THE INTELLIGENT ENTERPRISE IN THE EXPERIENCE ECONOMY FOR THE UTILITIES INDUSTRY

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Inspiring and shaping a digital world that reinvents power generation, transmission, distribution, and retail
“Sweeping societal change is putting massive pressure on energy utilities to transform. It is both our biggest challenge and our greatest opportunity – a chance to develop new capabilities, to pioneer new technology, and to create a new value proposition. Together, we can have a lasting, positive impact on the world.”

Miguel Gaspar Silva
Global Vice President
Utilities IBU
SAP SE

WELCOME

Dear Customers,

The energy utilities sector has immense responsibility to provide a safe and secure infrastructure for the world’s well-being. Looking forward, the stakes get even higher.

How the energy sector evolves over the next decade will have profound effects for generations.

With the global mandate to reduce carbon and the rise of renewable energy sources, electricity providers must cope with the new challenges of balancing supply and demand. They must accommodate customers’ energy preferences; embrace cultural, technical, and environmental changes that are disrupting energy utilities; and be mindful of regulatory oversight.

The transition is well under way. In 2016, investments in electricity supply and clean energies surpassed investments in oil and gas – a gap that will continue to expand in the coming years. Global investment in electricity power generation, networks, and storage has surpassed US$700 billion, and between 2013 and 2018, more than 300,000 home batteries were installed around the world. Market demand continues to drive massive investment in alternative forms of energy, storage, and delivery. But there is still much to be done.

A world of rapid technological change – distributed energy resources, micro-generation, batteries, microgrids, and electrical mobility – and social media adoption is forcing providers of electricity to rethink how they work, the services they provide, and their business models. The most successful companies will flexibly manage demand, enabled by insights garnered from smart technologies. Successful companies will think like data companies – able to process vast amounts of data to reengineer their own processes and adopt increasingly more efficient service delivery.

To get there, electric utilities must respond to rapidly changing conditions yet still comply with all standards within a regulatory framework. Four critical capabilities for success are:

▪ Distributed energy resource operations
▪ Smart and efficient distribution
▪ Demand and supply balancing services
▪ Omnichannel retail to digitalized consumers

By 2025, the cost of combining solar power, wind power, and energy storage will be competitive with traditional power-generation technologies in most of the world.

The business models for energy retailers will shift from pure selling of energy to providing comprehensive services for digital energy “prosumers.”

Companies that embrace intelligent technologies and the Intelligent Enterprise paradigm are the ones most responsive to the opportunities of energy transition and new customer demands. Key dimensions of the Intelligent Enterprise include:

▪ Assisted and automated business process execution
▪ Actionable business insights
▪ Innovative business models and practices
▪ Collaborative networks
▪ Experience management

This paper takes a deep dive into the trends shaping energy utilities over the next five years and the path to innovation. In it, we propose a set of priorities that will drive transformation and the tools that will make it possible.

Sincerely yours,

Miguel Gaspar Silva
Global Vice President
Utilities IBU
SAP SE
# TABLE OF CONTENTS

3  Welcome  
5  Our Place in the New World  
6  Paving the Way for Business Process Innovation  
7  Four Priorities for Success  
8  Distributed Energy Resource Operations  
10  Smart and Efficient Distribution  
12  Demand and Supply Balancing Services  
14  Omnichannel Retail to Digitalized Consumers  
16  Energy Gets Intelligent  
17  Key Technologies  
18  Getting There: A Phased Approach  
19  SAP’s Framework for the Intelligent Enterprise in the Experience Economy  
20  Top Experience Drivers Along the Utilities Value Chain  
21  How to Plan Your Path to the Intelligent Enterprise  
22  Comprehensive SAP Ecosystem Orchestrating the Partner Ecosystem to Deliver Value Faster  
23  SAP Is Committed to Innovation  
24  Resources

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The utilities industry sits at the center of a massive global shift toward sustainability. The transition has profound impact on society and is driving the industry’s own transformation.

The movement toward sustainable energy in combination with integrated mobility and livable cities requires utilities companies to develop intelligent solutions for energy generation and storage, water, and waste management while also striving for energy efficiency in their own operations.

