

Driving Performance Through Business Analytics—Leveraging Data to Improve Utility Performance

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Utilities have invested billions of dollars in IT systems in an effort to improve efficiency and reduce transaction costs. To support efficiency goals, these investments often focus on customer information and inquiry management, asset planning, workforce productivity, and work planning. These systems are often designed to support transactional activities (e.g., electronically distributing work orders to field workers, sending bills out to customers) and, as a result, commonly undervalue the diagnostic potential of the underlying information. This underutilization of company and customer information presents a valuable opportunity to optimize work effectiveness, raise performance, and improve the bottom line.

In recent work with clients, Oliver Wyman has assisted in developing analytical capabilities, organizations, and tools to leverage this underutilized information to improve performance by 20%–40%. This article provides three examples of how internal data and strong analytics can be used to drive performance gains:

- **Reducing collections-related write-offs.** With increasing bad debt levels, utilities are examining all options for limiting their financial exposure. From customer acquisition through tailoring actions toward delinquent customers and termination targeting, there are many opportunities to dramatically reduce bad debt and write-offs through the smart application of customer behavior analysis and insights to credit and collections processes and policies.
- **Improving system reliability and outage management.** System reliability and outage performance are perpetually top priorities for utilities due to the direct customer impact and potential regulatory implications. Recent client experience has shown that examination and analysis of outage and workforce management data can reveal targeted opportunities to improve system reliability.
- **Increasing everyday field productivity and efficiency.** Identifying and better understanding key drivers of workforce productivity allows utilities to better utilize existing field resources and drive

cost savings. Taking a data-driven approach to evaluating workforce productivity allows management to better direct resources to high-value activities and dispel long-held performance myths within the company.

In working with a variety of utility clients, Oliver Wyman has built what we refer to as “analytic engines” (see Exhibit 1)—the combination of a platform for data analysis and ongoing monitoring of key customer and company performance data (e.g., a data warehouse) with an internal analytics organization. These analytic engines are not large-scale IT systems that require millions of dollars and long implementation timelines, but rather are specific, purpose-built tools supported by analytic resources that can yield significant performance improvements with minimal investment.

Reducing Collections-Related Write-offs

In an economic downturn, customer payment behavior can deteriorate and large volumes of delinquent customers can overwhelm a status-quo collections process, increasing bad-debt expense and eroding earnings. This change can occur so quickly that managers may not notice the problem until it has snowballed out of control. To prevent this, companies must monitor such changes continually and have a credit and collections operation that is ready, flexible, and able to respond quickly to changes in customer behavior.

