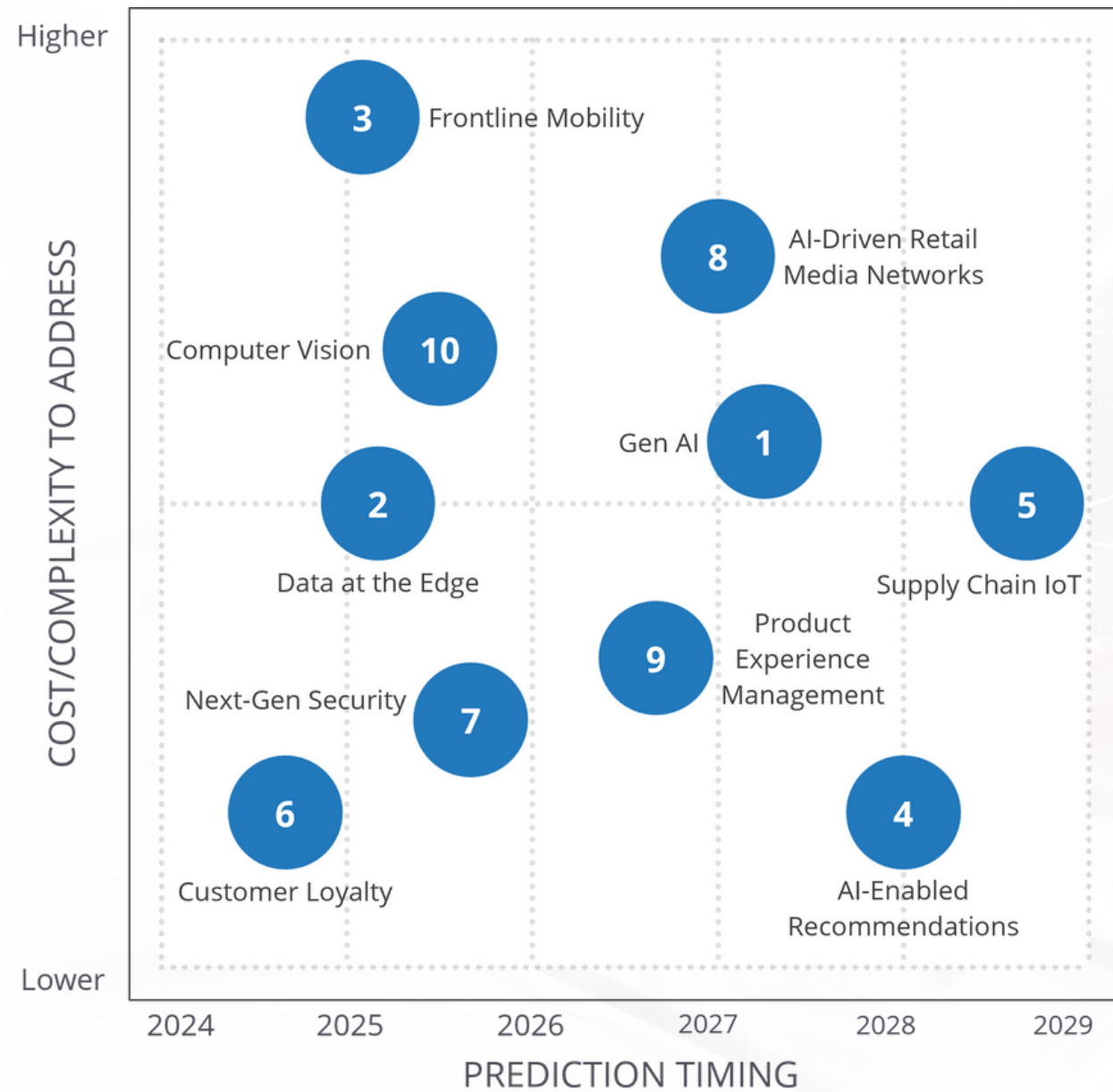
Guidance

Hire and develop skilled resources educated and trained in blockchain technology and NFTs with additional knowledge in AI/ML use cases in content production, distribution, and monetization, focusing on tokenization and marketplace processing.

Seek out M&E technology monetization vendors well versed on NFTs that have implemented or have a defined road map to implement NFT-based marketplace services.

Test and validate the NFT decisioning, creation, pricing, and auctioning workflow process and properly train sales, accounting, operations, engineering, and service resources on marketplace operations.

IDC FutureScape Worldwide Retail, Media & Travel 2024 Predictions



Retailers have spent 2023 cautiously monitoring inflation, recession, and global threats to business, and as a result slowed some capital investments. That said, if the value to profit or future growth was significant enough, investments continued. IDC survey data indicates optimism is rising and big budget and complex projects with longer timelines to value will restart or accelerate in the next year. (IDC Global Retail Survey, July 2023 [Global, N = 840])

IDC FutureScape predictions this year suggest that retailers are aggressively pursuing new paths to growth but not forgetting to work on reducing complexity, where unnecessary costs hide. The retail industry is continuing to transform before our eyes, successfully navigating new dynamics that require technology investments to support resiliency and agility in the coming years. As retailers continue to manage through seismic change, both IT and line-of-business (LOB) executives will find clear guidance in this document on how technology priorities and implementation strategies should be adapted to current realities.

The media and entertainment (M&E) industry in its transition to cloud services will continue to innovate, compete, and embrace a digital-first economy. The industry has been challenged by the 2015 transition to IT infrastructure; the threat of pure-play, over-the-top, and direct-to-consumer media providers that began with Netflix; and then a final 2020 COVID-19 inflection point that culminated in the rapid adoption of cloud services and remote production. In addition, driven by consumer demand for content immediacy, extremely high levels of consumption, on demand at any time, live latency-free streaming, and enhanced user experiences (UXs), the industry has responded with the rapid adoption of cloud services. Finally, the industry understands that to compete effectively while addressing these challenges head-on, it must develop more intelligent and highly automated cloud-based solutions. The M&E industry will intelligently leverage artificial intelligence (AI)/machine learning (ML) and data to its advantage and can do so because it has faster access to digital technologies built on a cloud foundation.

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 Source: IDC, 2023

IDC FutureScape Worldwide Healthcare 2024 Predictions

PREDICTION 1

15%

By 2025, GenAI will free up to 15% of clinicians' time, translating into an estimated \$350 billion in annual global healthcare savings to realize more workflow automation and efficiency

IT Impact

The rapid evolution of health IT infrastructure necessitates focusing on several key pillars, including robust data integration, bolstered cybersecurity, and the integration of Electronic Health Records (EHRs) with AI tools. Advanced encryption techniques must also be a cornerstone in fortifying this digital landscape.

Simultaneously, the increase in investments directed toward AI assistants such as Bard, ChatGPT, and Co-pilot calls for specialized training in AI tool integration, maintenance, and optimization for IT teams. The seamless infusion of AI-generated outputs into EHRs will enrich patient education through tailored content, multilingual translations, and diverse content formats. Consequently, this shift towards AI integration holds the potential to significantly elevate the quality of patient care while simultaneously optimizing healthcare operations.

Guidance

Integrate modern EHRs with GenAI tools to substantially elevate user experience and system functionality, streamlining workflows and improving patient outcomes. Also, fortify cybersecurity infrastructure by implementing advanced encryption methods, ensuring the utmost protection of sensitive patient data during AI-mediated processes. Training healthcare staff rigorously in AI-related skills and competencies will optimize adaptability and efficiency in utilizing AI-enhanced tools.

