The 2022 Gartner CIO and Technology Executive Survey highlights that mastering business composability puts CIOs and other technology executives in a better position to tap opportunity and increase agility and value delivery during the volatile energy transition period.

Overview

Key Findings

- Adoption of composability principles positions enterprises to win in turbulent times, such as the disruptions that the utility sector experienced throughout the COVID-19 pandemic or those that the industry is facing due to sustainability concerns and technology-driven grid edge disruption.

- A majority of enterprises with high composability rated their overall business performance, ability to increase revenue, to reduce business risk and to reduce cost, as ahead, or far ahead, of their peers and competitors. Although utilities have embarked on composability, it will take considerable commitment and effort to reach a high-composability level.

- The gap for high-composability enterprises is large in the three key principles of composability and most of nine composability practices, most notably independent decision making, iterative development techniques as default and continuous knowledge sharing.

- Cybersecurity, cloud and business intelligence continue to top the list of technology areas to receive increased spending in 2022, while infrastructure and data center, application modernization and ERP top technology areas that most respondents indicated as areas of reduced investment.
Recommendations

CIOs in utilities focused on digital transformation and innovation should:

- Use Gartner’s nine composability practices to assess areas of advanced and lagging progress in IT and technology delivery, and address weak areas in information and technology strategy.

- Enhance composable thinking by restructuring process and governance to empower teams to make independent decisions and self-organize, in appropriate risk settings, within their delegation of authority.

- Advance composable business architecture by fostering knowledge sharing and collaboration.

- Improve composable technology principles by practicing continuous and effortless sharing of ideas and access to platforms, tools and know-how across internal functions, product teams and business partners.

- Ensure digital-technology-based initiatives are closely aligned with business performance outcomes by using business-outcome-driven metrics. Address competing priorities by balancing any new investment across the portfolio of digital technologies and ensuring deployment plans are realistic and execute the utilities strategy.

Survey Objective

The 2022 Gartner CIO and Technology Executive Survey was conducted to inform CIOs and other technology executives how composability can improve business performance during times of volatility.

A total of 2,387 respondents participated, including 76 utilities; 65% of which were electric utilities, 24% water and 11% gas distributors. The respondents are members of Gartner Executive Programs and other IT leaders, primarily CIOs.

Data Insights
What Is Business Composability and Why It Matters for Utilities in Times of Change

Business composability, as depicted in Figure 1, is derived as a combination of mindset, architecture and technologies that enable enterprises to better respond and adapt to rapidly changing business conditions. Adoption of composability principles positions enterprises to win in turbulent times, such as the utility sector experienced throughout COVID-19 pandemic, or those that the industry faces as a consequence of sustainability concerns and technology-driven grid edge disruption.

Figure 1: What Is Business Composability?
As Figure 2 shows, enterprises with high composability rated their business performance ahead, and far ahead, of their peers and competitors. The high-composability companies are a sample of 150 respondents who stated that they utilize the principles of composable thinking, composable business architecture and composable technology, “widely” or “extensively throughout the enterprise.”

Utility participants, in general, trailed highly composable business in all of those categories, indicating that although utilities have embarked on a composability journey, there is still a long way to go. To improve business outcomes in the challenging days of energy transition, utilities should pursue composability.

**Figure 2: High Business Composability Delivers Superior Business Performance, Even in Times of Volatility**

**Enterprise Business Performance**
Percentage of Respondents Ahead or Far Ahead of Peers and Competitors

- **Overall Business Performance**: 63% for High Composability (n = 143) vs. 42% for Utilities (n = 72), +21 pp
- **Increase Revenue/Funding**: 60% for High Composability vs. 31% for Utilities, +29 pp
- **Reduce Business Risk**: 50% for High Composability vs. 34% for Utilities, +16 pp
- **Reduce Operating Costs**: 47% for High Composability vs. 28% for Utilities, +19 pp

*n varies by segment, CIOs and technology executives answering, excluding don’t know

Q: Considering the past 12 months, rate your enterprise's business performance compared with its peers or competitors.

