

## Gartner's Top Strategic Predictions for 2022 and Beyond — Leveraging What We Have Learned

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Initiatives: [Executive Leadership: Enterprise Strategic Planning and Execution](#); [CIO Leadership of Innovation, Disruptive Trends and Emerging Practices](#)

For every crisis, there must be an examination of what has been learned. Lessons about humanity, business and technology are there to be studied to find success in uncertain times. This research offers insights for executive leaders into understanding how predictions help uncover the unexpected.

### Additional Perspectives

- [Summary Translation: Gartner's Top Strategic Predictions for 2022 and Beyond — Leveraging What We Have Learned](#)  
(05 November 2021)

## Overview

### Key Findings

- Privacy and behavior are forever linked as people fight to retain sovereignty over their personal actions and data.
- New workstyles and sources of talent will expand resilience everywhere.
- New opportunities and risks will elevate our need to reach beyond our expectations.

### Recommendations

To build and expand a digital business, executive leaders in end-user organizations must:

- Approach privacy as a bidirectional issue by reducing collection of private data as individuals refuse to give up private information while providers seek new ways to mine it.
- Shift guidance of workers away from tactical command-driven direction toward career development and self-direction by encouraging more autonomous work.
- Expand risk management and incentives programs by coordinating across enterprises, sectors and cultural norms.

## Strategic Planning Assumptions

- By 2025, synthetic data will reduce personal customer data collection, avoiding 70% of privacy violation sanctions.
- By 2024, 40% of consumers will trick behavior tracking metrics to intentionally devalue the personal data collected about them, making it difficult to monetize.
- By 2027, a quarter of the Fortune 20 companies will be supplanted by companies that “neuromine” and influence subconscious behavior at scale.
- By 2024, 30% of corporate teams will be without a boss due to the self-directed and hybrid nature of work.
- Through 2026, a 30% increase in developer talent across Africa will help transform it into a world-leading startup ecosystem, rivaling Asia in venture fund growth.
- By 2024, 80% of CIOs surveyed will list modular business redesign, through composability, as a top five reason for accelerated business performance.
- By 2024, a cyberattack will so damage critical infrastructure that a member of the G20 will reciprocate with a declared physical attack.
- By 2025, 75% of companies will “break up” with poor-fit customers as the cost of retaining them eclipses good-fit customer acquisition costs.
- By 2026, non-fungible token (NFT) gamification will propel an enterprise into the top 10 highest valued companies.
- By 2027, low Earth orbit (LEO) satellites will extend internet coverage to an additional billion of the world’s poorest people, raising 50% of them out of poverty.

## Analysis

### What You Need to Know

Gartner's top predictions for 2022 and beyond explore three aspects of what we have learned — the push toward human centricity, the race to resilience and the ability to reach beyond our expectations. These predictions help our clients put into perspective issues from dealing with personal privacy all the way to avoiding wide-ranging war. However, what we have learned is not just in the topics that we cover. We have learned to explore the ramifications of conflicting areas of concern. For example, which will be of prime importance — having empathy toward human concerns, building better ability to thrive through change or expecting the unexpected? The answer is that all will need to be dealt with in combination as the uncertainties of everyday life seep into every situation.

Savvy executive leaders will work to broaden the horizons of IT professionals and business executives. They will stress the need to fuse technology capabilities with business strategies to drive improved outcomes — and to ensure they are prepared to deal with uncertainty that will continue to grow.

- Use Gartner's predictions as planning assumptions on which to base your strategic plans.
- Evaluate the near-term flags that indicate whether a prediction is trending toward truth or away from it.
- Position predictions with longer time horizons as having a lower probability of coming true than those with shorter time horizons.

Last year, we said, "It seems our lives are now equal parts turmoil and inspiration." This still holds true as we examine the predictions for the next several years.

**"We find that our humanity is more important than ever, even though it often appears not to be so."**

But this year, we seek to understand what will come of the uncertain times we have been forced to live through. A global pandemic persists and challenges us to figure out how not to repeat the mistakes of the past. This year, it has become clear that continuous uncertainty mandates resiliency at every level — individual, enterprise, public sector, technology, social and environmental decisions. In the effort to respond, we find that our humanity is more important than ever, even though it often appears not to be so. The human centricity people require is borne of a need for empathy. As people have become more isolated from one another, they better understand the need for connection. As people become more self-directed, they crave collaboration and joint productivity. Empathy allows people to work toward solutions that will reduce human angst, anxiety and fear.

But beyond empathy lies resilience, opportunity and risk — three things that have always been components of good business strategy. Today, these issues hold new meaning as resilience is built in nontraditional ways, from talent to modularity of business. As for opportunity and risk, they must be viewed with a sense of urgency because the risks hold greater danger and the opportunities greater reward.

When seeking top predictions, Gartner is not always able to accommodate every critical theme of the day. This year, Gartner feels it worth noting that the theme of sustainability has become critical. However, no single prediction presented itself as distinctive enough to garner a spot in our list. Yet one question does present an opportunity for discussion. We must examine the conundrum presented by the growth in both cloud computing, cryptocurrencies and machine learning. Some believe that the cloud and artificial intelligence (AI) will harm sustainability because of so much centralized compute power and accelerated use. On the other hand, the very nature of how and where cloud data centers are built argues against that negative proposition. In the end, the debate will need to be examined closely to uncover the truth. This is the nature of prediction — truth lies in examining opposing perspectives.

Our predictions for 2022 and beyond can help to examine many perspectives. They can focus our thinking about what we have learned and expand our vision about where we will go from here.

## What We Have Learned

Marvin Minsky, the so-called “father of artificial intelligence,” once said, “You don’t understand anything until you learn it more than one way.” The lesson in his wise statement stands before us today. As people, businesses, governments and all types of organizations are hit with constantly changing disruption and uncertainty, they struggle to apply the lessons of one thing before another overtakes them. The only recourse is to understand multiple things at once. We learned that people would need to be able to work from home. But we also had to learn that shifting in one direction — such as remote-only work — was not the ultimate answer. A hybrid workplace would allow people the freedom to work in a style and/or location that suits them best. Additionally, we saw that the way we treat people, where we find talent, and how we apply that talent to our success were all interconnected as a more global workforce emerged for those willing to leverage it. These types of multipart lessons can be applied in different ways, depending on the subject.

The lesson of the pandemic has been to expect the unexpected and be prepared to move in multiple strategic directions at once. We embrace options for people, we embrace greater efficiency in our enterprises, and we embrace acceleration of our transformation plans so we are not caught flat-footed in the future. This drives greater resilience in dealing with change. Companies locked into one mode of operation or into only one way of creating will find themselves at a disadvantage compared to others. The opportunistic companies will be prepared to seek out and chase whatever comes next.

Our predictions this year provide a foundation for people, process and technology to increase their role as central to creation of new value scenarios and success (see Figure 1). Value is still critical to growth of any endeavor, and we must be ready to find it. So, in essence, what we have learned is to never stop learning.

Figure 1. Top 10 Strategic Predictions for 2022 and Beyond

## Top 10 Strategic Predictions for 2022 and Beyond

Data	Tracking	Behavior	Supervision	Talent
<b>70%</b> reduction in privacy sanctions	<b>40%</b> intentionally devalue personal data	<b>25%</b> neuromine at scale	<b>30%</b> of teams without a boss	<b>30%</b> increase in talent across Africa
2025	2024	2027	2024	2026
Composability	Cyberattack	Customers	Crypto	Digital
<b>80%</b> accelerate business performance with modular business redesign	<b>G20</b> cyberattack breeds kinetic response	<b>75%</b> companies “break up” with customers	<b>NFTs</b> drive high-value companies	<b>1 Billion</b> poorest people get internet
2024	2024	2025	2026	2027

Source: Gartner  
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Gartner

Among the high-level trends that emerge from these predictions are:

- Privacy and behavior are forever linked as people fight to retain sovereignty over their personal actions and data. Protection of people’s privacy can sometimes come down to the idea that people’s behavior will either give them more privacy or will help give it away. People often give more personal information about themselves than they need to. In addition, companies often feel they must take personal information to better target the preferences of their customers. Both these approaches can increase violations of privacy. Now, people are starting to rebel against that. Some will intentionally devalue their personal information to make it hard to monetize, and thus make it less useful to take. At the same time, technology (for example, AI and synthetic data) is pushing the envelope in its ability to target people’s preferences without using individual personal data. As these options grow, the question ceases to be one of need to gather personal information, but one of desire. This shift will inform whether the ethics of the day lean toward protecting people’s right to privacy or not.

