Utilities Services Top 10, 2022

An assessment of the utilities industry and its leading business and technology service providers across execution, innovation, and client feedback

January 2022

AUTHORS:

Josh Matthews, Practice Leader
Saurabh Gupta, President, Research and Advisory

Excerpt for Infosys

"

The energy transition is reshaping the utilities value chain and bringing oil and gas firms into the competitive mix as they rebrand. The industry must also balance the acceleration in digital and emerging technology adoption brought on by the pandemic alongside demands to make the most of existing assets, improve efficiencies, fight off disruptive entrants, continually reshape the customer experience, and combat markets and geopolitics throughout the value chain. Business and technology service providers can guide utilities clients through these transitions and competing demands; but providers must be clear in how their strengths and focus areas fit under this global context and the outcomes their clients need.

Josh Matthews | Practice Leader, HFS Research

Contents

1 Executive summary

Introduction and key data

- The service providers covered in this report are Accenture, Atos, Capgemini, Cognizant, EXL, HCL, Hitachi Vantara, Infosys, LTI, TCS, Tech Mahindra, Wipro, and WNS. The overall and detailed rankings are on page 28. This report analyzes their execution, innovation, voice of the customer, and alignment with the HFS OneOffice™ vision across utilities industry services.
- The utilities industry is faced with fundamental, competing, and interlinked transitions: from fossil fuel to renewable energy generation, broader sustainability across value chains, adoption of digital and more intelligent technologies, the cybersecurity of nationally critical operations, COVID-19's effect on enterprise and consumer utilities behaviors, questions over what to do with existing assets, and a continuing need to drive efficiencies throughout operations.

The utilities services market	Service provider benchmarking	Enterprise client themes	Value chain
- The utilities services market has grown at 10% over the past two years; the enterprise demand for services across the value chain is also growing. - Competing transitions are fueling this growth, and the highest demand increases are for smart grid services, asset performance management, meter data management, metering and billing, customer experience (CX) services, and digital meter-to-cash. - The energy transition and merging of the energy and utilities industries drive the continued integration of energy and utilities services and technology.	- The average utilities services headcount is 5,348. - The average revenue is $530 million. - The average number of clients is 86. - Clients are mostly located in North America and Europe, with many providers' headcounts strong across geographies. - Twenty-five percent (25%) of clients engage in sustainability services. - Thirty-four percent (34%) engage in co-innovation. - Four percent (4%) and 18% engage in outcome-based and hybrid pricing models, respectively.	- Environmental sustainability is firmly on utilities companies' outlooks alongside diversity, optimization, and digital fluency. - Across the board, enterprises are adopting emerging technology and planning investments. - The supply chain, underpinned by factors across the utilities value chain, is driving emerging technology adoption. - C-suite commitment, risk and security, and fragmented systems present the biggest challenges to the utilities industry's plans for emerging technology.	- The HFS utilities value chain covers upstream generation, market operations, transmission, midstream distribution and metering, and downstream marketing and retail; sustainability services and the use of digital, more intelligent technologies, engineering, consulting, and business process services are also in scope if they're based in utilities-specific engagements. - See page 8 for more details about the HFS utilities value chain.

Key takeaways and recommendations

The energy transition

Energy is the new face of oil and gas, merging with utilities and integrating across all industries, including newly developing sectors. The need to reduce emissions to net-zero by 2050 at the absolute latest is fueling a global energy transition. The transition is creating new industries and ecosystems built on existing links between energy, utilities, and other industries like automotive, technology, and manufacturing. Business models are changing fundamentally as customers, regulators, and finance sources apply pressure. But despite the rising role of electricity as a critical asset—not just a utility—and energy firms trying to play in the utilities value chain, energy firms and governments are still investing vast amounts of money into coal, oil, and gas**.**

Competing demands

The energy transition must integrate with sustainability across environmental, social, and governance (ESG) factors, digital and more intelligent technology adoption, COVID-19 and the shifts to remote working, cybersecurity threats to business and nationally-critical infrastructure, the question of what to do with existing assets, ongoing efficiency pressures, customer experience (CX) reinvention, new competition and disruption in geographic markets, and more. The energy transition dominates the narrative of both the energy and utilities industries: these fundamental, competing, and interlinked transitions must align in enterprise and service provider roadmaps.

Utilities industry specifics

Renewables, energy markets, regional politics, and COVID are pulling the industry in different directions. The UK's competitive landscape has a more focused view of sustainability, with renewable-only providers taking up market share (however, at the time of writing, many are going out of business as gas prices soar). In the US, it took the recent administration change to move sustainability from feel-good CSR projects to a mandate, but we're still waiting to see what the scale of investment and change will be. Energy firms are breaking into the utilities industry, but it's one thing to build a renewable energy farm and another to integrate it with the grid and master the surrounding management. COVID-19 is having a dramatic effect on customers, pressuring providers unable to collect arrears; utilities are revamping their CX and connecting to consumers in new ways. Water, hydrogen, nuclear, and other renewables dynamics will add complexity.
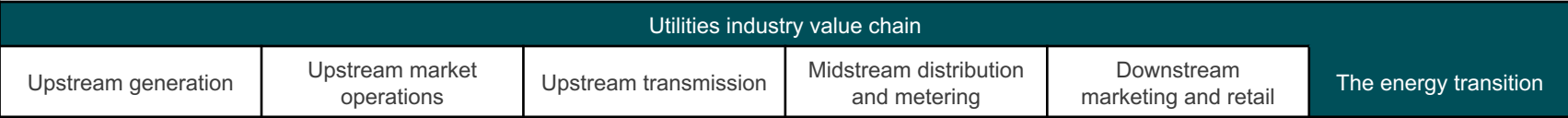
Technology and services

The utilities industry has been behind the curve on innovation, but now digital, cloud, and more intelligent technologies are the norm and spread throughout industry use cases. They're becoming a license to play for enterprises and service providers. The energy transition is driving the continued integration of energy and utilities industry services and technology. The services arms of conglomerates are competing against the independent firms and their ecosystems. Sustainability services are being embedded in provider portfolios and into existing, expanding customer relationships. Services portfolios are expanding across the value chain from consulting through to delivery—in case studies and customer references, not just in branding and marketing narratives.

Going forward

Utilities firms and their service providers need to balance the energy transition and the multiple, competing, interlinked transitions. They must meticulously align their roadmaps to outcomes, solving business challenges, and position under the global context. Underpinning this change must be focused services and technology throughout the value chain that includes partnerships across ecosystems. See our utilities industry illustration on the next page.

Utilities industry overview | Services and technology must target outcomes and solve problems aligned to a global industry context with multiple competing transitions

Global industry dynamics and challenges							
The energy transition from fossil fuels to renewables	Sustainability demands and regulation across ESG: environmental, social, governance	Digital and more intelligent technology adoption	What do we do with our existing assets?	Cybersecurity of operations and national infrastructure	Cost pressures from markets, geopolitics, and ongoing efficiency demands	COVID-19 and managing the shift to remote working	Customer experience evolution