Source: 2022 Gartner CIO and Technology Executive Survey

Note: pp = percentage points
There is also a high degree of correlation between business composability and digital maturity. As Figure 3 depicts, highly composable enterprises have both realized a higher percentage of digital sales (in regard to total revenue), and a higher percentage of internal business processes that have been optimized. This trend is projected to continue.

In addition to being more digitally mature, highly composable enterprises have a higher gradient of digitalization, which indicates their increased focus on digitally enabled business transformation and increased portion of revenue attributed to digital sales.

**Figure 3: Highly Composable Enterprises Have, and Project, High Digital Progress**

*Average (Mean) Percentage of Revenue From Digital Sales vs. Average (Mean) Percentage of Digitized Processes*

- **Digital Business** (Externally Facing, Average Percentage)
  - 0%
  - 50%
  - 100%

- **Digital Processes** (Internally Facing, Average Percentage)
  - 0%
  - 50%
  - 100%

n = about 126 (high composability), about 55 (Utilities) CIOs and technology executives answering, excluding don’t know

x-axis: Q. What percentage of your enterprise's processes have been optimized (made more efficient) through digital means?
y-axis: Q. What percentage of your organization's total revenue would you attribute (or expect) as digital sales revenue?

Source: 2022 Gartner CIO and Technology Executive Survey

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For highly composable enterprises, the ratio of average digital business (new revenue) versus average digital process (optimization) in 2021 is 35%/53%, while for utilities that ratio is 15%/42%. This ratio is projected to go even higher for highly composable businesses in 2023, indicating a steeper gradient of digitalization, with digital business projected to grow to 45%, compared to digital process optimization growing to 68%. For utilities, that ratio is projected to be 20%/59%. That is lower in both aspects, and with a slower overall gradient, indicating that utilities continue to be focused on optimizing existing internal business processes versus transforming by creating new digitally enabled revenue streams. Examples of new revenue streams are peer-to-peer exchanges or virtual power plants and flexibility market platforms. This leaves utilities vulnerable to disruption by other energy entrants who could exploit the utility digital laggards and enter the energy space as digital disruptors, leveraging load arbitrage technologies and market integration.

The impact of the energy transition and the upheaval resulting from the global pandemic are setting the stage for a distinctive and new business and operating environment for utilities. The sector that has been traditionally recognized for its business stability, reliability and predictability is now facing a decade of deep redesign that pervades every aspect of the business. Regulatory frameworks, business and operating models are changing, requiring utilities to develop new ways of thinking, new business architecture and technologies to enable new capabilities.

During the energy transition, utilities must be both resilient and agile if they are to survive and thrive. They will be forced to quickly shape-shift to adapt to the new realities, such as the impact of accelerated renewable buildup on the natural gas market or concerns about sustainability of the water supply.

In 2021, the postpandemic economic recovery and capital injected into economies through government stimulus packages have resulted in the sharp increase in demand for energy. Energy markets are seeing a snap back in traditional fossil fuel demand. This has created additional challenges, such as energy market volatility and increased interdependence between the traditional carbon-intensive energy sector and new forms of renewable energy production. As the current energy market instability in the U.K., Europe and Asia are demonstrating, the energy transition journey will be peppered with unintended consequences, supply volatility, unpredictable demand, government interventions and citizen concerns about energy affordability. These factors all put additional pressure on utilities, forcing them to improve agility — and increase composability. They have to do it, to survive disruptions by increasing resilience and to leverage opportunities brought by the energy transition.
Call to Action: The 2022 CIO and Technology Leader Agenda Survey shows that higher composable enterprises demonstrate higher overall business performance. CIOs and technology leaders should assess where IT and their enterprises demonstrate high and low composability and build appropriate strategies to progress. The pressing need is to deliver more composable technology and promote composable thinking. However, utility CIOs and technology leaders can capitalize on digital innovation success to advance composable business architectures and spread learning and good practice in other areas.