The utilities industry is being reshaped by four trends:

- **Renewable energy** – The global objective of carbon reduction and governmental regulation is fostering the rise of renewable energy sources, leading to intermittent energy generation and challenges to balancing energy supply and demand.

- **Energy prosumers** – Customers are becoming both producers and consumers of energy – prosumers – and they expect products and services that fit their exact needs at competitive prices. The ability to capture customer requirements and integrate end-to-end energy products and services will be a critical differentiator.

- **Smart technology** – The rising number of smart meters, sensors, and other devices poses challenges that span from organizational setup to having the right talent to operate in a cybersecure environment.

- **Changes in value proposal** – Utilities companies must redefine their core strengths and learn to create value in industry value networks in the face of rising competition.

In short, today’s energy grid is not set up to accommodate a world where consumers and businesses are able to generate energy on their own, or where that energy can come from anywhere and can fluctuate wildly from day to day. We believe that forward-thinking energy utilities view these challenges as a chance to rethink the very nature of their businesses and to move quickly up the learning curve as early adopters.

**Vestas Wind Systems** is planning to use a digital solution to deliver faster, more efficient, and more cost-effective wind turbine installations, providing clean energy to the world more quickly. It wants to provide workers in the field, construction managers, technicians, subcontractors, customers, and suppliers with accurate, real-time information 24x7 wherever they are, connected or offline. Vestas is using data for comprehensive project analysis and continuing improvement.

**Tokyo Electric Power Company (TEPCO)**, one of the world’s largest utilities companies, expects to deploy 29 million residential smart meters within its service territory by 2020.¹

To continue providing world-class service to its customers, **Sydney Water**, together with SAP, updated its billing processes with a modern and flexible billing platform to optimize its workflows and provide its customers with bills that are easy to understand.²

**CenterPoint Energy** implements an SAP HANA–based predictive maintenance solution that supports the strategy of integrating information technology (IT) with operational technology (OT).
We believe that by 2025, the cost of combining solar power, wind power, and energy storage will be competitive with traditional power-generation technologies in most of the geographies of the world. Simultaneously, many utilities will have concluded the digital transformation projects that will fundamentally change how they operate.

Business models will move from pure selling of energy to providing comprehensive services for digital energy prosumers – businesses and consumers who generate their own energy and feed it back to the grid. Grid operation will be automated with smart grids and local energy balancing. New providers for services such as virtual power plants or local energy exchange will be established.

Energy utilities will move from being an energy provider to being a facilitator and enabler of multiple market models. The rollout of smart meters will give energy consumers real-time access to energy consumption and microgeneration – a shift that will challenge utilities to ensure grid stability in the face of peaks driven by the demands of e-mobility and microgeneration.

New services will span from simple after-sales services and value-add services to complex bundles or equipment-as-a-service models. They also will include new business models based on the monetization of data.

For service providers, experience management will be key to moving forward. By combining operational performance data (O-data) from lines of business with experience data (X-data) from customers, employees, subcontractors, and suppliers, utilities providers will be able to understand what is happening and act on these insights to improve organizational performance and deliver better outcomes.

In a time of great change, the winners will be those companies that develop new capabilities based on insights from their data. They will be able to manage demand as well as streamline their own processes and adopt increasingly more efficient service delivery.

20% Of digitally determined utilities’ revenues will come from new products and services by 2022

65% Of power, gas, and water companies will have invested in edge analytics and computing by 2020, as they strive for operational excellence and the best optimization of their assets

65% Of electricity companies will have invested in digital technologies and platforms to support flexibility services by 2023, thereby activating a load potential of up to 35% of installed capacity

75% Of critical utilities assets will be digitally connected to predict and prevent equipment failure and prescribe best maintenance options to optimize and extend asset lifecycle by 2023

73% Of utilities consumers are willing to pay for a better experience
FOUR PRIORITIES FOR SUCCESS

We have identified four strategic priorities necessary for energy utilities to transform their business.

- Distributed energy resource operations
- Smart and efficient distribution
- Demand and supply balancing services
- Omnichannel retail to digitalized consumers
Today, smart solutions allow consumers of all sizes to interact with the energy system by making their demand more flexible. In the electricity system of the future, businesses and consumers will be able to produce their own energy through renewable sources. They will be both consumers and producers, drastically changing their relationship with energy utilities. Sensors and meters attached to power-consumption or power-generation devices will allow transparency and aid in managing capacity automatically.

