



Infosys: Navigating the Future of Energy



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1. Utilities globally looking to improve the customer experience and digitalize operations

Utility companies globally are facing similar challenges: regulatory frameworks require them to both increase choice and value for customers and leverage more from their assets, improving their management of ageing infrastructures and systems to ensure they provide an uninterrupted and efficient service.

In a recent NelsonHall survey on the impact of digital on the global utilities sector, the top three major business priorities identified, unprompted, by utilities were to:

- Improve customer service, including through expanded use of self-service, mobile and chat capabilities
- Increase efficiencies in billing and supply chain processes
- Enhance their tracking and predictive maintenance capabilities through the use of sensor-based applications and analytics.

Out of the top five business objectives ranked by utility execs, three focus on the customer, namely:

- Increasing average revenue per customer
- Launching new products and services (e.g. smart homes, EV charging infrastructure, and energy management) in order to generate new revenue streams. Achieving this demands the use of agile methodologies and implementation of cloud and SaaS-based solutions
- Enhancing customer experience (CX), including through better use of self-service, which also reduces operational costs.

The other two business objectives in the top five focus on:

- Digitalizing operations
- Achieving increased levels of straight through processing.

Particular areas of focus in the application of intelligent automation, IoT and analytics technologies are:

- Further developing smart grids' self-heal capabilities to auto-remediate grid infrastructure issues and microgrids (to enable prosumer empowerment)
- Transforming SCADA, EMS, OMS, and DERMS systems to improve the management of devices, data processes, remote monitoring and diagnostics (renewables), and also predictive maintenance
- With field services, further enhancing mobile workforce management through use of AR/VR
- Re-skilling the workforce with relevant digital skills; many utilities have ageing workforces.

Utilities are also dealing with increased adoption of distributed energy resources (DER) and managing fluctuations in demand. They are developing smart asset management capabilities to support renewables monitoring, managing energy demand, and the interconnectivity of the grid.

In terms of implementing SaaS-based enterprise applications, the most common areas are those in CRM, HR and employee productivity.

Utility companies are accordingly selecting vendors that can demonstrate deep industry knowledge, UX consulting capabilities, appropriate enabling toolsets (including intelligent automation, analytics and IoT), and clear ability to accelerate application development (DevOps) and implement cloud and SaaS solutions.

2. Infosys' Vision for Utilities

Infosys has been evolving its messaging around 'Navigate your Next' for the utilities industry and this theme has evolved into 'Navigating the Future of Energy'.

Infosys helps utilities Navigate the Future of Energy by transforming customer experience, modernizing infrastructure (grid Infra and IT assets) and enabling future-ready business models.

Infosys' extensive experience in CX transformation programs coupled with IP-driven solutions like PACE help create a differentiated customer experience at minimized cost. Expertise in infrastructure modernization solutions, combined with advanced technologies, including IoT, Edge analytics, AI & ML-based integrated cybersecurity platform, help secure business while enhancing efficiency.

Infosys also helps utilities become future-ready by unbundling traditional value chains to reassemble new business models.

At the core of Navigating the Future of Energy is the Digital Navigation Framework that helps utilities realize the five key business outcomes:

- Insight (focus on business insights through grid intelligence)
- Innovate (for new business models)
- Experience (enhancing employee and customer experience)
- Accelerate (return for digital)
- Assure (grid security and regulatory compliance).

Infosys claims its Navigate the Future of Energy campaign is resonating well with its clients in the utilities sector, which typically have heavy legacy businesses competing against smaller, more agile, digital entrants (more prevalent across DER, EV provisioning, and micro-grids), as they look to provide more of an Amazon-like experience to customers and employees.

3. Infosys: Navigating the Future of Energy

In alignment with the market challenges and key areas of investment by utilities noted in the NelsonHall survey above, Infosys has defined a focused *Navigating the Future of Energy* campaign and has relevant offerings to the vertical center in three core areas:

- Transforming CX
- Modernizing infrastructure (enterprise IT and grid infrastructures), including development of workforce digital capabilities
- Future-ready business models.

Within transforming CX, Infosys is deploying its digital studios capability specific for utilities and bringing a design thinking methodology, leveraging its WONGDOODY and Brilliant Basics design studios. Infosys is seeing traction in North America, where it is helping several utilities in reimagining their customer engagement, in particular supporting CIS transformation programs to identify new touchpoints and user journeys.

In terms of deploying digital capabilities for grid modernization and transformation, Infosys has been supporting one of the largest grid modernization programs in North America and a large grid modernization and DERMS integration program in Europe. In these programs, there is a particular focus on gaining insights from the data coming from IoT devices, planning, program management, and on bringing new resources and safety insights to plan for the grid. Other areas of focus include vegetation management, deploying inputs from sensors and overlaying these with imagery from drones to use for planning. It has several utility client projects in this area currently.

The modernization of the enterprise itself includes:

- Deploying cloud-native capabilities
- Investing in digital capability build-out.