Conduct regular evaluations of GenAI tools, refining and updating them as needed to maximize their effectiveness and benefits to patient care. Lastly, enhance the "explainability" of any GenAI-enabled systems by investing in transparent algorithms and user-friendly interfaces; this will foster trust among clinicians and facilitate more informed and confident decision-making in patient treatment plans.

PREDICTION 2

75%

Personalized health data platforms will support 75% of covered patients in advanced economies by 2028 while building more accurate patient journey simulations for providers and life science companies

IT Impact

Data platform vendors and payer, provider, and life science organizations must provide tools to ensure data quality.

Platforms and feeder data should be cloud enabled and able to scale rapidly with implementation.

Data sources must be interoperable and data cleansed for successful aggregation.

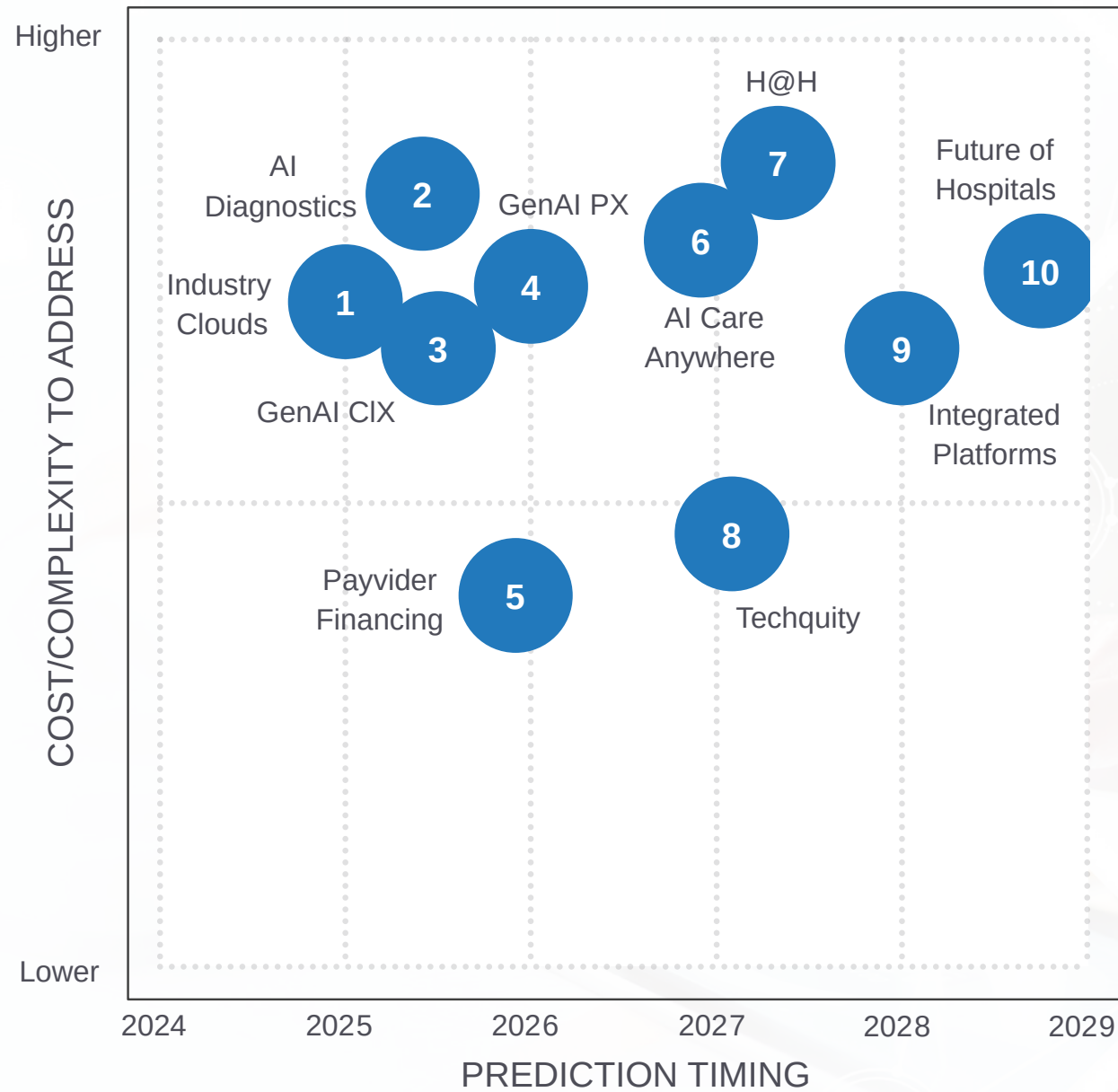
Guidance

Complete efforts on data source interoperability.

Vet vendors and partners for technical and industry expertise, including client references.

Consider future data requirements for remote monitoring (digital biomarkers) and RWD.

IDC FutureScape Worldwide Healthcare 2024 Predictions



Worldwide Healthcare Industry Strategies

The healthcare industry finds itself at a significant inflection point, driven by the imperative to master AI and automation technologies. Concurrently, there is a heightened focus on sustainability and governance to develop resilient systems capable of adapting to a rapidly evolving landscape. Technology buyers are confronted with a unique set of challenges and opportunities. Strategic decisions must be made that not only solve immediate issues but also position organizations to take advantage of emerging trends. Among these considerations are integrating industry-specific cloud solutions, investments in GenAI technologies, reevaluation of payment models, and a steadfast commitment to equity and sustainability.

Healthcare faces complex challenges and growth opportunities, rendering traditional models obsolete. The industry now demands innovative paradigms that call for proactive strategic investments in technology and human capital rather than merely reactive measures. The urgency for rapid action and forward-thinking has never been more pronounced as the industry continues to evolve in multi-dimensional ways. For technology buyers, this translates into the need for a comprehensive investment approach that aligns with the current industry shifts and anticipates future challenges and opportunities.

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Source: IDC, 2023

IDC FutureScape Worldwide Lifesciences 2024 Predictions

PREDICTION 1

30%

By 2024, By 2025, transformative patient experiences will be led by 30% of life sciences firms that used GenAI to optimize trial design, hyper-personalize content, and orchestrate empathetic interactions

IT Impact

With the growing interest of the life sciences industry in leveraging Gen AI to deepen patient engagement, IT will have to invest in fine-tuning patient experience platforms to enhance effectiveness.

After the 'gold rush' has come the 'Gen AI rush'. Everyone wants to implement it. But not every use case calls for the use of Gen AI. IT will have to partner with business to define measures of success and establish a governance strategy to decide which are the right use cases to prioritize the use of Gen AI.

As the need to provide personalized recommendations based on a patient 360 view grows, IT needs to have a laser focus on data sovereignty, regulatory compliance and data ownership issues.

Guidance

Use Gen AI to hyper-personalize patient experiences but keep the human-in-the-loop.

Create curated enterprise-wide clinical data pools for GenAI to learn from and to be agile in responding to patients' personalized queries. The availability of the right training data is often the biggest challenge.

Use Gen AI to optimize trial design and weave-in options that provide patients with choices.

Implement the necessary guardrails, especially when developing digital therapeutics related to mental health. Models need to be thoroughly validated. Patient safety comes first.

PREDICTION 2

70%

By 2024, 70% of life sciences organizations will prioritize security-by-design, privacy-by-design, and zero trust initiatives to enhance cyber-resilience and build trust, fueled by evolving regulations.

IT Impact

Security incidents can cause major harm to organizations, damaging brand reputation and trust and leading to financial losses such as regulatory penalties.

