

What to watch for in 2023

The market landscape will continue to be in a state of unpredictable flux in the next 12 months.

Three ways businesses can adapt, compete and win.

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Wherever you look, digital adoption has taken a quantum leap, forever changing how organizations, industries, societies and people operate and behave. The pandemic accelerated the digitalization of customer interactions by several years, and there's no turning back: **We now live in an era of digital.**



A new generation of customers increasingly evaluates companies based on the quality of the digital experience offered.

These massive shifts impose a new way of thinking when it comes to addressing customer needs and delivering business outcomes. The new approach is focused on shorter time to market, iterative processes and value creation.

Amid these changes, business leaders are also under pressure from customers, investors, regulators and employees to become active participants on environmental, social and governance (ESG) issues. It's now vital to see sustainable business as an opportunity to drive business efficiency and revenue growth.

Further, a new generation of customers increasingly evaluates companies based on the quality of the digital experience offered. It's now crucial to deliver a trusted and personalized customer experience (CX) that provides competitive differentiation.

With economic headwinds and a looming fear of recession, enterprises are also looking to technology and data to transform themselves, make better decisions, reduce costs, boost productivity, invent or reinvent offerings and deliver innovative solutions. The overall objective: become a more nimble, lean, customer-centric and resilient enterprise.

In this landscape, it's easy to see why technology is even more essential for gaining a competitive edge than ever before. The resulting tech explosion is widening the performance gap between leaders and laggards.

Three guideposts for the year ahead

With the next wave of digital change imminent, forward-looking enterprises will take this opportunity to reimagine their current state while wiring themselves for the future, using three guideposts to light the way:

1. **Power of experience:** Crafting solutions that focus on connected, personalized and immersive experiences
2. **Power of digitalization:** Combining pragmatic innovations with current investments to create a digitalized modular enterprise
3. **Power of decisioning:** Embracing a “data culture” that drives high-impact, data-driven decisioning

For enterprises to orchestrate, operationalize and integrate these three themes into their digital strategy and reach the desired state, it is critical to focus on building capabilities and experiences around the disruptive technologies that form the building blocks for the digital future.

1

Power of experience

Connected, personalized, immersive experiences

Nearly all successful enterprises share one thing in common: They recognize they're in the business of customer experience (CX). But as customers increasingly expect frictionless and seamless experiences through the channel, device and touchpoint that is most convenient to them at that given moment, enterprises are also evolving from multichannel to omnichannel to multi-experience (MX). This involves leveraging various modalities, digital touchpoints, apps and devices to design and develop a seamless experience.

In the past, MX developers designed apps independently, based on how people clicked, spoke and touched various web, mobile and wearable interfaces. Now, all these experiences are built on the bedrock of ensuring the best user experience (UX), which is managed by product, program and service delivery managers.

Even though CX, MX and UX are inextricably intertwined and interdependent in the digital experience economy, they've traditionally worked in siloes. As it becomes increasingly important to identify intersections between these disciplines to gain a competitive edge, businesses are looking to create more connected, personalized and immersive experiences.

While immersive digital experiences are still in the early days, it's time to get started now and keep experimenting. Enterprises need to evolve their technology infrastructure, strategic thinking, business models and services to make sure they are not left behind.

This is the time to assess and discover suitable technologies and gain experience, starting small and moving fast while taking care of privacy and data security.



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The building blocks to consider include:

Hyper-personalization. In today's competitive environment, organizations must act in a more contextually relevant, intelligent and impactful manner, which calls for a detailed understanding of their target audience. Businesses must find a way to personalize their interactions to engage customers and boost sales.

For better customer service, higher efficiency, growth, profitability and increased client lifetime value, hyper-personalization has emerged as a strategic necessity. To anticipate consumer needs and offer better customer experiences, businesses need to gather detailed information through extensive data and analytics.

Omnichannel delivery. When customers engage with brands both physically and digitally (i.e., “phygital” commerce), integrated omnichannel strategies need to prioritize customer service and an effortless buying experience. Today's customers demand and expect the same level of service no matter where or how they shop. An omnichannel business strategy can greatly increase revenue for firms, while the lack of one can seriously impair sales potential.

By comprehending consumer journeys and creating individualized experiences, businesses can enhance their current omnichannel approach. Each cross-channel touchpoint should offer customers a unified experience that they can interact with easily, thanks to an omnichannel strategy.

Studies show that companies with a strong omnichannel retail strategy have higher customer retention rates and that omnichannel consumers typically spend more over time, with larger transaction sizes and higher customer lifetime value.



60% of consumers familiar with the metaverse engage in metaverse activities today.
95% of business leaders expect it to have a positive impact on their industry within five to 10 years.

Source: McKinsey & Co.