- New workstyles and sources of talent will expand resilience everywhere. Resilience is the ability to bounce back, while preparing to get better in any endeavor. It's not a reset. That is a good thing because today's markets for talent and capabilities are quite different than they once were. Resiliency in enterprises will be built through leveraging a more diverse workforce that is guided in different ways, by sourcing talent from nontraditional locations, and by building more composable styles of work and business.
- The very notions of teamwork are changing. Teams without bosses are on the rise, as more emphasis is placed on career guidance and support than on tactical order-giving and taking. This lets companies take advantage of more self-directed workers, autonomously performing their duties. And while they are at it, since the workers don't need to all come from one place, companies can now source talent from many locations. IT talent can be found in the business unit, with business technologists. Worker talent in Africa is on the rise as investment drives more technical skill building in that area. Lastly, modular business redesign is allowing enterprises to take advantage of workers more used to working in interchangeable units of work. Now, smaller teams can be orchestrated into a flow of work guided by need in the moment. Enterprises that build their business operations, models and processes on this assumption are finding it easier to adjust and change to meet uncertainties when they arise. Overall, resilience grows from many ways of working.

- New opportunities and risks will elevate our need to reach beyond our expectations. Wherever enterprises look, they see opportunities and risks. This is not new but the frequency at which those opportunities and risks multiply is indeed increasing. This is the natural outcome of massive uncertainties propagating repeatedly. The unexpected has become almost commonplace. Who would have thought the question, “Should you pay the ransom?” would intrude into the boardrooms of companies running critical infrastructure. Who would have thought virtual assets would one day make physical assets seem almost “quaint” in terms of value? Indeed, who would have thought we might still be struggling to close the “digital divide” almost 30 years after the term was coined. But these things are now reality, and people yearn to either protect themselves from their ramifications or to benefit from their resolution. As we contemplate the seriousness of the risk, we balance that against the size of the opportunity. If warfare turns from cyberspace into real space, we may find it harder to contain. **If the ability to generate wealth from digital assets outstrips the ability to do it physically, people may find themselves less engaged with the physical world.** And certainly, if they fail to improve the lot of those less technologically fortunate, then there is a limit to how far technology can take society and, indeed, the human species. Striving to understand what people have learned about risk and opportunity is striving to understand what people have learned about themselves.

Gartner’s top strategic predictions continue to offer a provocative look at what might happen in some of the most critical areas of technology and business evolution. More importantly, they help people understand that learning never ends, that learning from multiple perspectives is essential, and that learning is a shared responsibility. Whether one is a customer, a business or an investor, these predictions will prove useful in capturing the interest of strategic thinkers and fueling the excitement of tactical decision makers.



## Strategic Planning Assumptions

**Strategic Planning Assumption:** By 2025, synthetic data will reduce personal customer data collection, avoiding 70% of privacy violation sanctions.

**Analysis by:** *Svetlana Sicular, Jim Hare and Anthony Mullen*

### Key Findings:

- Data generated using AI techniques — synthetic data — is gaining momentum as part of data strategies. Synthetic data can serve as a proxy for real data, resulting in reduced or no collection, use or sharing of any personal or otherwise sensitive data, such as personally identifiable data about people or intellectual property.
- Synthetic data reduces the risk of privacy violations and revealing secrets. Synthetic data generation uses AI techniques to learn a representation of artifacts about people from the real data to generate new, completely original synthetic content. This preserves a likeness to original data that cannot be traced back to a person, and thus, obviates privacy requirements.
- Synthetic data gives imagination to AI. AI-generated synthetic data makes AI truly prophetic, as it can represent the future and alternative realities, not just the past that the real data reflects. It mitigates human bias through controlled generation of reality, various scenarios and extreme conditions.
- Synthetic data can provide a more precise insight about the customer than real data, as AI can model the ever-changing and often unpredictable customer behavior. For instance, synthetic data enables a cookieless internet, where AI simulates real people's behaviors.
- Synthetic data lessens regulatory concerns, and therefore, reduces possible privacy violations. A plethora of maturing and regionally different privacy regulations across the globe makes the insights from personal data expensive and ineffective. AI is a powerful way to understand humans at scale by using high-quality and high-volume synthetic data.
- Synthetic data makes organizations more resilient. It can be used to train and test AI models to handle unplanned disruptions, unexpected events and scenario planning.

### Near-Term Flags:

- Starting in 2023, enterprises will compete on differentiating business ideas that require AI techniques, but for which they have little or no data. Synthetic data increases the scope and accessibility of data for those use cases.
- By 2024, 60% of data for AI will be synthetic to simulate reality, future scenarios and derisk AI, up from 1% in 2021.

## Market Implications:

Many barriers exist to the holy grail of clean and trustworthy data about people, not the least being tough privacy regulations and customers' expectations of institutional honesty. Customer and societal demand for privacy and ethical use of personal data hinder business opportunities to share and analyze personal data, often even despite potential benefits to the customers. Unethical use of personal data undermines people's trust. For example, some enterprises and software vendors face a dilemma — use the data that belongs to their customers for training AI systems and risk customer mistrust, or do not use it, and impair the accuracy and relevance of insights. Synthetic data frequently resolves such dilemmas, shortening time to market while ensuring responsible development of AI.

Many modern privacy and data protection laws require “purposeful processing” of personal data. Training AI models with directly identifiable data can lead to processing such data outside transparently conveyed purposes. Systems in need of accurate personal data spend a lot of time, effort and money on privacy audits and privacy certification/approval of developers. AI opens the door for synthetic data created with generative models, which describe the world in terms of probability and statistics. This alleviates concerns about mishandling of actual information — the use of which is strictly and unevenly regulated by various jurisdictions.

Synthetic data accelerates AI development time scales. Many AI and analytics projects suffer from delays caused by obtaining production data for development and testing. Synthetic data generation helps kick-start projects. Testing with synthetic data overcomes data scarcity and adds corner cases. Often, real-world data is happenstance, and it takes time to accumulate. It gets obsolete as humans change all the time. Synthetic data can be more realistic than real data and reduce the bias by representing data with appropriate balance, density, distribution and other parameters.

Synthetic data will power new economic models. Data monetization and data sharing make data more accessible but require deliberate and responsible approaches. Often, synthetic data is a good way to provide the necessary information within legal and ethical parameters. For example, for the U.S. Census Bureau's Small Area Income and Poverty Estimates, "in data confidentiality applications, synthetic data are modeled statistical outputs released in a format that closely resembles the confidential data format. Synthetic data can be disaggregated to the individual- or business-record level, or aggregated into tabular format." Synthetic data will be key to differentiating with the "long tail" of use cases (for example, new possibilities of personalization with synthetic images and text). Some companies are already pioneering unique AI solutions based on synthetic data, for purposes such as developing personalized treatments.

## Recommendations:

- Include synthetic data in your data and analytics strategy. Identify, examine and quantify the advantages and limitations of synthetic data. Supply guidelines about where synthetic data is necessary, acceptable or counterproductive for your solutions.
- Start your synthetic data exploration with tabular data — it represents a refined view of your business and contains sensitive information that is of great value. It is also the best understood and most regulated data. Combine synthetic data with real-world data to get the best results.
- Monitor your successes and failures at generating and using synthetic data, and progress with generative AI tools to adjust your data strategy. Follow lessons learned in the press and Gartner research. Manage expectations and provide guidance on the applicability of synthetic data as your experience evolves.
- Treat synthetic data as only a part of privacy-enhancing computation (PEC) techniques. Synthetic data generation approaches are evolving by rapidly incorporating the latest AI ideas. The availability of synthetic data is uneven across industries and types of synthetic data. To capture business opportunities that involve real people, determine how to best apply synthetic data and when to rely on other PEC methods.

## Related Research:

[Preserving Privacy While Using Personal Data for AI Training](#)

## Top Trends in Data and Analytics for 2021: From Big to Small and Wide Data

### Innovation Insight for Generative AI

### Three Critical Use Cases for Privacy-Enhancing Computation Techniques

### Use a Privacy Impact Assessment to Ensure Baseline Privacy Criteria

**Strategic Planning Assumption:** By 2024, 40% of consumers will trick behavior tracking metrics to intentionally devalue the personal data collected about them, making it difficult to monetize.

**Analysis by:** *The Consumers and Culture Insights Research Team and Rachel Steinhardt*

#### Key Findings:

Consumers are increasingly aware of the value companies eke out of data generated by their every move, online and offline, and of the power of that data, when wielded via recommendation algorithms, to manipulate their own behavior. A sizable contingent resolves to take action to undermine these personal information-dependent corporate methods. By turning the tables — manipulating algorithms and spoiling databases themselves — they defy the adage that insists, “If you’re not a customer, you’re the product.”

