

IDC FutureScape: Worldwide Digital Business Strategies 2023 Predictions

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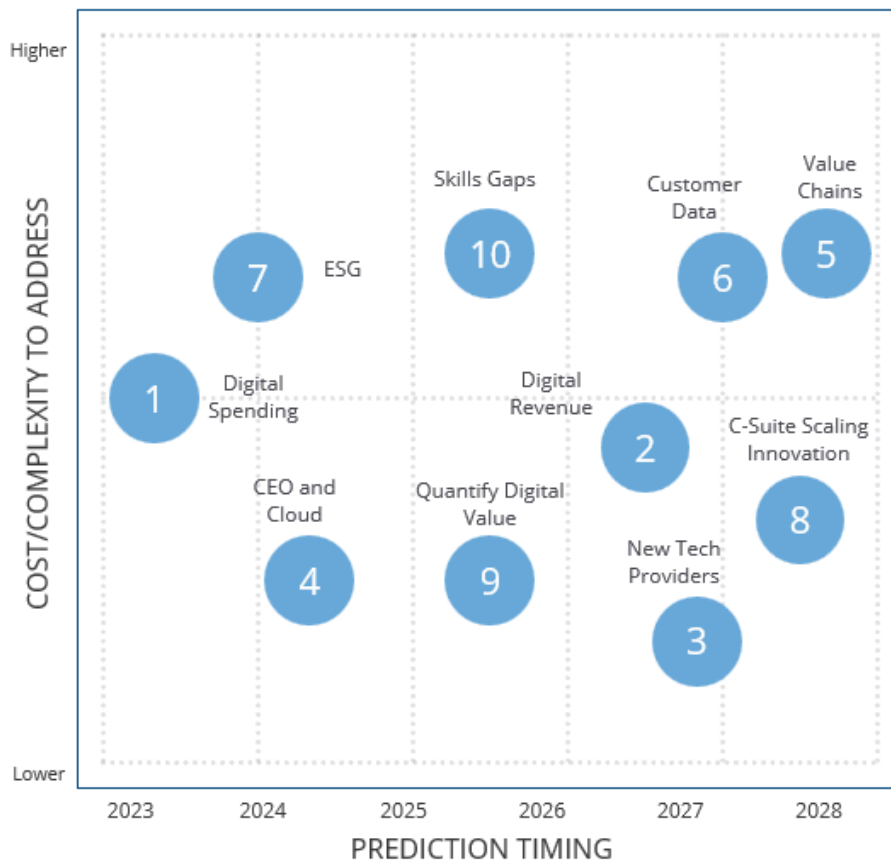
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IDC FUTURESCAPE FIGURE

FIGURE 1

IDC FutureScape: Worldwide Digital Business Strategies 2023 Top 10 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, 2022

EXECUTIVE SUMMARY

The strongest companies currently are those that began their transformation to digital business years ago, before the disruption of the past three years. Those companies are now in the process of maturing as digital businesses and moving closer to operating as digital-first organizations. Those that are early in their transformation processes need to catch up in a hurry, or they will fall behind at an increasing pace.

With that reality, even while recession looms over the global economy, organizations are still seeking to spend on digital. In turn, companies will increasingly adopt digital revenue models. Technology companies are thriving and will continue to thrive in this era. Partnering with technology providers and other vendors will be vital.

The role of the digital chief executive officer (CEO) will become vital in strengthening those partnerships along with building strategies that will enable companies to compete. Technology will increasingly become the responsibility to those across the C-suite, as digital spend will largely come from lines of business (LOBs).

There will be important considerations for leadership regarding their organization's place in the broader world. Leaders need to keep in mind how they fit within their ecosystems and where partnerships may provide value over direct competition. In addition, top digital organizations will strive to build trust with their customers, provide excellent employee experiences to support talent acquisition and retention, and be good stewards of sustainability.

IDC FutureScapes present information – about technologies, markets, and ecosystems – that help technology buyers better understand future trends and their impacts on the enterprise. They present guidance on complex, fast-moving environments and offer prescriptive, actionable recommendations. Every year, IDC identifies the key external drivers that will influence businesses in the coming years. An IDC FutureScape establishes 10 predictions derived from these drivers, analyzes the impacts on the IT organization, and proposes recommendations for the next five years. The 2023 digital business predictions are as follows:

- **Prediction 1:** Spending on digital technology by organizations will grow at eight times the economy in 2023, establishing a foundation for operational excellence, competitive differentiation, and long-term growth.
- **Prediction 2:** By 2026, 40% of total revenue for G2000 organizations will be generated by digital products, services, and experiences.
- **Prediction 3:** The number of tech providers in the G500 will double by 2027, incorporating businesses that originated outside of the tech industry.
- **Prediction 4:** By 2024, 50% of G2000 CEOs will establish strategic personal relationships with their cloud providers to achieve quantifiable outcomes from digital business platform investments.
- **Prediction 5:** By 2027, organizations with highly developed industry value chains on an ecosystem control plane will innovate 25% faster than other businesses.
- **Prediction 6:** By 2027, enterprises that collect, analyze, and contextualize customer data in a trustworthy way will successfully build creative business and pricing models that double customer lifetime value.

- **Prediction 7:** By 2024, a quarter of organizations worldwide will demonstrate responsible leadership by increasing their sustainability-related digital tech spend by more than 25% from 2022 levels.
- **Prediction 8:** With the majority of technology budgets residing with LOB, by 2027, 30% of the expertise in the C-suite will shift from encouraging innovation to scaling innovation and operating digital businesses.
- **Prediction 9:** By 2026, 80% of organizations will accurately quantify the value of their digital capabilities/assets (data, algorithms, and software code) and significantly improve their market valuation.
- **Prediction 10:** By 2026, enterprises that did not effectively address the talent and digital skills gap in their organization will constrain revenue growth opportunities by 20%.

This IDC study provides IDC's 2023 top 10 predictions for digital business strategies. These predictions provide guidance for organizations to mature as digital organizations in the next five years. They also lay out IDC's vision for the 10 most important shifts that will occur within the digital business landscape in that time frame and will help C-suite leaders drive digital maturity.

"The temptation may be for organizations to trim spending now in the face of a recession, but the past three years have proven that digital organizations are best set up for resilience. Organizations that emphasize digital maturity will further set themselves apart over the next five years," says Craig Powers, research director for IDC's Worldwide Digital Business Strategies program.

