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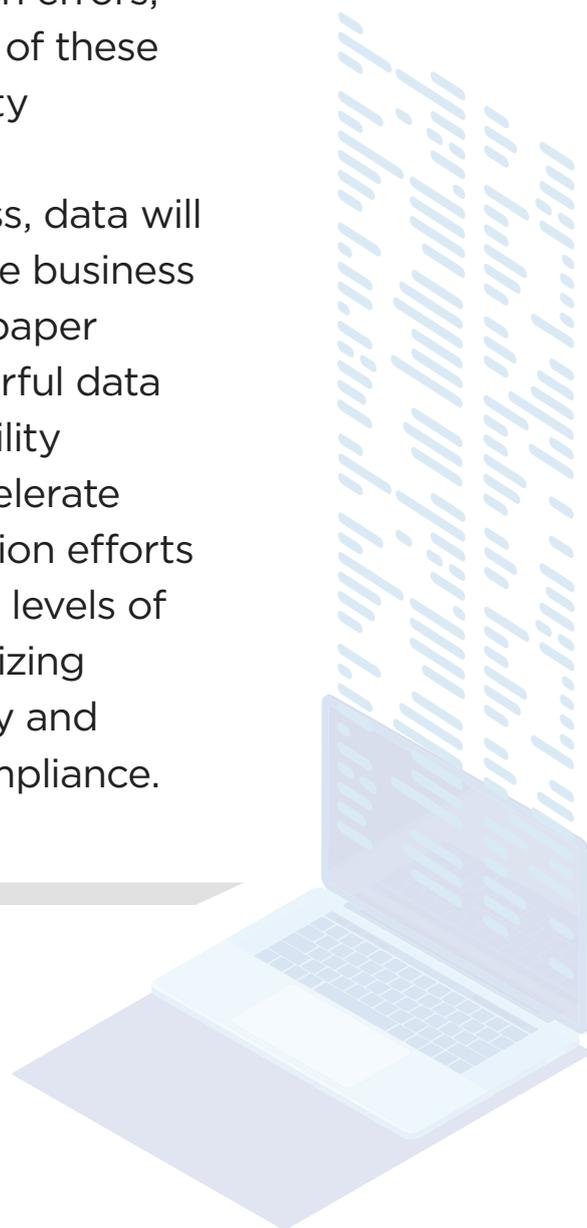
# Driving digital transformation in utilities with data



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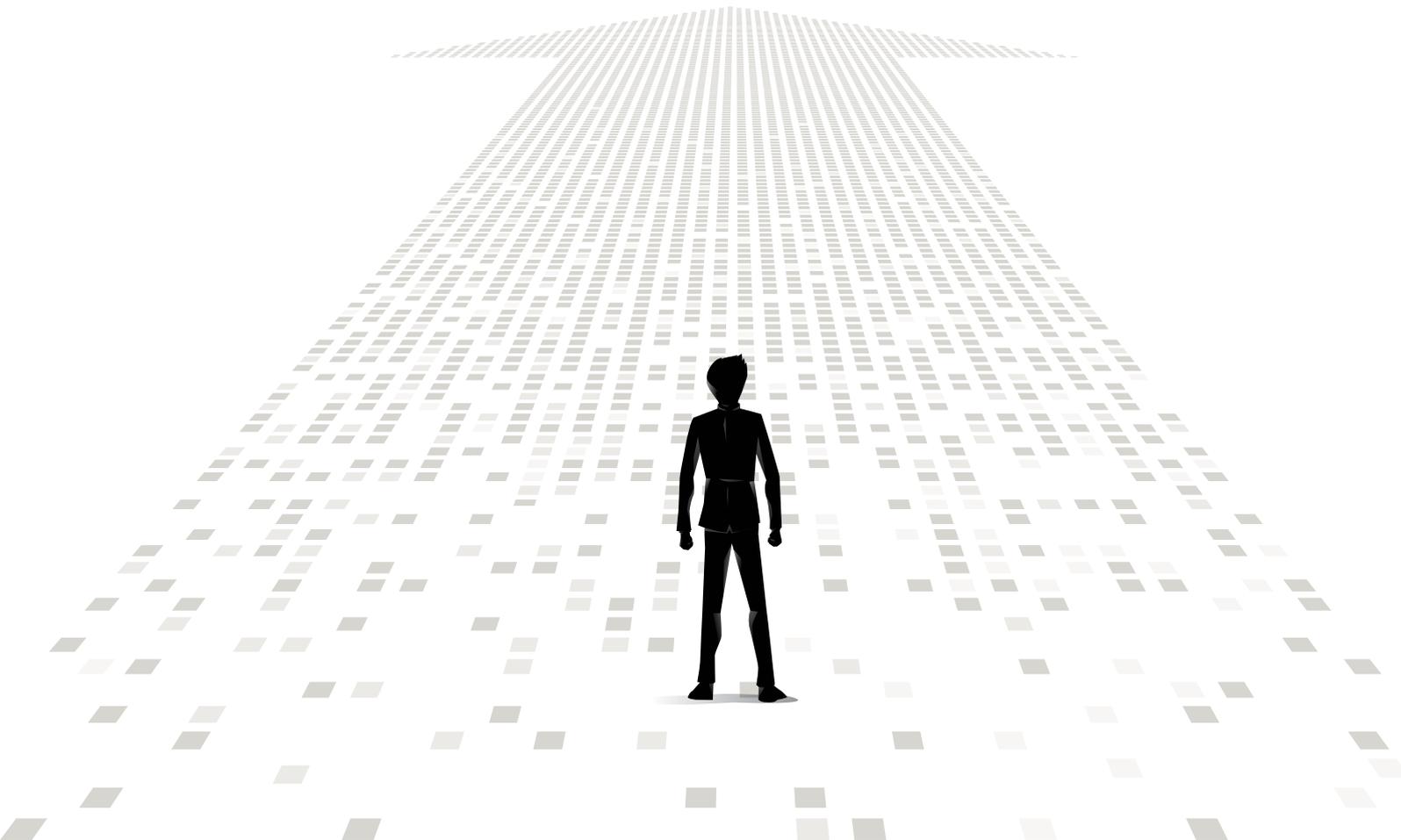
# Executive summary