Composable Enterprises Utilize Three Principles and Follow Key Practices

As Figure 4 depicts, there are three principles of composable enterprises: composable thinking, composable business architecture and composable technology. Some utility companies have already adopted and demonstrated some of the key principles and practices of composable enterprises; however, they trail highly composable businesses in every one of those aspects.
Out of three composability principles, the utility sample (76 companies) has scored the highest in the composability business architecture area. This comes as no surprise, as the current confluence of pandemic disruption and challenge to traditional energy provisioning, brought by prosumerization and democratization, have forced utilities to become more agile and rethink current business and operating models.

More utilities are reevaluating or changing work practices (both office and field work), collaboration, and bringing more capabilities to create new values and explore opportunities brought by business disruption. They are now less rigid and more fluid, positioning themselves for the decade of deep redesign. Transition to a more composable business has begun, but will require considerable management focus and commitment to achieve business composability levels required to succeed during the energy transition.
The most progress is required in the composable technology area, where utilities have scored 3.9 compared to 6.2 for highly composable enterprises (see Figure 4). The core of composable technology is modularity and flexibility enabled by composable application architecture.

To progress in the composability technology area, utilities will have to rearchitect their application portfolios. Instead of continuing with the current way of provisioning IT applications by implementing monolithic commercial off-the-shelf (COTS) products that are configured by system integrators (SIs) to best practices of the past, and consequently lock businesses to past strategies, utilities will have to start adopting composable application architectures. To do so they will have to structure their applications as a collection of packaged business capabilities that can be orchestrated to achieve certain business outcomes. By quickly rearranging packaged business capabilities for different business and operating models, utilities will be in a better position to respond to opportunities created by upcoming disruptions.

Though some utilities have started to adopt composability in the innovation layer of their pace-layered application portfolios, the work will have to continue to other layers. This includes exposing capabilities embedded in their monolithic system of records via APIs and making them available as virtual packaged business capabilities.

Gartner has identified nine practices that distinguish highly composable enterprises. As depicted in Figure 5, there are three practices that underpin each of the three composability principles:

**Composable Thinking:**

- Practice adaptive strategy to spot and respond to opportunities and threats.
- Promote a high-trust culture that empowers employees to independently make decisions.
- Empower internal functions, product teams, external allies and/or business partnerships to work together through autonomous, self-organizing networks.

**Composable Business Architecture:**

- Shape multidisciplinary teams to align on value, promote transparency, drive accountability and collaborate on demand.
Composable Technologies:

- Design business processes in parallel with technology capabilities.
- Distribute accountability for digital outcomes beyond the traditional IT organization to other business units/business leaders.

Figure 5: Nine Practices Distinguish Highly Composable Enterprises

**Nine Practices Distinguish Highly Composable Enterprises**

- Establish continuous and effortless sharing of ideas and access to platforms, tools and know-how across internal functions, product teams, external allies and/or business partnerships.
- Establish iterative development techniques (e.g., DevOps) as the default approach to development.
- Create dynamic and easily deployable integration capabilities for connecting data, analytics and application components.

n = 148 CIOs and technology executives from highly composable enterprises answering

Q: Which of these practices does your enterprise follow completely and consistently? Multiple responses allowed.

Source: 2022 Gartner CIO and Technology Executive Survey

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**Call to Action:** Utilities CIOs and technology leaders should use these nine practices to guide information and technology strategy toward higher composability.

Figure 6 shows three thinking practices to improve business composability and the percentage of high composability companies and utilities who performed them. Not surprisingly, utilities trail high composability companies in each of these practices. Although energy transition is upon us, most utilities still haven’t adequately moved toward adaptive strategies to spot and adapt to opportunities and trends. Old habits are hard to change. Consequently, traditional organizational decision making and commercial structures have significant inertia and remain common. Utilities’ culture, formed in a predictable and stable business environment of the past, still persists.

Traditional focus on reliability, predictability and safety prevents utilities from aggressively adopting a high-trust culture that empowers employees to operate independently. Operating critical infrastructure, which is highly relevant for the well-being of modern societies, has made utilities risk averse and established layers of complex and slow decision making that prevents employee empowerment.
Call to Action: Utility companies can become more composable by improving composable thinking practices, in particular by promoting high-trust culture and empowering employees’ independent decision making. Decision autonomy with a delegation envelope supported by decision intelligence can contribute to corporate ability to spot and respond to opportunities and trends. The change in decision making culture can be gradual but should start now, resulting in a more agile enterprise with little risk.