Investments must increase in internal security capabilities and in building robust cybersecurity solutions.

"By design" practices not only help enhance cyber-resilience and regulatory compliance but also lower costs and help build an ecosystem of trust.

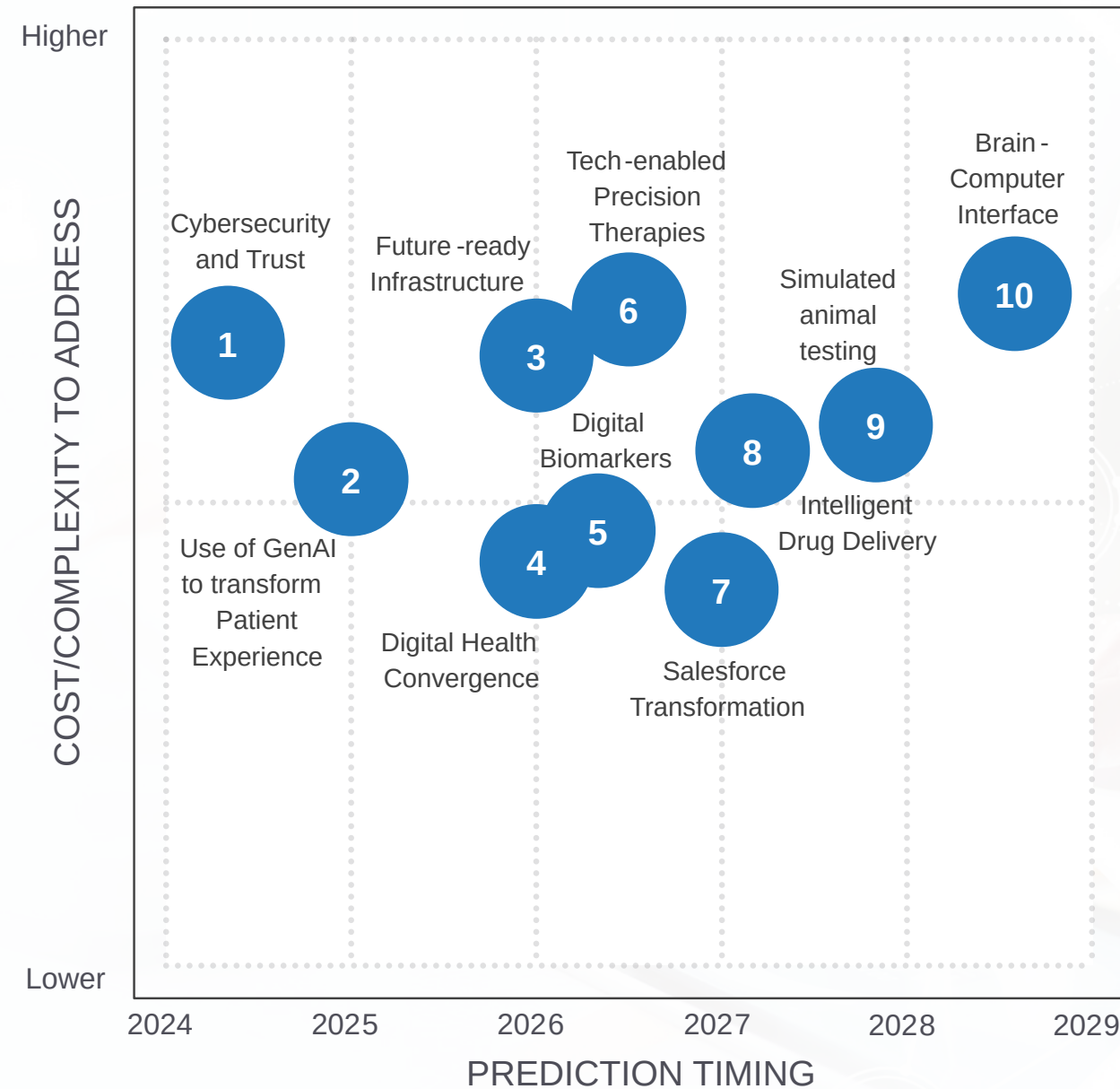
Guidance

Adopt a proactive approach to cybersecurity, and from the earliest stages of product development, plan for alignment with security-by-design and privacy-by-design principles.

Develop trust frameworks and practices for the implementation of zero trust strategies.

Leverage AI and analytics in cybersecurity processes, and consider investments in compliance-as-a-service offerings.

IDC FutureScape Worldwide Lifesciences 2024 Predictions



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 Source: IDC, 2023

Life Sciences Worldwide Industry Strategies

The life sciences industry is rapidly adopting technology and transforming business strategy. One sees the evolution of 'design-as-a-service' as the new model for drug discovery and the explosion of innovative TechBios leveraging generative AI to design novel molecules. The industry is investing in digital twins, control planes and modern digital infrastructure. There is a focus on generating patient 360 views, integrating data across connected devices, and health data platforms. There is a definite shift towards home care, intelligent drug delivery and precision therapies. As patient consumerization grows, this is the new era of "It's all about you" and hyper-personalized experiences – this is where Gen AI can make all the difference.

Real-world data is connecting the dots and fueling the confluence between healthcare and life sciences. Yes, it's raining data. Yet the industry is struggling to find the right data to train large domain specific data sets to train LLMs. The industry has gradually started exploring the use of synthetic data to address the data gap. Pharmas, biotechs, and medical device companies are rapidly transforming their business processes and upskilling their teams to be able to hop on to the fast-moving generative AI bus.

As data explodes, so does cyber risk. As ransomware attacks on the life sciences industry continue to grow, there is a deep focus on 'zero trust'. In addition to cyber risk, the industry is also prioritizing reducing business risk, and addressing sustainability, and employee productivity.

Finally, the industry is taking a big leap into the future, with the life sciences industry exploring the use of computer simulations, organoids and 'organs-on-a-chip' (OOAC) to replace animal testing in drug development. The life sciences industry is exploring the use of brain-computer interfaces (BCI) to enable people with neurodegenerative disorders, that have communication or mobility impairments to walk or communicate once again. Yes, fiction is rapidly becoming reality and the life sciences industry is redefining reality itself.

IDC FutureScape Worldwide National Government 2024 Predictions

PREDICTION 1

60%

By 2026 60% of governments will close digital gaps by automating and connecting data, processes and employees and deploy AI enabled platforms for intelligent operations end-to-end

IT Impact

Employees need data in real time to be more creative, work more strategically, and leverage the velocity of connectedness through collaboration.

Automation is central to your roadmap. Automation can increase quality, reduce human error, increase compliance, strengthen controls environments, and add new services to your organization's portfolio. This will be critical to scale your digital business strategies and reduce operating costs.

As agencies consider deploying Generative AI, caution prevails in deciding what datasets and prompts are provided to the Large Language Models (LLM) so that agencies do not introduce unintended decision making or cybersecurity risks such as potential data breaches, identity theft, financial fraud, or inadvertent release of privileged information

Guidance

Provide employees with digital assistants to enhance employee experience, improve operational efficiency, unlock cost saving at scale, and create a more resilient workforce. Digital assistants can increase productivity through speed of response and empower employees to make more consistent decisions with fewer errors or mistakes.

If your agency is at the start of automation, plan to address cultural resistance to intelligent robotic processing and enroll agency workers in offloading mundane repetitive tasks and adapting their jobs to higher skill levels.

