

**TECH
TRENDS**
By Globant

5 tech trends *for* 2024

How AI, quantum, robotics, and more will shape the upcoming year



ARTIFICIAL INTELLIGENCE.

The window of opportunity in AI opens for large and small businesses.

QUANTUM COMPUTING.

Quantum computing leaps from the pages of sci-fi, triggering the interest of industry.

ROBOTICS.

Versatile robots pave the way for novel applications.

BLOCKCHAIN.

Blockchain's industry applications are a go, but mass adoption lags.

IMMERSIVE EXPERIENCES.

While investment interest wanes, interest in 3D immersive experiences is still strong.

Introduction

Technology continues to be the driving force behind a rapidly changing world. This is evident at a business and, more importantly, at a human level. At this time of year, flashy predictions often steal the spotlight, making it easy to get distracted from what truly matters: using technology to improve a wide range of capabilities.

Put more simply, using technology to make your business better. Or your customer experience better. Or your employee experience better. Championing better human experience.

A foundational commitment to authenticity and legitimacy should be at the core of every technology venture. As we unveil this year's trends report, we stand firmly grounded in our identity—a technology company that has honed its expertise over the years, steadfastly advocating for technology-driven solutions, such as AI, tailored for our customers.





**We remain dedicated to what we do best:
delivering genuine, impactful innovations
stemming from who we are and the
profound knowledge we bring.**

Without a crystal ball to cite trends, we find that sometimes we're right and sometimes wrong. While some predictions pan out and are discussed frequently, other technologies progress steadily despite being in the background of conversations.

***So what will 2024
have in store?***

Thought leaders at Globant weigh in with their predictions for the next 12 months and beyond, we hope these predictions will provide insights and ideas to build the foundation for long-term success...and help you improve how your business is presented to the world.

01.

Artificial Intelligence

Generative AI opens the window of opportunity for businesses of all sizes.



The artificial intelligence space has been heating up for nearly a decade, but the launch of OpenAI's ChatGPT triggered an explosion of public interest, bringing relevance to significant investments in the technology over the last five years.

In 2024, the past year's focus on research and innovation will continue as organizations of all sizes define where and how to use this technology to benefit their users best.

Beyond 2024, AI will impact how we work and live in more ways than we realize, and organizations will start to see a return on their efforts to integrate the technology.

Integrated AI experiences.

In 2023, big businesses started focusing on using AI for cost optimization and efficiency. Still, the opportunity to use AI to skyrocket **customer experiences** in organizations across the board is largely untapped.



In 2024, organizations who have invested in AI in 2023 will focus on differentiating their customer experiences.



Nicolas Avila

Globant's Chief Technology Officer
in North America

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We'll see marked advancements in the use of generative AI in customer experience, but as that ramps up, customer awareness that they are interacting with AI will go down. We've seen it happen in other forms of AI, it is so embedded into every digital product, people didn't even know they have been using it for the last five to ten years.

As part of the experience improvement to come, we believe organizations that bring a design-first approach will ultimately win.

When envisioning the magnitude of change that will take place in the artificial intelligence space, we think about the vision of Steve Jobs as he sought to put a personal computer in the hands of every individual. He recognized that to do that, he had to make devices easier and easier to use. The same concept will have to happen with artificial intelligence solutions, and design will play a significant role, building on our 2023 prediction that we'd begin to **discover AI embedded in our everyday lives.**

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As we saw in the recent X announcement on PromptIDE, the threshold for fluency and capability in these technologies will be lowered, tools will be more capable, making them more accessible for everyone.



Isa Goksu

Globant's Chief Technology Officer for the United Kingdom



Carolina Dolan Chandler

Globant's Chief Digital Officer

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When you go to a website right now on your phone, and it is not mobile optimized, you decide if you want to do business with them. I believe we will be in the same situation in five years regarding AI. Customers will question their legitimacy if businesses are not improving their operations and experience with integrated AI tools.

Four key themes will define how enterprises move forward with artificial intelligence for competitive advantage:

01.

Action-enabled AI products will help humans think and do, helping people of all backgrounds augment how they accomplish tasks. In the context of mainstream generative AI tools like Google's BARD and OpenAI's ChatGPT, the technology can "generate" but cannot "act." Artificial intelligence must solve end-to-end customer problems to realize full integration and helpfulness. AI of the future will be capable of taking action. It will use its available capabilities to achieve a broad, high-level goal.

In 2024, we believe there will be breakthrough solutions in **action-enabled AI, with potential first movers in the hospitality, entertainment, and retail industries.**

Additionally, organizations will continue to tap into the next generation of work. Chatspot built on Hubspot, Grammarly, Midjourney AI, and OtterAI are just a few (of thousands) of AI solutions that offer a wide range of industries an opportunity to streamline their work, reach their customers more efficiently, create eye-popping visuals, and have a virtual notetaker on a subscription basis for no upfront costs. While none of these tools can replace a human, they significantly increase the capacity of an employee, allowing them time to focus on tasks that add strategic value.

In 2024, with the development of countless accessible AI tools, savvy organizations will adopt AI like never before to improve outcomes and manage resources.



02.

The hoarding of data by companies throughout the last decade creates a new fuel for artificial intelligence. Unstructured data considered useless in the past when looked at in aggregate can now help understand customer trends and more. For example, large enterprises have hundreds of thousands of individual documents. With a tool like GeneXus Enterprise AI, entities with large, unstructured data sets can quickly build a tool to aggregate, search, and make sense of massive amounts of existing material.

Additionally, with OpenAI's GPTs product, users can now create assistants that can be leveraged within ChatGPT. These assistants can combine instructions, external or corporate knowledge, and any combination of skills. Using natural language, what used to take hours or days can now be assessed in moments.

In 2024, we believe organizations will finally begin to make sense of their large amounts of unstructured data and use it to help make more insightful decisions.

03.