CIOs and technology leaders can increase composability by restructuring processes and governance to empower teams within the IT organization to make independent decisions and self-organize. With working experience in these practices, CIOs and technology leaders can promote enterprise composability by showcasing their achievement to business partners and stakeholders in the wider enterprise.
Composable business architecture practices (depicted on Figure 7) are one area in which utilities are coming the closest, and even exceeding, those of high-composability enterprises. Indeed, in the practice of distributing accountability for digital outcomes beyond the traditional organization, utilities have exceeded high-composability enterprises (55% vs. 53%). This is also an indication and a consequence of the fact that in the utility sector, many digital initiatives, digital strategy execution and digital innovation management tasks get assigned outside the IT organization, often to business-oriented digital officers.

Utilities are slowly approaching high-composability companies in designing business processes in parallel with technology capabilities (51% vs. 64%), and in shaping multidisciplinary teams to align on value and collaborate on demand (49% vs. 67%).
Utilities’ focus on infrastructure modernization and initiatives, to enable business and infrastructure resilience during energy transition, results in digital initiatives that cross multiple business and technology domains, in particular IT, operational technology (OT) and even extends in the consumer technology areas. An example of that would be an initiative to integrate consumer-owned distributed energy resources (DERs) in the flexibility markets. To run those digital initiatives, the common approach is to deeply mine data assets from different sources by aggregating from operational and business systems, and developing new analytical models and tools to generate new and faster insight. Frequently, this is done by implementing new technology platforms that ingest, aggregate, visualize and analyze data from across operational processes, and a shift to more real-time and remote (and automated) intelligent asset operations.

Similar digital initiatives are seen in customer-facing business domains, where increased competition and market volatility require more insights and automation to improve business resilience, improve customer retention and reduce commodity risk. All of this is achieved by designing business processes that leverage technical capabilities and promoting transparency.

Call to Action: Utilities are furthest ahead in the composable business architecture practices. CIOs and technology leaders should maintain momentum by continuing to improve operations performance by aligning business processes with technical capabilities and promoting architecture, technology governance and platforms that support multidisciplinary teams access to data from multiple technology domains.
Technology-related practices to improve composability (see Figure 8) is the area that utilities lag high-composability enterprises the most. Just over one-third of utility respondents (36%) have established iterative development techniques, versus 60% of high-composability enterprises. Only 43% have created easily deployable integration capabilities (vs. 58%), and 20% of utility respondents have established continuous low-effort sharing of ideas and know-how (vs. 59%).
Utilities continue to invest in integration across the enterprise. Integration technologies, including API development and orchestration, are on the top 10 list of technology areas utilities plan to increase investment in 2022, moving up three places from the 2021 report (see Figure 10). Digital technology platform architecture focused on creating platforms for internal operational efficiency improvement, intelligent asset operation and monetization, customer engagement and ecosystem collaboration, have increased the need for integration and orchestration of multiple systems. However, the movement toward composable architecture will additionally require exposing internal capabilities, locked-in legacy COTS solutions in the form of APIs, and integrating them with newly created or acquired packed business capabilities.

Information, ideas and know-how sharing have been traditionally a weak spot for utilities. Utilities still operate, either by design or in practice, with individual business units having strong authority to act to achieve narrow business metrics. Collaboration is strong within teams, but there is little accountability across teams to ensure wider sharing. Operational demands mean there is little time for noncritical tasks and there are often few enterprise-level resources assigned to address the problem.

Call to Action: In an uncertain world of energy transition with increasing complexity, increased market volatility, increased business risk and rising competition, utilities must innovate to discover new viable and sustainable business and operating models. Optimizing existing business processes and achieving exceptional business performance in the traditional business process areas is not enough to guarantee a sustainable commercial future. Companies must capitalize on digital-enabled business process innovation to excel at operational excellence and meet new market opportunities.