IDC FUTUREScape PREDICTIONS

Summary of External Drivers

- **Digital business** – Stepping stone to the future enterprise
- **Meaningful intelligence** – Differentiated decision power
- **Ecosystem-based innovation** – Driving enterprise value
- **Mainstream ESG** – Sustainability is measured and mandatory
- **Work mode upheaval** – New models and leadership
- **Everything as a service** – Thriving through the change
- **Storms of disruption** – Accelerating, interconnected uncertainty

Predictions: Impact on Technology Buyers

Prediction 1: Spending on Digital Technology by Organizations Will Grow at Eight Times the Economy in 2023, Establishing a Foundation for Operational Excellence, Competitive Differentiation, and Long-Term Growth

As we head into a potential recession in markets around the globe, we continue to see organizations embracing digital technology as a way forward. Over the past three years, we have seen businesses and governments embrace technology as a means to adapt to new socioeconomic conditions; serve customers, employees, and citizens in new ways; advance new business models; and drive economic growth. However, the economic picture today is less favorable than it was even just eight months ago. The most recent forecasts at the time of this publication show that global GDP growth will be just 2% in 2023. Yet businesses are more bullish on digital tech, as we forecast spending on digital or digital transformation (DX) technologies to continue to remain strong, growing at 16.9% in 2023.

Organizations are now more clearly seeing the value from digital technology – projecting a digital-first strategy to customers, investors, and employees with a cloud-first foundation; embracing data-driven business models supported by analytics and AI; and implementing automation tools across the organization. In IDC's *Worldwide C-Suite Survey* fielded in August 2022, only 18% of executives said they would lower overall IT spending, while 36% said they would *increase* IT spending in the event of a recession. Of course, for many organizations, there will be pressure to manage costs in slower economic times; but overall, the sentiment is to do so in a targeted manner that doesn't hinder future opportunities. The key to becoming a successful future enterprise is no longer in the near-term transformations but rather in taking an enterprisewide digital-first strategy with the goal of running a sustainable digital business for the long run. And by extension at a macroscale, those economies that support technology-driven business growth and fully embrace digital will realize economic growth over the next decade.

Associated Drivers

- **Digital business** – Stepping stone to the future enterprise
- **Everything as a service** – Thriving through the change
- **Storms of disruption** – Accelerating, interconnected uncertainty

IT Impact

- CIOs will need the full support of the CEO and C-suite peers to ensure that digital business goals are achieved from technology investments, particularly during this period of volatility.
- While digital technology (i.e., cloud, software as a service [SaaS], advanced analytics, ML/artificial intelligence [AI], and IoT) spending overall will continue to grow at a healthy rate, some IT projects may need to be reprioritized or delayed to help achieve financial targets in the context of slower near-term economic growth.
- Enterprises will aim to reduce long-term operating costs and be in a better position to gain a competitive edge when the economy recovers.

Guidance

- Negotiate with your strategic vendors to ensure maximum ROI. Now is the time to look closely at your technology suppliers to determine which of them can commit to supporting your digital business goals and drive clear outcomes from IT investments.
- Ensure that investments in cybersecurity technologies, processes, and expertise keeps at pace with investments in digital initiatives.
- Prioritize the recruitment and retention of skilled talent as this will be a key element of digital business success in the near and long term.

Prediction 2: By 2026, 40% of Total Revenue for G2000 Organizations Will Be Generated by Digital Products, Services, and Experiences

Running a digital business to remain competitive and thrive amid uncertainty is a top priority for CEOs across the globe. Digital capabilities are increasingly recognized as a strategic differentiator for organizations as well as crucial to accelerate their revenue growth, as confirmed by 85% of CEOs (source: IDC's *Worldwide CEO Survey, 2022*). Therefore, CEOs expect the share of their digital revenue to grow from 30% in 2022 to more than 40% by 2027. If this holds true across industries, the value and characteristic of the offering will be industry specific. Business-to-consumer industries such as media and entertainment, retail, and finance are leading the pack on digital revenue generation, with expectations to generate beyond 50% of their revenues from digital products and services in 2027.

The need to move at the speed of their digital consumers led these industries to be digital revenue front-runners, with different business models emerging across them. The media and entertainment industry, for example, is capitalizing on new ways to produce and sell content. The "as a service" subscription-based model is the go-to model for providing content (from news to video to music) in the industry. In retail and finance, the need for brands and organizations to reach the customer anytime and anywhere has pushed new customer engagement models through multiple interfaces (e.g., via mobile apps, social media, or ecommerce including new marketplaces).

Industries where physical products and value chains are driving revenue generation, such as manufacturing and utilities, are showing below average values for digital revenues. Nonetheless, their expectations for the coming years are aligned to the positive trend. Providing data-driven services for connected assets, offering pay-per-use or pay-per-part models for industrial machinery, and switching to direct-to-consumer models in the consumer packaged goods sector are some of the key business models emerging in the manufacturing industry.

Associated Drivers

- **Digital business** – Stepping stone to the future enterprise
- **Ecosystem-based innovation** – Driving enterprise value
- **Everything as a service** – Thriving through the change

IT Impact

- If you pause, you are already behind. Organizations that pause their shift to digital business as they try to steer around the storms of disruption will miss out on revenue growth.
- Enterprise technology leaders will need to consider all aspects of the make or buy trade-off, evaluating beyond costs and risks. Those who have the right mix of expertise and skills in-house and are accessible through partnerships will be quicker to develop new digital offerings.
- Moving to new digital business models to compete more aggressively requires new approaches to partnering and to integrating an "acquired" digital-native company into IT planning processes.

Guidance

- Anticipate tech requirements. There are five must-have requirements for technology architectures to speed up the delivery of new digital products and services: microservices and APIs, integration capabilities, industry data models, modularity, and cloud-native capabilities.
- Keep up with new skills and organizational requirements. Digital business models require new skills and a new organizational setup. A flexible culture combined with an internal evangelist or coordinator can help push the transformation forward.
- Make sure you have the right governance guardrails in place to support innovation and agility for the development of new digital offerings while keeping alignment and clear processes.

Prediction 3: The Number of Tech Providers in the G500 Will Double by 2027, Incorporating Businesses That Originated Outside of the Tech Industry

Based on IDC's assessment, there are currently 35 technology companies in the G500. This includes typical enterprise technology vendors such as Microsoft, IBM, SAP, and Oracle or digital-native companies such as Alphabet and Meta Platforms. In parallel, there are traditional players such as Siemens, Bosch, and GE that are currently classified according to the industries in which they originated.