During the transition, utilities should focus on gaining a 360-degree understanding of both business-to-consumer (B2C) and business-to-business (B2B) customers (see Figure 1). Household customers will be won with detailed analysis of technical, consumption, and experience data to determine their needs while securing customer profitability. Commercial and industrial customers with more complex asset structures and higher energy demands must avoid costly energy peaks while ensuring permanent availability of their infrastructures. Energy streams will be optimized by detecting flexibilities that can either be intelligently redispatched or traded, when economically feasible.

**Figure 1: The Next Iteration of Utilities Customers**

**Private prosumer**

- Energy storage
- Company and public charging
- Data analysis
- Solar panels, wall boxes
- Local energy management
- Energy communities, virtual power plants, trading

**Commercial and industrial prosumer**

- Plants
- E-fleets
- Data center
- Energy communities
- Buildings
- Production lanes

Romania’s Environmental Funds Administration plans to run a program in March and April to offer up to €115 million (US$128 million) to prosumers to encourage the adoption of solar energy.

**Petrol** provides energy products and services. Currently, 292 buildings are being contractually provided with energy savings and 15 systems provided with efficient lighting. More than 80 locations with charging stations are currently being managed.
DISTRIBUTED ENERGY RESOURCE OPERATIONS

Distributed Energy Turns Utilities into Energy Service Companies

Energy utilities will turn into energy service companies that partner with customers to constantly optimize energy streams, decrease costs, and offer new products and services to prosumers.

TRADITIONAL SCENARIO

Customer closes contract for point of delivery.

Utility delivers energy.

Utility measures consumption.

Utility bills the customer.

Utility responds to customer requests.

NEW-WORLD SCENARIO

Utility analyzes technical, consumption, and experience data.

Utility proactively proposes and promotes the next best product or service.

Customer closes contract for commodity and noncommodity services.

Utility orchestrates different service provider to onboard the service.

Utility up-sells to the prosumer.

Utility monitors and analyzes the prosumer.

Utility bills the prosumer.

Utility activates the service.

POTENTIAL BENEFITS

10%–20% Increase in revenue from new products

10%–20% Increase in customer satisfaction

Source: SAP Performance Benchmarking
The existing distribution grids were not built to support decentralized energy generation, distributed energy storage systems, or virtual power plants. In 2025, we expect that distribution grids will be equipped with sensors similar to today’s transportation grids. Utilities will use smarter asset management with fully digital allocation of spare parts, work, and logistics services (see Figure 2). Smart asset operation and maintenance will ensure cost-efficient, compliant, and safe power distribution.

Intelligent software will connect the distribution grid and bring together information from operational and business systems. Together, the granular data from sensors, the maintenance history of the assets, the consumption data provided by smart meters, and the experience data from customers, employees, and suppliers will provide real-time insights into the health of the grid.

These insights will allow smarter maintenance and investment decisions, lower maintenance costs, higher workforce productivity and safety, and a risk-based maintenance strategy through:

- Just-in-time triggering of maintenance orders
- Maintenance schedules based on real-time asset health status and failure prediction
- Accommodation of the grids to a bidirectional flow of electricity
- Collaboration in business networks with manufacturers and suppliers throughout the asset lifecycle

“With the help of SAP, we are transforming to a ‘live’ digital enterprise to better serve customers.”
– Gary Hayes, CIO, CenterPoint Energy

CenterPoint Energy implemented the SAP® Predictive Maintenance and Service solution to enable in-depth knowledge of the health of grid assets and support for maintenance and investment decisions.
SMART AND EFFICIENT DISTRIBUTION

Anticipate Grid Maintenance

The foundation for smart distribution is transparency of the current and even future status of the grid assets. Based on this transparency, maintenance becomes more efficient and outages will be avoided.

TRADITIONAL SCENARIO

Work order process is triggered by static preventive maintenance plans or failure notes. Maintenance work order is manually scheduled and then printed. Asset status is determined on-site; required spare parts or resources might be missing. Second visit to the asset is required to perform maintenance work. Maintenance work is confirmed on paper, and the asset management system is updated the next day.