2022 Spending Plans and Technology Trends

Economic recovery in 2021 has been reflected in the 2022 IT budget across all industries, including utilities. Being providers of essential services, utilities revenue has not been as negatively affected as in other sectors. Indeed, for some utilities, the shift in demand from large commercial and industrial segments to a more profitable residential segment has manifested in the 2020 revenue increase and will most likely be reflected in 2021 revenue as well. For that reason, the average 3.7% planned increase in IT spending, although somewhat lower than for high-composability enterprises (4.2%), is an indication that investment in digital initiatives will continue at an even increased rate, although maybe not on the level that is required to achieve high composability that utilities will need during the energy transition (see Figure 9).
Almost two-third of utility respondents (63%) indicated a planned increase in their 2022 IT spending, exactly matching the response of highly composable enterprises. For 21%, IT spending is expected to stay the same, while 17% expect their IT budget to be lower in 2022.

Considering the range of investment requirements utilities will have to make to achieve infrastructure and business resilience, most CIOs will still have to be selective in the way they spend their IT budgets. Critical and high-priority initiatives, to react to market disruption and regulatory mandates, and IT spending, directly related to urgent infrastructure modernization initiatives, will be prioritized. The spending to address digital transformation and enable new digital business revenue may be devolved or funded on a lower level as an exploration initiative.
Figure 10: Utilities Will Rebalance Their Technology Portfolios

Changes in Technology Investments
Percentage of Utilities Respondents

<table>
<thead>
<tr>
<th>Technology Area</th>
<th>Percentage Decreasing Investment (n = 68)</th>
<th>Percentage Increasing Investment (n = 75)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyber/Information Security</td>
<td>72%</td>
<td>0%</td>
</tr>
<tr>
<td>Cloud Platforms</td>
<td>63%</td>
<td>0%</td>
</tr>
<tr>
<td>Business Intelligence/Data Analytics</td>
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<td>1%</td>
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<tr>
<td>Internet of Things</td>
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<tr>
<td>Artificial Intelligence/Machine Learning</td>
<td>35%</td>
<td>0%</td>
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<tr>
<td>Digital Workplace</td>
<td>35%</td>
<td>0%</td>
</tr>
<tr>
<td>Digital Business Transformation Initiatives (Including Digital Marketing)</td>
<td>32%</td>
<td>24%</td>
</tr>
<tr>
<td>Legacy Application Modernization</td>
<td>32%</td>
<td>0%</td>
</tr>
<tr>
<td>Integration Technologies/API Architecture</td>
<td>31%</td>
<td>0%</td>
</tr>
<tr>
<td>Total Experience Solutions</td>
<td>29%</td>
<td>0%</td>
</tr>
<tr>
<td>Connectivity</td>
<td>23%</td>
<td>1%</td>
</tr>
<tr>
<td>Legacy Infrastructure and Data Center Technologies</td>
<td>23%</td>
<td>44%</td>
</tr>
<tr>
<td>Enterprise Resource Planning</td>
<td>21%</td>
<td>15%</td>
</tr>
<tr>
<td>Business Continuity Management</td>
<td>19%</td>
<td>3%</td>
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<tr>
<td>Hyperautomation</td>
<td>19%</td>
<td>3%</td>
</tr>
<tr>
<td>Containerization and Orchestration of Application Workloads</td>
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<td>Digital Media</td>
<td>11%</td>
<td>1%</td>
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<tr>
<td>Product Portfolio Management Tools</td>
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<td>7%</td>
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<tr>
<td>Human Augmentation</td>
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</tr>
<tr>
<td>Next-Generation Compute Technology</td>
<td>3%</td>
<td>3%</td>
</tr>
<tr>
<td>None</td>
<td>0%</td>
<td>40%</td>
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</tbody>
</table>

n varies by question, Utilities respondents, excluding not sure
Q: What are the technology areas where your enterprise will be spending the largest amount of new or additional funding in 2022 compared with 2021?
Q: What are the technology areas where your enterprise will be reducing funding by the highest amount in 2022 compared with 2021?
Source: 2022 Gartner CIO and Technology Executive Survey

In Figure 10, change in technology investment areas shows a similar pattern that we have observed in the past, with a few notable exceptions. The top four areas to experience an increase in IT spending among the utility respondents, namely cyber/information security, cloud platforms, business intelligence and Internet of Things have stayed the same. However, cyber/information security will overtake the No. 1 spot from cloud spending in 2022.