Consumers are motivated to devalue the behavioral data that companies collect by several different drivers, and those drivers manifest in a number of different forms of data deception:

#### Drivers:

- Concerns about privacy and security related to data collection
- Exposure to misinformation delivered by social media recommendation algorithms
- Awareness that tech platforms like Apple and Google are intentionally limiting user data collection via opt-in requirements and by neutering first- and third-party cookie-reliant business models
- Personal benefit (ways to make money from trickery)

- Greater good benefit (ways to support a cause with trickery)
- Desire to act on anti-capitalist sentiment
- Desire to be part of a team or movement by taking collective action

## **Tactics:**

- Employing behavior tracking avoidance technology (for example, VPN, browsers, plug-ins, operating systems and devices)
- Withholding personal information or withholding permission to track behavior, from companies that want to
- Entering false personal information that isn't useful for companies
- Viewing, "liking," clicking, linking or even purchasing items that they aren't interested in, in order to create an incorrect persona for marketing or recommendation algorithms
- Viewing, "liking," clicking, linking or even purchasing something they aren't interested in, in order to artificially inflate demand, increase visibility or drive up pricing

## **Near-Term Flags:**

- By 2023, half of social media users will have participated in hijacking a company's hashtag and using it to generate negative publicity or to promote an unrelated cause.
- By 2022, 65% of consumers will distrust corporations.
- By 2022, 90% of consumers will feel nervous sharing any personal information online.

## **Market Implications:**

In 2021, about a quarter of surveyed consumers engaged in some kind of intentional trickery to foil business algorithms that rely on collected user data. <sup>1</sup> This number has been trending upward since Gartner began measuring in 2019. <sup>2</sup> Of these people, more than two-thirds have purposefully generated false data signals with intent to muddy the metrics that help companies target their marketing via advertising, search and recommendation engines, or determine demand for products and services. <sup>1</sup> But the sentiment against algorithmic hegemony is far more common than taking action on the issue. Sixty-six percent of all Gartner survey respondents agree that people should take action to prevent algorithms from controlling their lives, while 73% believe companies and institutions rely too much on algorithms nowadays. <sup>1</sup>

All types of businesses depend on the types of algorithms consumers are increasingly keen to game:

- Ninety-four percent of respondents to Gartner's 2021 CIO survey have deployed some form of AI or plan to within the next three years. <sup>3</sup>
- Eighty-four percent of respondents to Gartner's 2020 Marketing Technology Survey have deployed or are deploying a personalization engine of some kind. <sup>4</sup>

Beyond these, companies may rely on the stock market, search engine optimization and social media virality. All of these algorithms make organizations vulnerable to the ratcheting savviness of the public in manipulating digital platforms.

The "meme stock" craze of early 2021 demonstrated how anti-capitalist and crowdsourced movements can align to subvert a crucial business algorithm and wipe billions in value from major corporations. <sup>5</sup> (The meme stock craze was when at-home retail day traders began to seize on social-media-platform-driven schemes to profit from record rallies of unlikely stocks.) This cornering of a market is not altogether different from:

- The way ride-share drivers in 2019 teamed up to trick their apps' algorithms into triggering surge pricing and earn more per fare <sup>6</sup>
- The way K-pop fans in 2020 banded together to employ concert ticket-snagging techniques to artificially inflate ticket requests for a Trump rally <sup>7</sup>

But the more commonplace ways people subvert tracking is by falsifying their behaviors and data online. These activities are far less likely to make headlines, but they are more likely to impact corporate bottom lines. Karen, a Gartner Consumer Community survey respondent from Georgia, explained the reasoning behind her fake online personas. Karen said: “[On social media] if I can, I use a false name and gender, and try to be illiterate, old and unemployed, so that they don’t bother me or think they can sell me anything.”<sup>8</sup>

The promise from apps and sites to deliver more relevant ads and recommendations is so lacking in appeal that nearly two-thirds of consumers say they’d rather give up personalization and relevancy than have their behavior tracked online.<sup>9</sup> Instead, many would poison the well via minor acts of personal algorithmic resistance that add up to a major case of corporate data rot.

### Recommendations:

- Awaken organizational leadership to the need to accurately gauge the sophistication of target and existing customers when it comes to data subversion know-how by tracking consumer sentiment and internet culture.
- Since major tech platforms call the shots on the future of third-party data tracking and sharing, stop relying on this data and make sure your company’s overtures for first-party data from customers are predicated on trust.
- Give users a peek at their data. Rather than touting improved personalization and relevance as an adequate trade-off for collecting personal information and behavior from customers, collect less data and send regular updates on what you’ve gathered.
- Adopt a competitively differentiating privacy position, and publicize your work to dismantle the data ecosystem as it currently stands. Customers already know their information and behavior are monetized by companies. Thus, communication and messaging that merely adhere to the collection consent requirements of legal compliance fall laughably short of what people want to hear.

### Related Research:

[Data Privacy Best Practices: How to Ask Customers for Information During the Pandemic](#)

[Maverick\\* Research: Pursuing a 360-Degree View of the Customer Will Destroy Your Business](#)

## Algorithm Hacking Puts Marketers' Data and Personalization Efforts at Risk

## Google to Drop Cookies, but Still Hold the Cards

## Apple Upsets the Digital Advertising Cart

**Strategic Planning Assumption:** By 2027, a quarter of the Fortune 20 companies will be supplanted by companies that neuromine and influence subconscious behavior at scale.

**Analysis by:** *Jackie Fenn*

### Key Findings:

Most executives already appreciate that every company is a technology company. The winners of the next decade will also be experts at neuromining — that is, applying behavioral intelligence and related technology to analyze, understand and influence human behavior at scale.

Tapping into human goals, desires and motivations at high speed and large scale will enable companies to dominate customer relationships and amplify employee engagement and productivity, leading to further disruptions in industry leadership similar to those created by today's digital giants. Today's leaders will be joined by other technology companies and pioneers from other industries who crack the combination of technology mastery, deep behavioral expertise, data centricity and a culture of experimentation.

While the initial focus will be on customer-facing neuromining, successful organizations will apply the same techniques internally to identify targets and positive interventions for all aspects of people's work activities, including employee engagement, decision making, management and leadership, collaboration, and productivity.

The growth in neuromining and other behavioral competencies will be accompanied by a corresponding emphasis on the ethics of influence. Neuromining does not have to be one-sided or surreptitious, but can incorporate consumer-friendly approaches to influence, such as transparent "nudges" that make people more aware of their subconscious tendencies.

Winning organizations will leverage the continued growth and widespread availability of behavioral data, such as:



- Social media analytics (see the Internet of Behaviors section in [Top Strategic Technology Trends for 2021](#))
- The increasing sophistication of analytics and AI applied to behavioral data

Advances in neuroscience and technologies to identify and direct activity inside the brain will add further precision in influencing attitudes, actions and behavior, and launch further waves of neuromining capabilities.

#### Near-Term Flags:

- The ongoing and growing dominance of companies making extensive and successful use of behavioral analysis, social influence and insights from neuroscience.
- A prevalence of behavioral insights or “nudge” competency centers in large companies and government organizations.
- The emergence of a viable and high-growth industry (that is, doubling every year for five years) for specialist companies (for example, BEworks, Irrational Labs and BVA Nudge Unit) providing behavioral insight services, as well as larger service providers.
- Emergence or extension of privacy regulations addressing how, and how much, companies and algorithms can mine and influence people’s behavior and mental state.

#### Market Implications:

Market leadership has been reshaped in the past 10 years to favor companies that are adept with technology and analytics. We expect this trend to continue, with market dominance attained by companies that add or intensify their neuromining focus and competencies.

The current market of specialist providers offering behavioral insight technologies and consulting services will grow into a multibillion dollar industry impacting all aspects of organizations and a wide range of business challenges and opportunities. Beyond marketing and customer experience, neuromining will expand into scalable leadership and performance coaching, every aspect of decision making, and employee and citizen well-being.

Many companies will seek a genuine and transparent “win-win” for customers and employees to act in their own best interests. However, others will successfully tap into the “darker side” of human motivation, resulting in ongoing mistrust of neuromining and influence technologies among portions of the population, and triggering additional privacy regulations in some geographies.

## Recommendations:

- Create a behavioral insights team or engage a third-party specialist service provider to focus deliberate and ongoing attention on questioning assumptions and challenging current approaches.
- Develop in-house expertise on understanding and mining behavioral data to improve customer and employee outcomes.
- Depending on the focus of behavioral change or influence, position the expertise in marketing, HR, R&D or product development, or as part of central services (for example, aligned with data scientists).
- Include in any neuromining initiative an assessment of potential ethical, privacy and legal issues.

## Related Research:

[How to Use Behavioral Economics to Drive Adoption and Save Money in Your Organization](#)

[Create Self-Sustaining Culture Hacks by Applying Nudging Techniques](#)

[Competitive Landscape: Customer Analytics](#)

[Market Guide for Web, Product and Digital Experience Analytics](#)

**Strategic Planning Assumption:** By 2024, 30% of corporate teams will be without a boss due to the

self-directed and hybrid nature of work.