Metaverse. In the metaverse, businesses will deliver completely new products, services and experiences that supersede anything that exists online today. Over time, the metaverse will offer decentralized, persistent, interoperable and collaborative business opportunities and models that will help companies elevate the digital business to unprecedented heights, improving brand recall and loyalty while engaging with Gen Z and Gen Alpha customers.

According to McKinsey, 60% of consumers familiar with the metaverse engage in metaverse activities today, and 95% of business leaders expect it to have a positive impact on their industry within five to 10 years.¹

The metaverse is widely regarded to represent a new era: the next evolution of digital platforms, mobile internet and social connection and a center of web 3.0. It will transform traditional internet experiences into connected, immersive virtual- and augmented-reality worlds.



2

Power of digitalization

Digitalized modular enterprises

New technologies are fundamentally changing entire markets and ecosystems; transformation timelines are being compressed from years to months and happening across multiple functions simultaneously; old business processes and customer touchpoints are being swept away by online and app-based companies powered by cloud, APIs, analytics and mobile.

To thrive, modern enterprises need completely new levels of agility, flexibility, adaptability and resilience. They need to shift their architectural strategies from a hierarchical to a modular approach, using software components and APIs, as well as autonomous teams with distributed responsibilities, to deliver innovation quickly and adapt applications

dynamically. Doing so will maximize their ability to build, assemble and reassemble core business elements at scale and provide new avenues for cost efficiency and revenue generation.

A modular approach requires several technology components, including microservices, low-code/no-code, cloud-native applications/software as a service (SaaS) platforms, event-driven architectures, reusable, open-source software components and the mobile application ecosystem. All of these lower the barrier to creating a composable application by linking applications and the data associated with them and creating new workflows.

Adopting a modular business approach takes some planning; however, once the foundation is in place, it can be swiftly improved and tailored based on needs.

Technology enablers like automation as a service, application as a service, digital twins and infrastructure as a service have helped forward-thinking businesses transform from monolithic, traditional enterprises to modular enterprises, built by the business, for the business. To make the transformation, businesses need to significantly reduce complexity and reliance on legacy systems and processes, while breaking up the layers in the system (including IT tech) landscape, turning them into interconnected modules performing only the tasks they were designed to do.



Here's a closer look at the some of the technology enablers of digitalized modular enterprises:

Automation as a service. With increased competition, globalization and changing business cycles, there is a stronger emphasis on innovation, agility and lowering operational complexity. Automation as a service helps businesses accomplish these goals.

The automation as a service market is expected to reach \$14.31 billion in 2026, up from \$5.25 billion in 2022.² Businesses can be significantly impacted by integrating technologies like visual inspection, machine learning (ML) and artificial intelligence (AI) with automation as a service as it can result in the highest quality outcomes, innovation of new practices and lower labor costs, increasing efficiency and maximizing profits.

App as a service. Several factors are encouraging businesses to shift away from conventional software development to solutions like low-code/no-code tools. These include the need to reduce spending, speed app development and deployment at unprecedented levels, and meet constantly changing business demands.

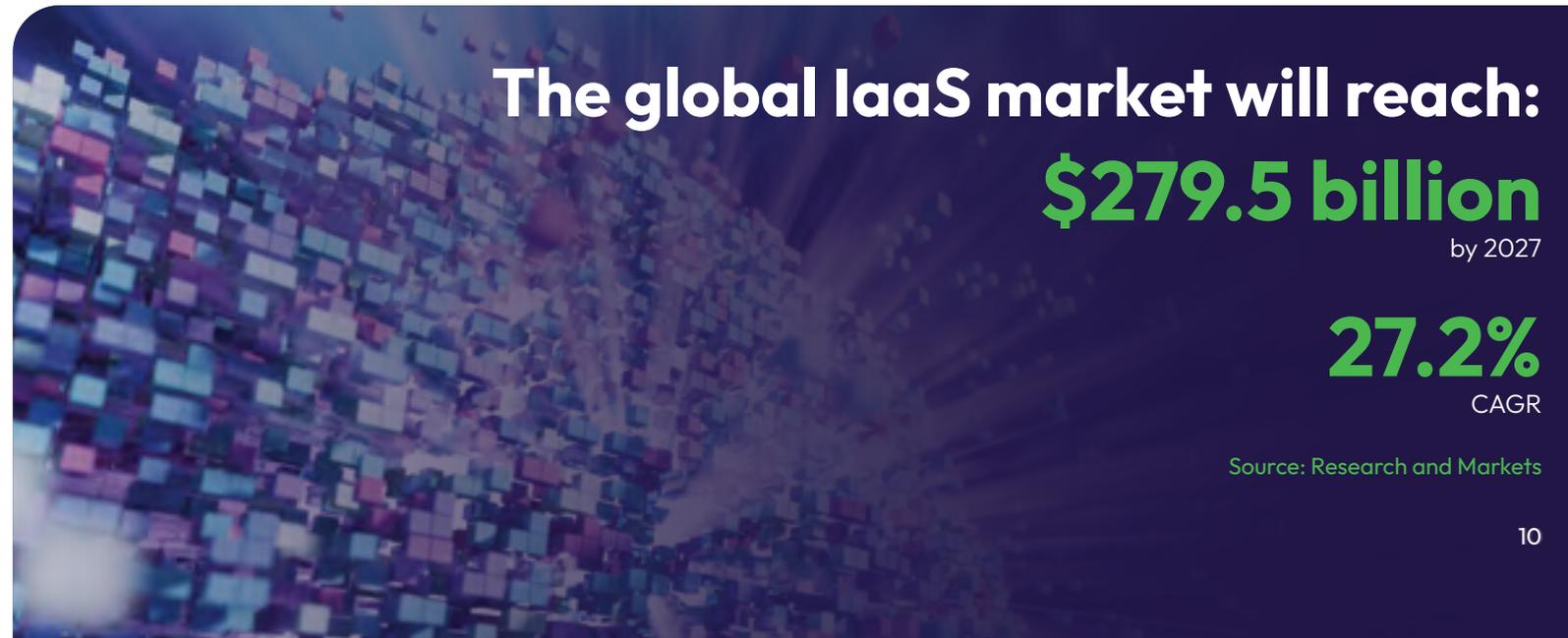
Gartner predicts that by 2025, 70% of new apps built by enterprises will use low-code or no-code technologies, up from less than 25% in 2020.³