Consider digital assistants as the first step of developing LLMs. Digital assistants create simple app interfaces that make it easy for employees to manage, deploy, and automate workflows.

PREDICTION 2

60%

By 2026, 60% of national governments will focus on upskilling and reskilling civil servants to improve their work experience and citizen services.

IT Impact

Using technologies such as AI can prove instrumental in offering upskilling or reskilling courses. While traditional upskilling might be done through certification pursuit, training seminars, or during onboarding processes, AI can help integrate training and skills development into daily work throughout their tenure.

AI is key to personalized learning. By determining a civil servant's role in the agency, it can create personal development goals and adapt training needs accordingly. The solution can then guide civil servants to training resources as needed.

IT can be used to develop simulation tools that allow civil servants to practice their skills in a safe and controlled environment. Simulation tools can be used to train civil servants on a variety of tasks, such as using new software, responding to emergencies, and providing citizen service.

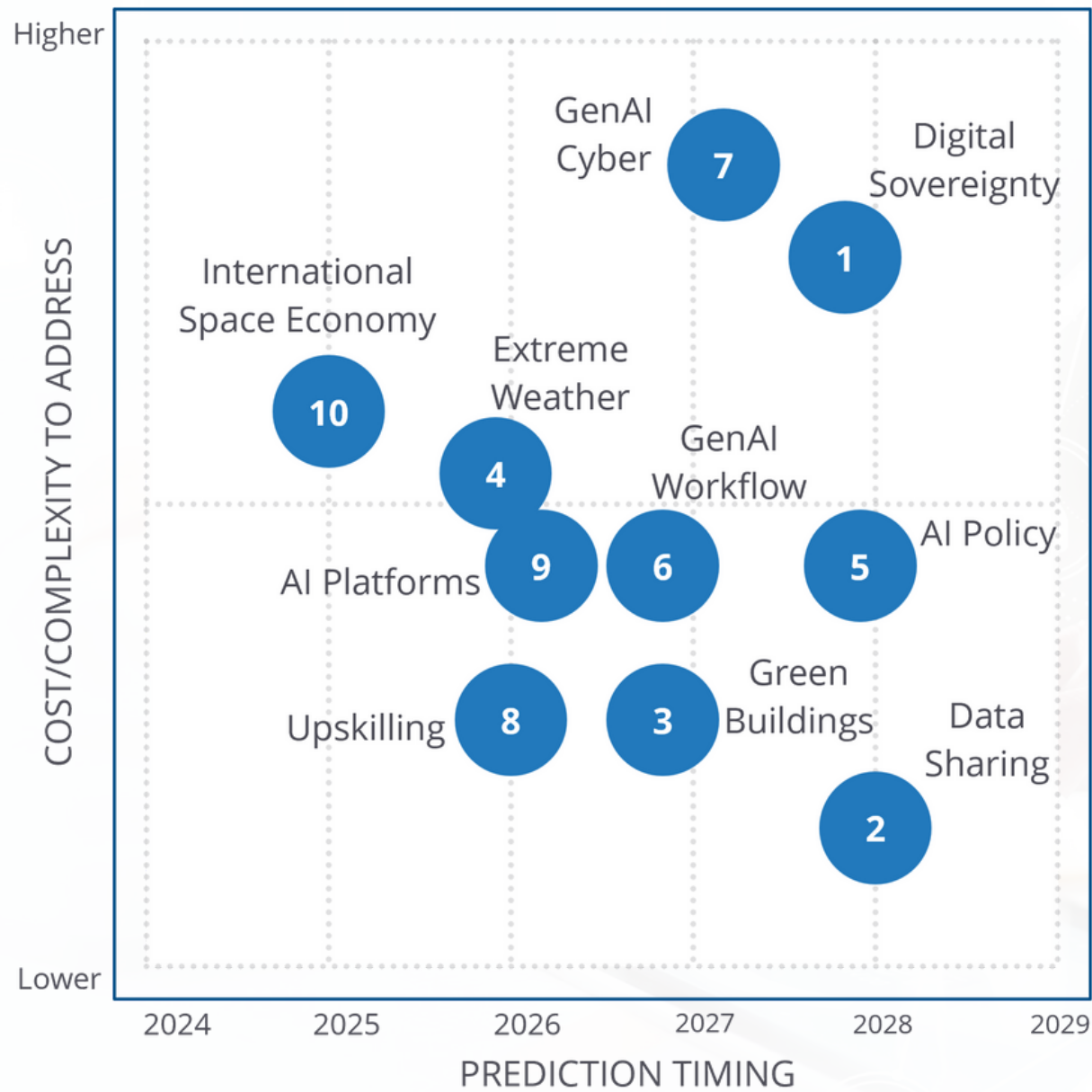
Guidance

Government agencies should facilitate continuous learning within their workforce. This means encouraging civil servants to learn and develop their skills throughout their careers. Leadership should link civil servants' skills to required capabilities and anticipate future developments in terms of skill needs to support services, citizen expectations, and emerging technologies.

Governments should identify what works and what doesn't. By tracking the progress of participants in upskilling initiatives, governments can identify which programs and approaches are most effective at helping people develop the skills they need. This information can then be used to design more effective upskilling initiatives in the future.

Governments should track and measure the results of their upskilling initiatives to ensure that they are effective. This data can be used to improve future upskilling initiatives.

IDC FutureScape Worldwide National Government 2024 Predictions



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 Source: IDC, 2023

National Government Predictions

These National Government predictions are intended to inform CIOs of key initiatives that should be included in agency strategic technology roadmaps. Technology such as automation, improved reporting and intelligence, privacy, security, cloud, and AI will enable agencies to become digitally resilient and communicate at scale, implement new cybersecurity measures, update, add and/or scale up services quickly, and train employees on new tools, rules, and processes. This IDC 2024 FutureScape includes not only specific predictions on deploying GenAI for national governments, but also includes AI and GenAI as critical technology for several predictions. AI in government is moving well beyond piloting and into the phase of execution and implementation, however at different rates, across different geographies and national agencies. Additionally, many national governments are sandboxing and piloting GenAI use cases while responsively waiting to scale out as they explore value, safety, and trust in data.

The drivers included in this IDC FutureScape will compel agencies to take a strategic approach to national security, sovereignty, and resilience and protection of virtual interactions as new attack surfaces and vulnerabilities are exposed and exploited by sophisticated global actors. As national governments replatform the organization, the recommended actions and guidance of these top ten predictions can enable a secure, agile, data-driven organization supported by an innovative workforce creating well-orchestrated approaches to customer journeys.

IDC FutureScape Worldwide Smart Cities 2024 Predictions

PREDICTION 1

75%

In 2024, 75% of cities and states will pilot GenAI to improve efficacy in community outreach and customer service, procurement, staff recruitment and training, and software development

IT Impact

IT will need to provide the operational structures around which stakeholders are able to experiment with GenAI while meeting established policies around fairness, transparency, and equity while fostering a climate of innovation and collaboration.

IT will need to establish an intelligence architecture that provides the capacity for personnel and leadership to understand how to use GenAI to deliver on city strategy; this will include working with GenAI-generated coding, which can expedite service innovations, but must be approached carefully.

Many GenAI use cases will change the way city workflow and processes run, and this in turn will require some retraining and reskilling of city IT personnel. Cities will need to transform internally to create and cultivate a culture of innovation and collaboration.

Guidance

Trust is a prerequisite to innovation; as such, cities should invest in the effort required to build generative AI policy and guardrails that allow for innovation but protect against misuse. Policy should be designed to prevent utilizing sensitive or proprietary data, guard against bias, strive for transparency, and meet legal standards regarding content ownership.

