nagarro

Digitally reinforced business resilience for power utilities

How to prepare for the next disruption?

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Introduction

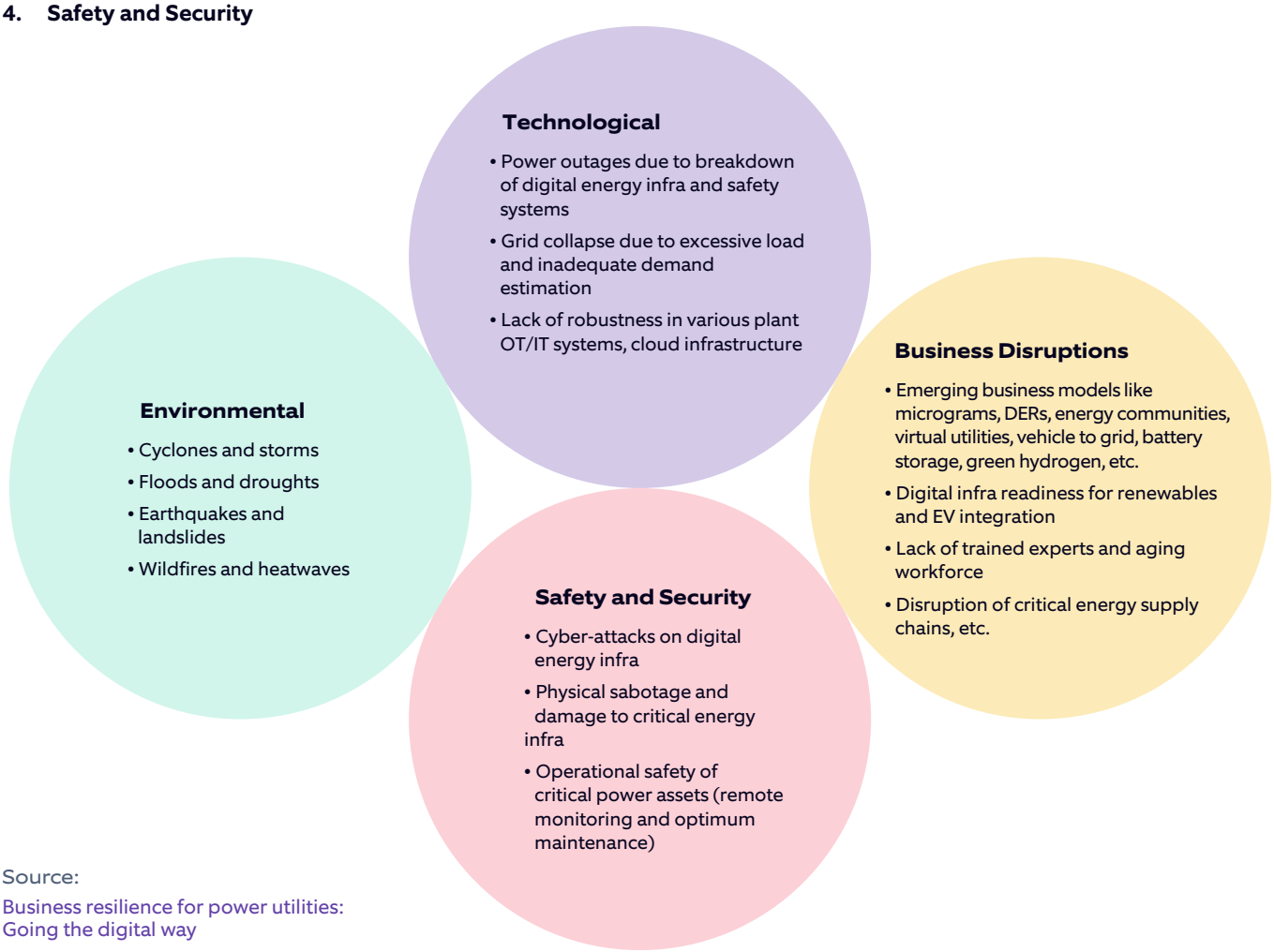
Since the establishment of the first electric utility in the late 19th century, little has changed in how power is generated, transmitted, or consumed. However, the last two decades have witnessed fundamental disruptions in the power and utility industry. The worth-mentioning ones include the massive push towards clean and sustainable energy, change in consumption patterns, demand for value-added services, and new-age competition. These disruptions are quietly reshaping and evolving the industry, driving it to a new future. While some organizations are quick to respond and innovate to make the new environment work in their favor, many others fail to change and ultimately fall behind. Why? Because, they don't adopt resilience.