The nascent regulatory environment around AI should be monitored. Regulatory boundaries are yet to be established: According to JJ Lopez Murphy, Head of Artificial Intelligence at Globant, “It’s still a matter of freedom versus safety at some point. And different societies will have different grades on that scale.” With artificial intelligence getting its intelligence from open sources, there must be clarity, a framework for how each application gets the information, usage rights, and a standard for respecting intellectual property. On November 2, 2023, at the [AI Safety Summit](#) in Bletchley, Britain, 28 countries, including the U.S., U.K., and China, banded together to contain the “catastrophic risk” that artificial intelligence poses.

While regulators are assessing how to handle artificial intelligence, organizations adopting AI solutions should be aware of the potential legal, ethical, and moral ramifications it may present.

In 2024, entities that develop emerging technology must learn the best way to govern it.

The governance of AI will ultimately have a clarified chain of responsibility rather than traditional technology regulation. Goksu remarks, “With this technology, it is tough to draw a line in the sand, which makes regulating it complex.”

Keeping a close eye on the needs and expectations of customers is where we see organizations besting the current lack of regulation. While some will take what we consider the “wrong turn,” others will use artificial intelligence responsibly, which dramatically helps their brand, enhances their relationships with customers, and adds to their bottom line.

96% of consumers think it’s important that businesses are transparent about how and when they are using AI in their products or services (Globant survey)



Juan Jose Lopez Murphy

Head of Artificial Intelligence
at Globant



The factuality expectations of generative AI will continue to get higher because the real-world impact of what these models produce will face much more scrutiny, driving companies to think more closely about controlling the responses given.

04.

Better ability to be inclusive. The original ChatGPT was limited to text (or written) prompting, which comes with challenges for some people who may live with a disability or simply prefer to express themselves differently. In September 2023, OpenAI updated GPT-4 to enable image inputs, which opened the door to countless additional applications for the technology. The technology was made available to everyone via their GPT-4 Turbo API.

In 2024, the technology will continue to lower the barrier to entry for generative AI by becoming more inclusive and improving user experience.

With the lowered barrier for entry, organizations that adopt generative AI tools will have inclusive channels, opening access to previously marginalized audiences.

Those who adopt the technology now have less of an uphill battle to stay relevant when artificial intelligence-powered experiences become a demand from consumers.

Did you know?

At Globant, we published our AI Manifesto in 2019 to signal to the market that no matter what opportunity is presented to us to work on artificial intelligence projects, we will abide by a self-established set of rules to maintain our integrity and trust in the market, as well as conduct projects in a way that contributes to sustainable outcomes.

Leverage off-the-shelf solutions

With all technology innovation, it presents risks due to the high upfront costs, lack of time, and, in some cases, lack of talent. The influx of investment and capital flow to technology startups has sped up the development of artificial intelligence, specifically generative AI, resulting in cost-efficient products coming to market that other companies can use, resulting in more modern approaches and streamlined customer experiences.

How organizations can move forward with artificial intelligence

According to Crunchbase, more than 1 in 4 US dollars of startup investment in the first half of 2023 went to AI-focused startups, more than double the share of the prior year. Artificial intelligence development is not slowing down, and investors agree.

With the technology still being novel, where organizations fall on the spectrum of AI maturity is varied. However, **consumer perception of artificial intelligence is rapidly changing, with 46% of recent Globant survey respondents saying they expect AI technology to offer an improved customer service experience within 1 to 5 years.**

In 2024, the chance for companies considering exploring artificial intelligence capabilities to catch up still exists, as most organizations are still seeking to find where the technology fits into their business models, operations, and brands.

Partnering with an AI accelerator

With over 10 years of proven data & AI capabilities, Globant enables the world's biggest brands and up-and-coming startups. Each day, our experts across the globe sit with our clients, marking the way forward for excellence in artificial intelligence tools and next-level outcomes. The capabilities of our team have produced amazing results for our clients and can be the secret ingredient to your organization's artificial intelligence recipe.

In 2024, company executives and small business owners should be looking to move their organizations to the next phase of AI adoption.

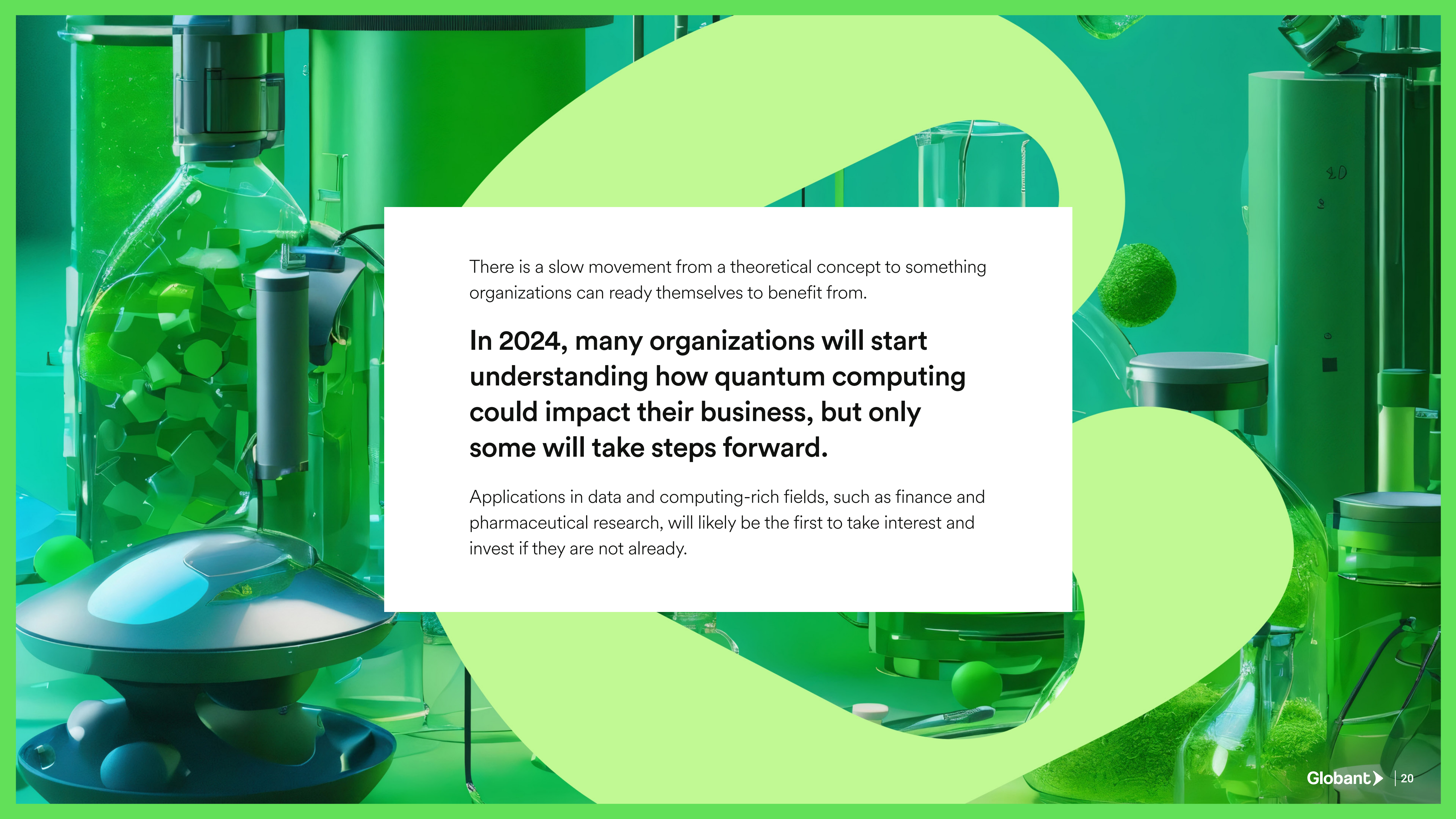
In some cases, that means exploring what artificial intelligence can solve. Others may know their pain points and are looking for existing solutions to plug in. Organizations aware of their stance on AI and taking steps to improve with their customers in mind will succeed.