**Analysis by:** *John Kostoulas*

## Key Findings:

- The pandemic period has embedded agility inside business operations, from business planning to daily execution. Business agility has led to organizational resilience during this period and will stay postpandemic.
- Formal Agile transformation, which has been piecemeal in adoption across most organizations, has now more potential than ever as agility is now being “felt,” not just conceived, by business leaders. Agile teams require, by definition, a culture of trust over one of command and control that managers try to perpetuate. <sup>10</sup>
- Hybrid work, adopted overnight during the pandemic, is now becoming a permanent feature across organizations. A large proportion of managers lack the skills to effectively manage employees in hybrid or remote settings; only 47% of employees believe that their managers can lead their teams to success in the future. <sup>11</sup>
- Removing the traditional hierarchical manager role can be a more pragmatic way to make hybrid work engaging and effective, as opposed to manager reskilling. Sixty-six percent of employees disagree that their manager is an expert at the skills most important for his/her job. <sup>11</sup>
- The combined consequence of Agile adoption at 30% and hybrid work at 50% of the organization can result in elimination of traditional manager roles in about a third of teams.

## Near-Term Flags:

- By 2022, 50% of large organizations will have expanded their Agile transformation to include the entire organization as compared to under 20% today. <sup>12</sup>
- Thirty-one percent of all workers worldwide will be remote in 2022, a 14 percentage point increase over 2019 and growth of 80% in total remote workers to 608 million. <sup>13</sup>
- The hybrid work share of remote workers is expected to reach 70% of the total remote by 2022. <sup>13</sup>

## Market Implications

In the last two years, every organization has been into transformation, whether they realize it or not. Business planning was done per month (or even more frequently), plans were devised in weeks, and actions occurred in hours. During this period, only the most essential work to deliver customer or mission value was undertaken.

Processes were streamlined to essential value, and there was a necessary shift (due to the lack of time) from the bottlenecks of central decision making to peer-to-peer network-based decision making. The velocity and pace of change in working modes were unprecedented, as in many cases, employees were made redundant or furloughed, but then joined back unpredictably. The most fundamental organizational change — the shift to remote and hybrid models — was completed in weeks, and workforce plans for office work were altered in days.

This *de facto* transformation embedded agility inside business operations and resulted in resilience, productivity and employee engagement gains (see [Employee Engagement Implications of COVID-19](#)). It is no wonder why most corporate organizations are looking into making most of these changes permanent — even accelerate them — instead of going back to “what it used to be.”

But the anachronistic, industrially defined, <sup>14</sup> role of the manager as the commander and controller of work (“the boss”) is a major impediment in an era where business agility requires team empowerment and autonomy over orders, and hybrid work limits control of output. Management — the art of getting things done through people <sup>1 5</sup> — still needs to happen. Therefore, it is essential to decouple management from the traditional manager role to reap the benefits of business agility and hybrid work in permanent mode. Teams play a key role in this transition as fundamental building blocks of organizational life instead of the individual.

Transformation into teams without a boss at scale has a number of skills, talent, process and technology implications:

- Teams will be the ones to undertake the management responsibility. Teams will depend on healthy dialogue and debate, self-organization, and a number of servant roles to perfect their management performance.

- In Agile and related methodologies, which are further adopted at scale postpandemic, many of these concepts are already built in the framework (for example, the Scrum Master or the coach/mentor). Holacracy is another method of decentralized management and organizational governance that is also applicable <sup>16</sup> and can supply essential building blocks, such as team constitutions and governance/operating meeting processes.
- Organizations will need to staff teams based on the skills of their members to contribute to management responsibilities without dominating the management process (that is, becoming *de facto* managers). These skills make up for an important aspect of each job profile and as subjects for development activities. Diversity, equity and inclusion are also vital for sound management decisions in the team setting.
- The connector role of the manager needs to be replaced with a formal network of teams approach. This network approach anyway exists in most organizations, but it will need to get supported and recognized. Technology tools to help establish and maintain networks are essential. The connector aspect is particularly important for coaching, as teams still need someone who can support and coach individual members to develop. <sup>17</sup>
- A number of HR processes (recruiting, learning, compensation, performance management and voice of the employee) will have to be conducted for teams, not individuals, to assess, develop and reward the shared management responsibility of the team members. Roles that deal with the outcomes of these teams (for example, clients, suppliers and product owners) need stronger involvement in these processes.
- Career paths are required to transition managers into individual (or rather, team) performers. The social aspect/status of the manager role, which is strong across many cultures, will have to be addressed, too. Not all managers are to be made redundant; they can transition into coaching, talent acquisition or capability roles.

## Recommendations:

- Leverage Agile, Scrum and related methodologies in their essence (not “in name only”). Their use over time has built a significant library of knowledge and expertise around deployment of teams without a boss.
- Pay particular attention to manager redeployment activities; this is not primarily a (management) reduction in force (RIF) exercise. Managers possess valuable skills that can maximize the performance of teams in other roles than the boss.

- Don't neglect the fundamentals: You still need a sound business strategy, clear goals and individual engagement to power teams without a boss.

## Related Research:

[Forecast Analysis: Remote and Hybrid Workers, Worldwide](#)

[9 Agility Hacks to Accelerate Digital Business](#)

[Thawing the "Frozen Middle" to Accelerate Agile Transformation](#)

[Redesigning Work for the Hybrid World](#)

**Strategic Planning Assumption:** Through 2026, a 30% increase in developer talent across Africa transforms it into a world-leading startup ecosystem, rivaling Asia in venture fund growth.

**Analysis by:** *Adrian Leow*

## Key Findings:

- Africa already has over 122 million active users of mobile financial services,<sup>18</sup> and smartphone connections and mobile data traffic are increasing rapidly. Improvements and growth in Africa's information and communication technology (ICT) sector have been largely driven by expanding mobile digital financial services. In recent years, mobile technologies and services have generated 1.7 million direct jobs, contributed to \$144 billion of economic value (8.5% of the GDP of sub-Saharan Africa) and contributed \$15.6 billion to the public sector through taxation.<sup>19</sup>
- The pandemic introduced "restrictions on movement and increased wariness of handling physical cash, which helped lift sub-Saharan mobile money transaction volumes 23% to \$490 billion last year, greater than the GDP of Nigeria, the region's biggest economy."<sup>20</sup> "Active users increased by 18% to 159 million," according to the GSM Association (GSMA), an industry body.<sup>20</sup>
- Several African nations are developing "innovation hubs" that they hope will amplify partnerships between large companies and startups and draw talent and foreign investment. "Rwanda and the African Development Bank have invested \$400 million thus far in the 70-hectare Kigali Innovation City, for example."<sup>21</sup>

- Kenya's thriving tech scene has been dubbed the "Silicon Savannah" in East Africa and is home to the most cutting-edge startups on the continent. Its \$1 billion tech ecosystem offers an attractive space for entrepreneurs, investors and technologists, with established firms such as Facebook, Microsoft, IBM and Intel having found a home in this hub of innovation.
- In 2020, 347 African tech startups raised a total of \$1.43 billion in 359 equity rounds.<sup>22</sup> However, this represents a drop from \$2 billion in 2019. The impact of the pandemic has reshaped the average amount being raised at every stage of the equity fundraising process, with a drastic impact on post Series B/Growth equity rounds that were heavily downsized.
- China is in the process of implementing new regulations in key areas aimed at restraining monopolies, governing fintech firms (which have been accused of behavior similar to unregulated banks) and protecting data privacy. In 2021, five Chinese tech firms canceled their U.S. initial public offerings (IPOs), which had a combined value of over \$1.4 billion, and 17 others scheduled for this year are now in doubt. TikTok parent, ByteDance, valued close to \$180 billion, announced it was pausing its IPO plans while navigating the new regulations.<sup>23</sup>

## Near-Term Flags:

- Through 2024, global investors will reduce their venture investment in China in favor of new emerging markets, including Africa.
- By 2024, there will be nearly 900,000 professional developers across Africa enabled by the rise of informal education channels, increasing both gender diversity and more proactive government support, making software development more accessible to wider audiences.
- By 2025, 167 million more people from sub-Saharan Africa will have subscribed to mobile services, making it a total of 623 million subscribed users, and smartphone connections in the region will more than double in that period.
- By 2025, 50% of people who own a smartphone but who don't have a traditional bank account will use a mobile-accessible cryptocurrency account.

## Market Implications:

Twenty-eight of the world's poorest countries are in the African continent. Half of its population live in poverty, without access to basic human rights, such as food, clean water and housing. Despite these obstacles, over the past decade, most African countries have enjoyed sustained economic growth. In some cases, there have been annual growth rates above 5%, buoyed by budget surpluses, rising commodity prices and foreign investment. Venture capital flowing into Africa has grown consistently, with an influx of capital from both local and international investors. Putting this significant growth into context, African startups raised \$400 million in 2015 compared to the \$2 billion that came into the continent in 2019, according to Africa-focused venture capital fund Partech Africa.<sup>22</sup>

The first major startup successes came in 2007, with the popular money-transferring app M-PESA and news crowdsourcing platform, Ushahidi. Ushahidi was originally launched as a decentralized news platform to track election violence, but has since been used to monitor disasters and conflicts everywhere from Haiti to Syria. M-PESA started locally in Kenya, which is called by some the "Silicon Savannah" of Africa. M-PESA is the launchpad for hundreds of startups, with the African nation generating \$305 million in venture capital (VC) funding throughout 2020, about half the \$564 million attracted in 2019, according to Partech.

