

Seven essential elements for energy and utilities

Energy and utilities organisations expect to benefit from operational improvements as they accelerate their digital transformation and adopt innovations. However, they will still encounter challenges such as migration strategies, outdated technologies, integration between new and old systems and managing very large-scale networks.

The convergence of operational technology (OT) and information technology (IT), the massive deployment of Internet of Things (IoT) and Industrial Internet of Things (IIoT), along with process automation and preventive maintenance will help overcome these challenges. Here are seven essential elements to consider.

1 Protect people and assets

- Connect devices, sensors, cameras, IoTs and IIoTs with the [operations control centre](#)
- Enhance collaboration between on-site technicians and remote experts by enabling voice and video sessions and document sharing
- Promptly identify, alert, respond to and coordinate emergency situations through the operations control centre



2 Operate seamlessly in extreme conditions

- Ensure service continuity in all environments by implementing robust, redundant [mission-critical networks](#) and communication systems
- Use [industrial switches](#) certified to withstand extreme temperature, electromagnetic interference, humidity, vibrations, dust and more, reducing maintenance requirements
- Securely connect and manage a wide range of IIoT devices, even in harsh and demanding environments

3 Control your connected devices

- Ensure secure onboarding of [IoT](#) and IIoT devices while safeguarding the network through IoT segmentation
- Automate network deployment, simplify tasks like moves, adds, and changes and offer advanced protocols and features such as Shortest Path Bridging (SPB) for micro-segmentation
- Establish a multichannel notification workflow between people, processes and sensors



4 Safeguard against cyberattacks and breaches

- Mitigate cyber threats by implementing a [zero trust network security](#) strategy
- Ensure built-in cybersecurity for both office and remote user applications
- Enhance communications system security with voice encryption and built-in security features

5 Achieve OT-IT convergence

- Efficiently collect and distribute data streams for real-time processing
- Enable remote monitoring and control of electrical circuits, valves and other [OT devices](#)
- Facilitate on-site staff mobility by providing DECT and Voice over Wi-Fi solutions compliant with industry regulations



6 Optimise operations for time and cost efficiency

- Implement a [unified network management](#) system for wired and wireless infrastructure and protect supervisory control and data acquisition (SCADA) traffic
- Proactively address network issues through [predictive maintenance](#) and AI, ensuring timely detection and resolution
- Consider OpEx and CapEx models to manage budget constraints effectively

7 Minimise energy consumption and environmental impact

- Implement optimised architectures and product life cycles to maximise longevity
- Leverage cloud solutions to reduce space and energy requirements
- Reduce digital pollution, improve waste management and decrease [energy consumption](#) throughout the entire value chain



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