Exhibit 1 Key components of an analytic engine

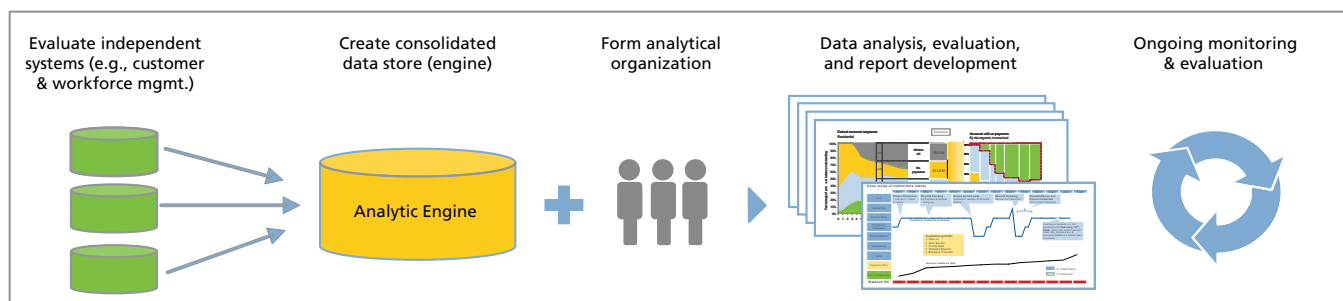
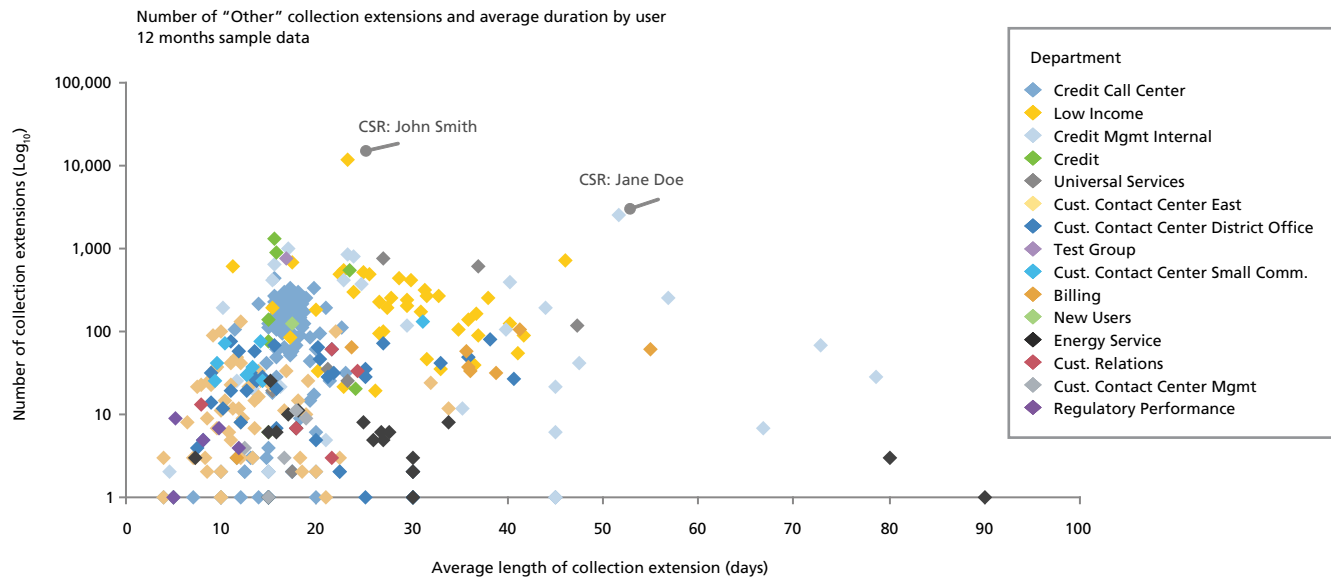


Exhibit 2 Analysis of CSR performance in collections process



Source: Oliver Wyman – disguised sample data

Utilities possess a wealth of customer and employee performance information that can provide valuable insights to help manage bad debt and customer operations. To help mitigate the bottom-line impact of deteriorating customer payment behavior, this information can be leveraged to establish internal collections targets and provide ongoing performance monitoring.

Exhibit 2 illustrates how an analysis of customer service representative (CSR) performance data can be used to identify the average length of collection extensions (e.g., grace periods that CSRs grant to customers) and the total number of extensions granted. This analysis shows the high level of CSR discretion and variability when deciding on extension terms and the large range of extension lengths. After a company sets targets for extension lengths, this information can be monitored on a weekly or monthly basis to track CSR performance and compliance. Since this information can also be shown by department, unit performance targets can be established and tracked that take into account the variations in the customer mix faced by each department.