Digital technologies enable forward-looking and agile enterprises to rethink Africa's challenges as an opportunity to innovate and address massive unmet demand. In Harvard Business Review's "Africa's Business Revolution: How to Succeed in the World's Next Big Growth Market,"<sup>24</sup> it's estimated that private consumption in Africa rose from \$860 billion in 2008 to \$1.4 trillion in 2015, which is significantly higher than that of India, which has a similar population size. The authors forecast that it could reach \$2.1 trillion by 2025. Yet Africa's consumers are still woefully underserved with 60,000 people per formal retail outlet in Africa, compared with just 400 people per store in the U.S.

Startups and digital talent face many challenges to get off the ground in Africa. Aside from dealing with a fragmented market of 54 countries, key sectors and infrastructure — especially ICT, financial services, transport, retail and energy — are controlled by large business groups or state monopolies. Although such enterprises are regarded as national champions and should use their leader position to advance the national interest, they often use their market power to stack the odds against new entrants introducing disruptive business models.



Startups and tech giants are also addressing digital talent shortages in the domestic and international market by tapping into resources in Africa. For example, [Andela](#) is a New York-based startup that helps tech companies build remote engineering teams from Africa. It does so by recruiting African software engineers, training them in its campuses in Kenya, Nigeria and Uganda, and then hiring the engineers out as full-time “distributed teams” to companies across Africa and the world. Andela has hired 1,200 African developers over the past four years and supplies their services to 200 companies worldwide. The company is already valued at as much as \$700 million.

Despite the challenges faced, Africa remains an attractive user market and innovation hub for tech entrepreneurs. It has a population that is both young and growing, with internet penetration rising fast fueled by The East African Marine System (TEAMS). TEAMS is an undersea fiber-optic cable that provides inexpensive, reliable broadband with average speeds faster than those in the U.S. And there are tremendous opportunities for digital innovators to use AI and other emerging technologies to improve access to financial services, healthcare and education. To realize this potential, however, startups will need to develop new hyperlocalized or regionalized go-to-market (GTM) strategies, while Africa’s national champions, investors and governments will need to work together to tackle the substantial obstacles they face.

#### Recommendations:

- Reframe perceptions, and evaluate digitalization capabilities presented by the hundreds of startups incubated within the innovation hubs of the Silicon Savannah and surrounding African nations and how they could be applied to your organization.
- Prioritize sourcing options based in Africa when assessing software engineering talent for digital initiatives, as it can provide competitive alternative resources to traditional regions for outsourcing such as Asia.

#### Related Research:

[2021 CIO Agenda: An Africa Perspective](#)

[Defining Workforce Diversity in Sub-Saharan Africa](#)

[Bitcoin Goes Mainstream: What It Means to You](#)

**Strategic Planning Assumption:** By 2024, 80% of CIOs surveyed will list modular business redesign through composability as a top five reason for accelerated business performance.

**Analysis by:** *Janelle Hill, Yefim Natis, Gene Alvarez and Partha Iyengar*

## Key Findings:

- Market turbulence predates and will survive COVID-19 and other incidents such as Brexit, cybersecurity breaches, 2008 financial crisis, wildfires and resulting climate impacts and more — disrupting business as usual for every public- and private-sector entity. Fifty-seven percent of respondents to the 2021 Gartner View From Board of Directors Survey say they expect economic and political polarization of society to be their biggest source of risk. And 72% of respondents say that they will align risk, strategy and performance to increase business resilience. <sup>25</sup>
- Our 2022 CIO and Technology Executive Survey finds 74% of respondents have modular and componentized technology implementations ranging from “some” to “widely.” Among respondents we categorize as moderately composable, 27% said they use composable business architecture principles widely or extensively throughout the enterprise. <sup>26</sup>
- Based on the 2022 Gartner CIO and Technology Executive Survey responses to questions about composable thinking, business architecture and technology-related actions and behaviors occurring widely or extensively throughout the enterprise, we categorize 6% of respondents as highly composable as of July 2021. <sup>26</sup>
- Leading CIOs foster the application of composability design principles to all operational assets — physical, virtual *and* digital.

## Near-Term Flags:

- By 2023, at least 20% of Global 2000 companies will publicly mention their ability to change faster as a significant factor contributing to their improved performance results.
- In 2022, federal governments will mandate that program participants use modular systems design to facilitate change and interagency collaboration and drive adoption of social programs.

- Through 2023, technology standards bodies will expand their interoperability guidelines to also promote modularity in commercial technologies.

## Market Implications:

Ongoing market turbulence will trigger unique business challenges. Decisions about strategy and actions can't be made based on historical business as usual, industry dynamics and trends alone because the disruption is something unique and unanticipated. Furthermore, Industrial Age thinking is that change — especially disruptive change — is a risk. Consequently, many organizations focus their response on reinforcing stability rather than driving adaptability as a means of finding a new way to tame market volatility.

Yet the extended COVID-19 experience is proving that trying to return to stability (“business as usual”) will not enable the organization to thrive in the “renewal” phase beyond the disruption. Many C-suite executives now acknowledge the importance of adaptable, agile and resilient operations to continue to grow in the face of ongoing volatility.

Progressive leaders are shifting their mindset to see volatility as an opportunity. Modular redesign of operational assets to minimize interdependencies enables work to be recomposed quickly, easily and safely. Adding composability as a competitive tool enables leaders to master the risks of accelerating change. If a change doesn't work out, it can quickly be reversed. From our 2022 CIO and Technology Executive Survey, CIOs in organizations that we categorize as high and moderate composability report improved business performance in revenue, cost, risk and overall performance than peers during the turbulent period from February 2020 through mid-2021. <sup>26</sup>

Applying the four design principles of composability — modularity, autonomy, orchestration and discovery — to business thinking, business architecture and technology better prepares the entity to respond to disruptions and proactively initiate change for advantage, and improve customer/constituent satisfaction. Orchestrating recomposed workflows with enterprisewide (and potentially even ecosystem) transparency and involvement is key to operational agility, adaptability and resilience.

As modular redesign of business operations for composability expands, it will rejigger industry rankings. Followers can become leaders. Industry leaders, whose ranking is based on economies of scale for example, could lose their position to a more agile competitor driven by “economies of composability.” Since COVID-19, IT budgets are growing faster than they have over the past decade.<sup>26</sup> Technology spending, as a percentage of revenue, will grow in industries that have historically underinvested. Finally, divestitures and outsourcing are facilitated by modular design. Therefore, we expect to see significant increases in both.

## Recommendations:

- Start small and quietly by applying the principles of composability as you update or add any automated business capabilities. Design them to minimize operational interdependencies that inhibit change.
- Enable discovery of reusable modular business capabilities by socializing the availability of an open catalog or repository.
- Measure IT value via business capability reuse, the time to deliver a change, cost and ease of change, and reductions of dedicated resources.
- Prove business value by measuring improvements in revenue, profitability and cost reduction by documenting examples of:
  - A recomposable process that reduces time to market
  - Composable physical and human resources that optimize outcomes despite disruptions
  - Discoverable events that streamlined risk mitigation in business operations
- Shift the mindset to “change is the means to new value” by evangelizing to business leaders the benefits of modularity and recomposition.
- Adopt an internal talent marketplace platform to quickly and seamlessly match employees to work assignments where they are most needed.
- Move toward the creation of a “platform business” that brings all of the above capabilities together (see [Case Study: Microenterprises \(Haier COSMOPlat\)](#)).

## Related Research:

[Becoming Composable: A Gartner Trend Insight Report](#)

[Business Composability Helps You Thrive Amid Disruption](#)

[Emerging Trends: Critical Insights on Composable Business for Product Leaders](#)

[Architect for Adaptability to Build a Resilient Enterprise](#)

[Compose Agile Budgets That Dynamically Adapt to Change](#)

[Quick Answer: What Does It Mean to Be 'Composable'?](#)

[What Is an Internal Talent Marketplace?](#)

**Strategic Planning Assumption:** By 2024, a cyberattack will so damage critical infrastructure that a member of the G20 will reciprocate with a declared physical attack.

**Analysis by:** *Richard Hunter*

#### Key Findings:

- Cyberattacks have consistently been treated by nations as crime, not warfare.
- Recent large-scale attacks have been aimed at critical infrastructure, including hospitals, government agencies, software vendors, and energy generation and transmission facilities.
- Political and military leaders do not and will not consider such attacks to be ordinary crimes against commercial enterprises and individuals, but as acts of war.