Cyber/information security continues to be a top investment area for critical infrastructure providers, such as utilities. In addition to increased spending to address national government cybersecurity directives for critical infrastructure providers, the flexible working practices have resulted in additional cyber/information security spending. Enabling work from home has effectively extended the enterprise perimeter to employees and customer homes. This has also elevated data privacy concerns and investment in systems to protect data as corporate assets.
The increase in cloud investment, which came with the vengeance during the COVID-19 pandemic, was partly triggered by the maturation of the core vertical solution offerings from leading enterprise application vendors. However, it was mostly accelerated by the need to achieve quick deployment of solutions, such as collaborative workforce tools and digital customer engagement, driven by COVID-19 response needs. This rapid delivery benefit continues to overcome perceived financial barriers for cloud service adoption and has made cloud the second most common area to increase investment in 2022.

In 2022, business intelligence/data analytics has reaffirmed the high attention from utility respondents. This is in line with utilities’ priority of optimizing asset performance and utilization, and minimizing operations and maintenance costs. From wind farm operations to network operations, advanced analytics and predictive analytics are viewed as major levers today. Going forward, analytics will be enabling intelligent operations (see *How Utility CIOs Can Use Intelligent Operations to Achieve Resilience During the Energy Transition*). The volatility of the commodity markets, as well as risk with customer deflection due to grid parity achieved in many markets, also requires better insight in commodity and customer business processes. However, most of the data for those areas is locked as dark data captured in transactional systems from data historians on the OT side, and metering, billing and energy trading and risk management (ETRM) systems on the IT side. Without significant investment in ingesting this data in analytical platforms, utilities will continue to be “data rich and information poor.”

The infrastructure and data center continues to be the technology area expected to reduce spending by the most of utility respondents. This was the leading technology area to receive reduced spending in 2021. In the 2021 utility CIO agenda report, 32% of respondents reported plans to reduce infrastructure and data center spending, while in 2022, this number has grown to 44%. This is a reverse correlation with increased spending in cloud service/solutions. Infrastructure as a service is expected to be provided by hyperscalers (Amazon Web Services, Microsoft Azure and Google Cloud).

The notable technology areas to receive lower IT investment are legacy application modernization and ERP, which were voted down by 24% and 15% of utility respondents, respectively. It is also important to note that 40% of the respondents are not planning to reduce investment in any of the listed technology areas, effectively maintaining the status quo on current IT spending.
Call to Action: CIOs should ensure digital-technology-based initiatives are closely aligned with business performance outcomes. Business outcome drivers should be used to design digital initiatives that include the appropriate range of technologies deployed in complementary ways to achieve the required goals. CIOs should seek to maintain the move beyond application of isolated technology initiatives to a more systematic and less technology-centric approach.

Figure 11 depicts how utilities compare to high-composability enterprises in regard to deployment of emerging technology. Not surprisingly, utilities trail high-composability companies in each of emerging technology areas. Composable enterprise, multiexperience development platforms and machine learning (ML) operationalization — falls behind by more, or close to, 30 percentage points, when compared with the highly composable businesses that have deployed them, or plan to deploy them, during the next 12 months.