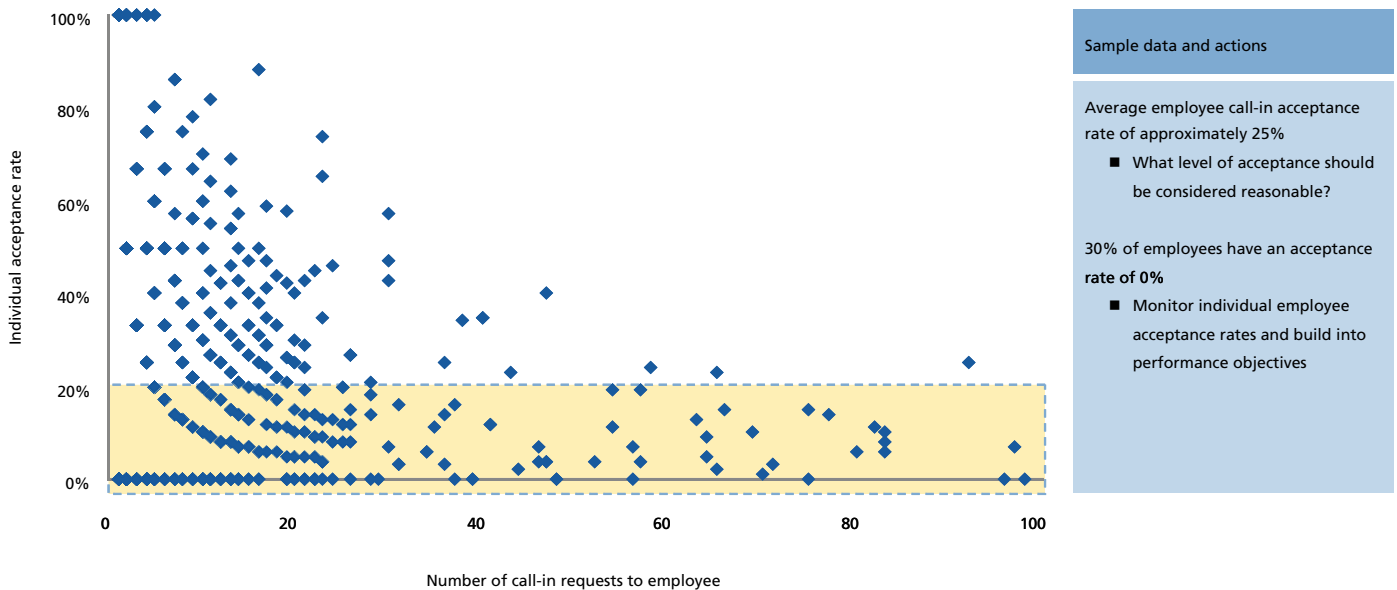
By monitoring this data regularly, companies can quickly respond to changes in CSR performance and reduce the overall length of collection extensions granted to high-risk customers.

This analytic approach has also proven extremely effective when used to collect and analyze real-time customer behavior data. This information allows the utility to anticipate potential bad-debt problems as customers wait longer to pay, more accounts go delinquent, and accounts receivable deteriorate. An in-depth discussion of these client experiences can be found in Oliver Wyman's report entitled *Managing in an Economic Downturn—Using Customer Behavior Analyses to Improve Bad-Debt Performance*. This type of analytic capability has been shown to reduce write-offs by 20–30%.

Improving System Reliability and Outage Management

Recent experience has shown that the analysis of current and historic outage data can be used to develop targeted improvement initiatives that noticeably improve outage performance. Macro-level analyses will not always suffice, as incident-

Exhibit 3 Individual employee call-in acceptance rates



Source: Oliver Wyman – disguised sample data

level granularity often yields the most insightful findings. By examining detailed outage information, utilities can break down outage response into component parts and reveal opportunities to improve each step within the process.