#### Market Implications:

Regulations at the national level (as opposed to current voluntary participation in initiatives such as the NATO Industry Cyber Partnership) will require investments in cybersecurity to coordinate closely with defense agencies, such as standardization of reporting requirements related to attacks.

In the short term, enterprises will continue to bear primary responsibility for (limited) defense and deterrence against cyberattacks. Variations in funding and capability in enterprises will ensure that those defenses continue to be inadequate to restraining the scope of damage from cyberattacks. The result is more and more damaging attacks pending military involvement.

Cyberattacks by nonstate actors against critical infrastructure will eventually diminish in frequency and intensity as cybercriminals adjust to the reality of kinetic reprisals by military and intelligence agencies.

### Near-Term Flags:

- Current instantiation of cyberdefense units in NATO as well as national defense organizations indicates increasing awareness among military organizations of the seriousness of cyber-attacks on civilian infrastructure.
- Recent quasi-public statements of reprisals by NATO members have been made against Ransomware Evil (REvil) cyberinfrastructure following attacks against critical infrastructure in the U.S.
- There have been increasingly impactful ransomware and cyberattacks on enterprises and supply chains for software and materiel.
- As a prelude to physical reprisal attacks, recent attacks such as the ransomware attack on Colonial Pipeline <sup>27</sup> veer close to outcomes that include deaths. [Police powers](#) have been extended in Australia to act preemptively against cyberattackers. This is a first step toward military action, given that preemptive strikes are characteristic of war, not police work.

NATO governments are already moving to prepare for cyberwar via dedicated cyberdefense units. Historically, wars are fought between nation states, but precedents for war against nonstate actors have existed since at least the 18th century (for example, British military action against the pirates of Chesapeake Bay and the Caribbean, American action against the Barbary Coast pirates, and the more recent global war on terrorism).

Such approaches generally follow the failure of police forces, who are constrained to their respective geographies and the necessity to respond only to committed crimes and to contain threats from nonstate actors. Police forces are also constrained by law to counterattack with deadly force against cybercriminals. Rules of engagement for military forces allow preemptive action against a foe when necessary to defend against further attacks.

These attacks are generally designed and launched by a small number of skilled technicians, making the actors attractive targets for targeted military action, including so-called “over-the-hill” reprisals.

Current approaches to protection against cyberattacks rely too heavily on enterprises, whose defenses can reject attacks (to a point) but have limited ability for deterrence. Individual enterprises have never been charged with serving as the first line of defense against warfare, and coalitions of enterprises serve only to share best practices that are obviously no guarantee of safety. The logical response to increasingly severe attacks is therefore military, not private.

## Recommendations:

To prepare for the shift from cybercrime to cyberwar:

- Executive leaders and government agencies should prepare to coordinate closely with military leaders who will soon be involved in defense of private enterprises (for example, by establishing responsibility for that coordination).
- Software vendors must prepare for more stringent governmental oversight of the software supply chain from coding through delivery and installation. This includes nonsoftware industry enterprises that supply apps and software tools to suppliers and customers.
- Enterprises (including governmental agencies) must continue to enhance and maintain awareness and defensive measures against cyberattacks, pending increased presence of military defenses.

## Related Research:

[The \(Geo\)Politics of Cybersecurity](#)

[Top Security and Risk Management Trends 2021](#)

## How to Prepare for Cyber Warfare

**Strategic Planning Assumption:** By 2025, 75% of companies will “break up” with poor-fit customers, as the cost of retaining them eclipses good-fit customer acquisition costs.

**Analysis by:** *Neha Ahuja and Emily Potosky*

### Key Findings:

Organizations often expunge poor-fit customers from sales pipelines, but few “break up” with customers: proactively identify and say goodbye to poor-fit customers after they have purchased the product or partnered with the organization.

Leaders do not fully appreciate how costly keeping a poor-fit customer can be for their business. Many will recognize the expense of satisfying a poor-fit customer like overcustomization, custom solutions and outsized time spent on servicing. However, additional incurred costs include the following:

- Opportunity cost: Poor-fit customers consume budget, resources and employee time that could go to good-fit customers.
- Emotional damage: Managing a bad relationship is emotionally draining, leading to worse well-being or even increased attrition among customer service representatives and sellers — two talent pools already under pressure.
- Credibility or brand degradation: Association with poor-fit customers may reflect poorly on a company’s reputation or brand.
- Long-term profit erosion: While investments in poor-fit customers may boost revenue in the short run, long-term investments compromise profitability in the long run.

Instead of proactively breaking up with costly customers, organizations tend to “ghost” poor-fit customers:

- Service leaders tend to push customers toward lower-cost self-service channels.
- Sales leaders tend to try to minimize investment where possible, reducing options for customized solutions and limiting access to dedicated customer service channels. They tend to be reluctant to increase resources for accounts (that is, customers) that are performing lower than their potential. <sup>28</sup>



Most organizations should instead break up with poor-fit customers. In other words, they should proactively end the relationship on their terms rather than waiting for the customer to end the relationship. In fact, the company is better positioned to initiate the breakup for a number of reasons:

- Many customers won't take offense to it, as they dislike when organizations continue to push poor-fit products/services. This approach is especially true when an alternative solution from a competitor is offered, or if the customer has the opportunity to work with another organization that would offer a lower cost to serve.
- Companies are better at identifying when the breakup needs to happen, as they have more insight into whether the current partnership is mutually beneficial or has the chance of becoming beneficial.
- By proactively breaking up with customers, companies can plan for losing this customer — both evaluating whether they can afford this loss and making contingency plans to ensure they can hit their financial targets after the breakup.
- Finally, the company can preserve goodwill and protect the chance of a future relationship by ending things nicely, creating the possibility of a future business relationship.

#### **Near-Term Flags:**

- By 2023, 50% of organizations will create a “customer fit” score based not only on revenue growth potential but also on profit margins, strategic direction, ease of partnership and emotional toll on employees.
- By 2023, 50% of organizations will reduce spend associated with poor-fit customers, including dedicated customer “save” teams, discounts and customized solutions.

#### **Market Implications:**

This breakup strategy must come from the organizational level. This significant change in the customer engagement strategy will expose silos across customer-facing functions and will force leaders in sales, marketing, customer service and customer experience to collaboratively execute a common customer-facing strategy. To begin, all functions must agree on a common set of attributes that define a poor-fit customer and then determine how each of those attributes would appear in relative functions. Accordingly, functional leaders must adjust their team's processes to reflect the focus on deselecting poor-fit customers. For example, customer service leaders will need to rethink their routing and queuing processes, as well as ensure representatives don't give preferential treatment to poor-fit customers. On the other hand, marketing teams will need to adjust their advertising strategies to deliberately deprioritize customers that are not a good long-term fit for the organization, instead of repeatedly marketing to every existing customer.

Actively ending relationships with customers that are no longer profitable will result in customers losing some control of their relationship with companies, forcing them to work with companies in a way that is mutually beneficial. On the other hand, as organizations take control of the customer-supplier relationship, they will have to rethink several aspects of customer-facing activities, such as resource allocation, handling of customer issues, and business planning and reviews. Organizations will also need to adopt internal processes and technologies to help identify poor-fit customers and ensure consistent execution of the breakup strategy across different customer-facing functions.

Organizations will also need a consistent data analysis strategy to capture and align customer data across different silos. This analysis strategy will be critical for predicting poor-fit customers and will require looking beyond just current profitability to other metrics. Potential metrics to collect include future potential, alignment with long-term strategy, willingness to engage in a strategic relationship, utilization of existing features or resources like customer service channels, etc. While evaluating the potential of the relationship is critical, organizations cannot overlook how poor-fit customers impact the bottom line in different ways: emotional toll on employees, brand and credibility risks, and misallocation of resources. Once a "fit" measure is established, organizations will also need to determine a threshold beyond which to break up with the customer that makes financial sense for the organization.

## Recommendations:

- Coordinate with executive peers to identify the attributes of a poor-fit customer.
- Apply data and analytics to predict poor-fit customers by assessing historical and current performance across these attributes.

- Create a customer-fit score to inform actions to take with customers — further grow the relationship, maintain the relationship or break up with the customer.
- Before breaking up with a customer, implement a short-term plan for improving profitability of high-cost customers (for example, paying for service or only offering self-service). Closely track ROI and draft a customer communication plan to terminate the relationship if it fails to reach the predefined threshold for profitability.
- Work closely with the CFO and the CFO's team to ensure the organization's ability to adequately grow business with and acquire good-fit customers to compensate for the loss of revenue from poor-fit customers.
- Adjust organizational key performance indicators (KPIs), including employee incentives, to include customer breakups along with growth targets.
- Communicate your breakup strategy to the board and investors to ensure they understand that any reduction in overall retention is intentional and done to improve the company's growth.
- Revise your retention targets to center on the percentage of *good-fit* customers retained, not customers retained.