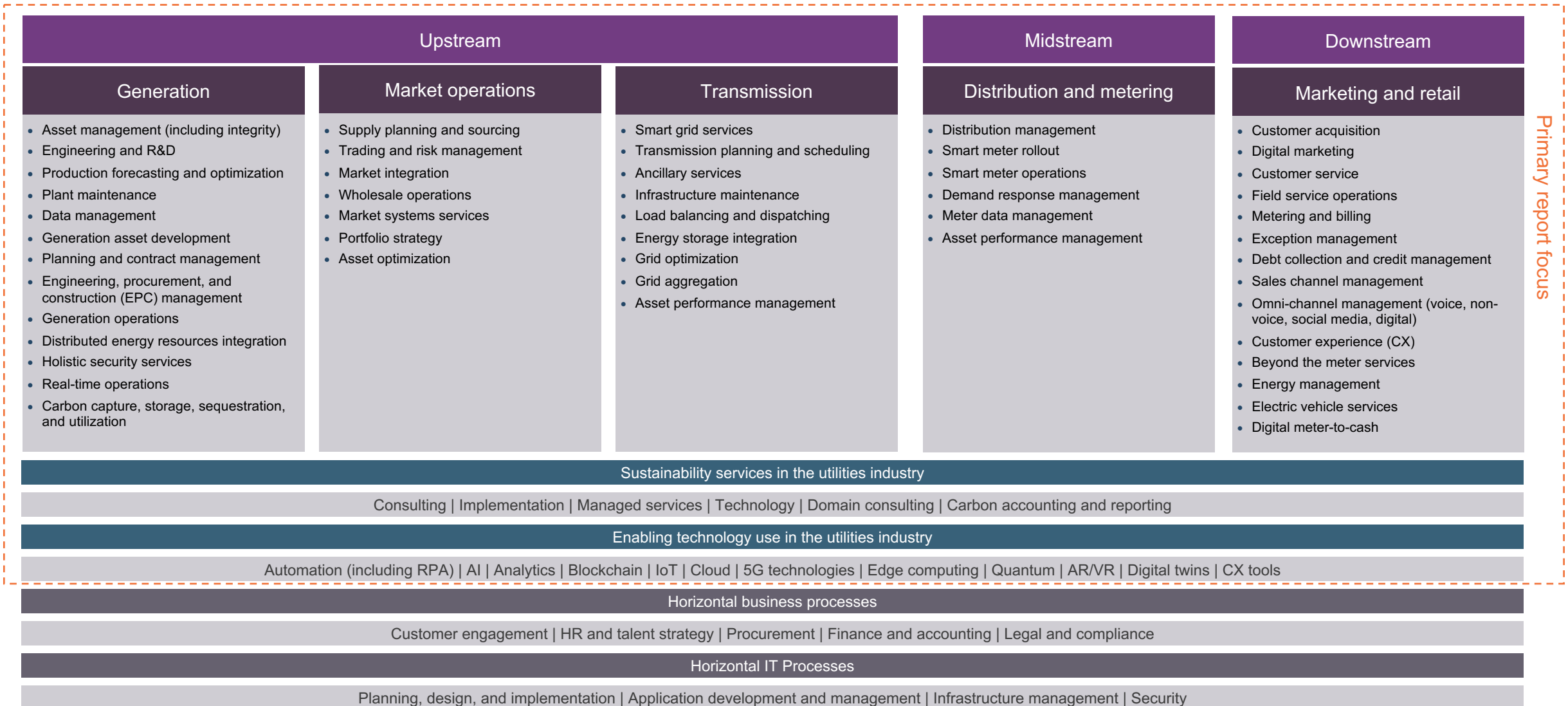| Utilities industry value chain					
Upstream generation	Upstream market operations	Upstream transmission	Midstream distribution and metering	Downstream marketing and retail	The energy transition

Service providers must keep bringing their energy clients back to outcomes and solving business challenges

Outcomes

- Reducing direct, indirect, and supply chain emissions to net-zero
- Being a positive part of the energy transition
- Ongoing process efficiency improvements and cost savings
- Developing new business models and customer pools
- Customer experience improvements, both B2B and B2C
- Remote working efficiency and customer service
- Social sustainability across diversity and working practices
- Governance sustainability: risk and reputation, including solidifying the industry's future-readiness and cybersecurity

Energy enterprises challenges, target outcomes, and services must align with the global context

Utilities services value chain (illustrated on next page)

Advisory, sustainability, digital and emerging technology, engineering, IT, and business process services

Demand is increasing most for services across smart grids, asset performance, meter data and billing, customer experience (CX), and digital meter-to-cash (page 24)

The HFS Research utilities industry services value chain

Upstream			Midstream	Downstream
Generation	**Market operations**	**Transmission**	**Distribution and metering**	**Marketing and retail**
• Asset management (including integrity) • Engineering and R&D • Production forecasting and optimization • Plant maintenance • Data management • Generation asset development • Planning and contract management • Engineering, procurement, and construction (EPC) management • Generation operations • Distributed energy resources integration • Holistic security services • Real-time operations • Carbon capture, storage, sequestration, and utilization	• Supply planning and sourcing • Trading and risk management • Market integration • Wholesale operations • Market systems services • Portfolio strategy • Asset optimization	• Smart grid services • Transmission planning and scheduling • Ancillary services • Infrastructure maintenance • Load balancing and dispatching • Energy storage integration • Grid optimization • Grid aggregation • Asset performance management	• Distribution management • Smart meter rollout • Smart meter operations • Demand response management • Meter data management • Asset performance management	• Customer acquisition • Digital marketing • Customer service • Field service operations • Metering and billing • Exception management • Debt collection and credit management • Sales channel management • Omni-channel management (voice, non-voice, social media, digital) • Customer experience (CX) • Beyond the meter services • Energy management • Electric vehicle services • Digital meter-to-cash

Primary report focus

Sustainability services in the utilities industry

Consulting | Implementation | Managed services | Technology | Domain consulting | Carbon accounting and reporting

Enabling technology use in the utilities industry

Automation (including RPA) | AI | Analytics | Blockchain | IoT | Cloud | 5G technologies | Edge computing | Quantum | AR/VR | Digital twins | CX tools

Horizontal business processes

Customer engagement | HR and talent strategy | Procurement | Finance and accounting | Legal and compliance

Horizontal IT Processes

Planning, design, and implementation | Application development and management | Infrastructure management | Security

2 | Report description and methodology

Service providers covered in this report

- The HFS Utilities Top 10 report for 2022 maps the industry's dynamics and, within that context, assesses how well business and technology service providers help their clients achieve results across the industry. The study evaluates service providers' capabilities across our utilities services value chain on execution, innovation, voice of the customer, and HFS OneOffice™ alignment criteria. HFS developed the value chain on page 8 to unify how services providers work with customers and partners using consulting, digital and emerging technologies, sustainability services, and managed services to deliver outcomes. The HFS OneOffice™ vision on page 13 is our stake in the ground for what digital transformation looks like in action, given new context during COVID-19.

- Utilities services span the provision of upstream generation, market operations, and transmission services, midstream distribution and metering services, and downstream marketing and retail services, all in support of utilities organizations. Our focus is on utilities industry-specific services; therefore, horizontal services such as finance and accounting (F&A) or applications management are out of scope unless they have clear industry elements.

- We've included more written commentary on the utilities industry throughout this report, along with enterprise and service provider data before the final Top 10 results and detailed participant profiles.

- The following three areas are our data sources for this report. We describe our assessment methodology in more detail on page 12

Provider-side information	Service provider briefings	Enterprise-side data and references
• Detailed quantitative and qualitative information provided by service providers on their operations and strategies, both in the utilities industry and how their industry-specific services fit within the broader company.	• In-depth conversations with service providers' utilities industry teams. • The participant profiles outline their strengths and opportunities based on these briefings, the information they provide, and their reference customers.	• *HFS OneOffice™ Pulse Study, H1 2021 data, covering more than 800 of the Global 2000 enterprises and including more than 50 energy industry leaders.* • *Reference calls and surveys with service provider clients providing quantitative and qualitative information.*

Utilities Services Top 10, 2022 | How we assessed service providers across their utilities capabilities

Execution | 25%

Scale and resources (70%)
- FTEs (full-time equivalents) dedicated or available to utilities services
- Utilities services revenue

Growth and trajectory (10%)
- YoY utilities revenue growth
- YoY utilities client growth
- YoY available utilities headcount growth

Global client reach (20%)
- Number of utilities clients
- Utilities client mix by size
- Global range of utilities clients
- Global range of utilities FTEs

Innovation | 25%

Ecosystem (25%)
- Scope and use of utilities-relevant partnerships
- Applicability and integration utilities-relevant acquisitions

Vision and sustainability services (25%)
- Analyst assessment of vision clarity and focus within the utilities industry's context across sustainability, digital, and competing transitions
- Sustainability services and solutions used in utilities engagements

Creative client engagement (25%)
- Co-innovation with clients
- Unique service models, including outcome-based and hybrid pricing
- Client assessments across a range of innovative engagement metrics

Technology use and development (25%)
- Breadth of emerging technology use in utilities engagements
- Platforms, tools, and technologies leveraged for utilities clients
- Intellectual property portfolio
- R&D investment and strategy

HFS OneOffice™ alignment | 25%
- Client perception of digital transformation, data, digital fluency, and change management capability
- Service provider self-assessment of OneOffice™ alignment and ability to present one face to the customer
- Breadth of provider engagements leveraging digital and emerging technologies versus managing legacy
- HFS analyst assessment of OneOffice™ alignment (see next page)

Voice of the customer | 25%
- Client quantitative assessments of execution and innovation
- Overall client satisfaction with the provider, outcomes, and financials
- Analyst conversations with reference clients
- Analyst assessment of references and case studies
- HFS enterprise buyer data across the Global 2000