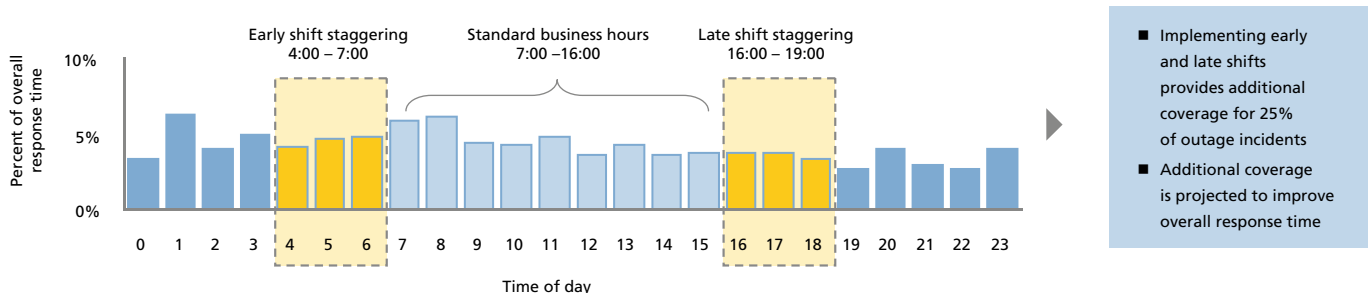
An example of these improvement initiatives can be seen in the employee call-in acceptance rate analysis in Exhibit 3, developed for clients who experience difficulty mobilizing their workforce in off-hours and on weekends.

While these utilities monitored overall employee response rates, they lacked an employee-level view

of call-in acceptance rates. The implementation of employee-level response tracking allows these companies to effectively monitor individual performance and build desired acceptance rates into employee performance objectives.

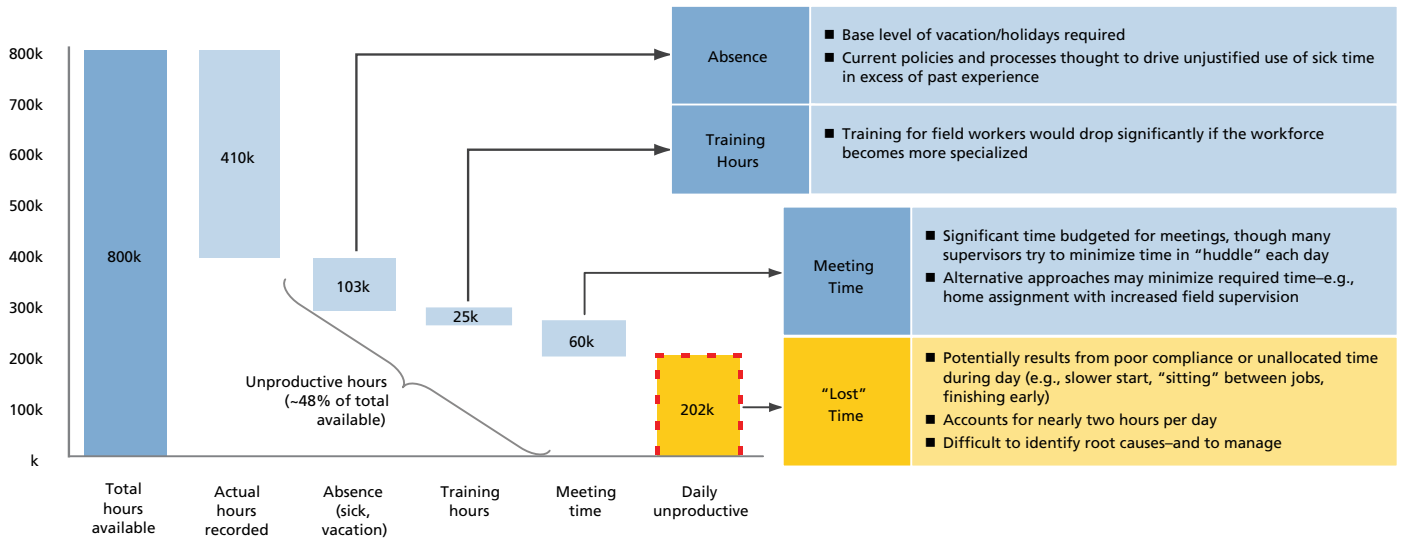
Utilities that apply a “one size fits all” solution to all service locations in an attempt to improve outage performance fail to realize the benefit of more targeted strategies that can be identified through granular data analysis. As Exhibit 4 shows, the evaluation of detailed service location-level data allowed a client to identify specific periods of time outside of typical business hours where adjust-