The low-code/no-code development market has rapidly expanded over the past few years, and we can expect these tools to reshape how businesses operate to become more effective, responsive, nimble and tactical in their programming endeavors. In fact, according to Gartner, the demand for business-driven hyper-automation is expected to be one of the top three factors driving the adoption of low-code.⁴

Infra as a service. Infrastructure as a service (IaaS) is a type of cloud computing service that offers essential compute, storage and networking resources on demand, on a pay-as-you-go basis. According to Research and

Markets, the global IaaS market will reach \$279.5 billion by 2027, at a CAGR of 27.2%.⁵

A major driver propelling the expansion of the IaaS market is digitalization, which is occurring concurrently with the increased acceptance of cloud computing services. In addition, the demand for faster data accessibility and more affordable information technology infrastructure is rising across a number of industries, including banking, financial services and insurance, healthcare, retail, manufacturing and telecommunications, boosting the market's expansion. It offers various benefits, such as minimal cost of operation, rapid innovation and enhanced stability, reliability and supportability.



The security as a service market is expected to grow:

\$12.4 billion

in 2021

\$23.8 billion

by 2026

13.8%

CAGR

Source: Markets and Markets

Security as a service. As businesses adopt higher levels of digitalization, the volume of data has greatly expanded—which, in turn, has attracted new types of cybercrimes and attacks.

According to Markets and Markets, the global security as a service market is expected to grow from USD \$12.4 billion in 2021 to USD \$23.8 billion by 2026, at a CAGR of 13.8% during the forecast period.⁶ The key growth drivers are compliance with regulatory and data protection laws, increased demand for cloud-based security solutions among small and medium-size businesses, and high cost and risks in managing on-premises security solutions.

Security as a service is a complete solution that enables a company to handle any security issue without the need for internal security personnel. The company can focus on growing its business rather than securing its digital assets by outsourcing its security concerns. Services include data loss prevention, antivirus administration and intrusion detection. With security as a service, businesses can take advantage of the knowledge and creativity of a devoted cybersecurity team that specializes in the intricate details of breach prevention in a cloud computing environment.

Digital twins. Wouldn't it be extraordinary to simulate plans or build what-if scenarios for the products, facilities and processes you want to change without putting real-world resources behind real-world implementation? That's the promise of digital twins.

The global digital twin market is poised to reach \$183 billion in revenue by 2031, according to Gartner.⁷ According to Markets and Markets, the digital twin market will grow from USD \$6.9 billion in 2022 to USD \$73.5 billion by 2027, at a CAGR of 60.6%.⁸

The digital twin value proposition is unique to each industry and use case. These technology solutions help realize the true essence of physical-digital convergence from their ability to blend real-time data, physical dependency models and intelligence from different platforms.

Digital twins provide the business with an unprecedented ability to simulate, optimize, test and operate equipment/products in a revolutionary way to proactively identify potential faults, pre-empt asset maintenance needs, reduce operational costs and asset downtime, reduce risks, increase safety and sustainability, and ultimately improve customer satisfaction.

