

STRENGTHENING THE CUSTOMER RELATIONSHIP



A COMPREHENSIVE GIS
Electric and Gas Utilities



esri

THE
SCIENCE
OF
WHERE

Introduction

Utilities strive to improve customer care. Their customers have high expectations. Satisfied customers fuel profitability, growth, and sustainability. The way utilities engage, understand, and communicate with customers is essential to maintaining their trust and improving satisfaction. That is why meeting or exceeding those expectations is a top priority of utilities today.

Customers have more energy choices than ever. This means utilities must focus more intently on those they serve. Understanding the relationship between customer behaviors and network impacts is critical. New behaviors, such as installing renewable energy resources or charging electric vehicles, profoundly affect power supply and grid stability. Utilities must deeply comprehend their customers alongside the network that supplies their energy needs.

Modern utility customers are no longer just consumers. They are prosumers. That means they may also produce energy. They demand choice and information. Timely communication is essential. Utilities must give customers the data they want, when they need it, in the manner they choose.

For years, utilities addressed these needs on a departmental basis. Each department commonly implemented a point solution to address its unique requirements. This was particularly true in customer care, whose software rarely integrated well with the solutions of other departments. As a result, silos developed. In these cases, customer care workflows remained fragmented. The data could become untrustworthy. These silos could result in substandard reports.

Maps and modern apps tell a comprehensive story with colorful visualizations. They break down silos. They highlight connections. When embedded in websites, they provide customers with self-service options. Accordingly, communication with all stakeholders is greatly improved. Higher customer satisfaction and perceived value follow.

Exceptional customer care results when one business system provides a fully informed view of customer behaviors and their network impacts, sharpening the customer relationship. Using location-based technology, Esri's [ArcGIS®](#) software provides the mapping, analytics, and collaboration capabilities required to increase customer satisfaction. ■



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A Customercentric Approach

Utility customers have higher requirements now than in the past. Modern consumer technology stimulated these higher expectations for the customer experience. Customers with questions expect immediate answers and fast resolution of any problems.

In response, most utilities' focus shifted from being assetcentric to customercentric. This move came with a realization that the customer is in fact the utility's most important asset. Without customers, there is no purpose or revenue to continue safe and reliable energy services.

Today, utilities must deliver a seamless and timely customer experience. This is important because of the following:

- Capital and operating expenses are a challenge. Unsatisfied customers will not support adequate rates. Satisfied customers are more willing to pay costs that fund important system improvements.
- Customer and utility collaboration is vital to achieve sustainability, grid modernization, safety, and equity goals.
- Customers have a variety of options to connect with large audiences via social media groups, channels, meetups, and more. One dissatisfied customer can share their experience, increasing negativity toward the utility.

ArcGIS improves customer care by enabling utilities to make information accessible in real time. It shares milestones for capital projects. ArcGIS makes it easy to connect with stakeholders and customers—and collaborate with communities. Social media feeds viewed within maps provide insight into customer opinions and experiences. Easy-to-use maps and apps keep utility staff members up-to-date about events and activities, enabling them to quickly answer customer questions. Similarly, apps provide field crews and office staff with the information they need to more efficiently perform their work. Immersive stories with text, interactive maps, and amazing photos are used to share educational resources, project updates, safety information, and more!

ArcGIS technology addresses customer care challenges by fundamentally transforming how organizations communicate and engage customers and staff. ■

Reasons Why Location Technology Matters

Customers and utility networks are both naturally linked to their location. While customers may occasionally relocate, individual premises are fed from a fixed connection point. Likewise, utility components occupy locations—working together as a single system. Moreover, some components adjust continuously to meet customer energy demands.

A modern geographic information system (GIS) does much more than just map static component locations. It brings important information together—creating transparency and a real-time understanding of customer impacts.

Impacts often result from dynamic customer and network activities—they all occur somewhere. The same is true with natural phenomena and weather. Temperature extremes, lightning strikes, floods, and wildfires routinely affect both customers and utility operations.