02.

Quantum Computing

**Quantum computing
moves beyond
science fiction, a
step toward reality.**





There is a slow movement from a theoretical concept to something organizations can ready themselves to benefit from.

In 2024, many organizations will start understanding how quantum computing could impact their business, but only some will take steps forward.

Applications in data and computing-rich fields, such as finance and pharmaceutical research, will likely be the first to take interest and invest if they are not already.



Daniel Buechel

Strategy Consulting Leader at Globant



While its widespread adoption may be years away, the focus should be on educating potential users about its value. Much like other emerging technologies of the past, quantum computing will be seen as a threat in many ways, and then, over time, it will gather widely beneficial use cases.

From qubits to breakthroughs:

Exploring the transformative power of quantum computing

There is a wide consensus among experts that quantum computing (QC) is a technology that could revolutionize many industries, such as pharmaceuticals, banking, and the automotive industry.



Quantum computing is attracting more and more attention — including from big tech, startups, governments, and the media. The quantum computing market is valued at

\$866
million

in 2023 and is expected to be \$4,375 million by 2028, growing at a CAGR of 38.3% from 2023 to 2028.

Companies like Alibaba, Baidu, Amazon, IBM, Google, and Microsoft have already launched commercial quantum-computing cloud services. For example, IBM has developed key initiatives in this field, partnering with the University of Tokyo, University of Chicago, EY, and Quantinuum.

Governments are also key players in the quantum race. Canada will invest \$40 million to build and commercialize the world's first photonic-based, fault-tolerant quantum computer. Likewise, the U.S. Department of Energy (DOE) will invest \$24 million in quantum network research. The worldwide investment in QC exceeds \$38.6 billion.

In 2024, quantum computing investments will continue to usher money to research in pursuit of a commercially viable product.





Quantum computing's unsolved puzzles

Quantum computing will be able to tackle problems with high numbers of variables and potential outcomes. However, there are challenges and potential downsides that organizations need to consider.

The technology faces two main challenges. Firstly, qubits have a short lifespan and are vulnerable to external factors, necessitating the development of more resilient models. Secondly, superconducting quantum circuits require extremely low temperatures, primarily achieved with costly helium. This cost and limited helium supply pose sustainability challenges for companies. Consequently, many firms may turn to service providers for quantum computing access, though these services remain limited.

To stay one step ahead, governments and companies are already exploring the future of cybersecurity. The U.S. National Institute of Standards and Technology (NIST) is developing post-quantum cryptography (PQC), and IBM is building Quantum Safe technology to prepare companies for the future of quantum.

Cracking the Quantum Code:

A Blueprint for Corporate Quantum Preparedness

In 2024, all industries must explore how they may be disrupted by quantum computing and take the steps necessary to gain a competitive edge.

Here are our recommendations to build quantum readiness in 2024:

01.

Research and experiment. Organizations may not fully understand the implications of quantum computing for their business models and security systems. Set up a dedicated quantum research team or lab to explore potential applications and develop proof-of-concept projects. Experimentation can help organizations gain confidence and understand the real-world benefits of quantum computing.

02.

Establish partnerships. Collaborate with quantum experts to evaluate the feasibility and benefits of quantum computing. Harnessing QC also depends on the collaborative efforts of industry, academia, and government. Companies like IBM and Google offer quantum computing services via the cloud so that organizations can gain access to quantum hardware and software.

03.

Secure data. With the potential to undermine current encryption methods, organizations must assess vulnerabilities. Developing a Cryptographic Bill of Materials (CBOM) is crucial for agility and risk management.

Prepare for the next computing revolution

Quantum computing is advancing rapidly, although not yet widely accessible. It's expected to become more affordable, with a growing impact on industries. According to [Forrester's Priorities Survey, 2022](#),

46%

of business and technology decision-makers and influencers worldwide have some knowledge about emerging QC solutions, and **65% of them consider QC to be necessary to their organizations.**

Companies that realize the potential of QC and start to explore its possibilities will be one step ahead to leverage the quantum revolution, ensuring they have the talent, maturity, and internal eagerness to move forward.

At Globant, we are gearing up to help organizations become resilient and ready to use quantum computing to transform their businesses.