AI deployments need to be human-centered, explainable, transparent, inclusive, private, secure, and fair and that innovation itself needs to be robust yet responsible.

As cities begin to experiment with GenAI created/tested/vetted code, developers report being both confident in the code generated, while also regularly finding security vulnerabilities in the code. Thus, cities will need to pay attention to data quality in training data, while also layering additional oversight tools to add protections or remediations.

PREDICTION 2

70%

By 2025, 70% of sub-national governments will deploy hybrid cloud to protect sensitive information while deploying multi-cloud for valued services, application development, and edge data integration.

IT Impact

Growth in hybrid and multi-cloud leads to more complex IT environments with a multitude of vendors to manage from the edge to the datacenter. IT staff will find that IT vendors have varying compliance levels, security controls, and application development environments.

Flow of data between public clouds, and between public and private clouds, can introduce additional security risks, such as network security risks. Expected staff shortages in cloud cybersecurity will add challenges for existing staff.

Inconsistent administrator and developer experiences may cause more work for employees and reduce productivity. IT staff will look to invest in automation and orchestration tools, especially to maintain visibility and control.

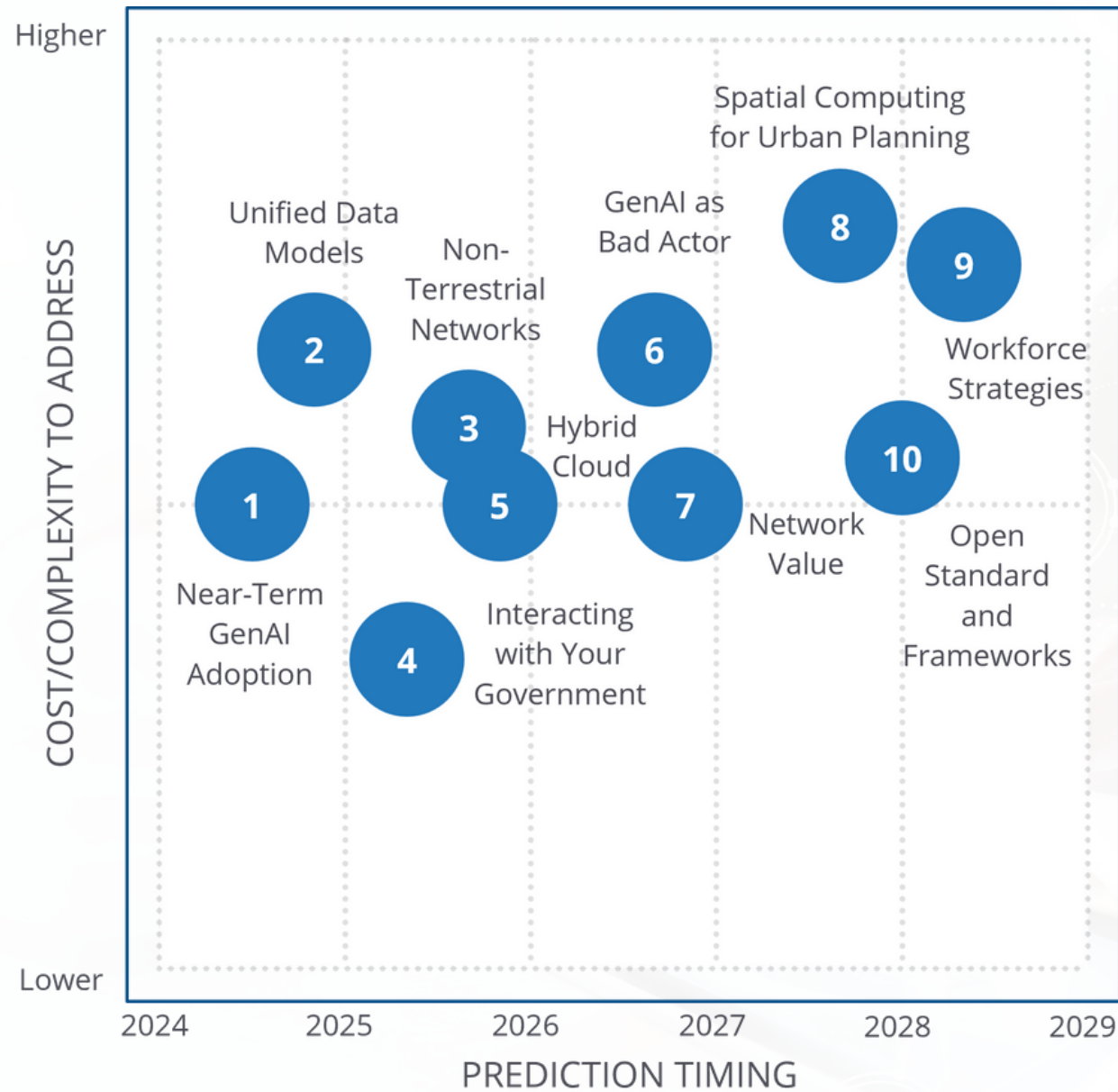
Guidance

Take a proactive approach to cloud orchestration and vendor management to attend to the differences in security and compliance, among other challenges. Consider orchestration and system management tools, including the benefits of open-source platforms, to coordinate separate and distinct public and private cloud services and enable administration consistently across environments.

Adopt data logistics platforms that enable active data migrations between hyperscalers to optimize costs, reduce vendor dependencies and improve governance, in particular for multi cloud data sharing and portability. Automation of processes like code deployment and application testing can help organizations cope with staff and skills shortages.

Consider an architecture that allows for consistent administrative and developer experiences.

IDC FutureScape Worldwide Smart Cities 2024 Predictions



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Source: IDC, 2023*

Worldwide Smart, Sustainable Cities: AI, Cloud and Edge Strategies

A common goal across municipalities is to use data and technology to modernize front and back-end systems to enable the faster delivery of secure reliable and human-centered digital services. IDC analysts analyze best practices for technology investments in the context of digital equity, the employee experience, and sustainable outcomes. This analysis covers vendor offerings in cloud, mobility, IoT and edge computing which provide the foundational layer for advanced solutions, such as digital twins. Uses of data and artificial intelligence to drive productivity and a new frontier of services are also core research topics. Solutions for environmental sustainability and resilience, urban planning and administration, public safety, and transportation are covered in depth as well as the new processes, relationships, business models, and policies required for effective deployment of technologies.

Approach

The IDC Government Insights: Worldwide Smart Cities and Communities Strategies research advisory service analyzes how municipalities, state, provincial and regional communities, with ICT suppliers and other partners, are leveraging technology to improve operations and better serve residents, visitors, and businesses. The continuing evolution of cities along IDC's Smart City Maturity Model, the creation of new partnerships and funding models, and the use of innovative technologies to create smart, sustainable ecosystems are covered in detail.

IDC FutureScape Worldwide Oil & Gas 2024 Predictions

PREDICTION 1

40%

By 2026, 40% of oil and gas companies will invest in GenAI improving field technician productivity by 30% and capturing field technician knowledge digitally to build a knowledge management platform

IT Impact

New skill sets will need to be obtained either internally or externally in order to create and deploy GenAI driven models. New hires, upskilling or working with third parties proficient in GenAI will be required and get desired results and improvements in oil and gas field service KPIs.

IT needs to create an environment that combines IT and OT security efforts. This can be an organizational challenge for many oil and gas organizations, which have historically managed these two areas separately. A holistic approach to security will require buy-in, education, awareness, training and coordination across IT and OT leadership and departments.