In a modern GIS, location-based technology buoys exceptional customer care. It does so with a complete model of the utility's network and every customer's relationship to it. It brings disparate types of information together.

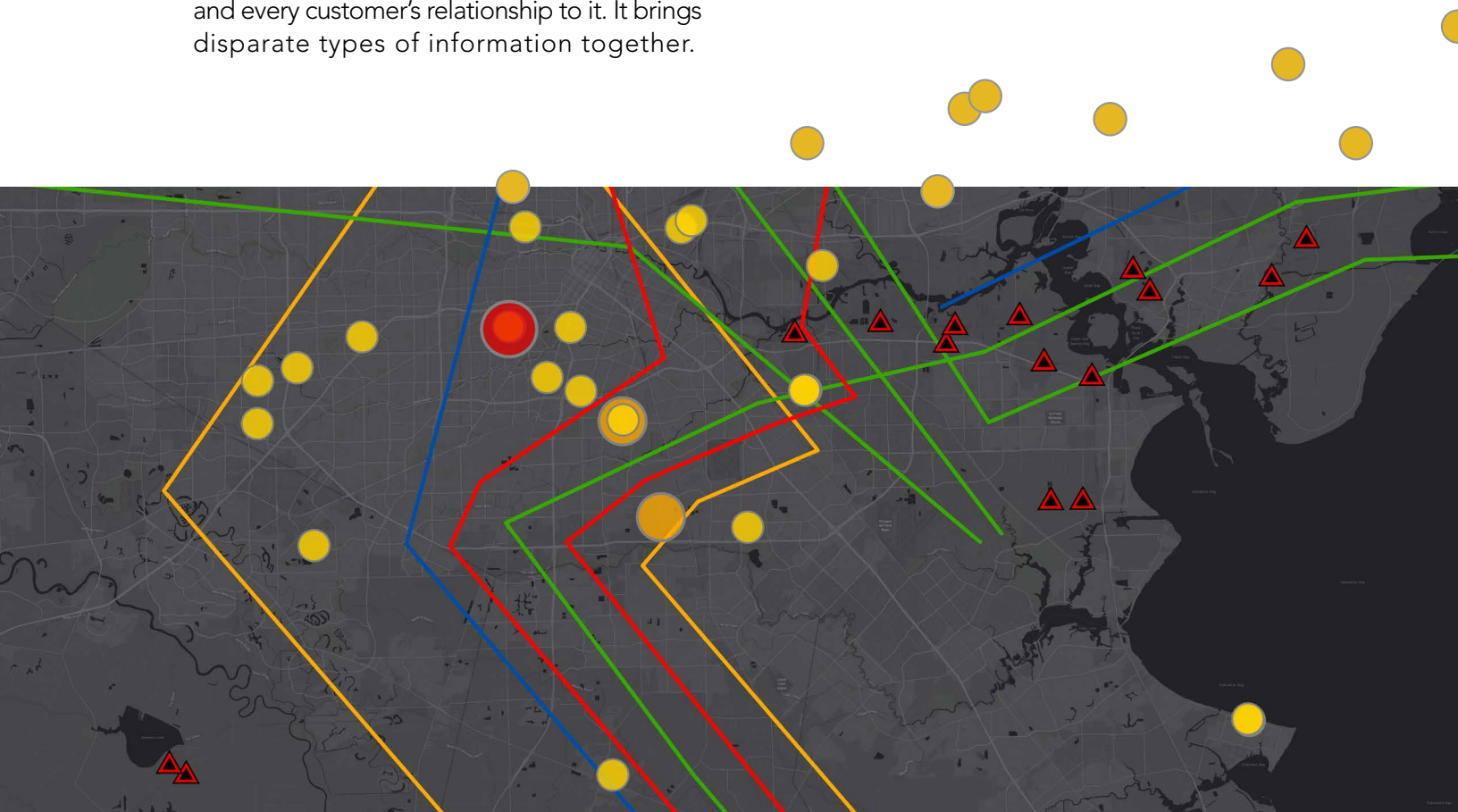
Going further, it models the past, present, and future states of the system to better analyze manifold customer impacts.