As these organizations develop their own software code, algorithms, and data for their own use, they will increasingly look for ways to externalize and monetize these capabilities. Certain banks are also

doing this via externally facing APIs. In this fashion, every traditional organization becomes more of a tech company – and many of them will be reclassified as tech companies.

All three of these categories will grow in number and quantity as the value of tech companies grows in an increasingly digital economy, contributing to the number of tech companies in the G500 doubling by 2027.

Associated Drivers

- **Digital business** – Stepping stone to the future enterprise
- **Ecosystem-based innovation** – Driving enterprise value
- **Everything as a service** – Thriving through the change

IT Impact

- Technology leaders will need to think about how to quantify value data, algorithms, and software code – for both internal and external uses.
- Future ecosystem strategies and relationships will change. Today, Ford (or any other company) could be your customer. Tomorrow, it could be your partner and, the next day, your competitor.
- As providers move away from license-based software models, IT teams spend more time weighing the financial implications of the shift to consumption and assessing outcomes-based objectives.

Guidance

- Start to develop an understanding of how to develop and sell technology products, from product development (R&D) through to commercialization (with the associated go-to-market strategy).
- Look for ways to externalize tech capabilities, whether to partners or suppliers via APIs or to customers as part of tech-enabled products and services. Assess where there is demand and where there isn't. Help the business leaders develop a portfolio that drives external value.
- Consider your strategy in the context of your ecosystem's value. Increasingly, it will be less about how well you play in the playground and more about how well you play with others in an increasingly ecosystem-centric approach to digital business models.

Prediction 4: By 2024, 50% of G2000 CEOs Will Establish Strategic Personal Relationships with Their Cloud Providers to Achieve Quantifiable Outcomes from Digital Business Platform Investments

Strategic relationships with the enterprise public cloud providers feature strongly in both IDC's *Worldwide CEO Survey* and IDC's monthly *Future Enterprise Resiliency and Spending (FERS) Survey* this year, signaling the era of the digital business "built on cloud." Rewind the clock 10 years ago, and this would have been an IT only-driven agenda to move servers and storage to the cloud. And just five years ago, it would have been led by developers to use cloud-native capabilities to deliver a whole new class of applications. Today, the scene is dominated by the C-suite building their core business strategy on the digital capabilities that cloud platforms can deliver.

This is brought about by two very large intersecting themes, one of which is business value due to digital investments ranging from profits to improved time to market and the other being the need to drive better market and societal impacts with ecosystem and sustainability outcomes. Neither of these themes can be delivered by traditional enterprise-IT platforms at speed and scale from an innovation standpoint. The way that cloud services providers themselves have pivoted in their digital business platform capabilities provides a blueprint for CEOs to replicate in their own businesses. With this in

mind, it's no surprise that the importance of cloud skills dominates heavily in IDC's future of work skills program, as CEOs themselves admit that "digital know-how" is now a top priority overtaking other traditional CEO skills such as business strategy acumen, change management, and financial and people leadership skills that have taken years to inculcate on their way to the top. CEOs who champion digital strategy execution have lower project failure rates (source: IDC's *Future Enterprise Resiliency and Spending Survey, Wave 7*, August 2022) and are more aggressive in leveraging critical levers such as using digital technologies to reach environmental, social, and governance (ESG) goals ahead of their peers.

We are entering a new phase of digital business that focuses on enhancing enterprise agility, resilience, security, and sustainability. Determining the right architectural model for an enterprise's future-ready digital business demands a more nuanced and considered approach than a simple cloud-first philosophy. To ensure that digital business platforms can effectively enable high-priority business use cases with agility, the way forward requires reframing the business case far beyond the narrow calculus of the destination (cloud versus noncloud) and budget (capex versus opex). Instead, exploring architectural options that can unlock and amplify digital business value should be at the forefront.

Associated Drivers

- **Digital business** – Stepping stone to the future enterprise
- **Everything as a service** – Thriving through the change
- **Ecosystem-based innovation** – Driving enterprise value

IT Impact

- CIOs without the support of "digital champion" CEOs will struggle to execute a digital-first strategy. They need to be fully resourced in the architectural design and operations of digital business platforms. This necessitates sharing and coexisting with other "digital" roles that the enterprise may have, which is a natural evolution to orchestrate long-term value.
- IT must play a leading role in working with the tech industry to architect how next-generation digital business platforms will be using and integrating with multiple cloud service provider capabilities, ranging from security to full-stack engineering to data and applications.
- IT will need to ensure that the design principles of standardization, openness, resilience, and security are built into the digital business platform if it is to provide the performance, scale, and agility that the business needs.

Guidance

- Resource IT with the capabilities needed to design, integrate, and work with multiple cloud providers, not just for infrastructure needs but also for data platforms and applications.
- Reorganize IT teams to work in agile squads led by full-stack engineering capabilities to work with the business to fulfill the promise of cloud partnerships.
- Understand that cloud is no longer a destination but an operating model. As a result, continuous improvements in service operations are a necessity with service experiences, operations intelligence, and life cycles as critical capabilities.

Prediction 5: By 2027, Organizations with Highly Developed Industry Value Chains on an Ecosystem Control Plane Will Innovate 25% Faster than Other Businesses

In IDC's 2022 *Worldwide CEO Survey*, active participation in digital ecosystems was mentioned as important to accelerating revenue growth. The growing importance of plugging in to a digital ecosystem

outside of the four walls of the enterprise creates new industry value chain opportunities. These can manifest themselves as business outcomes ranging from new customer experiences to supply chain resilience. As we march on toward transparency and visibility for social responsibility, reliance on an ecosystem of like-minded participants will give way to future sustainability outcomes as well.

There are many benefits associated with an actively managed and governed digital business network delivering new shared value based on digital technologies – which is the definition of an industry digital ecosystem. The top 3 benefits cited in a recent IDC study (Future of Industry Ecosystems [FoIE]) are rapid innovation to meet customer needs quickly, accurately, and proactively; established open standards that help meet regulatory requirements; and assurance of product/service safety and quality. IDC estimates that up to one-third of digital business use cases for any given industry's strategic priorities and programs are linked to ecosystem participation. In healthcare, this can range from scheduling to provider matching to preventative care through to assisted care coordination and remote patient monitoring. In retail, it is the value created in delivering experiential retail. And in other industries, for example, it is connected banking, contextual and value-centric insurance, agile mining operations, and effective national government.

IDC estimates that organizations with a highly developed ecosystem control plane mechanism that allows for governance, scale, and value can innovate at a pace that is 25% faster than their peers. The creation of new digital business models and software-based product innovations is incumbent, not only on technology integration but also on value integration between all participants, to deliver an outcome for any given product, service, or experience. This starts with shared business value, data, and underlying digital business platforms that an ecosystem control plane delivers.