Figure 11: Composable Enterprises Activities Around Emerging Technologies In 2022

State of Deployment for Emerging Technologies
Percentage of Respondents Who Will Deploy Within Next 12 Months or Have Already Deployed

- Artificial Intelligence/Machine Learning: 72% (High Composability), 51% (Utilities)
- Distributed Cloud: 70% (High Composability), 43% (Utilities)
- Responsible AI: 49% (High Composability), 23% (Utilities)
- Secure Access Service Edge (SASE): 49% (High Composability), 32% (Utilities)
- Edge Computing: 48% (High Composability), 29% (Utilities)
- Composable Enterprise: 48% (High Composability), 16% (Utilities)
- Multiexperience Development Platform: 46% (High Composability), 16% (Utilities)
- MLOps: 43% (High Composability), 15% (Utilities)
- 5G: 38% (High Composability), 16% (Utilities)
- Digital Twin: 29% (High Composability), 35% (Utilities)

n varies by segment, CIOs and technology executives answering, excluding not sure

Q: What are your enterprise’s plans for the following digital technologies and trends?
Source: 2022 Gartner CIO and Technology Executive Survey

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Utilities are not, and have never been, Type A companies — early technology adopters. The nature of the utility business puts a high premium on business continuity and predictability, with the risk aversion that does not favor investment in emerging technologies that are still in the early stage of the technology Hype Cycle. Regulated utilities, in particular, are slow in adopting emerging technologies. This is because it is harder to get regulatory approval if there is not a large enough pool of utilities that can demonstrate prudence in investment, with achieved benefits in cost reduction and customer service improvement.

That being said, utility respondents indicated two emerging technology areas: artificial intelligence (AI)/ML, and distributed cloud that have already been deployed, or are expected to be deployed, in the next 12 months (51% and 43%, respectively).

AI and ML are in the top five technologies planned to receive increased funding in 2022 (see Figure 10). It was ranked sixth among technology areas to receive increased IT spending in the 2021 utility CIO agenda report. And utilities are delivering on their plans for increased AI/ML investment with a fairly robust set of use cases (see Infographic: Artificial Intelligence Use-Case Prism for Utilities).

Interest in, and deployment of, distributed cloud, a distribution of public cloud services to different physical locations while operation, governance and evolution of the services remain the responsibility of the public cloud provider, is a new technology investment area for utilities. Though distributed cloud comes in multiple forms, the use cases it can support, such as low-latency scenarios for real-time energy management or high-speed trading, distributed control and edge AI with data cost reduction scenarios, are appealing to utilities.

Call to Action: Utility CIO and technology leaders should make sure that forward plans to deploy emerging technologies are realistic and aligned to the utilities risk appetite, and achievable to avoid business disenchantment with progress. In addition, for those emerging technologies that offer a clear benefit in undressing upcoming industry challenges, CIO should be willing to go outside of their risk tolerance comfort zone.

Evidence

The 2022 Gartner CIO and Technology Executive Survey
This survey was conducted online from 3 May 2021 through 19 July 2021 among Gartner Executive Programs members and other technology executives. The total sample is 2,387, with representation from all geographies and industry sectors (public and private). The survey was developed collaboratively by a team of Gartner analysts, and was reviewed, tested and administered by Gartner’s Research Data and Analytics team. Disclaimer: Results do not represent global findings or the market as a whole but reflect sentiment of the respondents and companies surveyed.

The 2022 CIO and Technology Executive Agenda report segments respondents based on self-reported extent of utilization of principles of composability. This segmentation allows a group of “high-composability” enterprises to be identified as a best practices group to contrast the performance of others.

We define high-composability enterprises (n = 150) as enterprises that utilize the principles of composable thinking, business architecture and technology “widely” or “extensively throughout the enterprise.”

Low-composability enterprises (n = 316) are enterprises that utilize the principles of composable thinking, business architecture and technology “not at all,” “rarely” or “somewhat.”

The moderate composability enterprises (n = 1,921) encompass the rest of the sample.

In the survey, the utility sample was represented by CIOs and technology leaders from 76 utility companies; 65% of which were electric utilities, 24% water and 11% gas distributors.

**Document Revision History**

2021 CIO Agenda: A Utility Perspective - 19 November 2020

**Recommended by the Author**

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Top 10 Trends Driving the Utility Industry in 2021

Urgent Action Needed: Energy Markets Are Changing Faster Than Energy Companies

Use Utility Scenarios to Prepare for Energy Transition Uncertainty

Infographic: Artificial Intelligence Use-Case Prism for Utilities

Energy CIOs: Get Ready to Operate Under Multiple Energy Provisioning Business Models