Guidance

Do not delay investing in GenAI skill sets. GenAI adoption in many industry verticals is moving at a steady pace. However, the oil and gas industry can be slower than many asset intensive industries when investing in new technologies. Nevertheless, it will be essential to have GenAI skillsets in place either internally or externally to fully leverage GenAI in a timely fashion.

Take a platform approach to operations. Breaking down silos in technologies, processes and personnel will be critical success factor in fully leveraging GenAI capabilities in field services. The ability to coordinate, integrate and leverage data from core operational systems across different departments and functions will be necessary to take full advantage of GenAI.

PREDICTION 2

50%

By 2026, 50% midstream and downstream will converge IT and OT security skills, technologies, and processes to protect and mitigate cyber and physical threats, reducing overall security breaches by 50%.

IT Impact

IT needs to create an environment that combines IT and OT security efforts. This can be an organizational challenge for many oil and gas organizations, which have historically managed these two areas separately. A holistic approach to security will require buy-in, education, awareness, training and coordination across IT and OT leadership and departments.

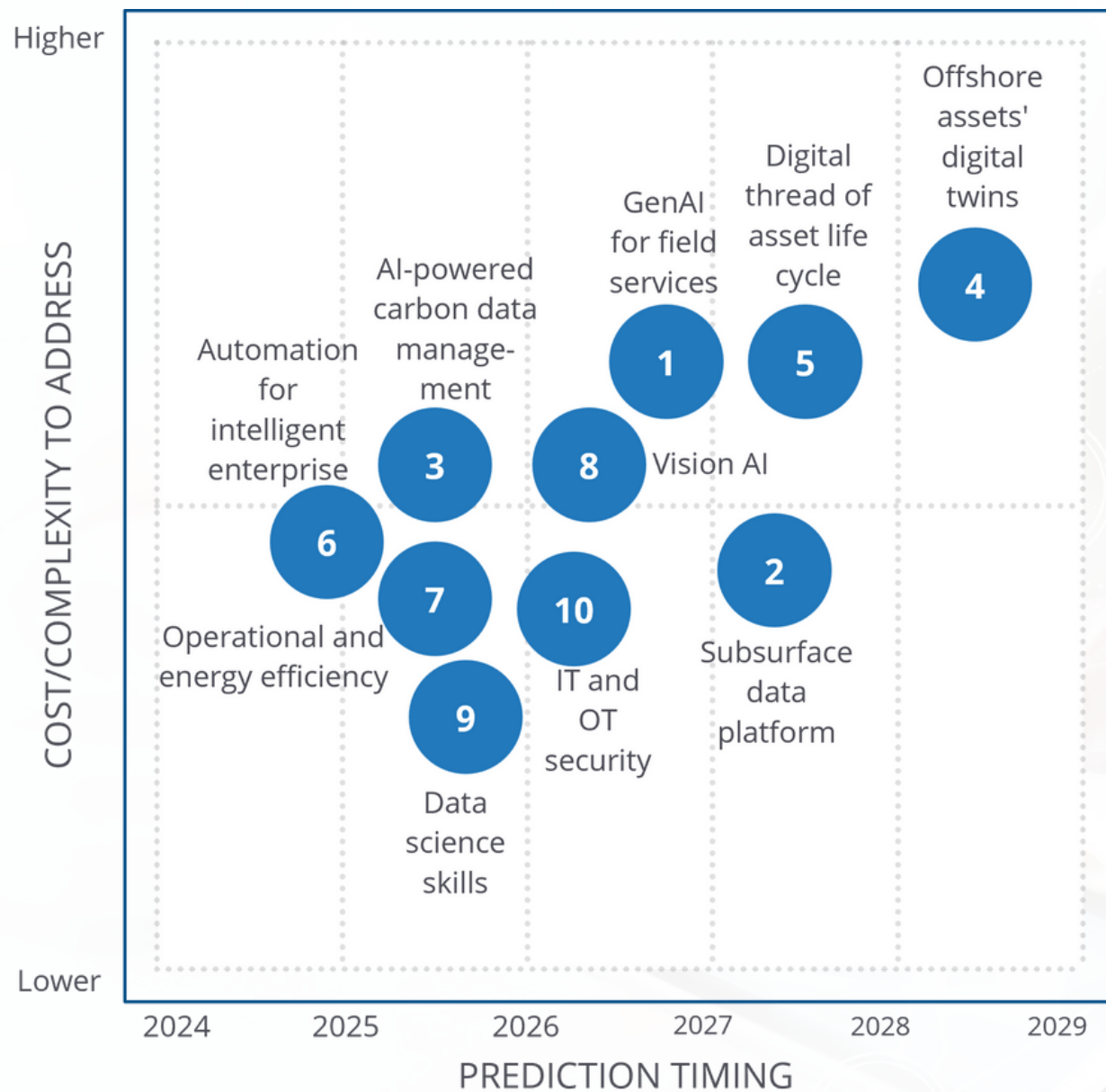
Outsourcing operational functions in oil and gas companies is becoming more common, which increases the risk of insider threats. IT must enforce stringent security policies that apply to all entities within an organization which includes employees, contractors, and vendors. This includes implementing rigid identity and access management procedures that will mitigate the expanding landscape of threats.

Guidance

Establish security policy training and education for both IT and OT professionals within your oil and gas organization. As IT and OT systems, processes and compliance become more intertwined, it will be necessary to break down any silos that exist between the two in order to create a single security unit which will be more effective when working together.

Identify security gaps within and between IT and OT systems. Evaluate potential threats across the value chain to protect the most critical data, information, assets, and systems. Doing this will provide the greatest value in the transport, storing and distribution of oil and gas midstream and properly securing refining processes and assets downstream.

IDC FutureScape Worldwide Oil & Gas 2024 Predictions



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 Source: IDC, 2023

Oil & Gas Digital Strategies

Over the past three years, the oil and gas market has undergone unprecedented disruptions, impacted by several global events including the COVID-19 pandemic, inflation, the Russia-Ukraine War, the growing social and political push addressing climate change, and challenges within the global supply chain. These disruptions have significantly impacted the way oil and gas companies operate. Among all the external forces, Ukraine war, in particular, has significantly impacted the global energy market in 2022-2023. As a result, several ongoing core oil business and energy transition-related initiatives were either put on hold or slowed down, while the spotlight is back on energy security.

To confront the challenge of energy dilemma – securing supply of energy versus greening of energy, oil companies need a significant transformation - transitioning from conventional pure oil business models to those that emphasize sustainable new energy. The new energy model must rely on the following 3 key pillars:

- **New energy business:** to balance portfolio with clean energy businesses such as renewable energy, e-mobility, CCS-as-a-Service, battery storage, and so on.
- **Sustainability & Decarbonization:** to implement principles of circularity and resource conservation into business processes. While minimizing carbon emission via remedial action such as CCUS, methane reduction, flaring reduction, and electrification of oil platforms and refinery or chemical plants.
- **Operational Efficiency:** to optimize assets, processes and workers while ensuring people and process safety thus saving time, cost, and energy usage.

IDC FutureScape Worldwide Utilities 2024 Predictions

PREDICTION 1

45%

In 2024, 45% of frontrunner energy suppliers will leverage GenAI technologies, especially chatbots, to improve customers' digital journeys cutting fallback calls to contact centers by over 60%

IT Impact

Utilities IT departments may not already house the skills necessary to deploy GenAI. Utilities' IT departments need to carefully assess existing internal skills to train and reskill staff if necessary. A skills map for core AI technologies, adjacent AI tech, as well as broader business applications and capabilities to deploy GenAI should be developed.