Exhibit 4 Outage performance improvement opportunities by time of day



Source: Oliver Wyman – disguised sample data

Exhibit 5 Available field worker time analysis



Source: Oliver Wyman – disguised sample data

ments to shift start times would result in significant outage performance improvements with limited incremental cost. By applying rigorous analytics to policies, clients have improved CAIDI by over 50% in a short period of time.

Increasing Everyday Field Productivity and Efficiency

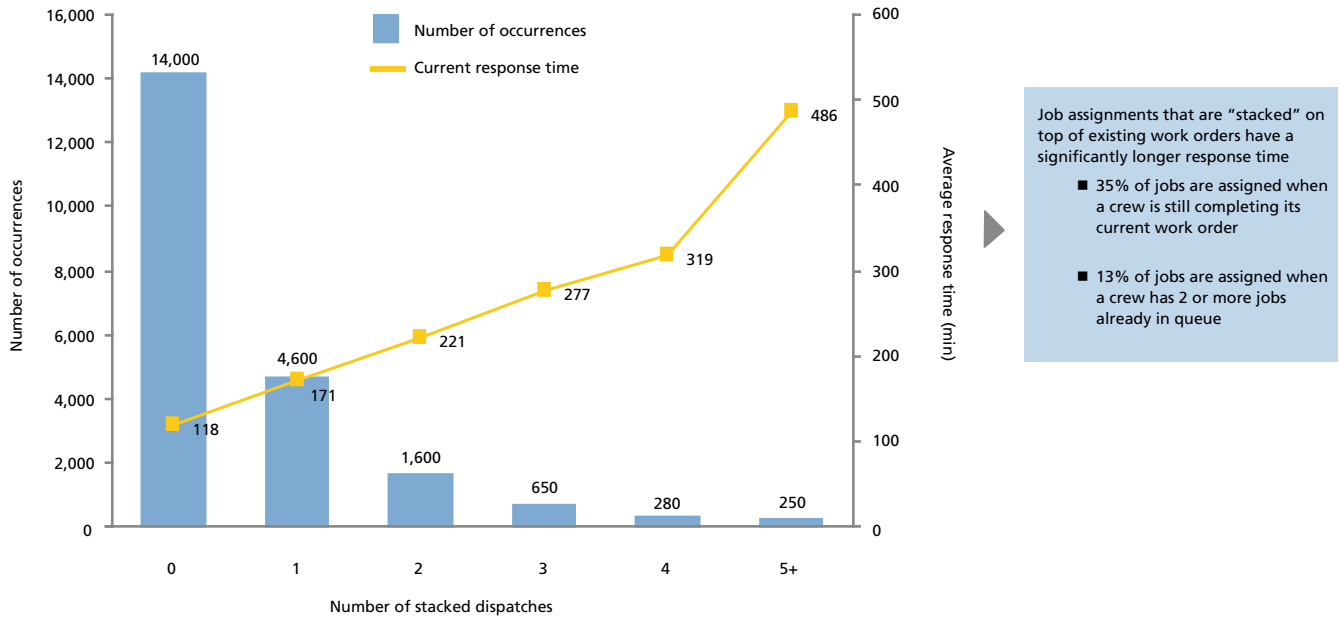
Insights gained through the analytic engine approach do more than enhance system reliability and outage management; they also yield significant improvements to everyday field efficiency and productivity. At each stage of the process, from work-order creation and dispatch to work completion, opportunities for more efficient policy and practice designs can be identified.

An analytic engine allows clients to effectively break down employee activities and identify areas to target productivity improvement actions, at an employee level. Exhibit 5 provides an example of an “allocation of available field worker time” analysis that has proved very insightful for client utilities.

