Radio Waves and Smart Water Meters: Effective Communication Tactics to Build Acceptance

GLOBAL DIGITAL SOLUTIONS

Introduction

Smart water meters have been used for many years all around the world and they transmit information using radio frequency (RF) waves, which is an example of an electromagnetic field (EMF). Concerns have been raised about the safety of smart meters because of EMF exposure. Attempting to address these concerns with scientific facts and/or medical research is challenging. This is because anti-EMF sentiments are most often driven by fear and emotion rather than evidence. That fear often stretches beyond the technology itself to include the institutional programs that promote the technology, such as a meter replacement program. Understanding the underlying causes of opposition is key to communicating effectively, addressing fears and encouraging acceptance of the technology.

Since emphasizing facts rarely has the desired effect on resistant audiences, this white paper is not intended to explain the medical or electrical science behind the safety of smart meters; rather, it provides some helpful context on levels of EMF exposure related to smart water meters and effective communication tactics that can be used to inoculate opposition and gain support for the program.

Levels of EMF Expose Related to Smart Water Meters

EMFs can occur naturally (such as visible light from the sun) and can also be generated by technology. There are two broad categories of EMFs based on their electromagnetic spectrum: ionizing and non-ionizing. Ionizing EMFs carry enough energy to break bonds between molecules and ionize atoms; these include gamma rays and X-rays. However, non-ionizing EMFs are lower frequency and do not carry enough energy to damage DNA directly; these include radio frequency (RF) transmissions and visible light. Examples of technologies that produce non-ionizing EMFs include microwave ovens, computers, Wi-Fi networks, cellular phones, Bluetooth devices, radio and television broadcasts, as well as smart water meters.

Smart water meters emit just a tiny fraction of the level of radio waves decreed safe by international standards – in fact, much lower levels than cellular phones, microwaves and Wi-Fi routers. A person speaking on a cell phone would experience 1,100 times the EMF exposure of a person standing in front of a smart water meter. Similarly, a person using a laptop computer experiences up to 2.2 times the EMF exposure of a smart water meter.

Like a common magnet, the strength of the EMF is proportional to the proximity of the device. A cell phone
People tend to dismiss risks with things they view as indispensable or integral to their lifestyle. It can be helpful to link a smart meter roll-out with other smart home technologies that are being readily integrated, including security systems and automated temperature and lighting controls. If marketed as an integral part of the “smart home,” there is less attention to the individual metering technology. And comparing smart meter EMF to those of other indispensable technologies (cell phones, laptops, microwave ovens) can further help dissipate the perceived threat.

2) Helping people to make an emotional connection to program benefits helps to balance emotion-based resistance. We often forget to highlight the emotional appeal of smart metering and its benefits, such as protection of property from undiscovered water leaks or the environmental benefits of water conservation. Ensuring that we try to win both the hearts and minds of customers will help to strengthen the attachment to the technology and minimize the “pull” of other emotional appeals.

3) Broadening the coalition of supporters lessens the suspicions around the water utility. People tend to be suspicious when a single entity is doing the communicating and implementing. It helps to engage local leaders (respected academics or consumer advocates), environmental groups, research entities and neighborhood associations to advocate the adoption of new technologies.

4) Engagement and choice drives buy-in more than education. Resist the tendency to “educate” the public; instead, seek to involve dissenters early in the program. Anything that provides customers with input into the program, and some form of choice, will dissipate resistance later.

5) Chronic resistance cannot be diffused with facts. Most times, technical experts will react to irrational resistance with scientific facts and proofs. It is a more effective tactic to express sincere agreement (e.g. with the concern for the public health), outline the challenges in doing so, and demonstrate steps that have been taken to ensure the concern is being addressed. Always welcome input in a way that contains resistance before it escalates to public outrage.

Successful implementation of smart water metering is directly related to the degree of employee, customer, and public awareness and acceptance of the program. Developing a strategic communications plan is the first step in addressing the needs of both internal and external stakeholders. The plan should cover content and timing of messages to stakeholders (primarily but not exclusively employees and customers), the various media that will be used, the number of exposures and contacts and specific branding for the program. It should specify who is responsible for each aspect of communication and provide mechanisms for feedback from stakeholders.

A comprehensive plan should include, at a minimum, the following elements:

- Stakeholder identification to identify potential issues and influential groups, and to leverage existing beliefs in program messaging.
- Public engagement to align program parameters to existing needs and recognized benefits.
- Consistent messaging through mass and target media to establish program fundamentals and trust across groups with different agendas.
- Small audience interaction and coalition building to expand appeal of the program.
- VIP briefings to gain the acceptance of policymakers.
- Employee engagement and preparation to ensure a seamless customer experience and operational cohesiveness.
- Branding strategies that leverage stakeholder perceptions, smooth installation and promote program benefit.
Conclusion

Global market insights predict that the global smart water meters market will experience more than 16% growth in the next five years. With this growth, public acceptance and education will be key factors in future implementation of these technology-driven efforts for utilities. Addressing public concerns about smart meters and safety issues related to EMF exposure relies on the ability to effectively communicate the project benefits by addressing qualms and fears about potential safety risks and encouraging the use of the technology.

Developing a strategic communications plan that's inclusive of many voices, establishes an emotional connection for audiences to the project and fosters a sense of involvement for stakeholders is the first step to helping build public acceptance for smart metering initiatives from both internal and external stakeholders.

With strong communication tactics, utilities and partners can break down negative sentiments around smart metering to unlock lasting benefits to enhance sustainable water conservation, public health and safety and financial outcomes for organizations and their customers for tomorrow.

About Jacobs

Jacobs leads the global professional services sector providing solutions for a more connected, sustainable world. With approximately $12 billion in revenue and a talent force of more than 50,000, Jacobs provides a full spectrum of services including scientific, technical, professional and construction- and program-management for business, industrial, commercial, government and infrastructure sectors. For more information, visit [www.jacobs.com](http://www.jacobs.com), and connect with Jacobs on [LinkedIn](http://LinkedIn), [Twitter](http://Twitter), [Facebook](http://Facebook) and [Instagram](http://Instagram).

For further information contact:

Name: Jaason Englesmith
Title: Global Smart Metering Technology Leader
Phone: 408.320.5227
Email: jaason@englesmith@jacobs.com
[www.jacobs.com](http://www.jacobs.com)