NEW-WORLD SCENARIO

Work order process is triggered by asset health predictions based on granular sensor data or by real-time condition monitoring. Precise knowledge of the asset status allows automatic allocation of the right resources and spare parts and optimizes the route. Maintenance work is confirmed, and asset status is updated in real time via the mobile asset management application.

POTENTIAL BENEFITS

44% Reduction in unplanned downtime

Source: Based on results from early adopters of SAP S/4HANA®

8%–10% Reduction of maintenance costs

Source: Trenitalia

Four Priorities for Success

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DEMAND AND SUPPLY BALANCING SERVICES

The transformation to renewable energy sources requires the decentralization of the infrastructure. In 2025, we expect decentralized power generation will be the primary source for overall energy production. Centralized power generation – where the utility has full control over all generation capacities – is moving toward energy production based on local entities such as solar panels and wind turbines, for example. Consequently, utilities will need real-time access to the data these entities generate to manage overall grid balance and stability (see Figure 3).

However, decentralized production output can be unstable due to the weather. On the one hand, it makes sense to create renewable energy near the point of consumption. On the other hand, renewable energy is most effectively created where population density – and thus local consumption – is low.

In addition, the intermittent nature of renewable energy sources forces energy to be conserved during off-peak periods using environmentally friendly technologies. For the same reason, it makes sense to provide consumers with incentives to save energy during peak periods.

We expect a long transitional period during which traditional energy sources must remain integrated into the supply system. Over that period, utilities will equip residential customers with smart meter technologies. In parallel, decentralized power generation will increase with the continuous installation of solar panels, wind parks, and so on. Bidirectional connectivity to these smart meters and entities for decentralized power generation will be key to optimizing the grid.

Once such a digital energy network is in place, real-time energy settlement calculations can be executed flexibly. Moreover, customers will participate in load-shifting programs for their overall energy reduction, and all market participants will guarantee grid stability.

55% Of utilities will derive 20% of gross margin on average from combined distributed generation and storage packages for prosumers by 2021.11

Figure 3: Digital Energy Network
DEMAND AND SUPPLY BALANCING SERVICES

Data Is Key to Balancing Demand and Supply

The success of the demand and supply balancing services is correlated with the availability, reliability, and fine granularity of data generated in the digital energy network.

TRADITIONAL SCENARIO

- Upload of meter reading and profile data with high manual effort
- Quality check and collection of relevant information for energy settlement
- Planning and execution of energy settlement run with long runtimes due to high data volume
- Visualization and evaluation of final results through enhanced reports and manual interaction
- Sending of relevant information to other market participants

NEW-WORLD SCENARIO

- Import of relevant information through an industry-wide standard
- ML algorithms to support and enable the high-quality standard of imported metered data
- Real-time execution and provision of scheduled energy settlement processes
- Visualization and evaluation of final results through instant results and standard operational reports
- Provisioning and distribution of energy settlement results through a cloud-based environment

POTENTIAL BENEFITS

- **Efficient** process handling through ML algorithms
- **Increase** in on-time deliveries
- **Reduction** in total manufacturing costs

Source: SAP Performance Benchmarking
OMNICHANNEL RETAIL TO DIGITALIZED CONSUMERS

In 2025, utilities will have moved from the traditional one-direction customer relationship to a cooperative prosumer relationship, where consumers both generate and consume electricity. As a result, utilities will need to store and manage electricity coming from outside their domain and act as an energy marketplace rather than as a simple provider.

To get there, energy utilities must change their business model to offset shrinking margins in the commodity business. To do so, they should intelligently introduce new business models, products, and services within a distributed energy resource marketplace as well as increase customer engagement with new experiences. They can shift the paradigm from ratepayer to customer by enhancing the digital experience with personalized interactions and insights.

Energy and water efficiency, distributed energy resources such as solar or wind, storage, and smart home devices all require increased automation and artificial intelligence. To serve the digital prosumer, energy utilities must adopt an intelligent front and back office, connected with meters through the Internet of Things. See Figure 4.