Realizing the full potential of these smart, connected ecosystems is still a long way off, but innovative enterprises are finding ways to start planning and securing quick wins, which can then be scaled out.

3

Power of decisioning

Data-driven decisioning

The essence of digital transformation is to become a data-driven organization, ensuring that key decisions, actions and processes are strongly influenced by data-driven insights rather than by human intuition.

Thus, enterprises need to create a "data culture," which requires shifting data ownership from the hands of a few specialists, to a data democratization approach. By doing so, businesses can provide unfettered, enterprise-wide data access to everyone in the organization, thus truly becoming data-driven.

Done right, data democratization—along with the utilization of data analytics and business intelligence tools to facilitate data consumption—will be a game changer, catapulting organizations to new heights of performance. The ability to instantly access, consume and understand data will uncover new possibilities and spur faster decision making that will result in more agile teams delivering innovative products and services to better serve customers.



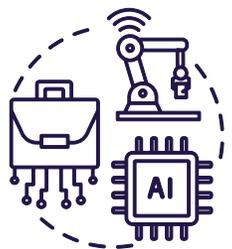
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Two key components of a data culture include:

Data products. As enterprises begin the journey of data transformation by adopting a data-driven business, they need to develop a mindset centered on the data product, built on cross-organizational trust enabled by a shift in organizational culture. Businesses should evaluate their existing capabilities and infrastructure, and then create or modify the data infrastructure alongside the evolving data product.

Centralized data platform architectures and data lakes don't scale well to meet changing organizational and process requirements, thus failing to deliver insights with the speed and flexibility needed.

Enterprises, usually distributed ones, can derive enhanced benefits from a distributed data architecture, which multiply as these organizations scale and grow. Benefits include improved business agility, scalability and fast realization of value from data. This replaces the bottleneck of the centralized monolithic data lake or warehouse by decentralizing data operations. It also ensures greater autonomy to domain experts (functional owners) and enables the provisioning of data infrastructure as a service, thus providing scalability and reducing operational and storage costs.



84% say responsible AI should be a top management priority

16% of companies have a fully mature responsible AI program

Source: Boston Consulting Group

Responsible AI. AI has gained prominence over the last decade as businesses have worked to unlock its vast potential in solving a wide variety of business challenges. These range from finding anomalies in financial systems to prevent fraud, to enabling personalized medication and care, to improving customer service via chatbots, to optimizing supply chains.

However, this powerful, multi-faceted set of technologies can have far-reaching unintended consequences not only to brand reputation and the bottom line but also, and more importantly, to employees, individuals and society as a whole if applied inappropriately or executed with insufficient rigor and discipline.

This is where responsible and ethical AI comes in. At its core, responsible AI is about considering the impact of the use of AI systems on real people.

Responsible AI helps build trusted customer relationships. As enterprises take proactive action to combat bias and improve transparency for their AI systems, customer trust grows, leading to improved retention, spending and adoption of new services/products.

Although most companies recognize the importance of responsible AI, there's a large gap between aspiration and action. According to a Boston Consulting Group survey, 84% of respondents say responsible AI should be a top management priority, yet just 16% of companies have a fully mature responsible AI program.⁹

Preparing for the year ahead

A confluence of changing market dynamics, tightening regulatory pressures and evolving customer preferences are shaping entirely new ways of doing business. New business models and experimentation with emerging technologies are delivering decisive advances in customer experience and operational efficiency, and driving a competitive edge.

As the underlying technologies evolve further, bringing new value to business and customers, enterprises need to adopt an innovative mindset and create a culture that embraces change, experimentation and continual learning and improvement. By doing so, they can stay relevant, pursue new heights of rapid innovation and improved performance, and respond to market demands with agility and dexterity.

As unprecedented pressure mounts on organizations to meet new customer expectations, it is crucial for enterprises to be customer-centric, delivering personalization at scale and frictionless experiences by actively applying the right combination of technology solutions and capabilities.

At the same time, it's important for enterprises to commit to sustainability and ethics while developing new digital solutions and taking concrete steps guided by an integrated strategy with clear transformation goals.

As always, these strategic technology trends do not operate independently of each other but rather build on and reinforce each other. Together, they enable organizational nimbleness that will help shape a successful future.

About the author



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I'm a problem solver and evangelist, focused on applying the right mix of business and technical competency to solve large business problems. I thrive on fuzziness and am passionate about defining the blueprint for digital transformation, with clear outcomes and

elevated experiences for my customers. I have the ability to inspire teams to work toward common goals and accomplish desired results. I have over 22 years of diversified technical experience in architecting, solutioning, innovation and product development.

In my current role, I lead the innovation and establish the engineering mindset within Brillio. I have a Computer Science Engineering degree from The Bangalore University and am a member of the Forbes Technology Council.

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Endnotes

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