Globally, non-technical losses cost utilities more than \$90 billion each year. Several factors cause this, such as billing errors, improper allocation, transportation errors, and energy theft . Each of these factors has a data quality element, and as utilities modernize their business, data will be critical in evolving the business successfully. This whitepaper explores new and powerful data quality solutions that utility companies need to accelerate their digital transformation efforts and achieve the highest levels of data quality, thus optimizing revenue and profitability and ensuring regulatory compliance.



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# Resolving the risks of poor data quality and regulatory non-compliance

Regulatory non-compliance and billing errors due to poor data quality can have huge cost implications. Take the following recent example: “In January [2020], the Maine Public Utilities Commission ordered Avangrid Inc. electric subsidiary Central Maine Power Co. to take a major earnings hit of approximately \$10 million via a lowered return on equity, among other penalties, following the rollout of a customer information and billing system, that the regulator said resulted in a high number of billing errors.” This example that highlights issues following system implementation is unfortunately not unique within the utility industry.

A Google search on “data quality” will demonstrate the critical importance of data. **Utilities, in particular, have a unique data challenge in their**

**business model.** While regulators may provide amnesty from civil penalties for regulatory non-compliance, it is viewed as unreasonable to burden all ratepayers with the cost of processing bill credits for supplier errors. This means billing errors can easily remain unresolved and uncollected, directly impacting the utility’s bottom line.

However, there is a solution that starts with a clear implementation methodology and is focused on delivering data-driven transformation.

**For utilities, this is accomplished by implementing a proven meter-to-cash data model to identify data errors without having to separately load data into SAP.** It does so both within individual data objects and across all data objects.



# Taking data off the critical path: The benefits of identifying data errors early

This unique, powerful approach allows data cleansing activities to begin very early in business transformation projects, thereby most likely removing data from the project's critical path.

Below, we provide three common examples of how this early focus on data cleansing can eliminate common (and costly) billing errors that result from issues with data.

## Examples of common data and related billing errors

Data error	Related billing error
Service locations missing a tax code	Identify these early to eliminate billing and contract management errors from occurring
Bills sent with prorated bill charges that are not a result of a move-in / move out	Identify these to avoid creating missing billing orders or corrected meter readings, which can lead to improper customer account re-billings
Duplicate meter reports	Identify early all the device locations with installed meters and eliminate any reports that occur more than once

Beyond physical leakage, there are two major categories of billing errors, which are known as "revenue leakage."

For the first type of billing error, the utility has a known customer, but they are not billed. These could be unbilled metered services or unmetered consumption.

The second type of billing error is losses due to theft, slow meters, or other billing issues. These include unauthorized consumption, other data errors, and metering mistakes.