## Related Research:

[Case Study: Performance-Based Key Account \(Re\)Tiering Strategy \(Verisk\)](#)

[Build a Customer Health Score for Proactive Service](#)

[Defining Customer Segmentation for Service](#)

[How to Differentiate B2B Service Delivery by Using Customer Profitability Segmentation](#)

**Strategic Planning Assumption:** By 2026, non-fungible token (NFT) gamification will propel an enterprise into the top 10 highest valued companies.

**Analysis by:** *Fabio Chesini and Dale Kutnick*

## Key Findings:

- NFTs are becoming a way to leverage hyper-tokenization to grow business models exponentially.

- Coca-Cola, Stella Artois, Visa and many other consumer product companies already have digital NFTs and are leveraging the intangible value of their brand for marketing and to drive new revenue streams.
- The market for non-fungible tokens (NFTs) surged to new highs in the second quarter, with \$2.5 billion in sales so far this year, up from just \$13.7 million in the first half of 2020, marketplace data showed. <sup>29</sup>

## Near-Term Flags:

- By 2024, wrapped NFTs will represent more than 30% of the NFT market.
- By 2025, 30% of publicly listed companies will have their marketing strategy underpinned by a tokenization strategy.

## Market Implications:

The internet enabled the nearly boundless growth of digital connections for information exchange and helped catalyze the creation of companies such as Alibaba Group, Amazon, Facebook, Google and Tencent. Public blockchains are exponentially growing the ability to digitally connect value represented by tokens, bringing yet another wave of seemingly limitless opportunities in the digital world. Fungible tokens and NFTs are driving a segment of this new phenomenon that Gartner calls “hyper-tokenization.”

NFTs can refer to real-life assets (for example, car, house, painting and photographs), but they are also about (often irrational) value perceptions for virtual assets, such as social media posts, pictures, videos, documents, brands and other objects. The proposition is underpinned by the expectation that buyers will be willing to pay more for a digital artifact because they belong to a group/network of people who believe in the same brand, game, sports team, picture and band, etc.

History shows that this irrationality is more powerful than anything else (see [Maverick\\* Research: Nonfungible Tokens Enabling Hyper-Tokenization of Digital Humans](#) and [Maverick\\* Research: The Digerati Are Becoming Part of 21st Century Societies' Infrastructure Services](#)).

There are currently 14,132 NFTs (ERC-721 tokens) listed on the Ethereum blockchain, compared with 441,012 fungible tokens (ERC20). As humanity spends more time online, digital (virtual) artifacts can satisfy their desire for “belonging” to groups with common interests. NFTs representing limited rights to art created by renowned (or well-marketed) artists have sold for more than \$50 million. Rights to unique or limited edition photos of athletes — for example, LeBron James’ first basketball dunk as a pro or an NFT of Lionel Messi’s “rookie card” — have sold for millions of dollars.

NFTs unlock new opportunities for brand gamification, with profound implications in the marketing business and digital ecosystems’ value perception. These days, the value perception of more than half of the top 10 companies (by market capital) is based on the ability of their network effect to integrate their digital ecosystem in people’s daily lives. NFTs will become a powerful digital marketing tool to underpin digital ecosystems’ network effects at new levels by strengthening societal belonging beliefs.

If NFTs gain momentum, we believe that even more traditional enterprises may “auction” limited digital use rights to some of their unique intellectual property.

Examples include the [first tweet](#) by Twitter founder Jack Dorsey, the first World Wide web message, some famous Playboy (or Playgirl) centerfolds, and the patent filing for the first automatic camera, first airplane and first computer program.

*The following are examples that we anticipate emerging as the market and technologies evolve.*

## Financial Services

Financial services will also see unparalleled growth at the convergence of NFTs and decentralized finance (DeFi). For example, every real estate property, machine, project or trade deal could be tokenized with an NFT. Tokenization is enabling a new competitive landscape for financial services by enabling global, “frictionless” access to liquidity at global scale, thanks to public blockchains and driven by cryptocurrencies’ stable coins. NFTs provide the ability to tokenize collaterals in a more granular way. This is the catalyst for the unbundling and reintermediation of financial services.

Cryptocurrency exchange/custody companies, such as Binance and Coinbase, as well as some existing financial services back-office and “clearing” companies (for example, BNY Mellon and State Street) and new entrants will enter the NFT space. They will bring more legitimacy and order to the process, and attract money from other asset classes.

## Video Games

Hyper-tokenization (including NFTs) not only enables gaming companies to sell virtual artifacts (such as weapons), but also pushes virtual property rights outside their actual gaming platforms. Examples include accounts and license portability, leveling services, virtual items, open markets and many more. In other words, NFTs enable gaming companies to decouple the in-game experience from the gaming token economics (aka tokenomics).

The aggregated gaming tokenomics is a new way to represent not only the gaming experience's perceived value, but most importantly, the irrational value perception of in-game (tokens linked to in-game experiences) and out-game (tokens not linked to in-game experiences). Out-game examples include digital artwork, social media posts, and other items, while in-game examples include digital weapons in Fortnite or World of Warcraft.

## Social Media

Social media platforms, especially Twitter and Facebook, are positioned to exploit the NFT megatrend. They have a virtual community in cyberspace and the ability to create new value perceptions, appealing directly to humans' irrational need for belonging. A good example is Cent's Valuables, a platform that tokenizes all the NFTs in the Twitter platform and enables any user to claim and start monetizing them outside Twitter platform control. In addition, [Twitter](#) recently announced the integration of Bitcoin tipping into its platform.

## Sports

The Paris Saint-Germain (PSG) Football Club issues "fun tokens" to keep fans engaged and increase their sense of belonging to the club (for example, VIP access, meet and greet, special events and collectibles – anything that can engage their fans).

In late August 2021, [PSG teamed up with Parisian artist Ludo](#) to release a set of unique NFTs. The limited crypto collectibles are designed to extend the connection between the club and its supporters through blockchain technology. " [PSG Lucky Buddys](#) will be the digital trophy for those who take pride in the Rouge et Bleu each matchday."

## Manufacturing

For example, a fleet of cars or trucks, IoT-enabled, could have the right of use established by holding an NFT issued by the vehicle owner. The NFT could also represent the entire fleet, and subservient individual NFTs represent each individual asset.

The NFT represents a contract, but it also works with the vehicles to properly manage use rights — for example, permitted locations, speeds, fueling, maintenance and other operation requirements required by the asset owner. This approach enables renters and owners to create sophisticated contracts without the overhead required by a traditional rental or lease contract.

## Recommendations:

- Use NFTs to increase brand value through community engagement.
- Determine how to exploit NFTs as an abstraction of your company's past products, patents, intellectual property and even processes to gain additional revenue and market recognition.
- Partner with some of the current NFT leaders and "packagers" to help brainstorm on potential enterprise artifacts and abstractions that can be virtualized and tokenized.

## Related Research:

[Quick Answer: How to Protect and Secure the Use and Trading of NFTs](#)

[Maverick\\* Research: Nonfungible Tokens Enabling Hyper-Tokenization of Digital Humans](#)

[3 Monetization Approaches for Driving Digital Revenue](#)

[The Gartner Digital Ecosystem Framework: How to Describe Ecosystems in the Digital Age](#)

[Hype Cycle for Blockchain, 2021](#)

**Strategic Planning Assumption:** By 2027, low Earth orbit (LEO) satellites will extend internet coverage to an additional billion of the world's poorest people, raising 50% of them out of poverty.

**Analysis by:** *Bill Ray, Alfonso Velosa, Roger Williams, Marty Resnick and Alan Antin*

## Key Findings:

- Installation of backhaul capacity is often the most expensive part of building a cellular base station, particularly in rural areas.

- The cost of satellite capacity has dropped by more than 60% in the last three years and continues to fall.
- At least three new low Earth orbit (LEO) constellations are being built specifically to provide satellite backhaul for cellular services.

## Near-Term Flags:

- In 2022, field testing and proof-of-concept deployments, such as the European Space Agency's (ESA's) SATis5 project, will prove integration with existing cellular infrastructure can be done without disruption.
- Launch of backhaul services from OneWeb and Starlink, expected in 2022, and Telesat, in 2024.
- Deployment of constellations by Omnispace and at least one Chinese LEO operator through 2024, providing a competitive landscape of vendors by 2026.
- Additional services will double average revenue per unit (ARPU) from low-income customers by 2027, driven by a mix of practical services (for example, agriculture pricing, weather reports and education) and entertainment/social media.

## Market Implications:

Using satellite backhaul significantly reduces the installation, and operational, costs of deploying a base station. While it isn't easy to provide average figures, the inflection point where satellite becomes less expensive than fiber is when there are paying subscribers for about 600GB a month (based on figures from [NSR](#)). [Average data consumption](#) in sub-Saharan Africa is about 600KB a month, so the inflection point for a new base station is 1,000 users. The introduction of LEO satellite constellations will decrease that number significantly, making it economical to extend network coverage into sparsely populated regions.