A key asset here is Infosys Wingspan, an open source cloud-based IT skills training platform initially developed for internal use. The mobile solution, accessible on any device, offers a combination of assisted learning and self-learning sessions based on skill-set, role, or area of interest. Infosys is combining Wingspan with other assets and proprietary tools in the Infosys Live Enterprise Suite.

Infosys sees Wingspan as particularly relevant to the utility industry, which has been lagging in its adoption of key digital capabilities, and requisite skill-sets, and highlights its experience of working with utilities in standing up cloud-based training platforms, pulling in from applications across a multi-cloud ecosystem. This training initiative has been taken up by three utility clients in North America and two in Europe. Two of these utilities are currently looking at creating digital CoEs in collaboration with Infosys. It now has joint training courses developed for Infosys and utility client accounts for digital capability build-out.

Infosys is also focusing on next-generation solutions to enable future-ready business models for utilities; many of its CX programs are leading to these solutions. An example is customer insights gained (for example, through SAP S4/HANA, Oracle cloud platforms for customer insights, or custom data hubs), which identify opportunities where Infosys can integrate smart meter data more effectively into the core system to provide more insight into usage and behavior (i.e. spikes in EV charging), thereby enabling a utility to offer tailored products and services to its customers. An example is a utility client building an EV comparison tool on its website to compare EV's, usage, and to identify the most appropriate tariff and plan.

Another example is a large U.S. utility entering new competitive markets in the U.S., including new states, and in renewables investment. To manage risk between the regulated and non-regulated parts of the business, the client needed to release products to market much faster than in the past when its whole business was regulated. Infosys approached the client with its Live Enterprise concept and partnered with ServiceNow to deploy a complete service management layer on top of the client's IT infrastructure. The solution was further extended to all business entities, including operating companies (regulated and de-regulated) and was also leveraged when there is a need for service orchestration across entities (i.e. launching new demand response initiatives or new rate card). The client will click on a button to request a new product or service, with full orchestration through ServiceNow.

A. Infosys' utility offerings and capabilities

Infosys has around 6,500 dedicated resources in its utilities sector business, serving around 70 clients globally across electric, gas, and water.

The five dimensions of Infosys' Navigate the Next framework applied to the utilities sector are:

- **Insight**, enabling grid intelligence and smart asset management through data analytics
- **Experience**, driving mobile-first customer strategies, including cognitive chatbots
- **Innovate**, using an industry 4.0 framework and IoT platform to manage Distributed Energy Resources (DERs)
- **Accelerate**, modernizing both grid and customer service operations
- **Assure**, ensuring regulatory compliance and grid security.

Infosys supplements a client's existing systems with proprietary platforms and products, including AssistEdge, NIA, Infosys Customer Experience Suite, Infosys Analytics Workbench, Infosys DevOps platform, and Infosys Infrastructure Management Solution Suite (IIMSS), and accelerators.

These digital offerings are converging into four distinct vertically-integrated solutions for utilities, underpinned by automation, AI, analytics, mobility, AR/VR, CX transformation, cloud, IoT and blockchain:

- **Digital Customer Service**, offerings include CX modernization, cloud migration of CX assets, CIS and MDM replacement, and call center automation. Infosys is providing this for multiple utility clients across all domain areas including smart meter integration, billing modernization, customer service, and field service transformation. Key IP includes Infosys Pre-configured Accelerator for Customer Experience (PACE), available on both Oracle and SAP Utility platform. Infosys is adding automation on top of Oracle CC&B and including bill comparison on top. Client examples include:
 - For one U.S. utility, Infosys has enabled 3m electric and gas customers to transfer to a new customer service platform in 22 months. This provides more significant insights on the customer base and makes it more agile in terms of time to market for new solutions to take to end-users, all with a heavy focus on security
 - For another U.S. utility, it has achieved billing accuracy of 99.97% and ~\$4.2bn in payments balanced with a difference of 50 cents through PACE

- **Digital Grid & Assets:** includes smart grid automation, DERMS, grid analytics and maintenance, vegetation management, and grid cybersecurity. Client example:
 - For a large global utility, Infosys is implementing a grid interconnected program, designing a platform to enable the interconnectivity of the grid and the ability to bring new players onto the grid; also, smart workflows and intelligent automation solutions from Pega Systems. Infosys is also applying grid solution analytics from Nexant, alongside grid analytics from GE and Alstom, bringing out insights both onto the planning end and operations end of the grid
- **Digital Enterprise & Workforce:** offerings include ERP migration to the cloud, ERP managed services, mobile workforce management, RPA in the call center and back-office, IoT-based work, and asset management. Here, Infosys is:
 - Placing increased focus on creating greater efficiencies across routing, planning, and scheduling, and enabling the field force to be more proactive in their representation of the utility companies
 - Providing the field force with predictive analytics solutions and integration with back-end CRM systems, including Salesforce
- **Digital Operations & Energy Supply:** includes ERP for supply chain, generation asset management, trading automation, and blockchain for wholesale operations.