HFS 2025 Vision | OneOffice™ in the utilities industry

Employee Experience

DIGITAL INFRASTRUCTURE
- Digitization and Automation of Processes
- Cloudification and Security
- Unification of Data

AUGMENTED WORKFORCE
- Autonomous, Agile Mindset
- Inclusive, Digital Mindset
- Aligned Outcomes
- LEAN and Design Thinking

ANTICIPATORY INSIGHTS
- Predictive Analytics
- AI Orchestrated Processes
- Machine Learning

OneOffice
NATIVE AUTOMATION
PEOPLE & PROCESS CHANGE
DATA & DECISIONS

Customer Experience

TOUCHLESS INTERACTION

REAL-TIME PERSONALIZATION

MOBILE AND SOCIAL ENGAGEMENT

CUSTOMER-DRIVEN PROCESS DESIGN

Fundamental principles emerging as part of OneOffice™-aligned organizations span strategy, talent, change management, data and digital fluency, and alignment across the organization. The utilities industry, like most, is in a war for digital and sustainability talent to ensure these competing transitions can be integrated throughout companies "natively." Technology platforms integrate data across value chains, going some way toward aligning organizations in their operations and decision making and connecting to the customer experience. To address change management in new ways, service providers are moving into all parts of the value chain, from advisory to delivery and ongoing management.

The HFS OneOffice™ vision is our stake in the ground for what digital transformation looks like in action, given new context by the forced change triggered by the pandemic. Built on customer, employee, and partner experience, the aim is to break down barriers between the front, middle, and back offices for a connected, communicating enterprise.

Examples In a utilities industry context include:

- The ongoing customer experience shifts in the utilities industry have combined with the pandemic's acceleration of digital, emerging, and remote contact technologies. It is boosting demand for automation to streamline processes and, if done well, connect upstream generation to downstream customer contact operations across the value chain.

- An array of digital and more intelligent technologies—5G, IoT, and AR/VR—are being leveraged to reinvent plant, grid, and distribution operations. AI, analytics, and automation are providing new insights and helping make sense of the vast amounts of data generated during the industry's transformations.

- Connectivity is fueling mobile and touchless interactions for customers and enterprise operators.

- Utilities firms have been grappling with customer experience demands for some time. They are well-versed in contact center operations, but with electric mobility, oil and gas market entrants, and smaller regional disruptors, they must continue to evolve their CX via new platforms, technologies, and marketing.

- Consulting and capability across the services value chain are not just branding anymore; they are being proven in case studies and customer references.

3

The utilities industry in 2021

The energy transition | Oil, gas, energy, and utilities are merging and spinning-out new industries and ecosystems; competition is being reshaped throughout the value chain

- **The global need to reduce emissions to net-zero by 2050 at the absolute latest is fueling a global energy transition**. It is defining enterprise operations, roadmaps, and their demands of third-party technology and business service providers. The oil and gas industry is well on the way to rebranding itself as the energy industry and is pushing into the traditional utilities space, making plays in renewable energy generation and moves throughout the value chain all the way to the consumer.

- **The links between energy, utilities, and other industries like automotive, technology, and manufacturing are well established.** Now, the effects of the energy transition are reshaping finance, insurance, supply chains, hospitality, telecom, media, and every other industry in various ways, whether via electrification, the adoption of digital and more intelligent technologies, or an ongoing need to do more with the assets we already have and manage the risk of phasing them out.

- **Business models are beginning to change fundamentally as demands come from customers, regulators, and sources of finance, with enhanced reporting requirements and climate change commitments now a must.** Consumer and enterprise customers understand carbon footprints and make decisions and demands based on increasing availability of information; demands are also coming from enterprise customers based on the need to clean up their own supply chains (i.e., their Scope 3 emissions). When you consider the energy transition alongside broader sustainability demands, the adoption of digital and emerging technologies, COVID-19 and remote working shifts, maintaining and reinventing customer experiences, talent wars, cybersecurity, and an ongoing need to be more efficient, you see the scale of the challenge facing the energy and utilities space; see more on these competing demands on the next page.

The energy transition | Renewable energy emerges, but fossil fuels aren't disappearing soon

- **Electricity is the backbone of a new energy system, but integrating renewables is also driving physical, virtual, and financial system complexity**. Firms will need to use existing, new, and complementary technologies to manage a supposedly "smart" energy system, and none of this will be possible without digitalization and the command-and-control infrastructure it brings. Electricity is moving from a mission-critical utility, for example, in powering data centers and control systems, to also being a critical asset through battery storage and localized generation. Firms must manage new forms of market participation.

- **Utilities providers have a head start on energy firms needing to reinvent their customer contact and experience (CX) processes.** While oil and gas supermajors have the resources to throw at renewable energy generation, mastering CX is a new ballpark. Distributed generation also means two-way power flows, with renewable generation fed back into the grid by "prosumers," leading to massive investments in intelligent device monitoring, grid management, and grid reliability to manage flows. Traditional utilities firms have been well-versed in CX for some time (although at varying levels of quality depending on which customer you ask), giving them a head start on energy majors looking to disrupt their longstanding industry. They also must fend off challenges from disruptors in their own space. Auto-switching services, renewable-only energy providers, and decentralized energy platforms are just some examples of these threats.

- **There are still frightening amounts of money being thrown into coal, oil, and gas.** There needs to be urgency in everything that touches climate change, and the transition can't happen without energy firms on board. Trust needs to be reestablished by the material action of traditional firms when faced with competition from renewables-only energy providers and a market with increasing levels of choice; they need to be clear on the good and the bad if they'll ever re-earn the trust of the public and politicians. Bad actions don't cancel out the good of renewables investments, but when those investments are still a small fraction of fossil fuel investments, there's work to do. There are global disparities in attitudes to the energy transition, and regardless of what happens at COP26 this November or whether the general optimism about the Biden administration proves valid, there will be a disparity for some time.

The utilities industry | The balancing act of competing demands is far broader than just a transition to renewable power
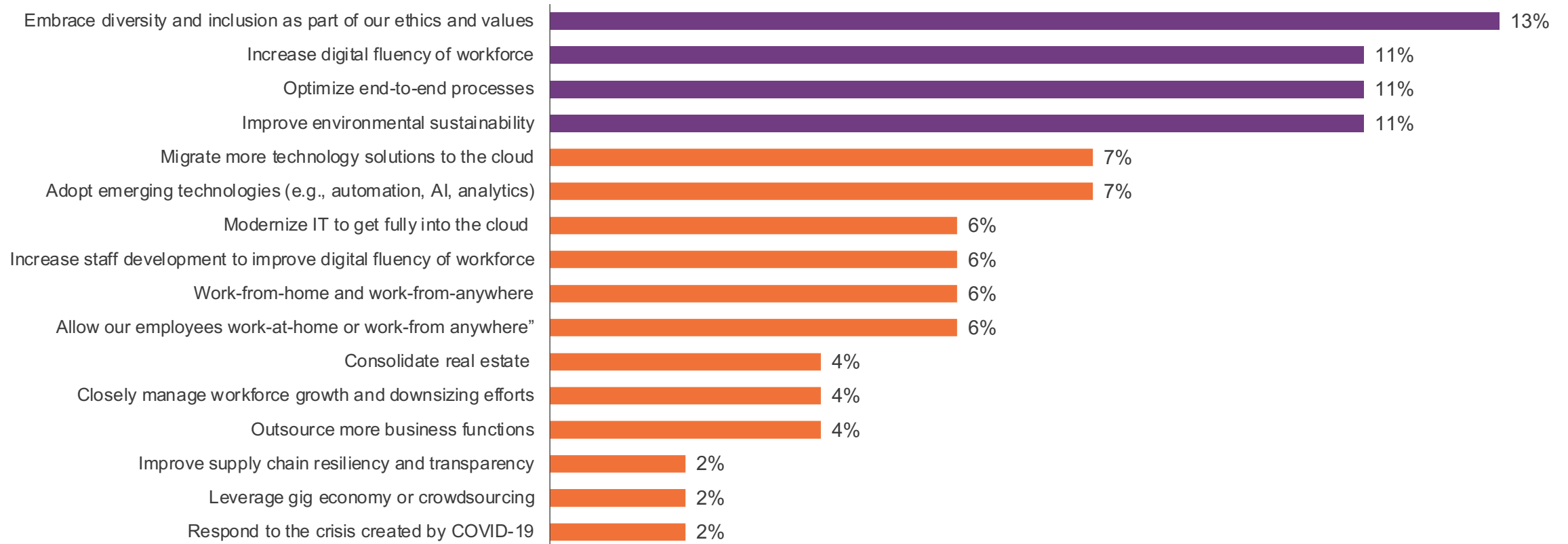
- **The utilities industry has been behind the curve on innovation.** Now, with the integration of advanced metering and smart(ening) grids and cloud migrations, firms want to take their data and make it useful. They're looking for actionable insights and better management of business and revenue streams to recover revenue and move forward. Overall, utilities require new capabilities to operate and implement new business models and aggressive transformation on cost structures to remain competitive and agile, and they must simultaneously progress sustainability ambitions across ESG. Alongside the transition from fossil fuels to renewables, broader environmental, social, and governance factors are forcing change via disclosure of diversity metrics and supply chain labor practices, financial risk and governance around the future of assets and operations, or the circularity of supply chains and their integration with industries like the automotive sector.