Utilities IT departments are fundamental to holistically understand and evaluate which GenAI use cases are worth investing in and deploying. Foundation models need to be trained on massive volumes of existing, often diverse, unlabeled, or unstructured data. GenAI life cycle workloads must also be evaluated and considered.

Guidance

Utilities' IT departments should look to their technology ecosystem to close GenAI skills gaps. However, utilities should retain some knowledge and skills internally to support continuity in the long run. Utilities' line of business departments that understand the underlying process of their operations should also be key stakeholders on GenAI projects.

Training foundation models, which are central to any GenAI application, has a significant impact on energy consumption and related CO2 emissions. Utilities must carefully evaluate the environmental impact of deploying GenAI. This is particularly important considering utilities' sustainability goals and leadership role they play in the energy transition.

PREDICTION 2

50%

By 2026, 50% of utilities in advanced markets will invest in ADMS or DERMS to optimize the influx of renewables and DERs coming online, decreasing their carbon footprints by 30% in the long run

IT Impact

IT departments will be tasked with supporting their organization's selection of ADMS and DERMS solutions, meeting the requirements of the line of business, while complementing the existing and future IT landscape.

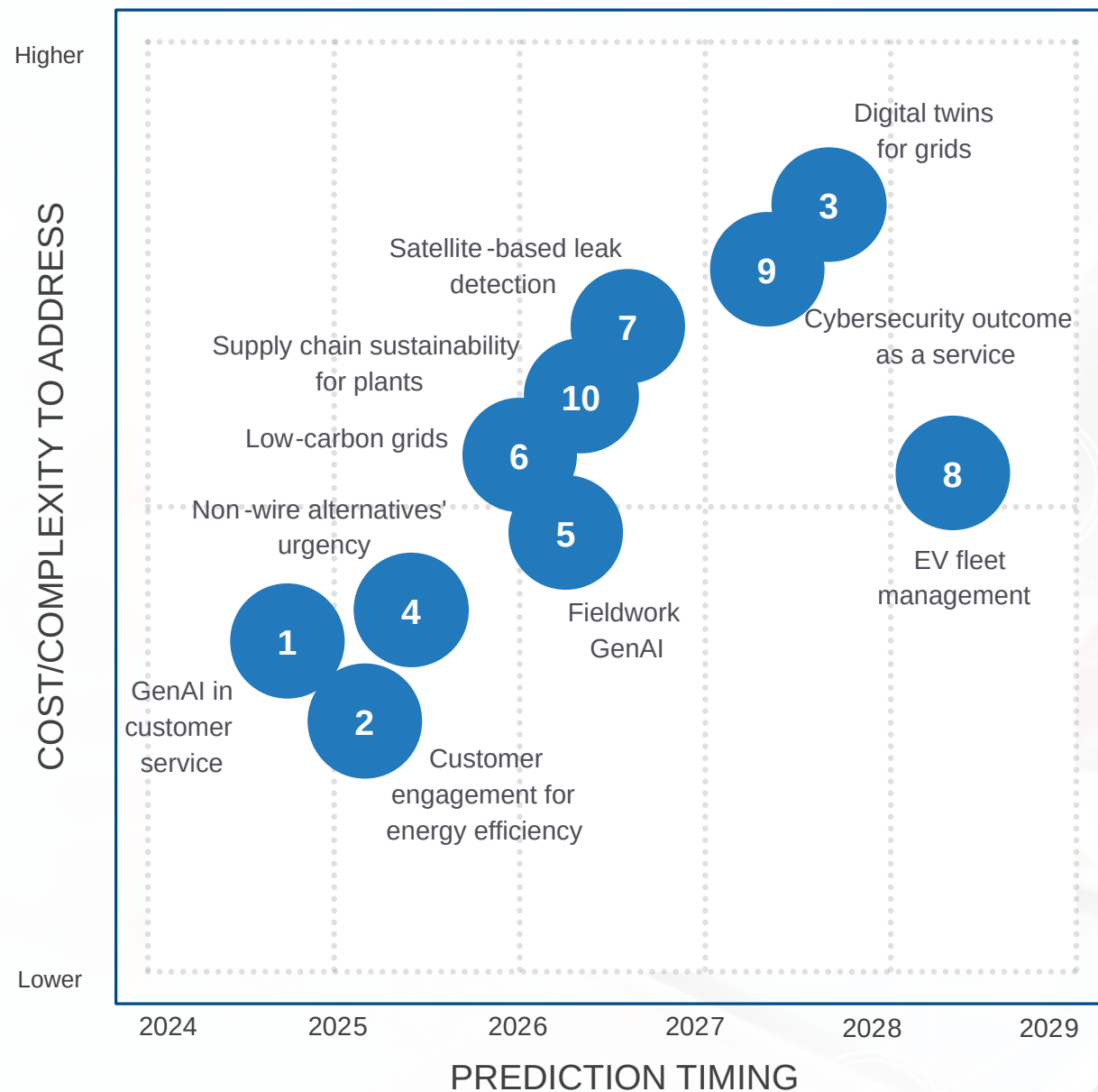
IT departments will need to closely collaborate with the line of business to not only understand the immediate needs of their distribution system, but also have a forecast and vision for future obstacles and challenges that will come in managing both utility connected renewables and behind the meter DERs.

Guidance

Become familiar with the vendor ecosystem in the ADMS and DERMS space, which offer a wide range of capabilities. Closely evaluate both ADMS and DERMS capabilities that can meet your utility's needs. A firm understanding of costs and capabilities of offerings in both the ADMS and DERMS space can save a substantial amount of time and expenses.

Take a holistic approach in managing all generation resources coming from both green energy and traditional fossil fuels to optimize the power grid in the best economic and environmental manner. Most ADMS and DERMS offerings are flexible and modular, providing buyers the option to purchase as needed as they evolve and mature.

IDC FutureScape Worldwide Utilities 2024 Predictions



Note: Marker number refers only to the order the prediction appears in the document and does not indicate rank or importance, unless otherwise noted in the Executive Summary.
 Source: IDC, 2023

Digital Utilities Strategies

Following a very difficult 2022, characterized by spiraling energy prices from the ongoing Russia-Ukraine War negatively impacting businesses around the world, this year had a more positive note. With receding energy prices, which are still not back to pre-energy crisis levels and possibly never will, focus returned to more longer-term initiatives and planning related to the energy transition. According to IDC's IDC Worldwide Energy Transition Survey (December 2022) almost 60% of organizations globally indicated that they were steaming ahead with their energy transition plans, either proceeding at the same pace as before the energy crisis or even accelerating their plans (more than 1 in 10 in the latter case).

Additionally, the extreme weather events of 2023, including the flooding in Libya and Eastern Africa, the blazing wildfires in Canada and Hawaii, the ice storm in Texas (US) and the severe heat waves that once again broke records all around the world just to name a few, forced the spotlight back on mitigating climate change through decarbonization, electrification and energy efficiency. In fact, globally, 84% of companies still plan to become carbon-neutral by 2040, and just under one-third plan to get there by the end of this decade. However, they admittedly need help, as 60% consider their decarbonization plans challenging.

This is a tremendous opportunity for utilities, which have decades-long expertise around electrification, decarbonization and energy efficiency, to drive the energy transition while growing their own business. Additionally, the energy transition, climate disruptions, and social sustainability have demonstrated that utilities are at the heart of economic resilience.

