Fact Sheet

UTILITY FINANCE

Cost Control

Short- and Long-Term Savings Through Automation and Technology

Quick Facts

- Short-term savings may have long-term consequences
- Automation and technology can save substantial amounts of money
- Automation has both tangible and intangible benefits and risks that should be closely studied

Overview

A number of factors, such as the need to replace water infrastructure and the increasing costs of energy, chemicals, and labor, affect the bottom line of water utilities. This, in turn, may lead to rate increases. However, water utilities also have opportunities to achieve significant savings through expanded use of automation and technology.

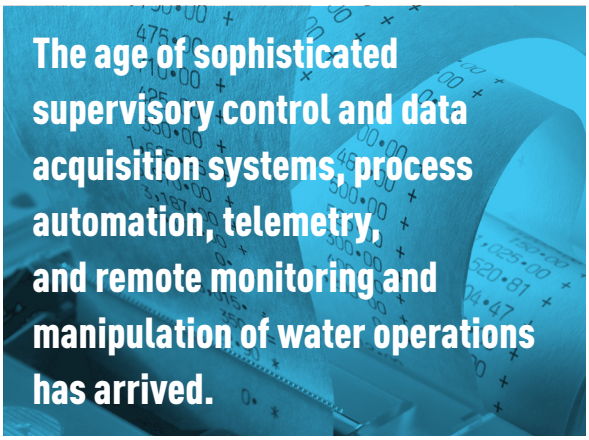
Spending Goals and the Impact on Customers

It is important for water utilities to evaluate short-term cost saving opportunities based on whether the long-term impacts are detrimental or beneficial. For example, though water utilities may cut operating costs by implementing hiring freezes, salary freezes, or layoffs, the short-term benefits of these cost savings (e.g., preserving capital) cannot be sustained. Additionally, water utilities should consider the external impact of their cost saving decisions. For example, by not working with key stakeholders or communicating consistently with customers, requesting a rate increase may be more difficult.

Technology and Automation

Implementing technology is an important way to provide financial savings and improve efficiency. With advances such as process automation, remote monitoring, and manipulation of water operations, water utilities have been able to achieve an estimated 30% savings in operational costs.

Operations and Maintenance (O&M) costs are one of the main cost centers for a water utility. The three largest



components of O&M are labor, energy, and chemicals. Through automation, water utilities can achieve savings in each of these areas.

Automation has tangible and intangible costs and benefits. Tangible costs are generally considered in terms of planning, engineering, procurement, and implementation. Intangible costs include technology or operational risks, such as changes to operating procedures, employee concerns, and change management costs. Tangible benefits include lower labor costs, reduced travel time to remote facilities, and lower chemical and energy costs. Intangible benefits are often difficult to quantify, but could include improved water quality, better data collection, and streamlined regulatory reporting.

Below are examples of how water utilities are using automation and technology to achieve cost savings and other benefits:

- Enterprise mobile computing can provide up to a 30% annual improvement in efficiency and service; improve security, health, and safety; and aid in regulatory compliance and reporting (Stern et al. 2008).
- A number of utilities are using automated meter reading (AMR) systems, which tie to the customer billing system and can result in improved customer satisfaction. AMR systems can also help determine and evaluate water loss by providing data that utilities can use to develop water loss reduction strategies.
- Utilities can use an MLOG device to identify potential water leaks before they surface. As a result, crews can fix pipe leaks before significant damage occurs and during the normal workday without incurring overtime costs. The estimated range of savings from using MLOGs is $40,000 to $100,000 (Hughes et al. 2011).

Table 1. Savings attributed to automation

	Typical Cost of Operation and Maintenance	Savings Due to Automation
Staffing	35%	5%–30%
Energy	34%	5%–35% (average 11%)
Chemicals	16%	15%–40%

Source: Roberts et al. 2008

However, if these technology solutions are not implemented well, there could be negative impacts. For instance, management and staff at many water utilities do not have the necessary training in the proper use of sophisticated technology. As a result, some utilities have purchased expensive technology systems only to find that they did not use them efficiently, losing opportunities to achieve cost savings and operational efficiencies (Martel et al. 2005).

References

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Last updated June 2017