Detailed analysis of employee time provides a basis for management to develop improvement initiatives targeted at reducing the “lost time” that the company is paying for. These analytics can be broken down at an employee level to monitor individual performance, determine where lost time is going, and develop initiatives to drive additional productive time.

One area analyzed for a recent client was multiple work orders being assigned to a single crew while the crew was still working on an active job. While this practice of “job stacking” allowed dispatchers to meet their goal of assigning all work orders in a timely manner, it significantly increased the time between when a crew was assigned a job and when the crew was able to begin work on that order. As a result, overall work performance was suffering and guidelines needed to be developed to address this practice.

Exhibit 6 Effect of dispatch stacking on average response time



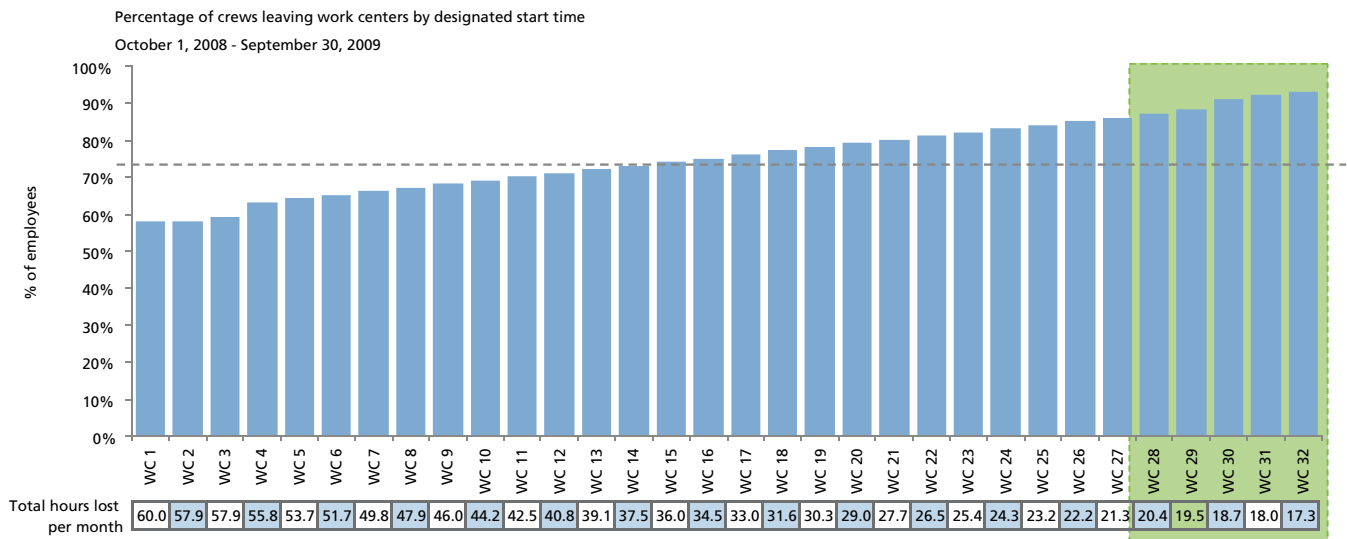
Source: Oliver Wyman – disguised sample data

Exhibit 6 highlights the prevalence of multiple job assignments and the increased response time that results from it.

As average response time for incidents where two

jobs are assigned increases more than 85% over the response time for a single assignment, defining a "cap" on the number of multiple job assignments will reduce response times to incidents (leaks, outages, damages, etc.).