**Though there are multiple reasons for revenue leakage, lack of**

**business-ready data is often key. It can also be the most easily identified and resolved, given the proper approach and tools.**

In this case, a utility's goal is to ensure that the data is not merely technically correct but is also correctly aligned with the policies and usage of the business. This is known as business-ready data.



Business-ready data is where all data objects are aligned and correct, and the business process is operating optimally. Accuracy, consistency, completeness, timeliness, along with other factors, are the data dimensions that work together to avoid a public hearing and lost profits. In fact, the business penalty example that we quoted earlier in this whitepaper was avoidable, had business-ready data been deployed in the meter-to-cash business processes. Similarly, though the term billing error refers to the bill itself, the root cause can occur anywhere across the meter-to-cash process.

### **Some examples of data errors related to the service itself are:**

1. Residential addresses that have commercial rates or tariffs
2. Active account with an inactive service
3. Active account on a metered rate with no attached meter
4. Metered rate with no meter or active account
5. Flat rate not active more than 12 months on an active service location
6. Service address noted as inactive but is still active

## **Realizing the benefits of smart meters**

It is important to understand that reducing billing errors is not enough. In 2017, the Public Utilities Department of the City of San Diego read 1.3 million meters and issued a corresponding number of water bills. Their quality assurance process flagged 57,117 potential abnormal meter readings (4.3 percent) for additional review. They adjusted 18,728 meter reads (1.4 percent) prior to billing the customers, while another 2,750 bills (less than 1 percent) were adjusted after customers received an incorrect bill. This may seem like a success story because 0.2% of customers received an incorrect bill; however, having to review over 4% of the bills and manually adjust more than 1% is not an efficient practice.

During the audit, the city discovered poor meter reads were the main reason for these errors. **While smart meters are a major part of the solution, data is critical to make them work correctly.**

For example, the business process of reading a smart meter requires the meter to be properly registered in the system. In one example, smart meters were installed by Con Edison and some of these meters weren't able to sync with the billing system for up to six months. According to one observer of the case, "That means even though the meters are recording data, they may not be communicating the data properly to Con Edison, so the bills that were sent to customers did not reflect those readings. Instead, the bills were just estimated reads."

Additionally, if the errors are more than six months old, under-billed charges may not be collectible. The California Public Utilities Commission found "PG&E's charges for back billed amounts due to delayed bills and estimated bills beyond the time limits... are, by definition, excessive."

## Other examples of data errors related to meters are:

1. Mismatch of service class meter type on the service
2. Meters in "available" status for stock transfer or scrap inventory
3. Verify the correct type of meter and duplicates - eliminating incorrect billing, extra service work, and estimated reads
  - Serial numbers
  - Smart meters
  - Touchpad meters
  - Manufacturer
  - RF meters
  - Between touchpad and RF meters
4. Meter reading unit not consistent with rate category

## Solving data quality quickly, efficiently, and accurately

Whether your business is undergoing digital transformation to be more streamlined and efficient garnering the powers of technology, or you are cleaning up the data in your existing system, HCL's experience in utilities and Syniti's technology are

powerful options to lead your business transformation or optimization process. Leveraging both can accelerate your achieving business-ready data that optimizes efficacy and revenue while ensuring compliance.

## Why experience + advanced data solutions matter

With over 20 years of experience in implementing SAP at over 30 utilities globally, HCL has created and maintained an extensive library of data objects that map client data for loading into SAP, using native SAP tools. These tools provide a starting point for accelerated data conversion. All data objects are organized into master and transactional data. Master data relates to customer, account, service, and inventory types of data, whereas transactional data is bill history, usage history, financial history, and other records related to typical business processing. As part of the

implementation, we encourage an iterative approach to data conversion, building upon each load to ensure a successful go-live.

Syniti's software creates an end-to-end solution for managing data from extraction through profiling, transformation, validation, and cleansing to loading directly via EMIGALL, which is SAP's native data loading tool. HCL and Syniti know the critical business elements that are required to create an accurate meter read and bill. Syniti's solution uses AI/ML experience engineered into the platform to power through this.

By instantiating the native SAP data model, understanding the relationships between the impacted data objects, and capturing changed data to keep it current, all the data dimensions can be evaluated in near real-time within Syniti, without having to load the data into SAP. This provides a more agile approach for data cleansing and correction, without the time-consuming recursive data load into SAP to perform these functions.