Agustin Huerta

SVP Digital Innovation at Globant

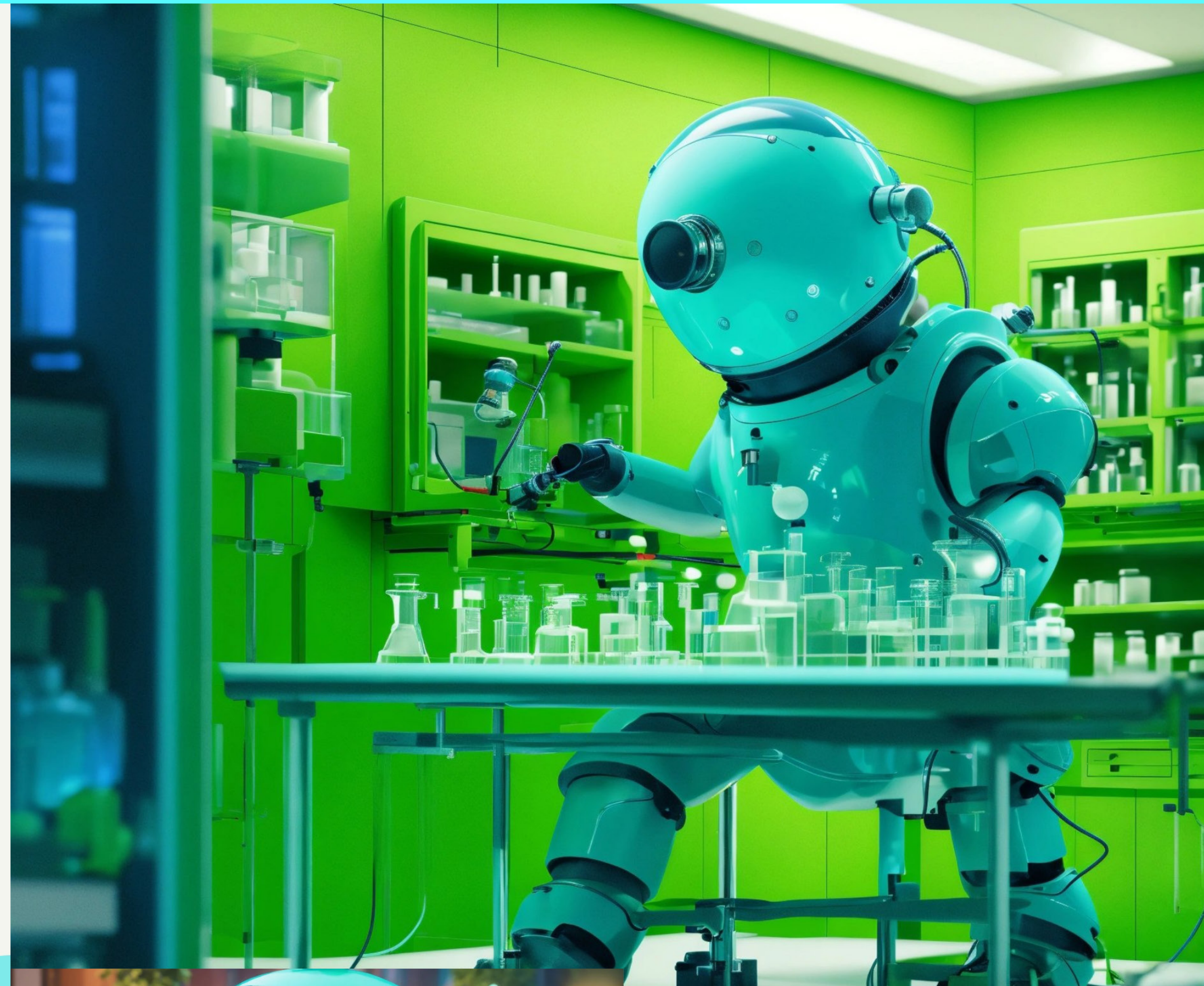


In 2024, the trend will be the development of research, not yet a service available to the market, except in industries that can experiment on the subject, such as large financial institutions and pharma.

03.

Robotics

Robotics moves into
a new frontier:
versatile robots



Robotics has evolved for over 2 decades, offering solutions across industries and influencing testing, innovation, automation, and manufacturing. The robotics market is expected to hit \$45.09bn in revenue by 2028, led by service robotics.

In 2024, the robotics market will reach a pivotal point with emerging multi-purpose robots, thanks to AI developments.

Opportunities: From fiction to robot AI reality

Sci-fi has painted robots in a variety of ways: as threats, like in Terminator, or blurring the lines between humans and machines, as in Blade Runner, where replicants were created under the motto “more human than humans,” and also as helpful devices, as Rosey from The Jetsons and Wall-E.





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Robotics and AI evolution have gone in parallel. Experts in robotics have desired to make robots smarter and more human-like, but it has been too complex without AI. Today, we are starting to get closer to our vision of a robot by combining capabilities of multiple technologies.



Agustin Huerta

SVP Digital Innovation at Globant

Industries will use AI robots to become more efficient and meet evolving demands

According to Forrester's report Predictions 2023: Automation And Robotics:
“Of relevant enterprises, **35% will integrate physical robotics with mainstream tech.**” Businesses use AI robots to enhance operations, bridge the gap between humans and technology, serve in stores, and even assist in agriculture to ensure safety and handle complex tasks. With AI, robots gained autonomy, adaptability, sensory perception, and NLP-based interaction, enabling data interpretation, problem-solving, and ML-driven improvement.

“By 2027, the use of robots in nontraditional sectors, most notably remote inspection and maintenance, will increase by 35%, resulting in a 50% drop in inspection errors.”

- IDC FutureScape: Worldwide Future of Operations 2023 Predictions (doc #US48669222, October 2022).



Robots will help some organizations remain competitive, improve quality, and be a support for internal teams.

The IFR (International Federation of Robotics) reports a record

3.5 million

functional robots globally in 2023, with installations valued at about \$15.7 billion. In car and microchip industries, robots save energy and costs, support reshoring, and even refurbish robots that add up to 30 years of service.