Powerful analytics assess data, revealing hidden patterns. And information is made available to all stakeholders—on any device, anywhere, day or night.

ArcGIS effectively reinforces customer care with answers to vital questions like these:

- Where should investments be made to improve customer experiences?
- Where are asset failures impacting customers?
- Where are the hazards that threaten public safety?
- Where do environmental factors potentially impact service reliability?

Location matters for utility customer care. Location is the common ground for customers and utility work! ■



Exceptional Customer Care

Exceptional customer care results in quality relationships with customers. It builds community and improves employee morale. Understanding utility events and activities in the context of location provides customer service representatives with knowledge. It enables them to better empathize with customers. Access to current, dependable data allows employees to prioritize customer requests and delegate tasks to appropriate staff. Moreover, empowering customers with self-service solutions gives them a way to proactively seek answers themselves.

ArcGIS provides solutions that greatly improve communication with all stakeholders, resulting in higher satisfaction both internally and externally. It does this by providing the following:

A Grasp on Customer-to-Network Relationships

Using a detailed network representation, ArcGIS connects customer's interests with the utility system. This provides a well-rounded view of customers. Customer interactions, utility activity impacts, demographics, and energy consumption can be viewed and analyzed together—in one place. A deeper understanding of customer characteristics helps clarify the best communication and engagement strategies.

Understanding and Analysis

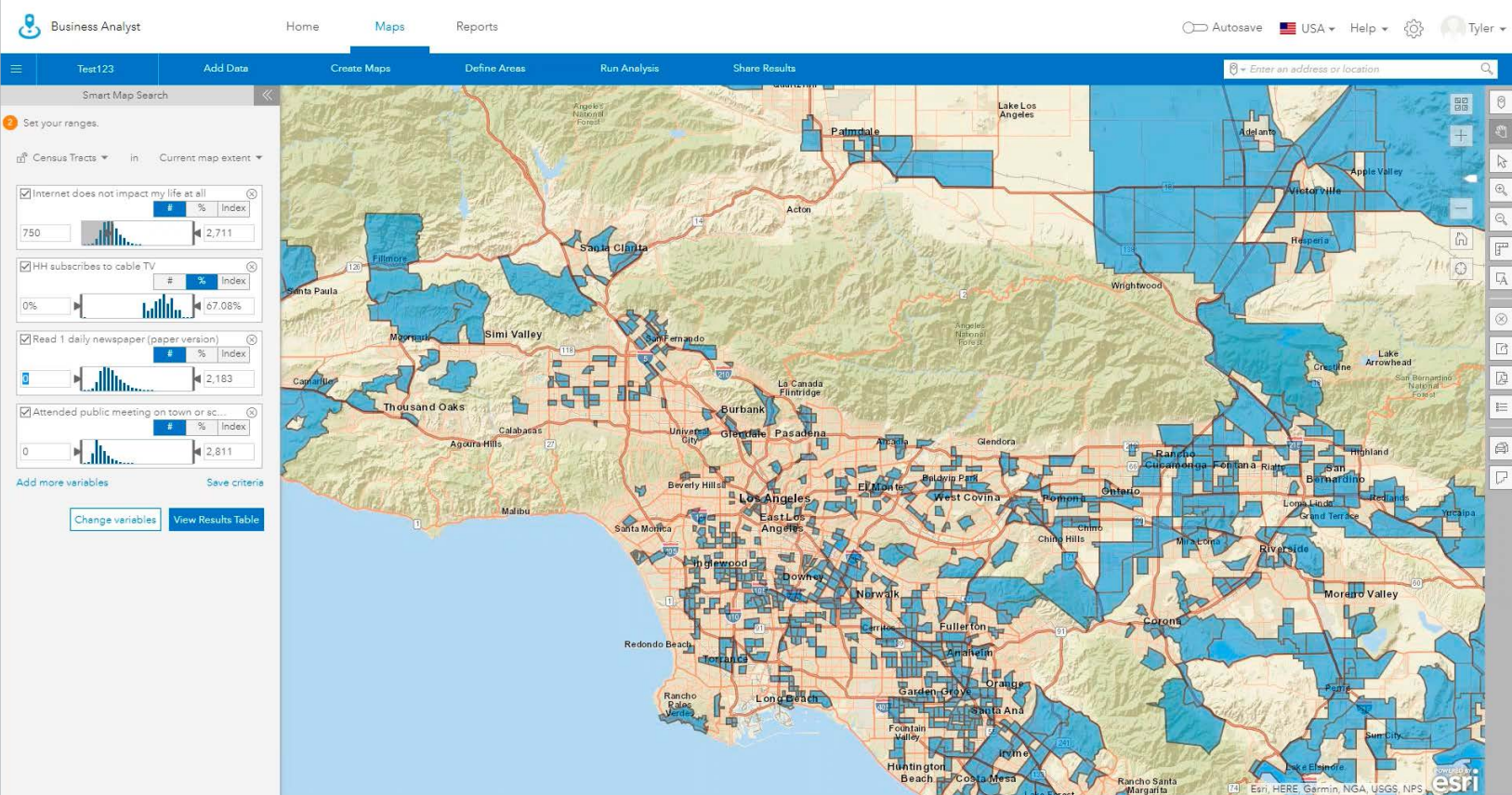
ArcGIS consumes real-time data from sensors, mobile devices, weather services, and even social media feeds, providing utilities with a complete view of their system and what's going on around it.