Associated Drivers

- **Ecosystem-based innovation** – Driving enterprise value
- **Digital business** – Stepping stone to the future enterprise
- **Everything as a service** – Thriving through the change

IT Impact

- Act as a consultant "value integrator" to the business with the right skill sets for designing and architecting participation with the digital ecosystem.
- Deliver the governance and platform capabilities for secure, auditable, and scalable interactions via an ecosystem control plane architecture.
- Organize IT to support an agile portfolio-driven approach to new digital products, services, and experiences in order to support each business unit road map that involves ecosystem participation.

Guidance

- Partner with digital natives at the center of gravity in each industry to understand how shared value can be derived (or how to become one yourself).
- Work with strategic IT partners to build an ecosystem control plane architecture and future-proof digital business platforms as well as data and integration solutions for scale and analytics.
- Enable the workforce to get the skills needed to behave as a cross-industry value integrator, and not just take a functional or engineering approach to systems.

Prediction 6: By 2027, Enterprises That Collect, Analyze, and Contextualize Customer Data in a Trustworthy Way Will Successfully Build Creative Business and Pricing Models That Double Customer Lifetime Value

Digital demands new business and pricing models. Where an automaker once sold a car, it now may generate recurring revenue from in-vehicle digital services and new one-off revenue streams from digitally empowered upgrades. Those new revenue sources require different pricing models as well as reinvented business models.

However, building those models to maximize their potential won't be easy. How much will the customer pay? What services have value? Will a new service negatively impact existing business? To answer these questions, a business must have insight derived from the right set of data and the right analysis of that data. It also must collect and analyze that data in a transparent way that is acceptable to customers. Running a subscription, membership, or recurring business requires new sales, finance, and customer success motions that are new for most traditional companies, and change can be difficult if it's not managed.

The organizations that get that equation right will develop (and iterate on) pricing models and associated business models that result in significant new revenue and long-term customers. Those that get it wrong risk alienating customers, damage to their brands, and missed opportunities.

Associated Drivers

- **Meaningful intelligence** – Differentiated decision power
- **Digital business** – Stepping stone to the future enterprise
- **Everything as a service** – Thriving through the change

IT Impact

- Trust and customer experience become significant differentiators in the digital business era, pushing IT teams to align privacy and data management policies with customer-facing business teams.
- IT should guide the business on efficient, effective, secure, and trustworthy data wrangling. The business needs data and analytics but might not know the best approach to managing and analyzing data.
- Build processes that support strong collaboration with business teams. The IT group must have a firm understanding of the functional area priorities, particularly when a business is transforming from one that delivered physical products or human-powered services to one that delivers software-driven services.

Guidance

- Put in place policies and oversight that ensure that data is collected and analyzed in compliance with not only regulations but also the expectations of customers.
- Think outside the box. Developing the right pricing model may require imagination and creativity. Pricing models that have driven market disruption are often dramatically different than any that have been offered in the past.
- Create a change management function prior to implementing new business and pricing models to ensure that employees are engaged in the transformation of product and service offerings and role changes within the organization.

Prediction 7: By 2024, a Quarter of Organizations Worldwide Will Demonstrate Responsible Leadership by Increasing Their Sustainability-Related Digital Tech Spend by More than 25% from 2022 Levels

Despite the economic distractions facing businesses and governments around the world, sustainability remains a top priority for executives. In one of the boldest actions by a business leader taken to date, Patagonia Founder Yvon Chouinard announced that he and his family are giving away their ownership in the company, dedicating all profits from the company to projects and organizations that will protect wildland and biodiversity and will fight the climate crisis. Donations from the business are expected to be worth approximately \$100 million annually. Beyond this notable example, IDC's 2022 *Worldwide CEO Survey* revealed that 79% of CEOs said that environmental sustainability is a board priority and that 82% of CEOs agree or strongly agree that their digital investments will drive their ability to meet ESG goals. When looking at tech spending approaches to sustainability, IDC sees a relatively even split between hardware, software, and services spending growth as well as spend on new sustainability solution suites versus added features to existing solutions (source: IDC's *Sustainable Strategies and Technologies Survey, 2022*).

Transparency is key to ensuring meaningful sustainability progress and evading claims of greenwashing. The most progressive organizations will be clear about their goals and outcomes, specifically relating to responsible consumption, waste reduction, and carbon emissions. As organizations look outward for help in making real progress around sustainability, due diligence must be performed to determine the difference between IT vendors' marketing strategies and their true capabilities. One of the first steps is to dig into how the vendor is reaching its own sustainability targets.

Associated Drivers

- **Mainstream ESG** – Sustainability is measured and mandatory
- **Meaningful intelligence** – Differentiated decision power
- **Digital business** – Stepping stone to the future enterprise

IT Impact

- All C-suite executives will feel pressure to balance near-term business objectives with longer-term sustainability goals.
- The CIO's role will be critical in helping reduce the technology acquisition and life-cycle element of the sustainability equation, including reducing datacenter energy consumption during a period of rising compute demands.
- Optimism about digital tech as part of the solution to sustainability challenges must be followed through with a strong vision, long-term commitment, and meaningful action to resonate with society at large.

Guidance

- Establish measurable sustainability goals. Metrics are critical parts of any sector of the organization, and sustainability is no different. Sustainability requires reliable and transparent data to fully track emissions, waste, and other aspects that impact the environment.
- Standardize your ESG data. The first key challenge to ESG data is the lack of standardization. Increasingly, businesses can use frameworks such as the SASB, ISSB, and GRI in the United States. Some organizations also choose to use the U.N. Sustainable Development Goals (SDGs) for sustainability-related metrics, including goals such as SDG 12 (responsible consumption and production, including waste reduction) and SDG 13 (climate action).

- Separate the hype from proven results when looking for partners for sustainability including cloud services providers, hardware vendors, and consulting providers. If a vendor doesn't have its own house in order, it's unlikely that it will be able to help an enterprise make progress.

Prediction 8: With the Majority of Technology Budgets Residing with LOB, by 2027, 30% of the Expertise in the C-Suite Will Shift from Encouraging Innovation to Scaling Innovation and Operating Digital Businesses

IDC research shows that – at the time this prediction was written in late 2022 – technology budgets are divided evenly between business funded (LOB) and IT funded. However, the LOB proportion of spending is growing steadily and is expected to overtake IT spending by 2023.