- **Global differences in the utilities industry transition are as stark as those in oil and gas:** The UK's competitive landscape has focused on sustainability for some time, with renewable-only providers taking up market share from sustainably-minded consumers. In the US, it took the recent administration change to move sustainability from a feel-good CSR project to a mandate (we're currently waiting for the exact impacts on regulation and whether rhetoric matches decisions). Conversations are spiking in the US around how to handle and report on this transition. US utilities are still scrambling. The UK is ahead but still immature, and it's a small market on a global scale. At the time of writing, a number of UK firms are going out of business due to soaring gas prices and a market perceived as broken. EDF, Centrica, and others are making use of advertising, claiming they're leading the generation of carbon-neutral electricity—with the * and crafty accounting making these statements passable. The attraction and retention of customers is their focus as market shares erode (pre-Autumn 2021 UK "energy crisis") and upselling renewables-only energy; auto-switching providers are gaining market share and driving disruption in the UK and Europe. Globally, firms are moving into the electric vehicle ecosystem as it develops alongside smart meter implementation and other modernizations of grids.

- **Energy firms are breaking into the utilities industry.** They are forming a new segment somewhat resembling a Venn diagram of the energy and utilities value chains. M&A and divestment activity is happening between energy and utilities firms. Energy firms moving into utilities still must segment to protect consumers and avoid monopolies, and that, in combination with customer contact and experience demands, is a head start utilities have over new competition.

- **It's one thing to build a renewable energy farm, and it's another to integrate it back into the grid and build grid capability, dispatching, flexible resources, and storage. That's much harder**. Technology allows live energy capture, storage management, and dispatch, breaking it into components and deciding how to respond. Mechanisms like demand-side management or storage are flattening load curves. Large customer transformations accompany large smart grid rollouts, and meter data analysis and asset management and inspection have an increasingly digital foundation with cloud, analytics, and cybersecurity at center stage.

The utilities industry | The balancing act extends to customers, criminals, and utilities beyond electricity

- **COVID-19 has a dramatic effect on customers and pressures providers.** The pressure of customers arrears combined with regulator pressure to not disconnect consumers during the pandemic means firms can't collect stray revenue but still must generate and distribute electricity and manage their ongoing transitions. The industry's debt to collect ratio remains high, and uncollected revenue is only likely to increase as consumer support policies draw to a close, which will hit smaller firms with more force. Bigger firms will have a better chance of surviving on reserves and government support.

- **Utilities are revamping their CX and connecting to consumers at the front end.** Digital marketing channels and analytics combinations are helping firms assess consumer demands and customize rate plans. Utilities must also serve a new purpose-driven energy consumer, which combined with low margins, energy market fluctuations, and growing competition from start-ups and disruptors from other industries requires cost optimization, customer engagement, repositioning, and new revenue streams. In countries hospitable to renewable energy, "prosumers" can feed locally-generated energy back to the grid.

- **Cybersecurity is top of mind, and cyber reporting requirements are only going in one direction.** The need to integrate IT and OT security throughout operations and value chains, including in nationally critical infrastructure that's a prime target for ransomware, is facilitating a boom in demand for cybersecurity professionals, technologies, and services.

- **Water will become tougher to manage worldwide.** Power grid and water delivery systems are already outdated, and water management will need to tighten as the effects of climate change, over-use, and poor management keep becoming apparent.

- **Hydrogen, nuclear, and the breadth of renewable energy combine into this massive industry transformation.** Meticulous decisions and management are required.

Social and environmental sustainability, digital training, and optimization is front of mind for the utilities industry

What are the major changes in your organization's ways of working for the next 12 to 18 months? (Rank 1)

Change	Percentage
Embrace diversity and inclusion as part of our ethics and values	13%
Increase digital fluency of workforce	11%
Optimize end-to-end processes	11%
Improve environmental sustainability	11%
Migrate more technology solutions to the cloud	7%
Adopt emerging technologies (e.g., automation, AI, analytics)	7%
Modernize IT to get fully into the cloud	6%
Increase staff development to improve digital fluency of workforce	6%
Work-from-home and work-from-anywhere	6%
Allow our employees work-at-home or work-from anywhere"	6%
Consolidate real estate	4%
Closely manage workforce growth and downsizing efforts	4%
Outsource more business functions	4%
Improve supply chain resiliency and transparency	2%
Leverage gig economy or crowdsourcing	2%
Respond to the crisis created by COVID-19	2%

Sample: 54 Global 2000 energy enterprise leaders
Source: HFS OneOffice™ Pulse Study, May 2021

Utilities industry technology (1/2) | Digital, cloud, and more intelligent technologies are now the norm, spread throughout use cases, and they are becoming a license to play

The utilities industry, like most, is filled with use cases of digital and more intelligent technologies being used for industry-specific applications and outcomes. The coming four pages outline the attitudes in our enterprise data toward respondents' current technologies, planned investments, the targets of those investments, and the challenges they face.

- **Automation is becoming critical for core industry business processes to reduce manual effort, streamline tasks, and consolidate resources.** Contact center automation is a critical battleground for technology and services providers, and it plays a leading role in the utilities customer experience (CX), as does the combination of analytics and AI for customer insight and decision making on behalf of the agent. Nailing CX and its evolution will be critical to utilities firms fending off the oil and gas firms venturing into their markets.

- **Analytics and AI improve data.** These technologies allow firms to monitor assets in closer to real-time, respond faster, improve forecast accuracy, cut costly errors, and address many other core cases for the improved use of data for decision making, alongside the CX impacts referenced above.

- **Internet of things (IoT) technologies advance monitoring and operating assets throughout the utilities system.** In combination with data, analytics, and AI, IoT improves awareness, reduces equipment downtime, and boosts data collection. IoT technologies underpin smart grid and metering operations; devices and platforms work in tandem with other technologies to leverage the data produced, shifting from a reactive to a proactive approach for utilities operations management.

- **Enterprises leverage blockchain to develop energy trading applications as decentralized generation transforms the market dynamic.** The transparency of energy sources, for example in purchasing renewable energy certificates (RECs), is also being improved. Cybersecurity is another case…

Utilities industry technology (2/2) | Digital, cloud, and more intelligent technologies are now the norm, spread throughout use cases, and they are becoming a license to play

- **The industry's critical infrastructure—generation plants, grids, and much more—is becoming a common target for cyberattacks leading to a boom in demand for cybersecurity professionals, technologies, and services.** Cyber reporting requirements are only going in one direction, as is the need to integrate IT and OT security throughout operations and value chains. But cybersecurity is not only about technology. It's about the people, processes, data, change management, and the technologies that enable it.

- **Cloud migrations and capabilities support myriad business outcomes.** Successful cloud adoption supports cost takeout, business continuity, business alignment across the value chain, integrating technologies and operations, streamlining operations, improving data use, and much more. Cloud links into contact center transformations, ERP shifts, and leveraging a host of other technologies.

- **Digital twins are modeling plants, supply chains, and enterprise ecosystems**. Firms are testing new operating models, modeling process data, and getting new technology perspectives.

- **Early quantum computing use cases will model complex physics and ecosystem shocks**. In the energy and utilities industries for example, this translates to modeling weather patterns around renewable energy farms. There's also the potential for ecosystem modeling the impacts of shocks like pandemics and adjustments to business models, combining with evermore sophisticated digital twinning of enterprise ecosystems and the operations within.

- **AR/VR platforms are being developed into training environments.** Enterprises can use them to aid field work, for example, in augmenting a piece of equipment with the instructions for an operator.