Figure 4: The Digital Prosumer Journey

**Four Priorities for Success**

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- Ability to be a trusted advisor and support customer “events” such as moving to a new home or building a house
- Value of the customer, handling switch bonus, and attracting loyal customers
- Personalized offers, pricing, and education based on “experience data,” individual consumption, and generation patterns, installed equipment, and devices
- Purchasing products and services online

- Transparency in order fulfillment and installation
- Timely delivery and installation of equipment and services
- On-time energizing of equipment and meters
- Activation of contracts and devices
- Captured feedback from customers on the installation

- Transparency and accuracy in billing of commodity and noncommodity products and services
- One utility invoice as a way to pay for everything
- Constant feedback collection during use to adjust interactions with the customer
- Proactive personalized notification and feedback regarding offers, bills, use, generation, storage, trends, outages, and emergencies in a timely fashion
- Self-service and intelligent bots as a way to act conveniently anytime

39% Of customers are interested in self-generation technologies such as solar or small wind, but only 28% of them would buy from their energy supplier.12

20% Of digitally determined utilities’ revenues will come from new products and services by 2022.13

Improving Revenue and Time to Market

First Energy Corp., based in Akron, Ohio, has fulfilled its needs to grow its consumer product business from small to large, increase revenue, expand its online presence, and empower its marketing and operational support group. After only five months, the company is selling new products to current and new customers.

Four Priorities for Success

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OMNICHANNEL RETAIL TO DIGITALIZED CONSUMERS
Putting the Prosumer in the Center

The emergence of prosumers and increasing environmental and energy awareness broadens the scope of customer interactions. To win the prosumer, utilities must have insight into the customer profile.

Multiservice Relationship with the Digital Prosumer

**TRADITIONAL**
- Customer closes contract for point of delivery.
- Utility delivers energy.
- Utility measures consumption.
- Utility bills customer.
- Utility responds to customer requests.

**PROSUMER CENTRIC**
- Trades energy through a distributed ledger (blockchain).
- Consumes, generates, and stores energy.
- Desires or owns a smart home to increase comfort and reduce risks.
- Requires automation to aid decision-making and optimize behavior.
- Experiences and shares brand, products, and services of a utility.
- Relies on e-mobility for sustainable transportation needs.

**POTENTIAL BENEFITS**
- Increase revenue from new business models
- Reduce customer churn
- Increase customer satisfaction

Source: SAP Performance Benchmarking
To execute on these four strategic priorities, companies need to change the way they operate. By shifting routine tasks from humans to business systems enabled by machine learning, and by redesigning processes, they will free up the capacity needed to define and pursue innovative and transformative business models (see Figure 5).
Advanced Analytics
Empowered users can get real-time visibility into their changing business performance, simulate the impact of business decisions, mitigate risk, and achieve better customer outcomes with the help of intelligent insights.

The Internet of Things
Data-driven insights of customer preferences can drive better operations, lower maintenance costs, and reduce risk of failure. Intelligent assets can be jointly managed as digital twins by manufacturers, utilities, and partners, thereby improving shared remote condition monitoring of assets, collaborative access to real-time data, and vendor-optimized predictive maintenance.

Artificial Intelligence and Machine Learning
Utilities can use artificial intelligence and machine learning capabilities to eliminate repetitive manual tasks such as service ticket management or apply machine learning to historical data to streamline the quotation process for configurable products.

Robotic Process Automation
Robotic process automation streamlines repetitive, rule-based processes and tasks in an enterprise and reduces cost through the use of software robots by replicating specific tasks or keystrokes.

Conversational AI and Digital Assistants
Voice interfaces will be the go-to technology for the next generation of applications, allowing for greater simplicity, mobility, and efficiency while increasing worker productivity and reducing the need for training.

Virtual and Augmented Reality
Already in use to help workers with difficult or infrequent maintenance activities, virtual and augmented reality will become even more critical to attract and retain new talent.

Blockchain
Blockchain is revolutionizing the movement and storage of value by creating a chain of unalterable transactional data. The blockchain model of trust, through distributed digital consensus, could reshape supply chains and commerce, including digitalizing the trade of energy and automating cross-company collaboration in microgrids.

