

SMART GRID - FORCING AN OPERATING MODEL CHANGE FOR UTILITIES

TRADITIONALLY UTILITIES HAVE SEPARATED THE MANAGEMENT OF THEIR OPERATIONAL TECHNOLOGY (OT) AND THEIR INFORMATION TECHNOLOGY (IT). HOWEVER, THE SMART GRID WILL REQUIRE INTEGRATION AND ALIGNMENT BETWEEN THESE TWO FUNCTIONS. UTILITIES NEED TO START CONSIDERING THEIR FUTURE OPERATING MODEL NOW TO ENSURE THEY ARE READY TO EFFECTIVELY IMPLEMENT AND MANAGE THE SMART GRID.

1 TWO SEPARATE OPERATING MODELS

Utility companies traditionally have two separate and completely segregated organisations managing their OT and IT.

- The OT function is responsible for the technology services that are used for the protection, monitoring and control of the transmission and/or distribution infrastructure.
- The IT function is responsible for the technology services provided to the business, including applications, data centres, desktop services, networks and contact centres.

This division of responsibility exists primarily as a consequence of regulatory constraints, which impose specific performance requirements and special security measures on operational technology functions and their underlying operational infrastructure. The division has also developed, as very different skills were traditionally required to manage OT and IT. As a consequence, the OT and the IT departments often have separately agreed contracts with IT service providers. This has resulted in multiple technology operating models existing within most utilities.

2 THE MOVE TO SMART GRIDS

Utilities are under ever-increasing pressure to move from the current demand-driven model (where supply is dimensioned by forecasting demand and provisioning generation capacity), to a dynamic supply-driven model. This change is encouraging the move towards smart grid. Smart grid delivers electricity from suppliers to consumers using digital technology with two-way communications to monitor and control demand. It enables consumers to become more aware of their consumption habits, offering them the opportunity to

save energy and it provides utilities with a tool to influence demand directly or indirectly reduce cost and increase network flexibility and reliability.

3 SMART GRID WILL FORCE AN OPERATING MODEL

The use of smart meter data as a building block for the smart grid brings two new challenges for utilities:

1. from an OT perspective, to implement enhanced load management capabilities based on increased data granularity with the associated upsurge in data volumes
2. from an IT perspective, to manage usage data and facilitate billing.

Smart grid is driving the two functions to integrate and share data. Also, OT systems are increasingly moving from legacy (monolithic or distributed SCADA) systems to IP-based systems, which means the gap in skills required to manage OT and IT is narrowing and organisations are finding that they have a duplication of skills.

Soon, it will no longer make sense to manage two separate organisations and current regulatory operational guidelines will need to change to keep up with the evolving technology landscape.

4 UTILITIES NEED TO CONSIDER THEIR FUTURE OPERATING MODEL

Utilities are currently debating whether they should establish strategic relationships with technology service providers to deploy smart grids or whether they should maintain an in-sourced model. We believe that the wider issue of the operating model needs to be addressed as a priority – this is not just about a sourcing decision. The following steps need to be taken by utilities:

1. understand the existing environment - what

resources, suppliers and skills are in place across OT and IT?

2. define your service demarcation line - what technology services do you need to provide now and in the future and which party (internal or external) should be responsible for each service. You should ensure that there is no duplication of effort with different parties being responsible for the same activities
3. design the delivery organisation and structure required to perform the functions that your organisation is responsible for. This might include merging the OT and IT functions into one single delivery organization
4. establish the governance framework, which defines the principles, rules, and processes that enable effective decision-making within your technology function

5 CONCLUSION

A single, fit-for-purpose technology operating model is critical to the implementation and management of smart grid and utilities need to consider this as a priority. There are also potentially substantial cost savings and benefits to be had from consolidating and streamlining the technology function.

ABOUT US

Wavestone is an international consultancy that provides connected thinking, insight and capability to industry leading organisations. We work collaboratively with our clients to plan strategic business transformation and seamlessly turn strategy into action.

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