Robotics is entering the “non-manufacturing” space where it’s traditionally been used for automation and efficiencies. We are starting to see investments in commerce transactions and food & beverage, for example, where tasks from credit card machine testing to tray removals leverage robotics capabilities. To the question: Can we leverage robotic capabilities to create more efficiencies across manual and human-intensive, repetitive tasks?

The answer is absolutely.



Tania Salarvand

Senior EVP, Strategy & Growth,
Hospitality & Entertainment at Globant



In 2024, businesses will adopt robots-as-a-service (RaaS), with many not taking a humanoid form but focused on an optimized task, like rolling delivery bots. One interesting example is the NYPD piloting the use of a robot to patrol a busy subway station overnight. We are also seeing food delivery robots in major metropolitan areas and robots delivering medication in hospitals.



Additionally, the entertainment sector is also poised to be impacted by robots. Walt Disney Imagineering and Disney Research are testing robots in their theme parks, and as recently as October 2023 they were seen at Disneyland operating as free-roaming droids that can interact with visitors, walk, and dance. The company has also announced several other robotics projects that will enhance the park-goer experience.

Risks and challenges

The blend of robotics with human ingenuity results in innovative solutions and enhanced capabilities across multiple sectors. As robotics will reshape industries and jobs, it will be necessary to demand legal frameworks addressing safety, privacy, and potential hacking vulnerabilities. With Asimov's Three Laws, robot autonomy, human oversight, safety, and ethics will ensure human safety. Robots may present challenges in manufacturing, as they have high costs and require specialized maintenance. Robots' strict ethical and data safeguards are necessary for healthcare and defense.

According to the US Bureau of Labor Statistics, job shifts due to robotic automation will come to pass, but with it, the creation of new roles as well. With robots taking over

routine tasks, employees may focus on creativity and critical thinking. To adapt, organizations must encourage continuous learning and upskilling in the workforce, addressing automation-related job losses and career transitions.

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There could be psychological progress around robotics, which could go in a few different directions. The most likely outcome will be further understanding that robots are not displacing jobs but rather are job creators as well as freedom creators. In the way that generative AI has begun to showcase to early adopters who have embraced its capabilities.



Daniel Buechel

Strategy Consulting Leader at Globant

Blockchain

Blockchain remains a critical technology for specific industries,
while mass adoption seems unlikely.

04.



While neither new nor in the spotlight, **blockchain has taken a backseat to the widespread applications of artificial intelligence.** It continues to be a niche technology that benefits a handful of industries. However, some challenges for everyday organizational use remain.

Organizations seeking to leverage blockchain technology can benefit from the power it brings to the table, regardless of the status of major ecosystem advancements.

In 2024, the implications for digital identities and data security ensure blockchain remains on our radar, and we will continue to see ad-hoc corporate adoption continue in specific industries as the ideal governance is determined and the way forward for interoperability is found.



The power of decentralization

Decentralization refers to transferring control and decision-making from a centralized entity to a distributed network. While blockchain can preserve trust among untrusted parties, its principal value arises when entities that don't trust each other need to transact. This makes it harder for any entity to have too much power or control over another. This concept becomes especially applicable when managing the security of our data and identities.

Our data is distributed worldwide, and long-standing centralized systems have left us dependent on giant corporations that manage our data and identities. Blockchain-based self-sovereign identity (SSI) solutions have emerged as Web3 decentralization gains momentum. Modern identification solutions leverage blockchain networks to let individuals manage their data and ensure privacy without needing third-party intermediaries.

Countries like Brazil are using blockchain to provide a more secure digital identification system and launch a central bank digital currency. The digital currency, named DREX, “will use distributed ledger technology (DLT) to settle wholesale interbank transactions, while retail access will be based on tokenized bank deposits.”




Diego Tartara

Global CTO at Globant



The world is moving towards data custody with blockchain. There is a huge potential for each person to own their data and give freedom to each person on how to make it available. The greatest potential is that of digital identity control.



Removing the middlemen with smart contracts

A smart contract refers to computer protocols that digitally facilitate the verification, control, or execution of an agreement. These run on a blockchain platform responsible for executing the transactions in the contract.

The benefits of smart contracts include automating complex business processes, reducing administrative overhead, and ensuring that contract terms are executed as agreed upon. An additional perk of these contracts is they are immutable.

For smart contracts to work well, however, it requires a corporate and individual mindset shift. Since a smart contract is an automatically running software, professionals must understand that they're immutable and cannot be altered once set. To ensure trust, audits of smart contracts can be performed manually or automatically. Companies such as Certik, Chainsulting, and OpenZeppelin, among others, examine smart contract software for vulnerabilities and security issues to ensure the products are safe for public use.

In the context of blockchain, immutability guarantees that once a transaction is added to the ledger, it can't be changed. This boosts confidence and trust in the system. However, it's essential to ensure that the data entered is correct from the beginning, as correcting errors afterward can be complex.

Beyond the obvious challenges

Scalability, energy consumption, regulatory concerns, organizational politics, and control issues often hinder blockchain implementation.

At its core, interoperability ensures that diverse systems can efficiently cooperate, exchanging information seamlessly. In the context of blockchain, it is ideal for different blockchain systems to be able to share information and conduct transactions with each other.

The existing ecosystem does not exist in such harmony, however. Private and public blockchains have unique value propositions, but as markets move towards individual data ownership, it is imperative to connect data across blockchains.



Blockchain will truly take off once governments and public agencies champion its interoperability. While the technology is valuable, private companies might hesitate to invest heavily due to associated operational costs. Real momentum might only come when public entities back it, not just in the immediate future but possibly beyond the next three to five years.