B. Utility sector use cases

In support of these four integrated solutions, Infosys has created a number of smart bots, AI, and ML use cases to further enable the transition to a smart utility. Examples include:

Infosys utilities smart bot repository (AI and automation):

- **Customer service:** automation of exception handling for customer requests related to move in/out (a recent pilot uses Alexa to initiate the move, RPA to complete the task involved and the customer interaction managed in the back-end SAP system), automation for billing exceptions and payment inquiries, credit disconnect analysis, RPA to determine and process the next CACS state for disconnection in CIS
- **Customer and billing back office,** automation of billing estimation exceptions, auto resolution of data synchronization issues between legacy CIS and MDMS, high-bill exception resolution, and automation of field activity completion
- **Transmission & distribution back-office:** trouble orders and work order re-assignment & re-processing, consolidated print job PDF files for field service agents from multiple applications including SAP, SIMs, and MicroStation CAD.

Utilities smart bot and AI/ML use cases relevant to the grid, energy supply, and plant operations include:

- **Energy Forecasting platform:** proactive data load monitoring and correction for interfaces with CAISO
- **Infosys NIA-based chatbot** for anomaly root cause and resolution
- **AI-based RAMS** leveraging KRTI 4.0. Infosys is integrating the Reliability, Availability, Maintainability, and Safety (RAMS) lifecycle services models from Pöyry with NIA predictive modeling and insights capability and tying this back to the asset management and work management systems to identify whether a specific process should be automated or kick-off a maintenance process. This has been implemented at a gas and water utility for its gas and water plant operations in Europe. Infosys is also engaging with a

number of electric utilities to use the RAMS-based model for predictive maintenance on the electric grid

- **Vegetation management and safety**, with the ability to quickly do visual analytics through the use of drones for asset and field inspections, and using AI/ML to do predictive analysis, in partnership with third-parties to identify where vegetation management needs to be done (i.e. where trees are close to transmission lines and need to be trimmed). The data is processed through NIA IP layer
- **Self-healing**: service levels from Infosys will be centered on business outcomes through self-healing across digital platforms, with constructs around deriving insights from the data, and then using the insights to drive autonomous operations across the entire IT operations stack
- **Grid analytics**, using Grid 360 from Nexant, taking insights into the NIA common platform, and bringing out insights both onto the planning end and operations end of the grid.

4. *Navigate the Future of Energy* is a catalyst for becoming a utility of tomorrow

Infosys is taking the *Navigate the Future of Energy* theme to all its utility clients over the next few years to enable them to transform into smart utilities and compete with digitally-native vendors. It claims to have signed \$1bn in contracts in the first ten months of 2019, including some large transformation programs where it is taking a legacy stack, converting it to a digital platform, which it will maintain for the following four or five years.

An important feature in these programs is the Wingspan training platform, where Infosys is gaining traction in joint training collaboration initiatives with several clients. We expect Infosys will develop further assets in this area as utilities seek to expedite digital skilling across their workforces.

Infosys is taking a design-thinking approach to utilities through WONGDOODY and BrilliantBasics capabilities. It is further strengthening its utility-specific innovation hubs (electric & gas). It is already seeing traction in the North American utility market and now needs to build momentum across Europe and APAC.

Infosys is increasing its investment in IP and accelerators, including PACE for utilities and smart bot repository, to further drive the industrialization of process and technologies while enhancing the employee and customer experience for its utility clients. A key IP includes its Polycloud (hybrid cloud orchestration) platform, to enable a utility to develop a new digital services platform, and quickly launch new products and services. Here, we expect Infosys will increase its ecosystem partnerships, in particular with digital start-ups, to enable legacy utility companies to compete more effectively with new digital entrants.

The framework further structures Infosys' capability around cloud and digital, and in providing the framework and tools to enable the transition to a smart utility in the future. We expect Infosys will also expand its use cases across AI, in particular for cognitive chatbots, including NLP and ML, and more complex use cases in support of NIA-based chatbots to further enhance UX/CX.

Additionally, Infosys has begun setting up innovation hubs at various client locations with the objective to co-locate, co-innovate and co-create solutions. Six hubs have been set up in the U.S. and two in the U.K. and continental Europe.

We expect to see further messaging around *Navigate the Future of Energy*, with Infosys gaining further traction with this approach to utilities.

About NelsonHall

NelsonHall is a leading global analyst firm dedicated to helping organizations understand the ‘art of the possible’ in digital operations transformation. With onshore analysts based in the U.S., U.K., and Continental Europe, NelsonHall provides buy-side organizations with detailed, critical information on markets and vendors that helps them make fast and highly-informed sourcing decisions. And for vendors, NelsonHall provides deep knowledge of market dynamics and user requirements to help them hone their go-to-market strategies. NelsonHall’s research is primary and rigorous, and widely respected for the quality, depth and insight of its analysis.

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