Why resilience matters?

With a lot of turmoil around—a raging global pandemic, acute need for energy transition, dwindling supply chains, soaring energy prices, increasing disruptions from extreme weather events, cyberattacks, evolving business models, and increasing competition—business resilience has never been more critical to the utilities. These various disruption drivers for business resilience vary and broadly fit into four major buckets:

1. **Environmental**
2. **Technological**
3. **Business Disruptions**
4. **Safety and Security**

Business resilience allows utilities to quickly adapt to these disruptions, tide over economic slowdowns or changing business landscape, and ensure business continuity and operations while protecting their assets, people, and brand equity to stay relevant in the face of such inordinate uncertainties. Utilities can become more resilient by following a framework wherein they identify the megatrends and risks early on and prepare themselves to respond swiftly rather than reacting to disruptions as and when they occur.



Source:
Business resilience for power utilities: Going the digital way

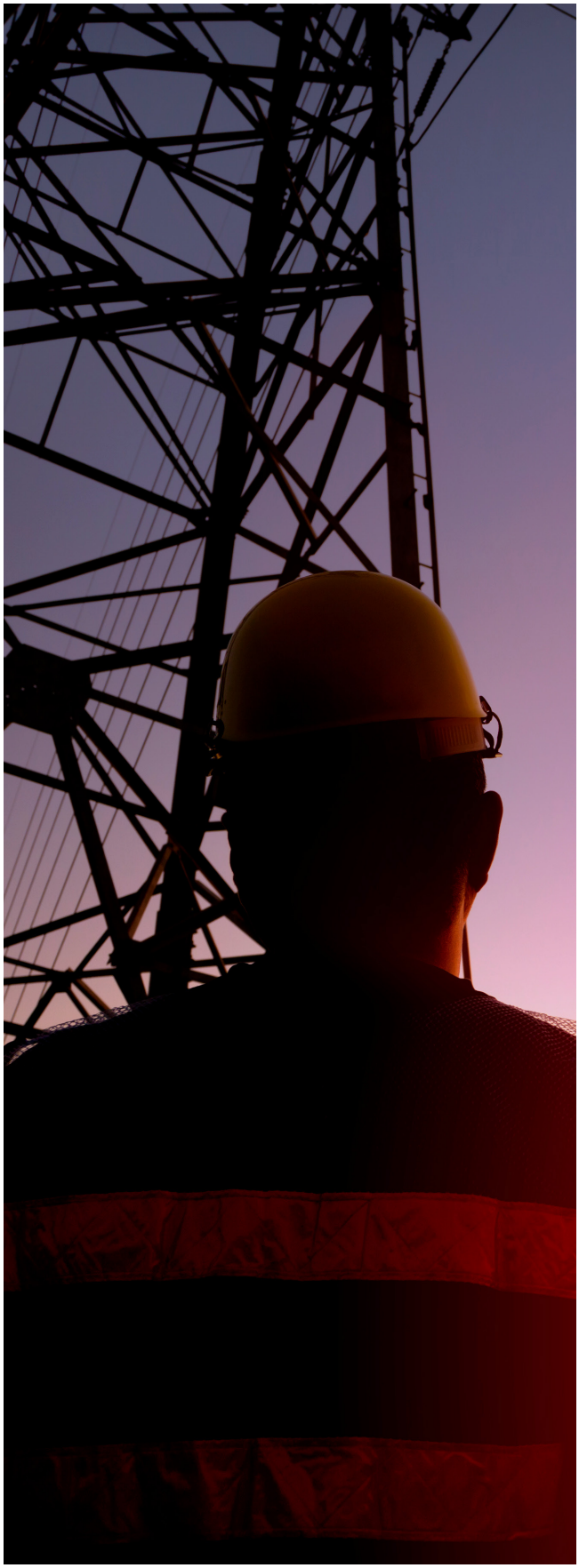
What is a resilient utility?

A utility is resilient when it can outperform its industry peers on one or more of the following three dimensions when encountering a shock or disruption:

1. Lower the immediate impact
2. Adapt faster
3. Recover to a greater extent

Resilient utilities have enhanced capacity to absorb the initial shock to minimize the decline, adapt faster to the changed conditions, and advance the recovery until they have achieved a position of advantage or leadership in the power utility industry. Therefore, these utilities can better manage their key business objectives like operational excellence, grid resilience, safety and compliance, and higher customer satisfaction and retention in the face of uncertainties and changing business conditions.

