Critical Considerations for Successfully Transitioning to a "Smart Utility": Implementing Intelligent Water Systems

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ABSTRACT

"Why don't I know now?!" No, that's not a child throwing a tantrum, it's the next generation of utility employees and customers. In the coming years, the growing population and workforce will shift from Baby Boomers to the emergence of Millennials. With this change in atmosphere, society is demanding an instantaneous and on-demand life style. Smart Utilities, or Intelligent Water Systems (IWS), seek to leverage this demand for knowledge in as close to real time, in order to provide valuable services to their customers and more efficiently and effectively manage their infrastructure.

This paper will build on the Knowledge Development Forum that WEF and WE&RF hosted at ISA WWAC in 2016 and a workshop at the 2017 CIO Forum, a meeting of approximately 30 CIOs from North America's leading utilities. The focus will be on what are the necessary conditions and actions for a utility to move towards the IWS paradigm.

There is not one singular definition of IWS, but IWS do have common components such as Data Prioritization, Data Governance, Data Capture, Data Curation, Data Validation, Data Integration, Data Analytics, Business Intelligence/decision support, Knowledge Sharing, and Performance reporting and visualization. These components allow utilities to collect historical and real time data from numerous sources and effectively utilize analytical tools to process data. It is important to remember that we collect data, not information! IWS delivers the integration of information required for high-performance operations and IWS technologies enable and enhance the use of data by utility personnel.

By determining what the value of IWS, the business drivers, and regulatory landscape, utilities can begin to understand tools such as analytics, optimization and integrated intelligence can be leveraged. Case studies and best practices will be presented.

ABOUT THE AUTHORS

The Authors are the Founder of the Water & Wastewater CIO Forum and the director of the Water Science & Engineering Center at WEF. This presentation will consist of information provided by multiple members of the workgroup and will be peer reviewed by independent professionals from WEF's related committees.