Data Platform to Manage Experience
Leading utilities are connecting operational data from their business systems (what is happening) with the experience data coming from customers and employees (why it is happening) to get 360-degree views and actionable insights and to deliver better experiences.
Companies will become intelligent enterprises on three distinct tracks. They will:

- **Optimize** what they already do by implementing a stable and scalable digital core to make processes more transparent and integrated
- **Extend** their current processes by connecting them to the real world using IoT technologies
- **Transform** their business using a constant stream of data enabling new service-driven business models (see Figure 6)

**Figure 6: Strategic Priorities Across the Maturity Framework**

- **Optimize**
  - Management of the increase of small-sized energy generation and storage
  - Digital, end-to-end process from the sensor in the grid of the mobile device of the field technician
  - Continuous rollout of smart meter technologies
  - New business models including subscription and pay-per-use offerings

- **Extend**
  - Inclusion of analytics and predictive capabilities in B2C operations
  - Maintenance strategy and investment plans based on asset health predictions
  - Ongoing investment in local renewable energy production (for example, solar)
  - Big Data extensions of the B2C sales process

- **Transform**
  - Support for personal mobility needs making use of customer-produced energy
  - Digital collaboration with other stakeholders during the asset lifecycle
  - Real-time energy settlement calculations
  - Support for market and peer-to-peer trading of energy flexibilities

- **Experience**
  - Customer centricity (personalized offerings)
  - Self-healing networks
  - Decentralized power generation
  - Service provider for the prosumer
SAP’S FRAMEWORK FOR THE INTELLIGENT ENTERPRISE IN THE EXPERIENCE ECONOMY

Most organizations understand what is happening in their business, but they may not always know why.

They know what’s happening because they have systems that capture operational data – about their customer transactions, supply chain, manufacturing, spending, and the activities of their workforce. They can see that data through reports and dashboards. They can see trends and predict what will happen next.

But to influence what happens next, companies need data about the interactions that people have with their products and their business. Experience data captures beliefs, emotions, opinions, and perceptions – the “why” something is happening. And when companies know why something is happening, they can make an informed decision about the best way to respond.

To win in this experience economy, intelligent enterprises connect experiences with operations. They use both experience and operational data to guide their business decisions. Intelligent enterprises collect insights from customers, employees, products, and brands at every touch point. They use powerful technologies to automate and integrate their data, processes, and applications, enabling them to sense risks, trends, and opportunities. And they act on this intelligence across every part of their business (see Figure 7).

Only SAP has the strategy, expertise, and solutions to deliver on this vision, enabling intelligent enterprises to turn insight into action.

Figure 7: SAP® Intelligent Enterprise Framework
TOP EXPERIENCE DRIVERS
ALONG THE UTILITIES VALUE CHAIN
Linking Experience Management with Utility Processes

Total Utility Experience Management

1 Engaged internal and external workforce
   Increase workforce and subcontractor engagement with real-time insights into the operational work environment.

2 Efficient service and asset operations
   Improve operational efficiency for service and asset management with real-time feedback on processes from technicians and customers.

3 Enhanced quality for metered data
   Improve process efficiency through enhanced analysis of implausible meter readings or time-series data combined with feedback from meter clerks.

4 Optimized status check for meters
   Enhance the possibility to check the actual status of the meter by combining technical details and real-time customer information.

5 Exceptional service experience
   Improve customer service at every customer touch point through customer feedback.

6 Optimized customer self-service experience
   Increase the customer’s ability to self-serve with insights into interactions on the self-service Web site.

7 Development of new services and products
   Deliver better outcomes by engaging your customers in the development process of new services and products.

8 Increased customer satisfaction at every touch point
   Use customer insights to develop the bill into an exceptional information letter through ongoing customer feedback.

Enterprise asset management  Meter, energy, and water data management  Customer experience and service excellence  Bill to cash
In the digital economy, intelligent technologies and integrated business processes are now driving digital transformation.

To do this effectively requires an end-to-end plan for becoming an intelligent enterprise. This includes creating an intelligent enterprise road map and implementation plan with proven best practices and deployment options that optimize for continuous innovation with a focus on intelligent outcomes.