- **Sustainability technology is being developed in various combinations of all the above.** Thoughtful combinations of sustainability with technology helps better measure, monitor, report, and optimize ESG performance and business outcomes in tandem.

- **Shifts away from traditional ERP and enterprise platforms to new disruptive players** as differences in CX and customer service capability become core differentiators in utilities markets.

Utilities emerging technology is prevalent across the board

What is the stage of overall adoption of emerging technologies in your company?
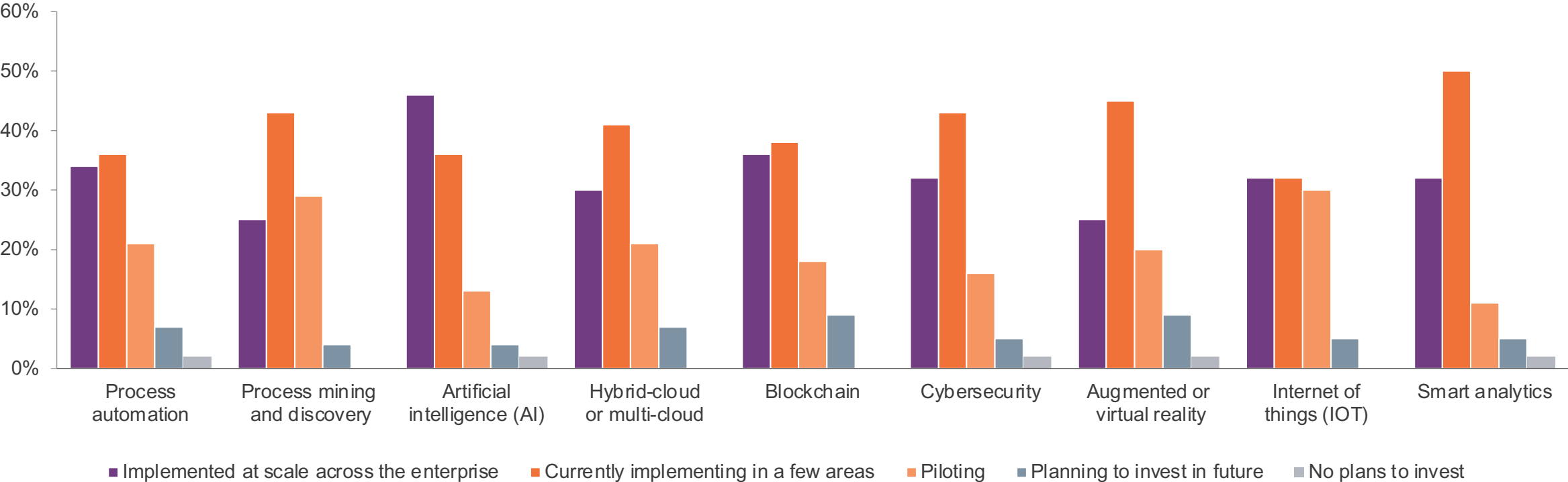
Legend:
- ■ Implemented at scale across the enterprise
- ■ Currently implementing in a few areas
- ■ Piloting
- ■ Planning to invest in future
- ■ No plans to invest

Sample: 54 Global 2000 utilities enterprise leaders
Source: HFS OneOffice™ Pulse Study, May 2021
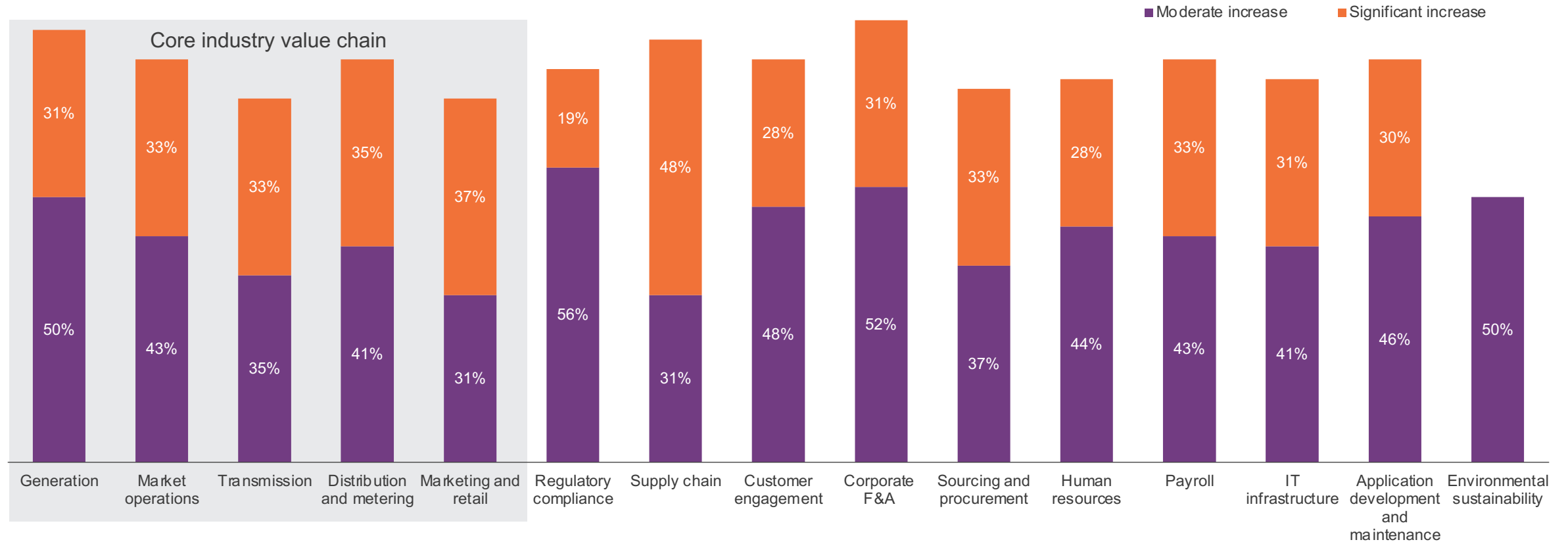
Utilities technology investments are planned across the spectrum and across enterprises

How do you see investments changing for these technologies over the next 12 to 18 months?
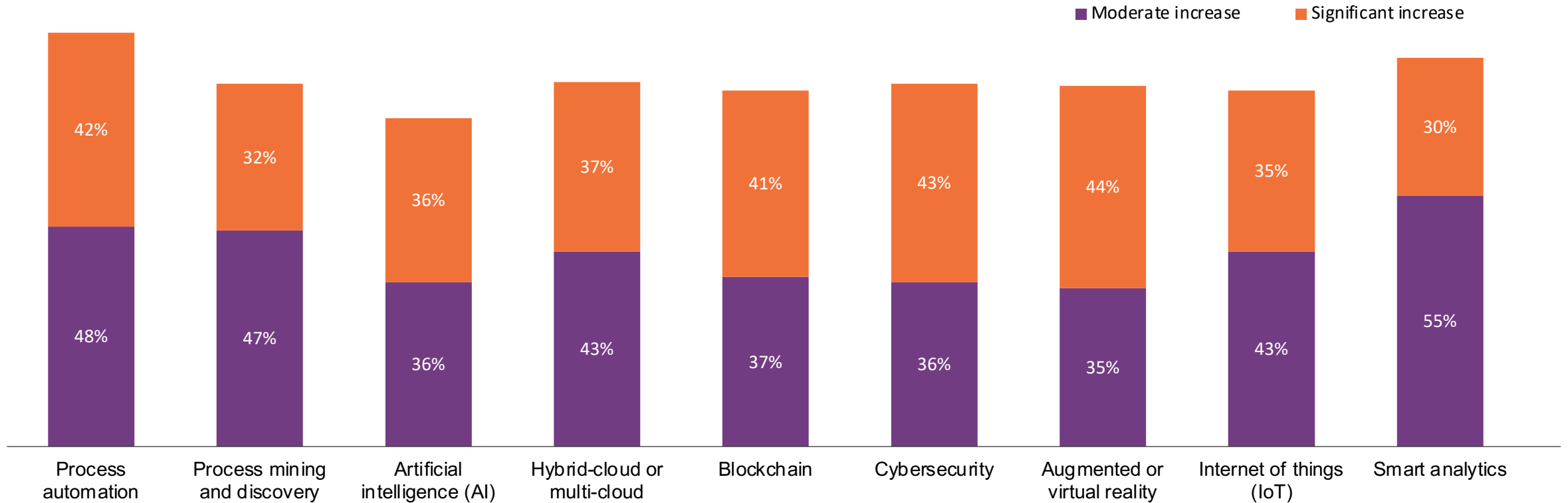
■ Moderate increase   ■ Significant increase

Technology	Moderate increase	Significant increase
Process automation	48%	42%
Process mining and discovery	47%	32%
Artificial intelligence (AI)	36%	36%
Hybrid-cloud or multi-cloud	43%	37%
Blockchain	37%	41%
Cybersecurity	36%	43%
Augmented or virtual reality	35%	44%
Internet of things (IoT)	43%	35%
Smart analytics	55%	30%

Sample: 54 Global 2000 utilities enterprise leaders
Source: HFS OneOffice™ Pulse Study, May 2021

Factors across the utilities value chain are driving emerging technology adoption in tandem

How do you expect the adoption of emerging technologies to change across your industry's value chain in the next 24 months?