Carolina Dolan Chandler

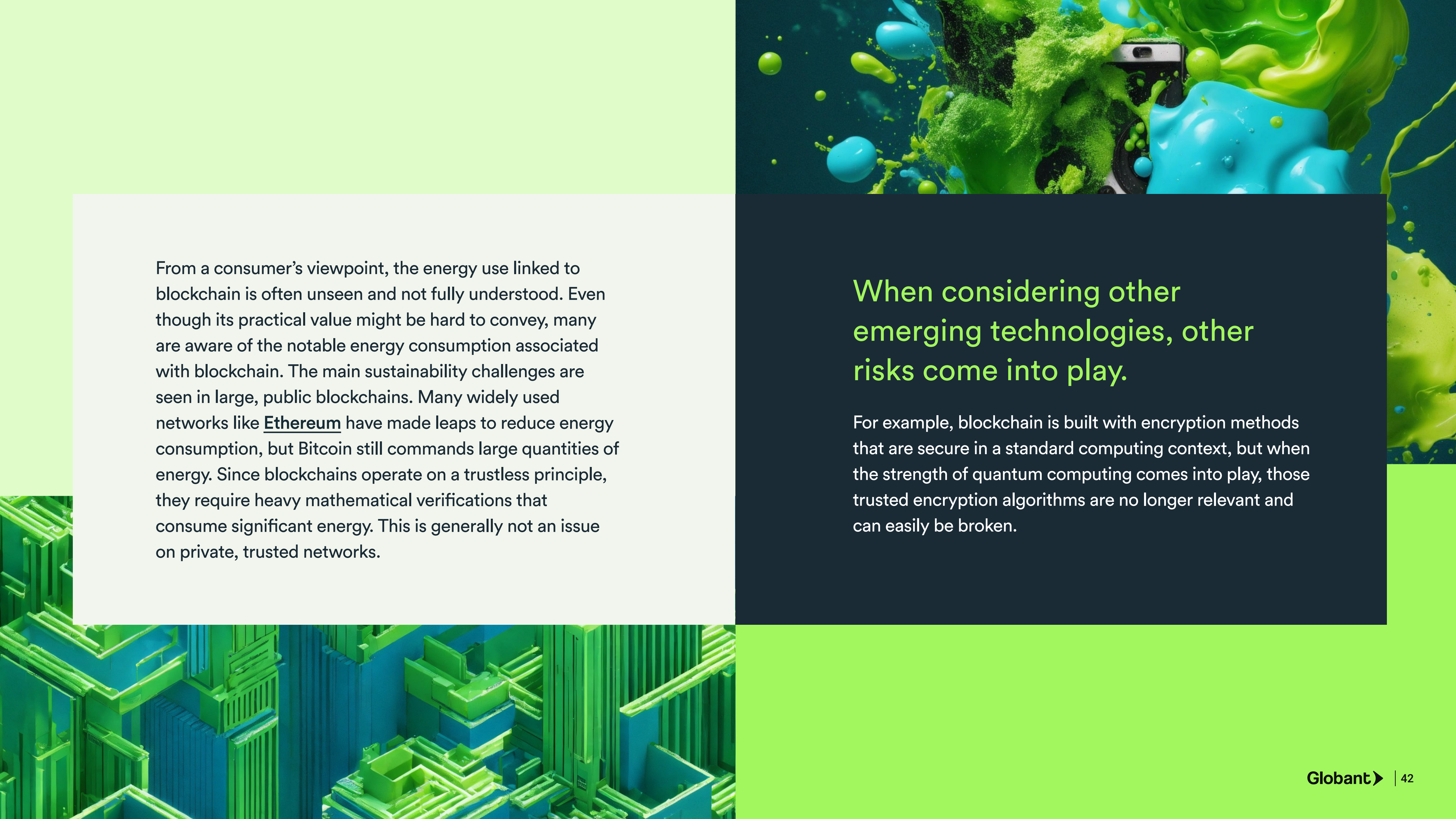
Chief Digital Officer at Globant



And governments have started taking initial steps toward adopting blockchain technology. For example, the technology is gaining traction in California, where vital records such as birth certificates and marriage licenses can now be delivered via smart contracts on the blockchain.

Blockchain is foundationally rooted in making transactions possible between entities that do not trust each other. When Bitcoin was created, it was designed to provide universal access to formal financial services and enable seamless, peer-to-peer, cross-border transactions. It inspired the creation of several other cryptocurrencies, many of which, while mimicking its features, strayed away from the fundamental goal of enabling trust and maintaining scarcity, leading to wild valuation swings.

Recent scams have tarnished the credibility of the entire cryptocurrency industry, sowing the seeds of distrust amongst the public. The biggest scams often revolve around the lack of regulation rather than the technology itself. It is important to discern between the two: while cryptocurrencies can be powered by blockchain, not all are. Improving trust in blockchain technologies involves a combination of education, transparency, regulations, and advancements in the technology itself.



From a consumer's viewpoint, the energy use linked to blockchain is often unseen and not fully understood. Even though its practical value might be hard to convey, many are aware of the notable energy consumption associated with blockchain. The main sustainability challenges are seen in large, public blockchains. Many widely used networks like Ethereum have made leaps to reduce energy consumption, but Bitcoin still commands large quantities of energy. Since blockchains operate on a trustless principle, they require heavy mathematical verifications that consume significant energy. This is generally not an issue on private, trusted networks.

When considering other emerging technologies, other risks come into play.

For example, blockchain is built with encryption methods that are secure in a standard computing context, but when the strength of quantum computing comes into play, those trusted encryption algorithms are no longer relevant and can easily be broken.



Immersive experiences

While investment interest wanes, interest in 3D immersive experiences is still strong.



Metaverse struggles with a lack of immediate practical use cases when matched against the current business environment. While a technology like AI is now approachable in the real world, the metaverse is the opposite. Mass adoption requires organizations to ask users to step out of the norm and into an entirely different world.

In 2024, we will see a static interest in the metaverse, with peak interest coming with the launch of the Apple Vision Pro in Q1. Key players will continue to invest heavily into making it an everyday interaction for individuals.

Forging the path to accessibility



The metaverse has emerged as an exciting concept in the ever-evolving digital and technology landscape. It promises to be a revolutionary realm, but as it stands, it faces **significant challenges** in finding practical use cases that align with today's business environment.