The End-to-End Journey to Becoming an Intelligent Enterprise

Plan
- Well to manage expectations
- Simplify and innovate
  - Reimagined business models, business processes, and work
  - SAP Intelligent Enterprise Framework as a guide for digital transformation
  - Value-based innovation road maps
- Standardize and innovate
  - Model-company approach to accelerate adoption with model industry solutions
  - Design thinking and rapid, tangible prototypes
  - Coengineered industry innovations delivered with agility
- Run
  - Run all deployment models
  - Run with one global support
    - One global, consistent experience
    - End-to-end support – on premise, in the cloud, or with a hybrid approach
- Optimize
  - Optimize for continuous innovation
  - Optimize to realize value
    - Continuously captured and realized benefits of digital transformation

To move forward with speed and agility, it helps to focus on live digital data and combine solution know-how and industry-specific process expertise with data analytics so that the right digital reference architecture is defined and delivered. In that context, a model-company approach is aimed at simplifying and increasing the speed of the digital transformation journey. Model companies represent the ideal form of standardization for a specific line of business or industry. They are built on preconfigured SAP solutions based on best practices supported by SAP, along with the business content that encompasses our experience and expertise relevant for the industry. They provide a comprehensive baseline and come with the accelerators to jump-start digital transformation projects.
COMPREHENSIVE SAP ECOSYSTEM
ORCHESTRATING THE PARTNER ECOSYSTEM TO DELIVER VALUE FASTER

Our comprehensive ecosystem for the utilities industry offers:

- The Intelligent Enterprise as the overarching strategy to meet future requirements, providing:
  - SAP S/4HANA co-development programs for customers and partners
  - Industry co-innovation programs for industry-specific use cases
  - Delivery of enterprise-to-enterprise industry clouds
  - Thought leadership, evangelism, and enablement by industry through events, councils, and regular customer exchange

- Integration into a wide range of business services (OEMs, suppliers, key vendors, and more)
- Open architecture, with a choice of hardware and software specifically designed to meet requirements
- Complementary and innovative third-party solutions to provide leading-edge and state-of-the-art technology

Our partner ecosystem includes, among others:

- Accenture
- Microsoft Azure
- Capgemini
- Deloitte
- EY
- IBM
- PwC
- Celonis
- Sodales Solutions
- OpenText
- Tech Mahindra
- Atos
- OSIsoft
- Rizing
- Utopia
- CRITIGEN
- Dell
- Itron
- Intel
- HCL
- Siemens
- ESRI
- PROLOGA
- AlertEnterprise/
- Innovative Network Services
- Netinium
- METEOPROTECT
- Natuvion

Getting There
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SAP IS COMMITTED TO INNOVATION

10-Year Innovation Vision
SAP delivers fully intelligent business solutions and networks that span company boundaries and promote purpose-driven businesses. These solutions will be the most empathic symbiosis between machine intelligence and human ingenuity.

- Self-running enterprise systems
- Self-organizing business ecosystems
- New markets and business models

Comprehensive Industry Coverage
SAP enables comprehensive coverage of the complete utilities value chain across the enterprise. With its clear industry road map, SAP is the partner of choice for the utilities industry.

- More than 4,100 utilities in 97 countries are innovating with SAP solutions.
- 93% of utility companies in the Forbes Global 2000 are SAP customers.
- All lines of business are supported on a single platform.

Proven Services Offering
By bringing together world-class innovators, industry and emerging technology expertise, proven use cases, and design thinking methods, we help utilities develop innovations that deliver impact at scale.

- Proven methodologies to drive innovation, from reimagining customer experiences to enhancing operations
- Innovation that is fueled through a managed innovation ecosystem from SAP
- Ability to build your own innovation capability and culture

SAP supports utilities in becoming intelligent enterprises – providing integrated business applications that use intelligent technologies and can be extended on SAP Cloud Platform to deliver breakthrough business value.

Learn more
- SAP for Utilities
- SAP Services and Support
Outlined below is external research that was used as supporting material for this paper.

17. Bruce Temkin, “What Happens After a Good or Bad Experience,” Qualtrics XM Institute, June 2018.

Note: All sources cited as “SAP” or “SAP Performance Benchmarking” are based on our research with customers through our benchmarking program and other direct interactions with customers.