



So Smart: Smart Water, Smart Grid And Smart Cities

SMART is a Technocrat management acronym that stands for Specific, Measurable, Achievable, Relevant and Time-based, and is used to create peak efficiency. They would like to mislead everyone to think it's smart as in intellect, but in that sense, it is really dumb. □ TN Editor

Smart water/ smart city programs are changing. Once viewed from a top-down perspective, city water utilities are starting to be seen from a more holistic perspective, with larger, more integrated programs. A recent [MIT conference on smart city water](#) included ideas for eco-entrepreneurs to create a niche within city water utilities through data analytics.

City utility managers are growing increasingly aware that technology can reshape service delivery and raise the quality of life, while better managing energy, connectivity, consumption, and our finite supply of water. The lesson has emerged as city utilities extract value from years of infrastructure and automation investments.

Early adopters used system information for reporting purposes. Now the Internet of Things (IoT) can allow automation and data-driven decision making. That capacity is changing the way that cities manage their water utilities. The challenge remains in figuring out how to incorporate IoT innovation investment that will create value and improve efficiency.

Often, execution is much more complex than initial pilot projects. Here are some ideas for projects that do show great promise.

[Smart water metering](#): Cities aim is to increase operational and management efficiencies, to reduce expenditures, and limit carbon footprints through smart water metering. Cities need to identify endpoint leakage; gain clarity between leakage, non-revenue water and chargeable consumption; establish consumption patterns; use predictive analytics to regulate supply; and, set up adjustable alarm notifications to predict/prevent end point anomalies.

[Water leak detection](#): The biggest water problem, according to John Sullivan, P.E., Chief Engineer, Boston Water and Sewer Commission and speaker at the MIT conference, is “water leaks.” Soon, cities will be able to do analysis digitally. “We want things that are pretty simple... cheap... We have a ton of needs and are always looking for good solutions.” Software can sync with meters and controllers on a customer’s property to remotely control outdoor irrigation use and monitor flow through pipes into a building. The impact can have up to 50 percent water savings and ongoing, real-time leak detection.

Weather anticipation and adjustment: [Marcus Quigley](#), founder and CEO, Opti RC, noted at the [MIT conference on clean city water](#) that “intelligent systems that think on their own” work on the “built environment” to anticipate and address weather information. Through, “redesigning themselves, minute by minute,” they can deliver efficient outcomes. This type of technology wasn’t able to be built just five years ago, according to Quigley.

[Probes as lead sensors](#): Entrepreneurs can look to “phosphorus” as well as lead sensor technology, according to Quigley. A \$100 probe that could last a year in the field would be a “million dollar technology.”

[State-of-the-art electronic/digital hardware and software](#): Interval data measurement and continuously available remote communications enable measurement of detailed, time-based information and frequent collection and transmittal of such information. On the consumer end, this can result in active monitoring water usage through smart faucets and smart sprinklers.

The smart water management market is [expected to grow](#) from \$8.5 billion in 2016 to \$20 billion by 2021. It's a target industry that is rife with opportunities for eco-entrepreneurs.

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