As this trend continues, C-suite executives responsible for LOBs will have more direct influence over technology investment decision making. They will collaborate more closely on cross-LOB investments, and ROI metrics will become more nuanced. As a result, organizations will build a foundation of innovation maturity and, by 2027, at least 30% of the C-suite's focus will turn to scaling that innovation and operating a truly digital business. For many enterprises, this changes who sits at the executive table as skills and experience will need to evolve to match the operational needs of the digital business.

Associated Drivers

- **Digital business** – Stepping stone to the future enterprise
- **Ecosystem-based innovation** – Driving enterprise value
- **Meaningful intelligence** – Differentiated decision power

IT Impact

- As the context and business priorities of LOB buyers change, IT organizations spend more time assessing and navigating new offerings suggested by a more tech-savvy audience.
- CIOs and their teams spend more time building/maintaining their status as a trusted advisor, ensuring that tech deployment strategies are rooted in operational excellence.
- Duplication and needless redundancy as LOB leaders gain greater influence over technology becomes a growing financial and operational risk for IT and inhibits the development of cross-enterprise efficiencies.

Guidance

- Be contagious with confidence. To effectively run digital businesses and scale innovation, C-suite personas will have to demonstrate that they are confident and knowledgeable about the technologies that are key to their organization.
- Be tenacious with talent. The C-suite needs strong LOB teams to implement digital business strategies, and persistent effort is needed to find, support, and retain that talent.
- Be quick to collaborate. Many of the C-suite's technology investments will create value across the organization by involving multiple LOBs, and close collaboration will be essential to identifying the best ideas and realizing ROI over both the short and long term.

Prediction 9: By 2026, 80% of Organizations Will Accurately Quantify the Value of Their Digital Capabilities/Assets (Data, Algorithms, and Software Code) and Significantly Improve Their Market Valuation

The pandemic has made clear the need for all organizations to develop digital products or services to complement their traditional ones, or risk becoming less relevant to their customers or constituents.

For organizations not already in the software or data business, this will require new skills and a buildout of processes to not only develop these digital assets but also first source digital inputs from various ecosystems and then, post-development, create a digital distribution mechanism for clients or partners. For their entire digital business value chain, organizations will need to articulate what to measure in order to manage this digital business. Instrumenting organizations to accurately quantify the value of their digital capabilities or assets will become essential to success, but progress to date has been slow. Today, less than one-third of leaders at all levels are monitoring their digital business key performance indicators (KPIs) on a regular basis.

IDC research clearly demonstrates that companies that have successfully transformed themselves fully into digital enterprises realize twice the revenue and operating profits when compared with those that have not transformed yet. These transformation leaders also outperform their competition that are still in the process of transforming with 28% more revenue and 24% greater operating profits. As more and more companies become fully transformed from the less than 20% of enterprises today, relative GDP from digitalized products and services will expand exponentially.

Associated Drivers

- **Digital business** – Stepping stone to the future enterprise
- **Ecosystem-based innovation** – Driving enterprise value
- **Everything as a service** – Thriving through the change

IT Impact

- Help business leaders think differently about developing their core assets and long-term approach to investments in data, algorithms, and software code.
- CIOs/CTOs will deal more with development professionals that are part of their direct organization as new digital assets are created.
- Change some fundamental IT architectural decisions or guiding principles in response to an acceleration of the speed and scale of custom development for digital assets that will mean net-new work for IT organizations (e.g., integration and acceptance testing).

Guidance

- Develop the relevant KPIs for your digital products and services and test whether these metrics accurately reflect your digital operations. This will likely require working with your finance organization to ensure that the right management accounting metrics are developed, including activity-based metrics.
- Ensure that all levels of management monitor the daily/weekly performance of KPIs for digital assets.
- Understand what is available to source from or distribute to different software ecosystems, and communicate that knowledge to the rest of the organization. There is no time to waste reinventing what already exists elsewhere.

Prediction 10: By 2026, Enterprises That Did Not Effectively Address the Talent and Digital Skills Gap in Their Organization Will Constrain Revenue Growth Opportunities by 20%

IDC research shows that organizations are struggling to acquire the right talent to compete in today's market. According to data from IDC's *FERS Survey, Wave 6*, worldwide, 45% of respondents identified the "general shortage of people with the right skills" as the main reason they believe vacancies are hard to fill. The shortage comes at a time when demand for technical skills is perhaps stronger than

ever. Earlier this year, Walmart, as an example, said it hoped to add 5,000 people to its technology team that is already 20,000 strong. American Express has hired 3,600 tech workers this year and hopes to add another 1,500 developers. Compounding the inability to acquire the right talent are the effects of the great resignation, which are leaving organizations with inconsistent operations, reduced customer satisfaction, loss of critical knowledge, increased security risk, and increased workload on remaining employees.

Filling the skills gap will require a multipronged approach. Assuming most companies won't be able to find enough people with the technology skills they require, they'll need to invest in training current employees, hire professional services firms, and build new partnerships. In addition, more companies are looking for technology solutions to the problem. For instance, some no-code tools could be used by line-of-business teams to offload some work from professional developers. AI/ML-driven code generation tools will take care of some coding for developers, and automation can similarly reduce the workload of professional software engineers.

To remain competitive, organizations must continue transforming their processes, products, services, and experiences. Those with the right talent will move faster and will more efficiently capitalize on the growth opportunities in the digital business era. Those that don't aggressively pursue solutions to the skills gap will grow slower and lag behind competitors.

Associated Drivers

- **Work mode upheaval** – New models and leadership
- **Digital business** – Stepping stone to the future enterprise
- **Meaningful intelligence** – Differentiated decision power

IT Impact

- Employee experience programs and internal learning management system (LMS) platforms will be key to helping organizations retain and cultivate talent that helps bridge the growing gaps across the human, technical, and leadership skills needed.
- As hybrid work becomes work, IT will be responsible for securing both the office environment and the home office environment in an always-on model with endpoint security becoming paramount. IT must spearhead security training for non-IT staff to help ensure that employees keep corporate data secure.
- Build support for people from the business to gain new technology skills. IT will no longer be the only group in the organization responsible for technology. To drive efficiencies, IT must serve as a guide for the rest of the business to take on some of the digital creation that has historically been managed entirely by IT.