Source:
Boston Consulting Group – Becoming an All-Weather Company



5 things resilient utilities do well

Based on our experience with clients, we have concluded that these are some of the behaviors and priorities aptly demonstrated by several of our utility customers that have successfully embarked on a journey of digitally reinforced resilience.

1. Embrace long term shifts

Anticipating and embracing long-term industry shifts and trends contribute significantly to business resilience.

A leading utility contractor in Europe decided to migrate its legacy on-premise accounting software to a cloud-based remote desktop solution, enabling them to accommodate remote working and scale for long-term growth while ensuring business continuity.

2. Deeply care about agility & responsiveness

These companies and their offerings are purposely built to respond fast to change.

TESVOLT, a Germany-based startup that oers battery storage via lithium-ion-based storage systems, decided to quickly switch from classroom-based training to a digital academy and remote learning for times when travel is restricted.

3. Find ways to accelerate innovation

Resilient utilities experiment with new ideas and introduce breakthrough products and services to unlock new efficiencies.

Burgenland Energie, a leading Austrian utility, empowered their field inspectors with innovative wearable technology to make the inspection process ecient, replacing a tedious paper-based manual process with a simple and ecient digital process.

4. Invest in readiness for uncertainty

These utilities invest smartly to timely identify and mitigate unplanned downtime.

One of the largest power equipment and turbine manufacturing companies in Europe developed a digital platform that detects anomalies in plant data that optimizes their performance to prevent unscheduled downtimes and unnecessary costs. The platform helps power utilities to be ready for uncertainty and reduce downtime.

5. Leverage data & AI effectively

Data and AI-powered systems enable utilities to make smarter and better decisions.

A data-driven intelligent decision support system helps Avista, a vertically integrated utility in North America, to forecast the power demand and provide insights to optimize electricity production or procurement.

We recommend a four-step framework to help you assess the current state of business resilience and prescribe actions to improve upon the same.

How to make utilities more resilient?

Step 1: Assess the current state

From our experience of partnering with leading organizations across the energy and utility industry, we have identified three recurring stages of business resilience: Adapt, Lead and Sustain. Start by critically evaluating your business functions for resilience to assess your current state and determine the next steps accordingly. To help you with the assessment, we have designed a questionnaire that enables you your business functions against four important areas: **Business innovation, Operational innovation, Customer satisfaction, and Safety and security.** The assessment consists of carefully selected questions designed to provide category resilience scores in each area and an overall business resilience score indicative of your current state.