## In summary

**Peter Sondergaard**, Senior Vice President and Global Head of Research at Gartner, Inc said, “Information is the oil of the 21<sup>st</sup> century.” Although this quote is about the value of data as an asset, there are other aspects of this “21st-century oil” that are very important. Henry Ward Beecher is quoted as saying, “It’s not the work that kills people; it’s the worry. It’s not the revolution that destroys machinery; it’s the friction.” In this analogy, the machinery is your business processes, and business-ready data is the oil that removes friction. Together, HCL and Syniti, with our tools, processes, and experts deliver real savings by reducing and removing the business-destroying friction while providing transparency and clarity to your corporate data, the DNA of your business. Likewise, removing this friction reduces costs in business processes by allowing the automation and process efficiencies inherent in SAP S/4HANA to work as designed.

According to Thomas Redman, “the Data Doc,” “where there is data smoke, there is business fire.” Dr. Redman is saying that if a company is not managing its data appropriately (the smoke), this is an indication of larger problems across the business (the fire). These productivity inefficiencies related to data are well known, although often hidden from view in the business units.

HCL and Syniti are in a unique position to quickly identify areas in need of cleansing and jumpstart a digital transformation project while providing active data monitoring. These benefits are not limited to the project or activity that you are delivering. The HCL and Syniti work products are reusable for your next project, whether it be a merger, acquisition, divestiture, system consolidation, or new system implementation.

Our value proposition is based on removing those inefficiencies by pinpointing the gaps and errors between business processes and data. This is important in both running the business and implementing a business transformation program.



**By reducing the time to resolution to solve data errors, the implications of those errors are greatly reduced and often removed.** For instance, identifying a poorly configured meter early can prevent the associated billing errors, and identifying a gap in the design and/or configuration early prevents project delays associated with similar late discoveries. This approach to data helps businesses avoid process failures and project delays, effectively creating an “insurance policy” to minimize risk due to data errors and non-compliance. Together, HCL and Syniti can uniquely help you leverage data as an asset while helping you remove the liabilities that are often associated with it.

## Next steps

Whether you are in a run-the-business scenario or you are planning your move to SAP S/4HANA, HCL and Syniti can help you establish the data visibility that your business requires and provide them with actionable visibility across the systems landscape – allowing you to empower stakeholders with fact-based data quality recommendations.

You can then take those recommendations and action items to prepare your data for your current or next project and provide immediate benefits to the business:

- **reduce the complexity of your data migration**
- **remove data migration from your critical path**
- **establish the basis of data quality programs going forward through reusable content**
- **create measurement tools for governance programs**

For acquisitive businesses, we can create templated approaches to data to streamline and accelerate the velocity and capacity of your business to do mergers, acquisitions, and divestitures.

To help accelerate the transformation project and reduce the length of this critical path, please contact HCL at [SAP@hcl.com](mailto:SAP@hcl.com)



## About the authors



**Keith Hoffmann**  
HCL Solution Manager

Keith has helped Utilities around the world transform their business practices and data for over 28 years, 16 within the SAP ecosphere. This work has ranged from improving operations in the Front Office, streamlining tasks in the Back Office, and designing integration between systems, such as connecting an IVR to the call center or the CIS to a self-service portal. Keith has also helped Utilities with the challenges that arise when moving data from a legacy system to the new billing system, beginning with data cleansing in the legacy system and the transformation of that data in the new system.

Eric Stout, PMP, CSM is a Senior Delivery Partner at Syniti, a worldwide leader in information governance and data modernization solutions, focusing on helping customers manage one of their most critical assets - data. He combines expertise in business intelligence and business process management and transformation with over 25 years of business application development and deployment, consulting, data architecting, and strategic planning. Prior to Syniti, Eric led business intelligence at NASA for IBM Global Services.



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HCL offers its services and products through three lines of business - IT and Business Services (ITBS), Engineering and R&D Services (ERS), and Products & Platforms (P&P). ITBS enables global enterprises to transform their businesses through offerings in areas of Applications, Infrastructure, Digital Process Operations, and next generation digital transformation solutions. ERS offers engineering services and solutions in all aspects of product development and platform engineering while under P&P. HCL provides modernized software products to global clients for their technology and industry specific requirements. Through its cutting-edge co-innovation labs, global delivery capabilities, and broad global network, HCL delivers holistic services in various industry verticals, categorized under Financial Services, Manufacturing, Technology & Services, Telecom & Media, Retail & CPG, Life Sciences, and Healthcare and Public Services.



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