Guidance

- Identify opportunities for reskilling or upskilling. In an environment where it is difficult to find the right skills, there is great opportunity to cultivate the right skills with existing staff who already understand the organizational context. Not only is this good for minimizing the skills gap, but it can also help reduce the attrition rate because people are more inclined to stay at jobs where they feel valued and are encouraged to seek growth.
- Invest in both human and technical skills. To run a successful digital business, employees need to be equipped with both technical skills and human skills. Staff must be trained to collaborate cross-functionally, think critically, and communicate effectively to develop a resilient organization.

- Exploit automation to enable employees. By removing the mundane, detailed, and repetitive tasks from an employee's day-to-day responsibilities, individuals are left to focus on higher-value tasks. They can drive insight from data, step back and solve problems, initiate cross-functional projects, and deal with exceptions. These practices allow organizations to move beyond reactionary approaches, and they enable employees to proactively manage their workload and dedicate time for strategic thinking that contributes to revenue growth.

ADVICE FOR TECHNOLOGY BUYERS

This year's IDC FutureScape document series comes at a time of geopolitical and economic uncertainty, and these issues are top of mind for all organizational leaders. Inflationary impacts, potential recessions, and other "storms of disruption" will pass, but the digital business era is just beginning, with long-term opportunities for all enterprises. As you implement strategies to manage through slower economic times in the near term, don't lose sight of the longer-term business goals that your organization has set.

Prioritize digital maturity. Companies that have built the platforms to support digital business need to avoid complacency. They should be establishing cultures of innovation, where identifying new ways of doing business are embedded into companywide goals. At one time, digital transformation was a competitive advantage. Now, that is merely the baseline for existence. Digital maturity is how companies become digital leaders and resilient organizations.

Make data a centerpiece of your digital strategy. Building a data-driven culture is still a competitive differentiator. Data-driven decision making is valuable at all levels of a business, from the C-suite to the field workers. Implementing the technology necessary along with a culture of data is a foundational element of digital business.

EXTERNAL DRIVERS: DETAIL

Digital Business – Stepping Stone to the Future Enterprise

- **Description:** A digital business sees value creation based on the use of digital technologies for both internal and external processes, including stakeholder engagement, employee commitment, and product and services experiences. Building and leading a digital business is the next step toward the future enterprise, with CEOs indicating that digital product and service revenue will jump from the current 30% factor to over 40% by 2027. While some parts of operations may never be purely digital, digital businesses are committed to a digital-first strategy that builds value and growth by aligning all parts of the business and IT landscape with digital workflows. Both the supply side and consumption side face increased scrutiny for investment, and development strategies for both digital and nondigital assets demand omni-channel leverage for the digital business to get support or funding. Implications include reprioritization of digital customer experience, evolution to fully digital operating models, more resilient digitally enabled supply structures, and automation to address risks and challenges. Regulatory factors are also driving digital business focus, where the use of data and the trusted engagement with automation drive new risk mitigation investments. Businesses that are launched or relaunched in the digital universe are gaining measured operational and competitive advantage, driving digital-native considerations across most sectors. Digital business is bringing together business and digital strategy, where technology is both a common denominator and a dominant driver of value and growth.

- Context:** According to IDC's 2022 *Worldwide CEO Survey*, "technology" is the number 1 word of the year for CEOs. In 2021, the dominant solutions for major monetization workflows were manual/custom, indicating a high greenfield focus. A 2021 *IDC Survey of Monetization* indicates that digital investment is a focus for 95% of CEOs, and 27% self-assess as "pioneers." According to McKinsey, in the next step in the digital journey, integration of digital and operations capabilities will drive step change improvements in revenue, customer experience, and cost (see *IDC PeerScape: Future IT – Practices to Establish a New Digital Business Operating Model*, IDC #US47857221, June 2021). According to IDC's *Future Enterprise Resiliency and Spending Survey, Wave 7*, operational efficiency (43%) and customer satisfaction (42%) are higher priorities than profits (37%) (see *Market Analysis Perspective: Worldwide Digital Business Models and Monetization, 2021*, IDC #US46247521, September 2021). In the drive to the future enterprise, digital businesses will prioritize deeper understanding of consumption models, recognizing usage intelligence as a critical driver for development of value and growth strategies, with an expected 60% of IoT-using organizations creating new data-driven offerings and recurring business models (see *IDC FutureScape Webcast: Worldwide Digital Business Models and Monetization 2021 Predictions*, IDC #US47028620, December 2020).

Meaningful Intelligence – Differentiated Decision Power

- Description:** Data is now well embedded at the core of strategic capability for every organization. Data-centric capabilities and infrastructure are now critical to empowering performance-intensive computing and unleashing business value. Meaningful intelligence has moved beyond technical challenges of speed and precision, and organizational intelligence is now expected to enable better decisions, be more efficient, and improve knowledge across the organization. Differentiated decision power leverages real-time insight as the critical capability to keep up with the speed of change. Further, where trust is now paramount in all enterprise activities, ethical data strategies demand a balance between the potential of data and the critical respect for people's privacy and preferences; data and ethical use expectations have reset the bar for privacy, trust, visibility, and responsibility – both with respect to customer stakeholders and in the context of government interventions, regulations such as GDPR, and antitrust actions. Speed and experimentation are now also critical to meaningful intelligence, making digital twins a mainstream strategy that is broadly leveraged in support of measurably differentiated decision power. Data literacy and democratization have shifted organizational focus from straightforward distribution of data to more immersive strategies to find and leverage truly differentiated decision power. Metadata is a critical decision support tool, providing context through workflow linkages and automation. Data optimization and democratization are core strategies to mitigate skills shortages, create data-driven decision value, and deliver strong competitive advantage.
- Context:** The differentiating power of data is a fact: IDC's August 2021 *Future of Intelligence Survey* indicates that 77.3% of respondents have a senior-level executive responsible for enterprise intelligence (see *IDC FutureScape: Worldwide Future of Intelligence 2022 Predictions*, IDC #US47913321, October 2021). According to IDC's 2022 *Business Intelligence and Analytics Survey*, 40% of organizations have started tracking new KPIs in the past 18 months. IDC's *Future of Intelligence Survey* also indicates that investments in enterprise intelligence (including data culture and democratization) improved employee retention and productivity. Yet the focus on ethics and trust has never been higher, with the European Commission proposing regulation of artificial intelligence systems described as "the first ever legal framework" on AI (digital-strategy.ec.europa.eu/en/library/proposal-regulation-laying-down-harmonised-rules-artificial-intelligence). If that regulation follows the GDPR path, it will

set the benchmark for most global economic sectors. The worldwide data integration and intelligence (DII) software market grew over 10% in 2021, indicating an unprecedented focus on gathering intelligence about data and leveraging data capture that "listens" to database transactions to inform on what is happening in the business (see *Worldwide Data Integration and Intelligence Software Market Shares, 2021: Accelerated Growth in a Digital-First World*, IDC #US47920522, June 2022).