Legend: ■ Moderate increase ■ Significant increase

Core industry value chain:

Category	Moderate increase	Significant increase
Generation	50%	31%
Market operations	43%	33%
Transmission	35%	33%
Distribution and metering	41%	35%
Marketing and retail	31%	37%
Regulatory compliance	56%	19%
Supply chain	31%	48%
Customer engagement	48%	28%
Corporate F&A	52%	31%
Sourcing and procurement	37%	33%
Human resources	44%	28%
Payroll	43%	33%
IT infrastructure	41%	31%
Application development and maintenance	46%	30%
Environmental sustainability	50%	

Sample: 54 Global 2000 utilities enterprise leaders
Source: HFS OneOffice™ Pulse Study, May 2021

Barriers to technology | C-suite commitment, risk and security, and fragmented systems present the biggest challenges to the utilities industry's plans for emerging technology

What are your company's challenges to adopting emerging technologies?

Legend: ■ Rank 1 ■ Rank 2 ■ Rank 3

Challenge	Rank 1	Rank 2	Rank 3
Lack of C-level leadership commitment	26%	9%	7%
Data security issues	15%	20%	11%
Fragmented systems landscape	15%	9%	4%
Risk and compliance concerns	13%	15%	11%
Lack of centralized data governance within the organization	11%	19%	6%
Lack of organizational alignment	9%	2%	2%
Challenges in developing business case	7%	13%	15%
Lack of digitally fluent talent	4%	4%	22%
Lack of data quality		9%	6%
Archaic and broken processes			13%
Lack of a clear digital strategy			4%
Lack of investment in change management			

Sample: 56 Global 2000 energy enterprise leaders
Source: HFS OneOffice™ Pulse Study, May 2021

The energy transition is driving the continued integration of energy and utilities industry services and technology

- **Technology and business service providers are beyond critical to decarbonizing the energy and utilities industries in balance with numerous other competing demands.** Service providers, especially the leaders profiled in this report, have longstanding presence in the industries, understand the domains, and have huge networks of partners and innovation. But it's their visions and market positioning within the global context and industry transitions, with a clarity of focus on where specific sets of capabilities come in alongside the ecosystem, that define the best of the best. The breadth of capability at these service providers' disposals makes self-awareness and humility even more important, and it makes strengths stand out in a market full of similar narratives.

- **Conglomerate firms have advantages, but they aren't unbeatable.** Their engineering, IT, digital, and strategy services arms can tap into longstanding OEM and industry infrastructure expertise. However, other providers have vast partner ecosystems that can match this, and they often provide services to conglomerates despite having their own services arms. For example, many of the firms in this report have parent companies deeply involved in energy generation, power grid operation, and technology design and manufacturing, but they must still compete with independent service providers for their own parent company's business.

- **End-to-end isn't just branding anymore; cases and customers are proving a shift across the value chain.** Many service providers' journeys from delivery toward innovation, consulting, and increasingly large transformational projects are proven in case studies and conversations with clients. The most successful firms combine their deep technical expertise with increasing levels of business fluency to engage at higher and higher levels of client organizations. Providers are partnering to cover any expertise gaps and link up with the strategy consulting firms operating at the highest levels designing organizational-wide strategies. These larger traditional consulting firms are certainly in for a fright, and they mustn't be complacent as firms rapidly move up the value chain. But, there is still a way to go, both in branding with (new and existing) clients who've grown used to firms being "delivery powerhouses" separate from the consultants and in bridging the gap between domain consulting and being able to engage in a three-plus-year timeframe with the C-suite.

- **Service providers are integrating sustainability throughout their portfolios across consulting, technology, and managed services.** HFS is currently mapping the ecosystem, which remains fragmented and undefined. But this is a key component throughout the energy transition, where sustainability must become native in organizations evolving on so many fronts to survive and grow stronger.

- **Providers are combining digital and more intelligent emerging technologies with outcomes and the global competing context**. For the energy transition, providers are formalizing their go-to-markets around digital, technological, and industry-aligned capability across IoT, analytics, cloud, and much more. Providers are co-creating with customers and partners, building platforms for next-gen grid operations, emissions reporting, carbon offsetting, EV solutions, and many more specifics to the energy and utilities industries.

- **Enterprise customers are demanding outcomes, and we see the effect in client deals**. The multiple transitions facing the energy and utilities industries create more and more transformational projects incorporating services and technology across the value chain. But there remain workflows and assets to manage, with modernizing aging infrastructure still forming a large part of services revenues. App development remains prevalent, and cloud migrations are becoming the norm, as are enterprise platform upgrades and integrations with more intelligent technologies.

Demand is increasing across the utilities services value chain: It's increasing the fastest in midstream and downstream

- We asked the 13 service providers profiled in this report to assess the change in demand for their services across the utilities value chain during the past 12 months on a scale from +5 (a significant increase) to -5 (a significant decline).
- Demand is increasing across the whole value chain.
- The fastest growth in demand is for midstream distribution and metering and downstream marketing and retail services.
- **There is standout growth for smart grid services, asset performance management, meter data management, metering and billing, customer experience (CX), and digital meter-to-cash.**
- This mirrors the dominance of the energy transition and competing demands throughout this study; broader competing industry demands are borne out in an increase in demand across the value chain for technology and business process services.

Source: HFS Research, 2022
Sample: 13 leading utilities service providers covered in this report

Upstream: generation	Change in demand	Upstream: market operations	Change in demand	Upstream: transmission	Change in demand	Midstream: distribution and metering	Change in demand	Downstream: marketing and retail	Change in demand
Average	**+ 2.9**		**+ 2.3**		**+ 3.2**		**+ 3.7**		**+ 3.5**
Data management	3.8	Asset optimization	2.9	Smart grid services	4.1	Asset performance management	4.1	Customer Experience (CX)	4.3
Distributed energy resources integration	3.4	Supply planning and sourcing	2.9	Asset performance management	4.1	Meter data management	4.0	Metering and billing	4.0
Holistic security services	3.4	Trading and risk management	2.5	Infrastructure maintenance	3.4	Smart meter operations	3.8	Digital Meter-to-Cash	4.0
Asset management (inc. integrity)	3.3	Market integration	2.1	Grid aggregation	3.4	Distribution management	3.7	Field service operations	3.9
Engineering and R&D	3.2	Portfolio strategy	2.1	Transmission planning and scheduling	3.0	Smart meter rollout	3.4	Debt collection and credit management	3.9
Real-time operations	3.1	Wholesale operations	2.0	Load balancing and dispatching	3.0	Demand response management	3.2	Omni-channel management (voice, non-voice, social media, digital)	3.8
Engineering, procurement, and construction (EPC) management	2.9	Market systems services	1.9	Grid optimization	3.0			Energy management	3.6
Generation asset development	2.9			Energy storage integration	2.6			Customer service	3.5
Carbon capture, storage, sequestration, and utilization	2.7			Ancillary services	2.5			Exception management	3.5
Plant maintenance	2.5							Beyond the meter services	3.3
Generation operations	2.5							Customer acquisition	3.3
Production forecasting and optimization	2.1							Digital marketing	3.3
Planning and contract management	2.0							Electric vehicle services	3.0
								Sales channel management	2.8

Utilities services | Benchmarking the providers profiled in this study

8,921

Average headcount dedicated or available to utilities services

Largest: 26,000
Smallest: 970

- Utilities services headcounts grew by 13% in 2020 and 8% in 2019.