Colorful visualizations help spot trends, improving workflow efficiency and effectiveness. Predicting a utility activity's impact on customers strengthens proactive communication and swift complaint resolution. Additionally, analyzing customers in context detects overlooked opportunities for utility programs and services—improving their results.

Delivery of Timely Communication

ArcGIS is key to meeting customers' expectations for current updates on whatever affects their service. When needed, prompt informative messages can be sent—day or night. ArcGIS keeps customers abreast of what they need to know with 24-hour self-service web maps, apps, and notification services—reducing call center volume. ■





A Grasp on Customer-to-Network Relationships

Location is the common denominator when using data from various utility systems. Customer information, meter data management, and work management systems are good examples. Connecting information from disparate computer systems by location provides a way to view, query, and analyze separate types of data—together, breaking down silos.

Spatial data plays a large role in understanding customers. Visualizing customer location with consumption, billing, and program details reveals otherwise unnoticed conditions. Including related demographic and sociographic information further exposes relationships and bolsters data-driven service equity decisions. The totality of this information provides a comprehensive overview of customers and how to best interact with them.

The same is true for network assets. It is essential for utilities to have an authoritative digital representation that details all network components, their operation, and their operating environment. Understanding where assets are is much more than seeing a dot on a map. Location can provide information about the natural world, indicate vulnerabilities, show which critical customers are nearby, and more.

Using location, ArcGIS integrates important business information to establish interrelationships among customers, the network, and the world around them. This enables analysis of customer characteristics, behavior, interactions, and energy consumption. Understanding hastens proactive and advanced customer care. ▶

“The expanded capabilities of this new app save us \$1,800 per month in marketing expense, give us the ability to offer a more **streamlined customer experience**, and maximize the tool to cross-market additional cooperative services.”