Ecosystem-Based Innovation – Driving Enterprise Value

- **Description:** Innovation has shifted from tactical DX investments that aggregate siloed strategies to holistic, ecosystem-aligned enterprise commitments. Strategic innovation, led by the CEO, boards, and C-suite, now demands clear and measured links between technology innovation and outcomes. IT organizations are seeing a shift in investment priorities, with ecosystem-driven models now materially impactful to strategy, planning, and execution. Ecosystem commitments carry new challenges including consideration of IP protection and cybersecurity, where intelligent innovation has hastened business evolution across the workload, enterprise, and ecosystem control planes. Accelerated digitalization has also forced companies to fundamentally reimagine how they can leverage ecosystem relationships. The enterprise that is positioned to be bold has the most ecosystem leverage, realizing high-value outcomes to the benefit of both the enterprise and discrete workloads. This next generation of innovation has moved beyond bridging historic gaps and siloed investments with respect to customers, cost, and supply chain; it is now driving long-term and measurable strategic integration of enterprisewide business functions. Successful ecosystem alignment is now leading the C-suite discussion in terms of driving enterprise value and what success looks like. Organizations are investing in creative ways to leverage the ecosystem for both co-innovation and industry leadership.
- **Context:** Trusted ecosystem models are leading organizational response in the drive to digital business, empowering high-value innovation and tangible outcomes that can be delivered at scale. Ecosystem-based, multipartner solutions will drive speed and value through commercial intelligence, operational value, and increased value and differentiation, with insights driven by AI/ML (48%) and value metrics for pricing (49%) at the top of immediate digital business priorities (see *IDC FutureScape Webcast: Worldwide Digital Business Models and Monetization 2021 Predictions*, IDC #US47028620, December 2020). Tech spend by business leaders will overtake spend by IT by 2023 (see *Worldwide Line-of-Business Forecast, 2021-2025: C-Suite Tech Spending in a Digital-First World*, IDC #US48459721, December 2021). The need to reassess use cases and ensure alignment will drive commitment across the "digital dream team." Planning and budget cycles will be driven to become more dynamic in response to evolving ecosystem models. Technology architectures will be driven to support the needs on the broader C-suite for business models of the future (see *The C-Suite Tug of Digital Value in the Future Enterprise*, IDC #US48052721, August 2021).

Mainstream ESG – Sustainability Is Measured and Mandatory

- **Description:** Environmental, social, and governance (ESG) is a globally adopted framework that supports understanding and actions to achieve a better and more sustainable future for all. The United Nations has adopted 17 Sustainable Development Goals, which guide strategies to address global challenges such as poverty, inequality, climate change, environmental degradation, peace, and justice. Pending regulatory changes will require disclosure of sustainability-related risks and opportunities as part of new International Financial Reporting Standards (IFRS). Increasing global thought leadership is pressing ESG as more than just a measure. ESG will be foundational to business purpose and value; care is

now a recognized currency and diversity, equity, and inclusion (DEI) affecting the bottom line. Increased scrutiny on both investment and operational sustainability is driving organizations to move from platitudes and posters to actually demonstrating practices that support ESG goals. The focus on measurement demands data and analysis that goes beyond a traditional bottom-line focus, creating new data requirements and exposing new risks. Accuracy, trust, and integrity are drivers for all stakeholders, with these new reporting demands exposing unprecedented reputational risk; ESG data is now viewed on par with financial reporting, so the trust bar is set very high to avoid perceptions of "greenwashing." The shift of sustainability to a mainstream operational requirement is magnifying known data issues, particularly where the required data is difficult to identify, gather, and validate.

- **Context:** Global rules and reporting reality (IFRS sustainability and climate standards in 2022) will drive focus among the C-suite and board of directors, where reporting accountability will rise to the same standards as financial statements. According to IDC's *Global Sustainability Software Survey, 2022*, about 40% of organizations globally cite some form of executive mandate to invest in sustainability tools that is aligned with new industry focus on strategy and regulatory requirements. Measuring and tracking sustainability progress, particularly in the social dimension, will be essential for vendors and ecosystem partners. Internal and external sources for data, analysis, and reporting will be driven to align in support of previously unmeasured targets; in 2021, more than half of the surveyed practitioners stated that their organization spent more on ESG reporting than they did during the previous year; almost 60% expect spending to further increase by 2024. Recent SEC filings also create impactful financial considerations, such as imposing \$1.5 million in fines on BNY Mellon for allegedly misstating and omitting information about ESG (www.sec.gov/news/press-release/2022-86).

Work Mode Upheaval – New Models and Leadership

- **Description:** The past two years have seen workforce dynamics disrupted through widespread adoption of hybrid work, accelerated investment in automation, a new focus on employee experience, and the pipeline of talent for both general and IT sector jobs. Automation and augmentation of work have been accelerated, with technologies like AI and RPA making everything from onboarding to secure access much more fluid. Modes of work have raised the bar for skills and driven increased attention to employee experience. Remote and hybrid work has gone beyond a focus on physical workplaces and digital workspaces to spotlight skills, workforce management, automation, changing demographics, and as-a-service talent resourcing. New modes of working are now intrinsic to leadership and organizational resilience and go well beyond traditional staff planning methods. New work models require cross-functional teams – including HR, IT, LOB, finance, and operations – to leverage new disciplines and modes of work aligned with each company's business goals. Automation, multi-disciplinary capabilities, and democratization of data and workflow add operational complexity, with dynamic resource models like "as a service" causing planning and operational changes that extend beyond the work and impact enterprise risk policies. Employee and customer experience leaders must work together to recalibrate culture, augmentation, and space models that are competitive and aligned with more dynamic and refined work models.
- **Context:** Who is working and what workers expect has changed: With a significant number of workers expecting to change jobs in 2022, IDC's 2022 *Future Enterprise Resiliency and Spending Survey* reports that, worldwide, over half of organizations have felt negative effects of worker attrition resulting in increased workload on remaining employees, security risks, and loss of critical knowledge. The recognized criticality of skill retention is pushing major technology sector players such as Microsoft (www.wsj.com/articles/microsoft-boosts-pay-in-fight-for-talent-11652738482) and Apple (www.wsj.com/articles/apple-boosting-pay-budget)

[for-workers-amid-tight-labor-market-11653527996](#)) to boost pay in the fight for talent and to visibly respond to inflationary pressures. Work mode dynamics and labor-centric policies and strategies are taking on new power across the business community, with HBR reporting a 658% increase in the frequency of CEO discussions of equity, fairness, and inclusion during earnings calls ([hbr.org/2022/01/11-trends-that-will-shape-work-in-2022-and-beyond](#)). The C-suite is critical in representing organizational values; 69% of Gen Z workers prioritize diversity, according to a survey by Tallo ([tallo.com/blog/genz-demands-diversity-inclusion-strategy](#)), and a New York Times report indicates that tech firms will be deprioritized based on employee concerns about the sector's moral qualities ([www.nytimes.com/2020/01/11/style/college-tech-recruiting.html](#)).