The concern is even more remarkable when comparing the rapid adoption of generative AI. However, promising developments are emerging, and some industry sectors are starting to show early adoptions. Will this be the year the metaverse finally transcends the buzzword and impacts how we live, interact, and work?

Contrasting the metaverse and AI:

Unveiling adoption challenges

AI's seamless integration into daily life contrasts with the metaverse's distance from reality. The metaverse demands significant resources to create an immersive experience. **When it comes to consumer technology adoption and comfortability, the learning curve around generative AI is gentler due to its ability to be embedded into natural user experiences, while the metaverse requires a significant leap, requiring organizations to push their customers into a completely different world.**

Despite these struggles, the metaverse continues to pique the interest of key players and innovators. Major tech companies and visionaries have invested an estimated

\$180 billion

in the past few years in research and development to transform the metaverse into an everyday interaction for individuals.

While statistics show lukewarm mass adoption, specialists anticipate that this will change in the future, as those interested in experimenting in Roblox, Decentraland, Fortnite, and Pokemon Go today (Z and Alpha generations) will become next-generation business targets and will have a much more attuned use and behavior to metaverse environments.





Ávila predicts that



“The way we have multiple social networks today could be similar to how we will be in multiple metaverses in the future: we will interact with five different metaverses for five different reasons.”

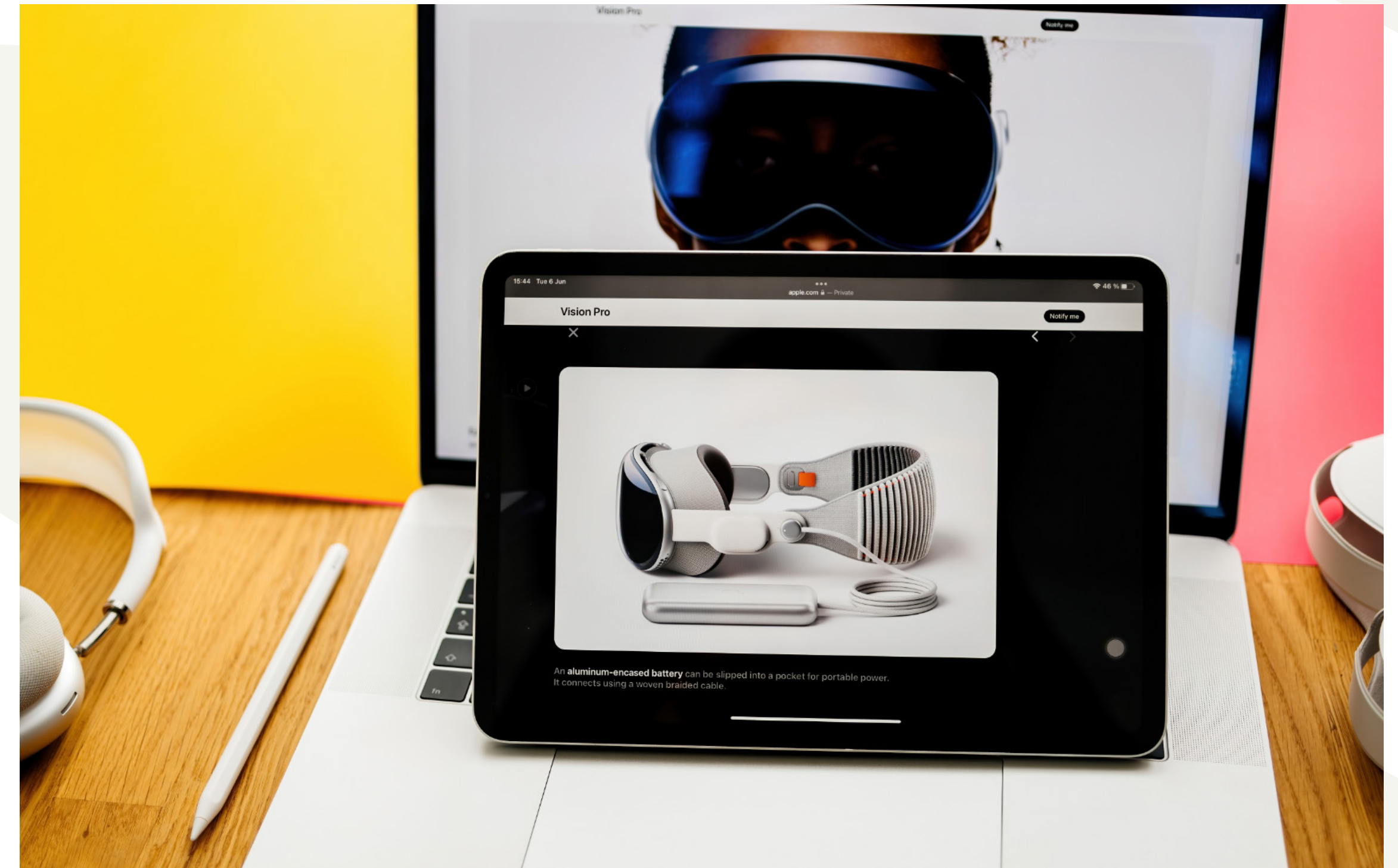
Julieta Shulkin, author of [#VueltaPorElMetaverso](#) predicts that this behavior will help the future metaverse adoption stating that “the teenagers that play in the metaverse today, in 2030, will join the industry. They will have it incorporated. It will be a natural evolution.”

Apple Vision Pro:

A Glimmer of Hope on the Horizon

The release of the Apple Vision Pro mixed-reality headset in early 2024 is expected to spark enthusiasm and curiosity. This device brings the convergence of AR and VR to a familiar ecosystem, transforming how businesses gather customer data. Ritesh Menon, VP of Technology at Globant, anticipates its potential for hyper-personalized content and revolutionizing business practices. **Spatial computing offers in-depth insights into customer behavior beyond traditional web and mobile app interactions.** This data can significantly benefit marketing and enhance the customer experience.

Mass adoption of the metaverse faces accessibility challenges, and engaging stakeholders is crucial to its widespread use. **“Historical patterns suggest that institutional players, such as schools, factories, and healthcare providers, have been early technology adopters and drivers of integration. Vision Pro could follow this path, gaining momentum as institutions recognize its value and incorporate it into their operations,”** remarks Goksu.