IDC FutureScape Worldwide Manufacturing 2024 Predictions

PREDICTION 1

50%

By 2026, half of G2000 companies are integrating operational systems with Gen AI to better ingest data, identify issues, and provide real time context to operators, improving efficiency by 5%

IT Impact

IT must ensure technology integrates with current systems and software, scales with the business and provides flexibility.

IT must ensure adequate collaboration with operational employees to ensure Gen AI automation tools are both practical and effective.

Companies will need to analyze the effect of different stakeholders, such as factory floor workers, warehouse workers, IT Teams, supervisors, inventory controllers and others.

Guidance

Automate data-to-insight wherever possible to both make jobs more interesting and as a way to speed decision-making and improve operator efficiency.

Companies must first fully understand their processes. Then decide the right level and balance of Gen AI automation.

Communicate, communicate, communicate – Gen AI is not a threat it is a tool that operators can use to be more efficient and effective.

PREDICTION 2

40%

By 2027, 40% of G2000 companies will be using comprehensive ecosystem sustainability data to make decisions across the full range of operations, reducing carbon footprint by 30%

IT Impact

Operationalizing sustainability will require substantial investment with respect to IT infrastructure, manpower, and support services — this must be balanced with cost.

Real-time sustainability data capture and analytics and remote connectivity options will be critical to provide necessary visibility for decisions.

Making the right tools available to move from 'posters to practice'.

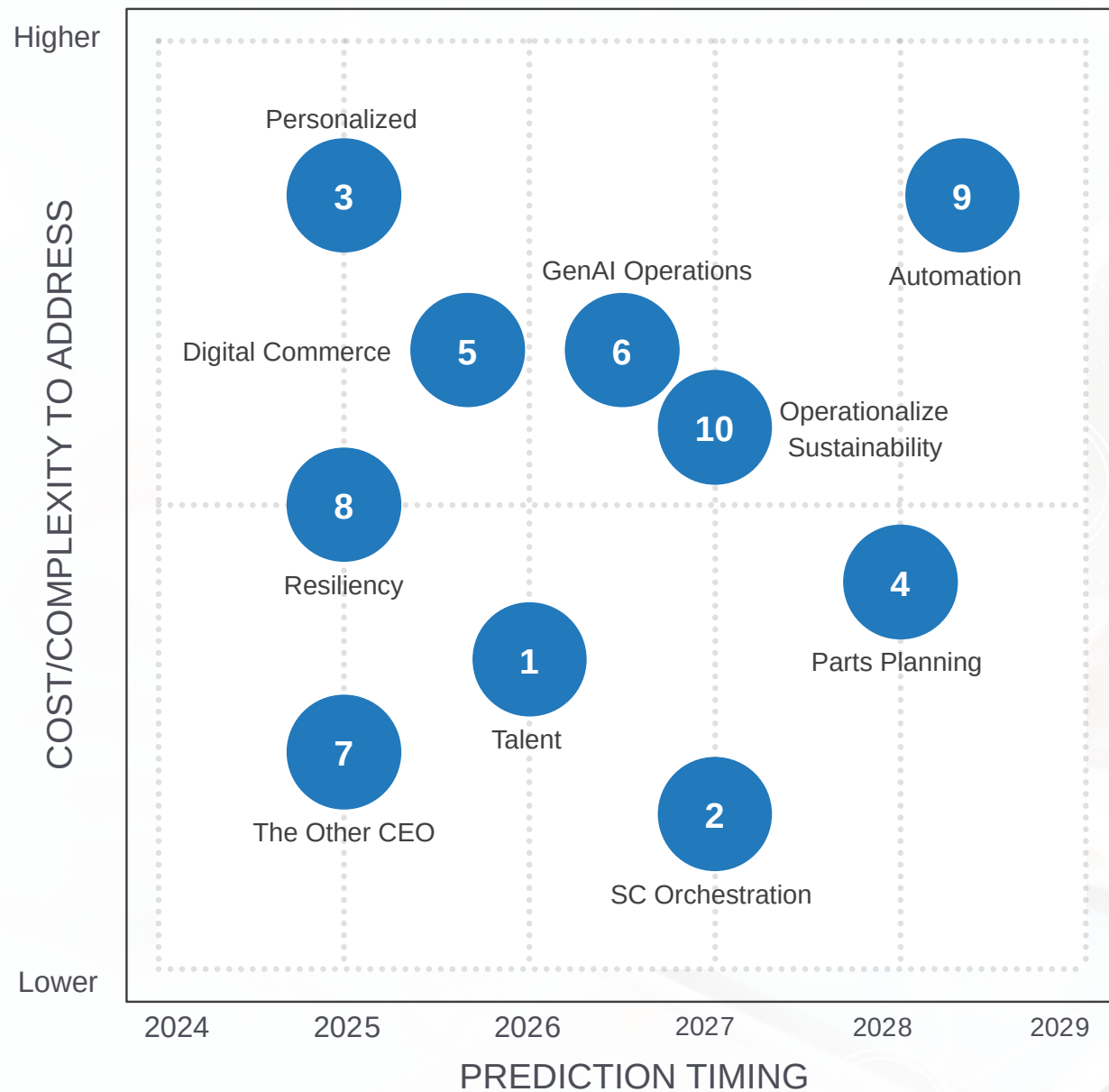
Guidance

Take a broader view of cost-benefit and how longer-term customer demographic shifts will impact buying priorities.

Expect that regulatory pressure will increase – even if you don't act proactively, be prepared to respond.

Build sustainability metrics into service level agreements with suppliers, contract manufacturers and third-party logistics providers.

IDC FutureScape Worldwide Manufacturing 2024 Predictions



*Note: Marker number refers only to the order the prediction appears in the document and does not indicate rank or importance, unless otherwise noted in the Executive Summary.
Source: IDC, 2023*

Manufacturing Strategies

The manufacturing industry continues to deal with high levels of change and both challenges and opportunities abound. In no particular order, IDC sees three main challenges. How and when to best transition to the cloud and leave behind highly customized, legacy on-premises applications, how to best meet emerging sustainability regulation and more from reporting to embedding sustainable practices into the way 'we run the business', and then how best to both adopt and adapt to decision and process automation technologies while preserving the critical roles for people and accelerating 'time-to-expertise'.

Key themes woven into our worldwide manufacturing top 10 predictions for 2024 include the focus on balancing resiliency & efficiency, supply chain management, product & service innovation, digital commerce, talent gaps, sustainability, and the emerging role of Gen AI. These predictions span the manufacturing value chain, as DX continues to be embraced by all parts of the business. This IDC study provides manufacturers with the top 10 predictions and underlying drivers that we expect to impact manufacturers' IT investments in 2023 and beyond. Technology leaders and their counterparts in the line-of-business (LOB) operations can use this document to guide their IT strategic planning efforts.

IDC provides its top 10 predictions for the manufacturing industry with analysis that covers a five-year period. The predictions are designed to provide organizational decision makers with a call-to-action investment plan with respect to these technologies.

Mastering AI Everywhere, Across Industries, in the Digital Business Era

IDC believes that Generative AI will trigger a market transition to 'AI Everywhere' that will define the next frontier of the Digital Business journey.

IDC's FutureScape 2024 predictions show that GenAI will impact every business function, every process, every employee, and every customer interaction across all industries.

This will require new leadership approaches, new business models and new competencies to 'Master AI Everywhere in the Digital Business Era'.

To learn more and access more IDC FutureScape content, [click here](#).

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