$739 million

Average utilities services revenue across participants

Largest: $2.8 billion
Smallest: $38 million

- Utilities services revenues saw 10% growth over the last two years.

115

Average number of utilities services clients

Largest: 400
Smallest: 11

- Twenty-five percent (25%) of utilities services clients engage in sustainability services.
- Forty percent (40%) engage in co-innovation with their service provider.
- Ten percent (10%) engage in outcome-based deals, with 13% engaged in hybrid pricing models.
- Providers largely cite that 40%-80% of their engagements are digital (not managing legacy).
- Broadly, providers are rating their own alignment with the HFS OneOffice™ vision from 8 to 10 of 10.

Source: HFS Research, 2022
Sample: 13 leading utilities service providers covered in this report

Utilities services headcounts are spread evenly across North America, Europe, and APAC

- North America 28%
- Europe 33%
- Asia Pacific 28%
- Middle East and Africa 7%
- Latin America 4%
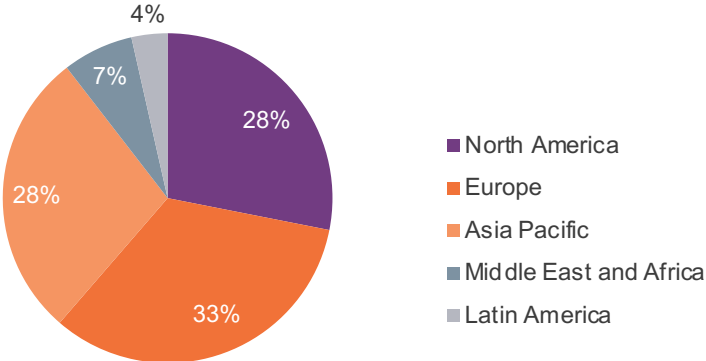
Utilities services clients are primarily North America and Europe based
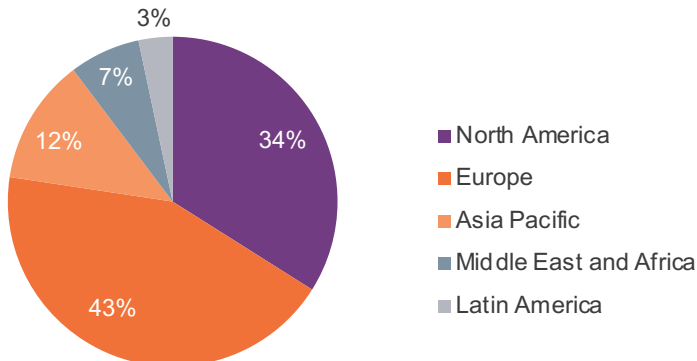
- North America 34%
- Europe 43%
- Asia Pacific 12%
- Middle East and Africa 7%
- Latin America 3%

4

Utilities Services Top 10
2021 results

Utilities services | A summary of the providers assessed in this report

Provider (alphabetical)	HFS' take
Accenture	Ambition and resources focused on leading the utilities industry through multiple transitions, combining delivery with the highest levels of strategy
Atos	Innovation embedded in a newly-vertical Atos across utilities, with decarbonization and cybersecurity focuses built on wide-reaching collaboration
Capgemini	Utilities scale and resources across the value chain with a focus on sustainability, technology development, and customer experience
Cognizant	Aligned and specific energy and utilities transition capabilities built on data and analytics brand strength, surrounded by an acquisition and partnership boom
EXL	A focused business process expert within a transforming utilities industry, combined with technology investment and platforms aligning processes
HCL	Bringing engineering to the strategy table marrying business and technology; investment pouring into co-innovation and R&D, with a data platform emphasis
Hitachi	Hitachi services build on the operations and OEM capability of the whole Hitachi Group, bringing one face and deep industry expertise to customers
Infosys	Growth and an energy transition focus with outcome-based deals widespread; expanding value chain capabilities are integrating with sustainability services
LTI	Growing utilities expertise combined in the broader L&T Group's industry history earns LTI the right to be ambitious across digital and sustainability solutions
TCS	A combined ecosystem and industry approach adds to engineering, technology, and advisory capability for the industry's transition, including sustainability services
Tech Mahindra	Clear positioning of global technology capabilities aligned to outcomes within the overall utilities context and the Mahindra Group's industry might
Wipro	Utilities industry and energy transition vision combines with a new operating model aligning Wipro to the global context, while integrating digital and CX in balance
WNS	Deep business process and utilities expertise with high levels of customer co-innovation and outcome-based pricing growth; sustainability is the next step

HFS Top 10 Rankings | Utilities Services, 2022 notable performances

HFS Podium Winners
Top three providers overall across execution, innovation, voice of the customer, and HFS OneOffice™ alignment criteria

#1	#2	#3	#4	#5
accenture	Capgemini	Infosys Navigate your next	tcs TATA CONSULTANCY SERVICES	Atos

Execution powerhouses					Innovation champions				
Top five providers on execution criteria					Top five providers on innovation criteria				
#1	#2	#3	#4	#5	#1	#2	#3	#4	#5
accenture	Capgemini	tcs TATA CONSULTANCY SERVICES	Atos	Infosys Navigate your next	Atos	Infosys Navigate your next	tcs TATA CONSULTANCY SERVICES	accenture	Tech Mahindra

Aligned to the HFS OneOffice™ vision of transformation					Outstanding voice of the customer				
Top five providers on HFS OneOffice™ alignment criteria					Top five providers on voice of the customer criteria				
#1	#2	#	#4	#5	#1	#2	#3	#4	#5
accenture	Tech Mahindra	Capgemini	Atos	Infosys Navigate your next	Infosys Navigate your next	WNS	HCL	accenture	tcs TATA CONSULTANCY SERVICES

Other notable performances

- **Hitachi Vantara** ranks #1 for client reach and #2 for ecosystem
- **LTI** ranks #3 for growth and trajectory
- **EXL** ranks #6 for voice of the customer
- **WNS** ranks #3 for creative client engagement

- **Cognizant** ranks #3 for ecosystem
- **Tech Mahindra** ranks #1 for growth and trajectory
- **Wipro** ranks #2 for vision and sustainability services

HFS Top 10 Rankings | Utilities Services, 2022

Rank	Overall HFS Top 10 position	Execution				Innovation					OneOffice alignment	Voice of the customer
		Scale and resources	Growth and trajectory	Client reach	Overall execution	Ecosystem	Vision and sustainability services	Technology use and development	Creative client engagement	Overall innovation		
#1	accenture	accenture	Tech Mahindra	HITACHI	accenture	accenture	Atos	accenture	Infosys	Atos	accenture	Infosys
#2	Capgemini	Capgemini	Infosys	accenture	Capgemini	HITACHI	wipro	tcs	HCL	Infosys	Tech Mahindra	WNS
#3	Infosys	tcs	LTI	Capgemini	tcs	Cognizant	accenture	wipro	WNS	tcs	Capgemini	HCL
#4	tcs	Infosys	HCL	tcs	Atos	tcs	Infosys	Capgemini	tcs	accenture	Atos	accenture
#5	Atos	Atos	Capgemini	Atos	Infosys	Infosys	Tech Mahindra	Atos	Atos	Tech Mahindra	Infosys	tcs
#6	HCL	HCL	accenture	wipro	HITACHI	Capgemini	Capgemini	Tech Mahindra	Tech Mahindra	HCL	LTI	EXL
#7	Tech Mahindra	wipro	EXL	Tech Mahindra	wipro	Atos	Cognizant	HCL	EXL	wipro	wipro	Tech Mahindra
#8	wipro	Cognizant	wipro	LTI	HCL	wipro	tcs	LTI	Cognizant	Capgemini	WNS	Capgemini
#9	WNS	HITACHI	tcs	Infosys	Cognizant	Tech Mahindra	HITACHI	Infosys	LTI	Cognizant	tcs	Atos
#10	Cognizant	Tech Mahindra	Cognizant	Cognizant	Tech Mahindra	HCL	LTI	Cognizant	Capgemini	LTI	HCL	Cognizant

5

Infosys profile

How to read the profiles
HFS's take

Dimension	Rank
HFS Top 10 position	#
Ability to execute	#
Scale and resources	#
Growth and trajectory	#
Client reach	#
Innovation capability	#
Ecosystem	#
Vision and sustainability services	#
Technology use and development	#
Creative client engagement	#
OneOffice alignment	#
Voice of the customer	#