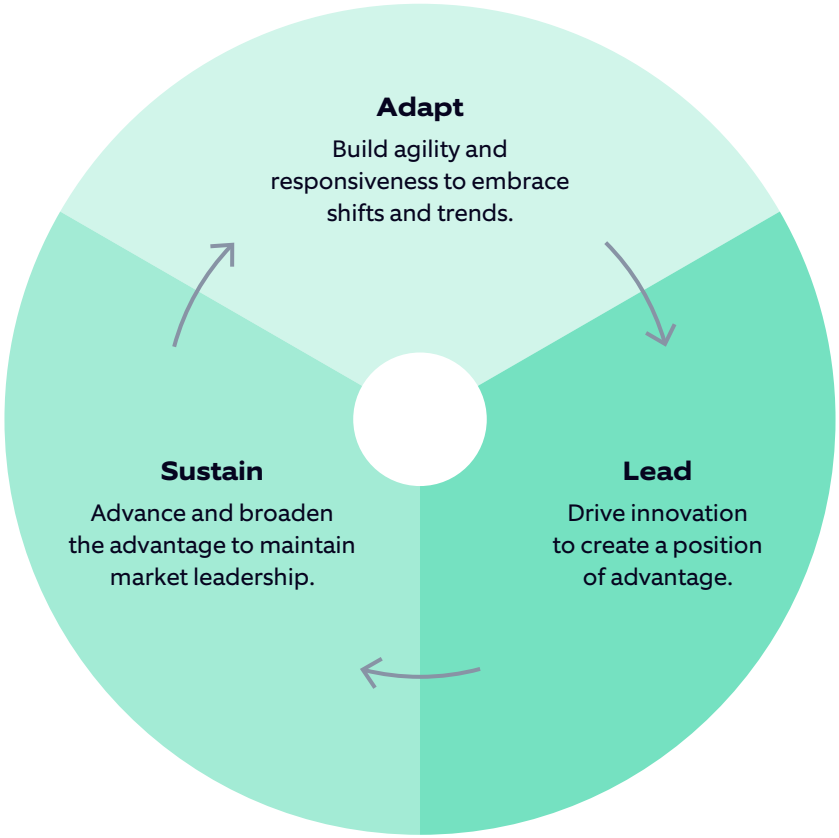


Figure 1. Framework for Digitally Reinforced Business Resilience

Business Resilience	Operational Innovation	Customer Satisfaction
How future ready is your organization for the new age business models and offerings such as internet of energy, EaaS, virtual power plants, community microgrids/DERs, hydrogen economy, etc.? **3**	Rate your investment in digital technologies such as power generation and demand forecasting, smart grid analytics, etc. **8**	How do you rate your readiness to provide integrated omnichannel customer service? **6**
On a scale of 1-5, how well does your organization adapt to and scale for new technologies and digital solutions on an organizational level? **5**	Rate your investment in digital technologies such as power generation and demand forecasting, smart grid analytics, etc. **9**	Rate the maturity of your digital outage management solutions and analytics. **7**

Figure 2. Snippet of the self-assessment questionnaire

Download the **self-assessment questionnaire here** and evaluate.

The assessment outcome will be the category-wise business resilience scores across each of the four focus areas **(Business innovation, Operational innovation, Customer satisfaction, and Safety and security)** and a cumulative business resilience score for your organization on a scale of 0-100. Further, the resilience scores help you analyze your current state of business resilience in each of these four areas.

The scores here do not indicate a higher or lower business resilience capacity for your organization. Rather, they provide a snapshot of your current state of resilience and what you should be planning for next to be more resilient than today and keep up with the ever-changing market dynamics.

This makes it an iterative process of continuous assessment to look out for new industry trends and emerging threats and gaps, helping you finally improve on the same.

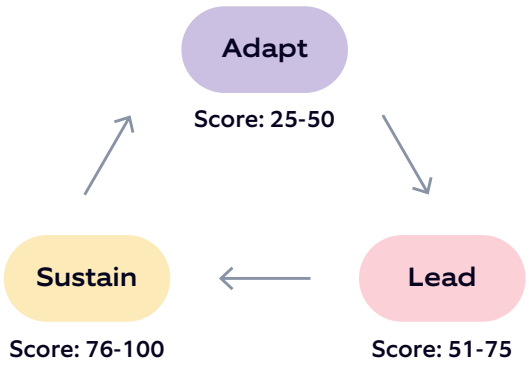


Fig 3: Current state of business resilience and respective scoring

Step 2: Explore solutions to improve upon your existing business resilience

Explore possible solutions and use cases within your organization to build resilience across the four impact areas—leverage multiple techniques and tools like brainstorming sessions or ideation workshops with relevant stakeholders. The ideation exercise should give you a list of suggested use-cases and improvement programs across the four focus areas based on your current and target states, which would look something like this:

	Business Innovation	Operational Innovation	Customer Satisfaction	Safety and Security
Adapt	• Sustainability and energy management platform • Energy rating and benchmarking solutions	• Decision support for generation, procurement, and trading • Advanced analytics-based load forecasting and peak demand management • Renewable energy forecasting • ML-based detection of energy leaks, thefts • Real-time energy consumption and expense analytics for AMI	• Customer data analytics platform • Omnichannel customer engagement, communication, and analytics platform • Customer communications management (CCM), Customer information system (CIS), Customer relationship management (CRM), etc.	• Access control with computer vision and facial recognition
Lead	• E-mobility infrastructure and solutions • Microgrid management and controller system • Distributed Energy Resources (DERs) integration	• E-mobility infrastructure and solutions • Microgrid management and controller system • Distributed Energy Resources (DERs) integration • Power plant performance optimization system • Real-time monitoring and control of assets • GIS and location intelligence-based site assessment • Asset inspection by Unmanned Aerial Vehicles (UAVs)/drones • Predictive maintenance and fault detection solution	• Chatbot and other Conversational User Interface (CUI) for customer service • Virtual Personal Assistant integration (Alexa, Google Home)	• ML-based detection of potential faults and failures
Sustain	• Blockchain-based smart contracts and Renewable Energy Certificates • Vehicle-to-Grid integration solution • Carbon emissions analytics platform	• Centralized data hub platform • Digital twins for power plant • Large-scale demand response management with connected appliances and heat pumps • Smart grid controller and analytics • Mixed reality-based remote collaboration and virtual assessment platform • Connected enterprise using 5G and IIoT technologies	• Analytics platform for Energy Efficiency Programs (EEPs) • Advanced analytics- based outage management solutions • Marketplace analytics platform	• PPE detection in the field with advanced image analytics • ML-based detection of potential faults and failures

Step 3: Prioritize and implement solutions

Now that you have a list of potential use cases to be implemented, the next step would be to assess, prioritize, and implement them based on their potential impact on resilience and the effort/cost involved in implementing each business function.