Satellites are also able to provide islands of connectivity, so networks can deploy directly where the customers are, rather than rolling out across a country in a linear fashion. For example, a school, business park or government center can be provided with cellular coverage that extends into the surrounding region. Such islands will then join up to provide contiguous coverage. Given current launch costs can be as low as \$200,000, additional satellites can quickly be launched to address demand curves and limit supply bottlenecks.



These services will provide a comparatively low ARPU. [Brazil](#) currently has an ARPU of roughly \$3 a month for cellular data and Nigeria \$4 a month, but that's only a small part of the economic value generated. Facebook users in Nigeria, for example, are worth \$11 a year to the company. This is less than the \$137 a western user is worth, but still a significant sum, and the creation of connectivity offers a wealth of opportunities in group cooperation, financial liquidity and education.

With connectivity comes participation, both economically and politically, in the wider ecosystem. Nokia's pioneering "[Life Tools](#)" project demonstrated that basic services can deliver high value if properly targeted. The 2009 project used SMS for content delivery and highlighted challenges in language and content personalization, but also had a profound impact on the 85 million people who used it. Farmers in India, for example, reported a 10% to 15% increase in profits, despite the limited capabilities of the service.

In the longer term, the addition of billions of newly connected "netizens" will have a profound impact on the internet in terms of culture and content. Developing countries already make heavy use of open-source software and are ramping up projects to encourage participation. In the long term, the addition of such a large population to software development could impact both the quantity, and quality, of open-source platforms, making it harder for professional development companies to compete.

## Recommendations:

- Identify and remove assumptions based on first-world experience from your business model, operations and ecosystems. Be careful to avoid assuming that users will have continuous connectivity, have access to servicing equipment or will be prepared to pay for greater convenience.
- Prepare for increased diversity in language and cultural norms by recruiting within target markets or demographics.
- Establish a customized product offering that you can provide to emerging market customers, where you can break even on the investment after the first 10 million customers.
- Review your talent pool for product management and software development talent to understand the gaps you have in serving this type of customer compared to your normal, affluent customer.

## Related Research:

Maverick\* Research: LEO Satellites Will Trigger the Revolution That 5G Has Failed to Deliver

Emerging Technologies: LEO Mega Constellations — Market Disruption Ahead

Emerging Technologies: Emergence Cycle for Satellite Systems

## A Look Back

*In response to your requests, we are taking a look back at some key predictions from previous years. We have intentionally selected predictions from opposite ends of the scale — one where we were wholly or largely on target, as well as one we missed.*

This research is a collection of Gartner's highest-level predictions and so is not subject to on-target or missed predictions.

## Evidence

<sup>1</sup> Gartner Consumer Community (n = 329, 9 through 16 September 2021). While Gartner Consumer Community (n ≈ 500) members resemble the U.S. general population, the data presented in this document is based on the responses of community members who chose to take each individual activity (sample sizes vary). Respondent samples for individual activities may not be representative of the general population, and the data should only be used for directional insights.

<sup>2</sup> Gartner Consumer Behaviors and Attitudes Survey, 2019

<sup>3</sup> The 2021 Gartner CIO Survey was conducted online from 14 July through 14 August 2020 among Gartner Executive Programs members and other CIOs. Qualified respondents are each the most senior IT leader (CIO) for their overall organization or a part of their organization (for example, a business unit or region). The total sample is 1,877, with representation from all geographies and industry sectors (public and private).

<sup>4</sup> 2020 Gartner Marketing Technology Survey. The purpose of this study was to understand how marketers are investing in, deploying and getting value out of marketing technology. The research was conducted online from July through September 2020, among 387 respondents in the U.S. (54%), Canada (3%), France (6%), Germany (8%) and the U.K. (29%). Respondents were required to be involved in decisions related to their company's marketing technology strategy. Eighty-five percent of the respondents came from organizations with \$1 billion or more in annual revenue. The respondents came from a variety of industries: financial services (46), high tech (51), manufacturing (63), consumer products (27), media (40), retail (46), healthcare providers (48), IT and business services (44), and travel and hospitality (22).

The survey was developed collaboratively by a team of Gartner analysts, and it was reviewed, tested and administered by Gartner's Research Data and Analytics (RDA) team.

Disclaimer: Results of this survey do not represent global findings or the market as a whole, but do reflect sentiments of the respondents and companies surveyed.

<sup>5</sup> [GameStop, Meme Stocks, and the Revenge of the Retail Trader](#), TechCrunch.

<sup>6</sup> [Uber Drivers Are Reportedly Colluding to Trigger 'Surge' Prices Because They Say the Company Is Not Paying Them Enough](#), Business Insider.

<sup>7</sup> [Trump 'Played' by K-Pop Fans and TikTok Users Who Disrupted Tulsa Rally](#), The Guardian.

<sup>8</sup> Gartner Consumer Community (n = 302, 5 through 12 August 2019). While Gartner Consumer Community (n ≈ 500) members resemble the U.S. general population, the data presented above is based on the responses of community members who chose to take each individual activity (sample sizes vary). Respondent samples for individual activities may not be representative of the general population, and the data should only be used for directional insights.

<sup>9</sup> Gartner Consumer Values and Lifestyle Survey (October 2020; n = 3,000)

<sup>10</sup> [Break Through the Barriers to Scaling Agile and Product-Centric Delivery](#)

<sup>11</sup> 2020 Gartner Manager of the Future Survey, n = 4,787 employees

<sup>12</sup> [15th State of Agile Report](#), Digital.ai.

<sup>13</sup> [Forecast Analysis: Remote and Hybrid Workers, Worldwide](#)

<sup>14</sup> [Reinventing Management](#), Ivey Business Journal.

<sup>15</sup> Definition of management by Mary Parker Follett See, for example, [The Early Sociology of Management and Organizations: Dynamic Administration: The Collected Papers of Mary Parker Follet](#), Z-Library.

<sup>16</sup> [Organizational Structure Types for Digital Business](#)

<sup>17</sup> [The Connector Manager Approach to Coaching](#)

<sup>18</sup> [The Rapid Growth of Digital Business in Africa](#), Harvard Business Review.

<sup>19</sup> [The Mobile Economy: Sub-Saharan Africa 2019](#), GSM Association.

<sup>20</sup> [Africa's Digital Payments Race Becomes a Scramble](#), Reuters.

<sup>21</sup> [Overcoming Africa's Tech Startup Obstacles](#), Boston Consulting Group (BCG).

<sup>22</sup> [2020 Africa Tech Venture Capital Report](#), Partech.

<sup>23</sup> [Here's What the Crackdown on China's Big Tech Firms Is Really About](#), TIME.

<sup>24</sup> A. Leke, M. Chironga and G. Desvaux, "Africa's Business Revolution: How to Succeed in the World's Next Big Growth Market," Harvard Business Review Press, 2018.

<sup>25</sup> **2021 Gartner View From Board of Directors Survey:** This study was conducted to understand how boards of directors view digital-business-driven business model evolution in their enterprises, and the role of the CIO and other executive leaders. These issues were also discussed specifically in the context of the COVID-19 crisis. The survey provides insights on boards' expectations of executive leaders and how boards of directors translate their focus into actual executive actions and overall corporate performance. Gartner conducted this survey online from May through June 2020, among 265 respondents in APAC, EMEA and the U.S. Companies were screened to be midsize, large or global enterprises.

Respondents were required to be a board director or a member of the corporate board of directors. If respondents served on multiple boards, they answered for the largest company, defined by its annual revenue, for which they are a board member.

The study was developed collaboratively by Gartner analysts and the Research Data and Analytics team.

<sup>26</sup> 2022 Gartner CIO and Technology Executive Survey

<sup>27</sup> [Colonial Pipeline Ransomware Attack](#), Wikipedia.

<sup>28</sup> Key Account Manager Benchmarking Survey 2021 (n = 368)

<sup>29</sup> [NFT Sales Volume Surges to \\$2.5 Bln in 2021 First Half](#), Reuters.

## Document Revision History

[Gartner's Top Strategic Predictions for 2021 and Beyond: Resetting Everything - 20 November 2020](#)

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## Recommended by the Authors

Some documents may not be available as part of your current Gartner subscription.

[Three Critical Use Cases for Privacy-Enhancing Computation Techniques](#)

[Maverick\\* Research: LEO Satellites Will Trigger the Revolution That 5G Has Failed to Deliver](#)

[Non-Fungible Tokens \(NFTs\) Create New Digital Products and Business Models](#)

[Future of Work Reinvented: Seizing This Golden Opportunity Requires 3 Actions](#)

[State of the Customer: Proactive Service Increases Cost but Enhances Value](#)

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