Strengths

Strengths of the service provider: qualitative and quantitative

Opportunities

HFS and customer feedback recommendations for the service provider to develop

Maturity across the value chain

Client breakdown by size

Client location breakdown

Value chain capabilities

Upstream: generation	Upstream: market operations	Upstream: transmission	Midstream: distribution and metering	Downstream: marketing and retail

Value chain capability scale

Not a focus	Emerging	Mature

Acquisitions and partnerships	Clients	Operations	IP, platforms, and tools
• **Recent acquisitions that have added to utilities services** • **Key partnerships that contribute to utilities services**	• **Number of clients and key client names**	• **Headcount dedicated to and available for utilities services** • **Delivery location breakdown and key centers of excellence, etc.**	• **Intellectual property (IP), platforms, and tools key to utilities services**

Growth and an energy transition focus with outcome-based deals widespread; expanding value chain capabilities are integrating with sustainability services

Dimension	Rank
HFS Top 10 position	3
Ability to execute	5
Scale and resources	4
Growth and trajectory	2
Client reach	9
Innovation capability	2
Ecosystem	5
Vision and sustainability services	4
Technology use and development	9
Creative client engagement	1
OneOffice alignment	5
Voice of the customer	1

Strengths

- **Utilities growth and deepening relationships; a breadth of services combines with clarity of vision and focus**: Infosys continues to integrate services and technology across the value chain, presenting one Infosys to the customer and focusing on transformation programs.
- **Innovation design centers, networks, and industry bodies:** Infosys has a range of utilities-specific academia partnerships with Stanford and Purdue, and it's hiring from universities globally and working on curricula with a focus on hiring industry-specific talent. This is combined in Infosys's Live Enterprise architecture, HFS OneOffice™ aligned, across large and small partners to tackle the scale of the energy transition.
- **Energy transition COE:** Combining advanced engineering teams with EV, IoT, grid, and broader teams to be the energy transition "orchestrator" for all technology and services, a similar approach to Infosys's sustainability services development.
- **Sustainability First approach and ambition for growth:** Aligns across capabilities and involvement in UN COP26, WEF, and other networks.
- **Fifty-five percent (55%) of clients use gain-share outcome-based pricing:** Infosys links transformation to domain-practice-led outcomes.
- **Deep Microsoft, Oracle, and SAP** history with accelerators aligned to the utilities industry.

Opportunities

- **Energy transition and sustainability services:** Infosys is showing exceptional development in its sustainability services portfolio, case studies, and narratives, and it is among the leading SIs for these services. It must now ensure this capability finds its way throughout its utilities industry practice and engagements with its long-established client pool. This will include a continued focus on developing a brand image across the value chain with new and existing clients.
- **Deployments of digital and emerging technology throughout the portfolio:** While Infosys has standout cases and continues to embed digital and emerging technologies in engagements, its client base has been slow to adopt this as mainstream, hence there remains room for expansion.

Client breakdown by size

- <$1B 18%
- $1-5B 45%
- $5-10B 14%
- $10-20B 12%
- $20-50B 3%
- >$50B 8%

Client location breakdown

- North America 50%
- Europe 31%
- Asia Pacific 17%
- Middle East and Africa 1%
- Latin America 1%

Value chain capabilities

Upstream: generation	Upstream: market operations	Upstream: transmission	Midstream: distribution and metering	Downstream: marketing and retail

Value chain capability scale

Not a focus	Emerging	Mature

Acquisitions and partnerships

Recent utilities-relevant acquisitions:
- **Simplus** (2020)
- **WongDoody** (2019)
- **Fluido** (2018)
- **Brilliant Basics** (2017)
- **Noah Consulting** (2015)

Key utilities partnerships:
- **Enterprise package vendors:** SAP, Oracle
- **Hyperscalers:** AWS, Azure
- **Emerging new enterprise platforms and start-ups:** Bidgely, Ensek
- **Academia partners:** Stanford, Purdue
- **Industry partners**

Clients

Number of clients: 70
- Consolidated Edison
- Ausgrid
- E.ON
- Arizona Public Service
- Essential Utilities
- Citizens Energy Group
- A leading west coast electric and gas utility
- An American Fortune 100 energy company
- Welsh Water
- El Paso Water
- A large East Coast-based US energy provider
- A large East Coast US gas and electric company
- A leading West Coast US electric utility

Operations

Utilities headcount: 9,870
- North America 15%
- Europe 14%
- Asia Pacific 70%
- Middle East and Africa 0.4%
- Latin America 0.6%

Delivery locations:
- Technology and innovation hubs: Raleigh, NC (utility East Coast hub), Connecticut, Indiana, Texas, Phoenix (utility West Coast hub), Rhode Island, Pennsylvania, Calgary
- Digital studios, innovation centers: London, Melbourne, Bangalore, Providence, Dusseldorf, Bucharest, Marseille, Helsinki

IP, platforms, and tools

- Infosys Pre-configured and Accelerated Customer Care & Billing Enablement (PACE) for Utilities
- Infosys NextGen Grid framework
- Energy as a Service: End-to-end management of a customer's energy assets and services with a focus on sustainability and enabling the energy transition
- KRTI 4.0 AI framework for utilities
- EVSE Onboarding Solution developed with Nexant
- Utility BOT Repository: Automation platform with AI capabilities, process discovery, RPA, and orchestration.

6

About the authors

HFS Research authors

Josh Matthews

Practice Leader

joshua@hfsresearch.com

Saurabh Gupta

President, Research and Advisory

saurabh.gupta@hfsresearch.com

Josh Matthews is a Practice Leader at HFS, based in Cambridge, UK. Josh leads HFS's coverage of sustainability and the energy and utilities industries, built on academic and industry expertise across chemical engineering, management, and sustainability. Josh also focuses on supply chain, the TMT (telecom, media, and technology) industry, and the HFS Triple-A Trifecta of automation, analytics, and AI segments. Other subjects of interest and coverage include quantum computing and diversity and inclusion (D&I). Previously, he has covered the internet of things (IoT) and manufacturing.

Josh is a former City Councillor in Cambridge, where he held the opposition portfolio for Climate Change, the Environment, and the City Center.

Josh graduated from an Engineering and Management master's program at Cambridge University. His research tackled operational and environmental improvements in industry and the implementation and management of sustainable initiatives. On behalf of the university, Josh worked on consulting projects at Unilever, as well as SMEs in the tech and marketing spaces.

Josh had previously graduated from Loughborough University with a first-class master's in Chemical Engineering. Over the course of this degree, he worked in the energy industry, and was a visiting researcher at UC Santa Barbara, publishing designs and analysis of low-CO_2 hydrogen production in the Chemical Engineering and Technology journal.

Saurabh Gupta is President of Research and Advisory at HFS. He oversees HFS' global research function managing the global team of analysts and operations across US, Europe, and Asia-Pac. He works closely with the CEO to set the strategic research focus and agenda for HFS Research, understanding and predicting the needs of the industry and ensuring that HFS maintains its position as the strongest impact thought leader for business operations and services research.

He is a recognized thought leader and passionate problem solver in the global services industry. With 15+ years of experience across client, provider, advisory, and analyst roles, he brings a uniquely realistic and wide-ranging perspective to our industry's challenges and opportunities. Before joining HFS, Saurabh led strategy for Genpact's CFO and transformation services, helped shape the Business Process Services (BPS) strategy for AbbVie, managed Everest Group's global BPS practice, and worked as a techno-functional consultant at Infosys.

Saurabh advises senior executives on business transformation initiatives with a strategic mindset and execution orientation. He has authored over 125 research reports, is a frequent speaker, and is regularly quoted in industry publications. He is well-known for spotting disruptive trends like As-a-Service, Cloud, Analytics, Robotics and predicting their implications for different stakeholders. He brings to the table a combination of subject matter expertise and structured thinking with effective collaboration and communications.

About HFS

Insight. Inspiration. Impact.

HFS is a unique analyst organization that combines deep visionary expertise with rapid demand side analysis of the Global 2000. Its outlook for the future is admired across the global technology and business operations industries. Its analysts are respected for their no-nonsense insights based on demand side data and engagements with industry practitioners.

HFS Research introduced the world to terms such as "RPA" (Robotic Process Automation) in 2012 and more recently, the HFS OneOffice™. The HFS mission is to provide visionary insight into the major innovations impacting business operations such as Automation, Artificial Intelligence, Blockchain, Internet of Things, Digital Business Models and Smart Analytics.

www.hfsresearch.com

@hfsresearch

www.horsesforsources.com