As the new improvement programs are implemented, utilities must identify and define measurements, benchmarks, and KPIs to evaluate post-implementation results.

Fig 4: Program prioritization matrix

Step 4: Continuously improve

To keep up with the dynamic nature of the current business world, utilities are advised to always be on the lookout for changing business trends, consumer needs, and emerging technologies to stay relevant and continue to lead.

Thus, it becomes imperative for utilities to always strive for continuous improvements in resilience. The goal?

To continuously identify areas where it is the most vulnerable, adapt to risks and changing business needs, achieve market leadership, and then strive to maintain that position while looking out for emerging threats and adapting to the same.

Nagarro: A trusted & a CARING partner

Nagarro is uniquely positioned to partner with you in your journey to build a more resilient utility. With our Thinking Breakthroughs approach, we enable technology-led business outcomes. We offer a variety of engagement models which helps accelerate your resilience journey.

1. How do we help you identify and secure low-hanging opportunities?

Through purpose-designed workshops, our experts offer strategy, innovation, and technology consulting in a highly collaborative and time-bound manner to uncover key business challenges and ideate solutions to overcome them. A key focus of these workshops is maximizing business impact.

2. How do we help you make quick wins early in the business resilience journey?

Independent, small, agile product teams accelerate product releases by transforming crude ideas into minimum viable products to capture vital end-user feedback. A rich collection of Nagarro's pre-built modules and accelerators further reduces the time and cost to market.

3. How do we help you streamline and accelerate the delivery of multiple projects?

Nagarro offers fully managed scrum teams to scale your engineering effort where the ownership and responsibility to design, develop and maintain the solution is with Nagarro. Alternatively, we offer product implementation teams (professional services) which augment your delivery capabilities with full ownership of requirements, delivery, and L2/L3 support. You can also avail our 24x7 managed services that offer dedicated engineering and IT Ops to support your solutions.

Stories of Resilience

Story 1: TESVOLT GmbH – Germany

Building future-proof customer product training for global scalability

Client resilience challenge:

TESVOLT wanted to overcome limitations in classroom trainings to redefine customer experience, optimize operations, and offer a comprehensive and convenient digital product training solution for its customers globally.

How Nagarro helped:

A digital academy for all training needs. Nagarro considered time to market, cost, and ease of use to deliver a purpose-built digital academy—a customer portal that fulfills all training needs.

Outcomes:

TESVOLT was recently awarded the most innovative company in Germany. As the company becomes a global player, the new portal helps it efficiently deliver product training to worldwide product installers of its energy storage systems and drive global business growth.

Stories of Resilience

Story 2: Burgenland Energie – Austria

Empowering staff to embrace the remote work mega trend

Client resilience challenge:

Burgenland Energie (BE) operates around 200 wind turbines that require periodic inspections. The manual inspection process with a 150-point checklist was tedious. BE wanted to digitalize and streamline the wind turbine inspection process and improve the safety of their remote staff.

How Nagarro helped:

Digitalize inspection process with Smart glass. Nagarro helped BE fully embrace the future of remote work by implementing a smart glass-based inspection solution that streamlined the end-to-end inspection process.

Outcomes:

With the new smart glass solution, BE experienced a 30% reduction in inspection time per wind turbine. They also reduced error rates and improved coordination among remote inspectors while improving employee safety.

About us

We are shaping the company of tomorrow

Nagarro is a global digital engineering leader with a full-service offering, including digital product engineering, digital commerce, customer experience, AI and ML-based solutions, cloud, immersive technologies, IoT solutions, and consulting on next-generation ERP. We help our clients become innovative, digital-first companies through our entrepreneurial and agile mindset, and we deliver on our promise of 'thinking breakthroughs.'

We have a broad and long-standing international customer base, primarily in Europe and North America.

This includes many global blue-chip companies, leading independent software vendors (ISVs), other market and industry leaders, and public sector clients.

Today, we boast over 17,000+ experts across 32 countries, forming a Nation of Nagarrians, ready to help our customers succeed.

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