Everything as a Service – Thriving Through the Change

- **Description:** Everything as a service (XaaS) is a driver for change in every sector and ecosystem, with real impacts on both the supply side and the demand side of every business. Organizations are adopting as-a-service models at varying speeds out of necessity, but the multidimensional delivery strategies make requirements more complex and impacts less predictable. The shorter decision cycles of on demand are letting industry leaders do things differently, but the commitment models are fundamentally changing. On the supply side, demand and customer expectations are rising, so suppliers are driven to convert and enable offerings more quickly in a secure services-based model. Change is rampant in terms of accountability and control, as suppliers are more committed in a shared-responsibility model. Buyers are now making decisions based on commitments to measured outcomes in terms of optimization, reliance, and financial models. Architecture and solution strategies are now critical to the service provider, where proprietary systems that are being maintained or migrated can materially impact the efficacy of the as-a-service solution. Nonproprietary requirements are serving as a starting point for integration, so solutions and vendors are pressed to be dynamic and interchangeable. Leaders are challenged to find new financial, operational, and governance models that support success in an iterated move to as a service. Critical factors for organizations to thrive through the as-a-service change landscape include solution control, contractual clarity on roles and responsibility, and accountability alignment including geoeconomic assurance and data sovereignty risks.
- **Context:** Typical 2020 enterprise workloads had 5 to 15 dependencies; that is expected to be 6x greater by 2025 (see *IDC FutureScape: Worldwide Future of Digital Infrastructure 2022 Predictions*, IDC #US47441321, October 2021). According to the IDC worldwide forecasts, CAGR in spending is materially shifting toward as-a-service constructs over the next three years, with infrastructure as a service projected to be up 21%, dedicated cloud projected to be up 31%, and the services to support as-a-service investments projected to be up 16.9%. Software as a service is projected to have CAGR at 15.3%. To support an as-a-service foundation, software-defined everything will drive attention to policy automation, programmability, and analytics instead of hardware-specific configuration and control. There is also extensive evidence that the as-a-service segment is building in dominance: SaaS-based APM solutions are expected to increase at a five-year CAGR of 23.7% compared with 2.8% for on-premises solutions (see *Worldwide Application Performance Management Software Forecast, 2021-2025: Market Pivots to Observability*, IDC #US48353021, November 2021); SaaS-based network security solutions are creating traction, estimated to bring greater than 7% annual growth in the sector (see *Worldwide Network Security Forecast, 2021-2025: SaaS Adoption Brightens Market Outlook*, IDC #US48185721, September 2021); the IoT security market, enabling autonomous operations across all segments, has a CAGR of 16.3% (see

Storms of Disruption – Accelerating, Interconnected Uncertainty

- **Description:** It's an extraordinary moment: We have our most impactful pandemic in 100 years, our first invasion in Europe in 75 years, and our first global inflation in 40 years. While change and disruption are nothing new, this year feels faster, more wide ranging, and farther reaching – the most dramatic change in a generation – affecting the psychology of leaders. It's not just a few things but the interconnected nature of them together, the domino effect, and the unexpected yet consequential impacts that generate a perfect storm of instability. The global order is under threat from the Russia-Ukraine War. The war's impact on energy has shocked markets, resulting in both a renewed interest in expanded fossil fuels and a greater clean energy imperative. "Climate action failure" and "extreme weather" are cited as severe immediate and long-term risks. Disruptions in grain and fertilizer exports are adding to inflation and threatening massive food insecurities. Rising interest rates challenge the economy and IT spending. While some adaptations from the COVID-19 pandemic are now integrated into global business and operating models, impacts are still felt in supply, labor, and more. Supply chain difficulties and chip shortages are expected to continue until at least 2024. Developing economies, seeking to digitize rapidly, have limited resources, while the speed of technology-enabled solutions marches on. It's undeniable that these external forces are increasingly interwoven, not temporary, impacting organizations' business and digital plans concurrently, becoming storms of disruption.
- **Context:** With storms of disruptions, there is a lot of complexity, but it cannot be teased apart easily. The multidimensional interactions among issues/people/companies drive constant change and redefine competition continuously. In addition to individual drivers, seeing the whole of the system is important. Concern about the future is heightened and growing. WEF reports that 84% of experts are either "concerned" or "worried" about the outlook for the world (www3.weforum.org/docs/WEF_The_Global_Risks_Report_2022.pdf). Yet 95% of business leaders report that their crisis management needs improvement, according to PWC (www.pwc.com/gx/en/issues/crisis-solutions/global-crisis-survey.html). Global supply chain pressures increased in 2Q22. Global GDP growth is projected to slow sharply in 2022, to about 3%, and remain at a similar pace in 2023. Crude oil prices have almost doubled since 2021, while natural gas prices in Europe have increased 4x to 5x, according to OECD (www.oecd.org/coronavirus/en/data-insights/energy-prices-are-spiking). Fertilizer prices surged in March, up nearly 20% since January 2022 and almost 3x higher compared with a year ago. Currently, 193 million people globally are acutely food insecure, but FAO predicts insecurity will worsen in at least 20 countries in 3Q22 (www.fao.org/3/cc0364en/cc0364en.pdf).

LEARN MORE

Related Research

- *Critical External Drivers Shaping Global IT and Business Planning, 2023* (IDC #US49631122, October 2022)
- *Are CEOs of Digital-First Pioneer Enterprises More Focused on Attracting Top Talent?* (IDC #US49660422, September 2022)
- *Defining the Digital Business* (IDC #US46842221, August 2022)

- *IDC MaturityScape Benchmark: Digital Maturity in the U.S., 2022* (IDC #EUR149303622, July 2022)
- *IDC's Worldwide Digital Transformation Spending Guide Taxonomy, 2022: Release V1, 2022* (IDC #US47824522, June 2022)

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