“In the spatial computing era, businesses must be ready for a data revolution. It offers improved customer insights, personalization, and engagement, redefining customer expectations. The future of customer data is here, and it’s extraordinary.”



Ritesh Menon, VP of Technology at Globant.



However, it's vital to distinguish spatial computing from the broader concept of the metaverse. While both involve immersive digital experiences, Vision Pro focuses on Apple's augmented reality (AR) technology and devices. This technology enriches users' real-world environments by overlaying digital information and interactive elements onto their physical surroundings. It can impact various sectors, from education and healthcare to retail and entertainment. For instance, Vision Pro could revolutionize education by offering immersive anatomy lessons with 3D models or historical event reenactments through AR simulations. Other initiatives, like the [Ray Ban-Meta partnership](#), will ultimately provide customers with many options ranging from low-end smart glasses to VR headsets to a more premium experience and product with the VisionPro.

Pioneering next-generation brand engagement techniques

While the potential of the metaverse for business is still at an exploratory stage, and we are trying to understand the opportunities for authentic revenue, several companies keep asking themselves if they should be present in the metaverse.



Brands will always look to boost customer engagement and increase loyalty, the metaverse provides a new world, a new channel to what currently exists. The constant need for new exciting experiences offers a real opportunity for the metaverse to become relevant.



Rachel Armstrong

Globant's Studio Partner, Design based in the UK



It's essential for companies to recognize that the metaverse is already accessible to brands eager to discover new innovative approaches to connect and engage with their users.



Fabien Rossini

Globant Strategy consultant

Two outstanding examples of brands bringing immersive experiences to their audiences are Hadean and Pixelynx.

Is the metaverse an industry game-changer?

While we continue to see how brands and consumers will utilize the metaverse, industries are moving forward in finding solutions to solve business challenges. Experts agree that the metaverse will influence industry and commerce well before it fully realizes its potential in the consumer sphere. Two global brands, Macy's and Marriott have both embraced the metaverse, providing brand and product extensions for the companies.

A [new study from IDC](#) highlights a key takeaway about the enterprise and the metaverse, stating, “Product/solution design and engineering, demonstration, employee onboarding and training, testing, asset performance and maintenance, human behavior simulation, and aftersales service are some of the key use cases of the enterprise and industrial metaverse put together.” IDC Market Perspective: Enterprise and Industrial Metaverse – Beginning to Take Shape and Enable Business and Operational Transformation (Doc #US48534022, June 2023). The metaverse offers a cohesive, immersive digital experience with widespread connectivity and promising applications across education, manufacturing, supply chain, and energy industries. This extends to consumer, enterprise, and industrial metaverse realms.

Dedication to innovation can bridge the gap between what the metaverse could do and its real-world uses. Soon, the metaverse will provide lasting and flexible business options, helping organizations grow digitally. At Globant, we recognize the metaverse’s potential and build a space to augment how we onboard new employees. Additionally, we recently launched [“Globant World” on Roblox](#), to help spread the word about Globant’s culture in a fresh and new way.



We’re seeing clients embrace the metaverse to provide new experiences to younger generations. This helps them learn in different ways and connects them to classmates, friends, and teachers. It goes beyond the curriculum and into platforms like Roblox and Minecraft to be used as educational tools.



Veronica Futaoka

Tech Director at Globant

AI flips the script on immersive experiences

The Humane AI pin, unveiled in mid-November 2023, represents a new model for how humans interact with technology, and vice versa. The device, powered by AI, is a wearable assistant that integrates into human lives and has the power to replace traditional mobile devices. Worn as a lapel pin, the device operates on voice commands and hand gestures, including a UI that projects onto your hand. It has the power to synthesize data, record videos, send text messages, translate conversations in real-time, and much more.

Artificial intelligence brings brand-new capabilities to the world, making products like the Humane AI pin possible, and is restructuring the way that humans interact with technology.

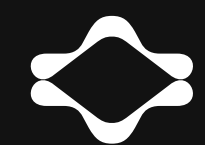


The way forward for enterprises in 2024

In 2024, enterprises will have varied paths based on their industry and offerings. Not all tech trends will align with every business, but there's always a way to stay tech-forward for optimal customer service.

A common thread through every trend discussed in this report is data. Using, storing, exchanging, and optimizing data remains crucial for creating outstanding customer experiences and is even more vital as AI evolves. At Globant, we recognize that data quality is table stakes regarding effective technological reinvention. For two decades, we have been ushering top brands through their transformational journeys with data at the center.

The businesses that thrive in 2024 and beyond will be the ones that harness their data in tandem with the emerging and established technologies discussed above to improve their customer, employee, and human experiences.



Tania Salarvand

Senior EVP, Strategy & Growth,
Hospitality & Entertainment at Globant

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For years, the notion has been ‘content is king,’ but now, we believe that ‘data is queen.’ She’s the path to personalized, relevant, and impactful experiences in physical and digital spaces.

About Globant

We are a digitally native company that helps organizations reinvent themselves and unleash their potential. We are the place where innovation, design, and engineering meet at scale.

- We have more than 27,500 employees, and are present in 30 countries across 5 continents working for companies like Google, Electronic Arts and Santander, among others.
- We were named a Worldwide Leader in AI Services (2023) and Worldwide Leader in CX Improvement Services (2020) by IDC MarketScape report.
- We stand among the top 100 fastest-growing companies in the world (2023) according to Fortune.
- We were also featured as a business case study at Harvard, MIT, and Stanford.
- We are active members of The Green Software Foundation (GSF) and the Cybersecurity Tech Accord.

For more information, visit

www.globant.com

Globant/Allison Survey:

Globant, in partnership with Allison, surveyed 2,001 U.S. consumers over 18. The survey sample was stratified to match census representation for region, age, gender, and ethnicity. The survey was fielded using Qualtrics, and the panel was sourced from Lucid. Fielding was executed from 10/2/23 to 10/10/23.

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