

IT/OT Convergence Issue Brief

SUMMARY

Information Technology (IT) and Operations Technology (OT) are increasingly overlapping in the electric, gas, and water utility industry. IT includes traditional computing, storage and telecommunications systems used for decades in industries such as finance, healthcare and retail. OT includes technologies that run real-time processes such as electricity distribution, manufacturing plants and transportation systems.

“IT/OT convergence” means that IT and OT teams and functions are increasingly overlapping in many industries. Capabilities that once lived in IT are showing up in OT, such as Internet Protocol (IP) telecommunications. Conversely, traditional OT applications such as industrial control system (ICS) monitoring are now occurring in IT systems. The major issues with IT/OT convergence are a need for collaboration between traditionally isolated teams and cultures so that products can support the diverse needs of both IT and OT; and for executive leadership to understand the impact of IT/OT convergence and lend support where beneficial.

BACKGROUND

IT/OT convergence is the increasing use of the same infrastructure components and applications by both IT and OT teams. Within the utility industry, some companies have multiple uses of the same product, each operated by a separate team and possibly with a different set of operating processes. IT/OT convergence seeks to improve the efficiency of IT and OT teams when they collaborate, possibly by eliminating multiple instances of the same product, or at least by defining a common set of operational processes that all teams will use. Conversely, IT/OT convergence ensures that someone is looking at every necessary task – avoiding a situation where each

thinks the other is doing a task, but neither is.

IT/OT convergence can touch many departments of a utility. Some early examples include utility telecommunications, where migration of ICS from legacy technologies such as SONET (synchronous optical networking) to IP-based networks requires the ICS expertise of the OT department and the IP expertise of the IT department. Smart metering is another example, where the meters themselves are an Operations Technology and part of the electricity distribution network, but the meter data management and back-office functions are classic IT applications. IT/OT convergence also affects cybersecurity, as more intelligent devices are placed into ICS networks, requiring operational expertise from OT combined with cybersecurity expertise from IT.

In all of those examples, IT and OT must learn from each other: OT must understand the IT technologies and how they will affect operations; while IT must better understand the objectives of the Operations technology, which is usually at the heart of the utility's core business objectives.

IT/OT convergence is perhaps a misnomer, as the two functions are unlikely to ever completely converge. A more realistic view is that the people, processes and technologies that serve IT and OT will increasingly overlap. However, the term IT/OT convergence has enough prevalence that it will likely continue to be the most common name for the IT/OT phenomenon.

UTC POSITION

The Utilities Technology Council (UTC) believes that the IT/OT convergence is an opportunity for utilities to improve efficiency of their grid operations, customer engagement and back-office operations. IT/OT convergence has little if any policy impact, but has sub-

stantial business, cultural and change management impact. UTC helps its members converge IT and OT through its IT/ OT program of work, addressing three fundamental areas:

Management Practices required for successful IT/OT convergence. UTC presents focus groups for change management, configuration management, converged IT/OT operations and systems reliability compliance.

Utility Requirements and Solutions required for IT/OT convergence. Focusing on IT/OT's place in utility modernization, this subcommittee will perform and share research and analysis on utility's business requirements of IT/OT and available technical solutions – what is necessary to better enable collaboration of IT and OT teams.

Educational Activities that support IT/ OT convergence. UTC's IT/OT Committee will publish free white papers and for-purchase research, plus maintain a steady presence in UTC publications and events. UTC will sponsor webinars for members that identify useful IT/OT solutions training that members can pursue.

UTC's program addresses the whole utility's role in IT/ OT convergence, not only the technology deployments required. IT and OT departments at any given utility often come from vastly different back-

grounds and may have spent decades with differing focus. Convergence requires conscious efforts to improve collaboration between teams that have been traditionally isolated from one another.

ABOUT UTC

The Utilities Technology Council (UTC) is a global trade association dedicated to serving critical infrastructure providers. Through advocacy, education and collaboration, UTC creates a favorable business, regulatory and technological environment for companies that own, manage or provide critical telecommunications systems in support of their core business.

History: UTC was founded in 1948, to advocate for the allocation of additional radio spectrum for power utilities. Over the last 68 years, UTC has evolved into a dynamic organization that represents electric, gas and water utilities, as well as natural gas pipelines, critical infrastructure companies and other industry stakeholders.

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