Exhibit 7 Field mobilization time adherence



Some work centers have fewer than 60% of crews getting started in appropriate time frames

Source: Oliver Wyman – disguised sample data

Another area of efficiency enhancement supported by the analytical engine was around field mobilization. Wider implementation of GPS technology in utility fleets presents additional opportunities to analyze and improve field efficiency. By pairing GPS technology with mapping software, crew movement can be analyzed on a systematic basis. Exhibit 7 provides an example of how crews can be measured for their efficiency in starting their shift. Crews that are not in their vehicles and out of the “yard” by the designated time will drive down productivity. Analysis of historical GPS information can be used to identify the largest areas of opportunity and target strategies to improve performance of these individuals. There is a significant amount of time lost simply getting crews moving at the start of the shift.

Summary and Management Considerations

More and more utilities are learning to leverage their internal information and develop powerful detailed analytics to drive performance. Forward-thinking

companies are shifting internal resources to form new analytical organizations to perform ongoing analyses and provide insights, not limited to a “one-off” effort. Identifying and allocating resources with the right mix of analytic and system skills is vital to the ongoing success of this approach. Additionally, with available tools such as low-cost “analytic engines,” the information can be leveraged like never before.

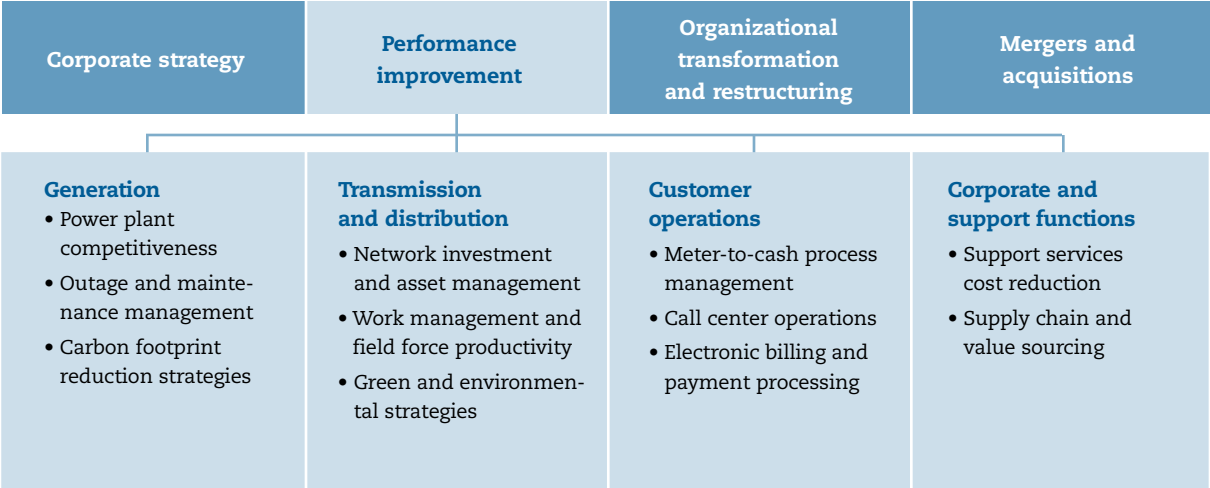
Management’s most important contribution to this process is to instill a culture of continuous improvement within the utility, as the analytic engine allows for ongoing performance monitoring and investigation. Deploying the appropriate analytic tools, the resources with the right capabilities, and the processes to continually review performance can lead to dramatic improvement in the effectiveness of a utility’s workforce. ❖

About Oliver Wyman

With more than 2,900 professionals in over 40 cities around the globe, Oliver Wyman is an international management consulting firm that combines deep industry knowledge with specialized expertise in strategy, operations, risk management, organizational transformation, and leadership development. The firm helps clients optimize their businesses, improve their operations and risk profile, and accelerate their organizational performance to seize the most attractive opportunities. Oliver Wyman is part of Marsh & McLennan Companies [NYSE: MMC].

Energy/Utilities Practice

- Dedicated consultants with significant experience in the energy and utilities sector
- Clients include over 75 electric and natural gas companies in North America and Europe, as well as a range of unregulated service providers to energy and utility companies.



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