—Tammy Thompson, Senior Executive Manager of Business and Brand Development, Guadalupe Valley Electric Cooperative



A Grasp on Customer-to-Network Relationships (continued)

Knowing more about customers, infrastructure, and what's nearby enables utilities to answer questions like these:

- How has demand shifted over time?
- Which customers have easements on their property?
- What critical infrastructure is within a flood or fire zone?
- How many customers will be affected by a loss of critical infrastructure? ■

CASE STUDY

Mobile-Friendly App Advances New Utility Services—Guadalupe Valley Electric Cooperative (GVEC) serves customers across 3,500 square miles of south central Texas. GVEC expanded beyond electric service and into additional lines of business. The utility wanted to do more for the community by providing additional services and improving customer communication.

[View Story](#)



Understanding and Analysis (continued)

A utility's marketing group needs information and analytics to match today's prosumers with select product, service, and utility program opportunities. Staff work more efficiently and increase participation by focusing their efforts—matching potential users to specific demographic characteristics and proximity considerations.

Casual users perform straightforward analysis in their apps—as needed. When required, rich, in-depth analytics is available for more specialized review. The ArcGIS analytic apps provide multiple ways to meet the needs of all users within a utility.

The ArcGIS analytical capabilities empower customer service staff to answer questions and keep customers informed about the impact of utility activities. ■

“This application provides DEWA [Dubai Electricity and Water Authority] customers with the ability to estimate **potential electricity production and savings on electricity charges** by installing solar panels.”

—Manal Ahmed Salem Alshamlan,
Senior Manager, Innovation & The Future,
GIS & Field Application, DEWA

CASE STUDY

Online Calculator Boosts Solar Generation Connections by 52 Percent—Dubai Electricity and Water Authority is a leader in alternative energy use. DEWA launched the Shams Dubai Calculator application to help the company achieve its aggressive renewable-energy goals. The online application examines numerous parameters and estimates the electricity production potential of every rooftop in Dubai. Access to this information quickly increased the solar panel adoption rate.

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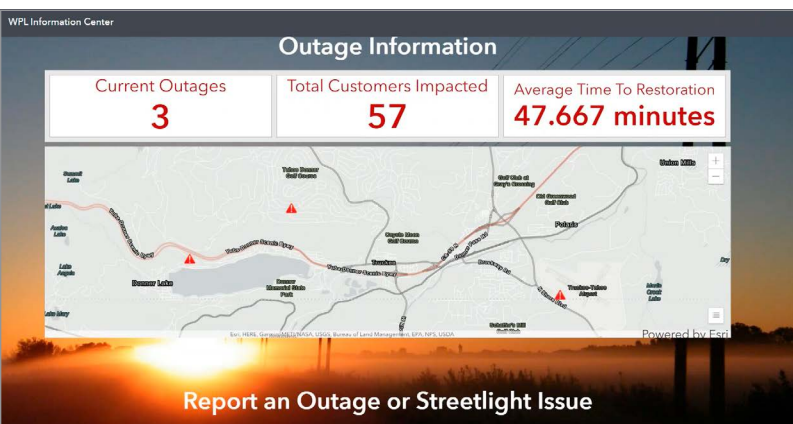
Delivery of Timely Communication

Customers expect to be told about changes to their service in a timely manner. Furthermore, they expect their utility to alert them to important issues. Will outages affect them? Is construction occurring in their area? Are they heading toward a high bill? “No surprises” is a cardinal rule in a utility’s relationship with its customers.

Utilities use many ways to communicate with customers. They place door hangers, send email, make phone calls, and promote public-facing websites. Notifying customers of planned service interruptions is typically organized and scheduled. However, it is much more difficult to ensure that customers are kept aware during unplanned events.

ArcGIS unlocks a new era of timely communication by proactively sending notifications to customers via email or short message service (SMS)—in real time. Web GIS supports real-time updates to maps and applications shared via utility websites. ArcGIS ingests inputs from sensors and enables alerts when critical service thresholds are exceeded. When an activity or event impacts service, whether planned or unplanned, real-time messaging can prevent the rush of phone calls that frustrate customers as well as staff.

Timely communication is reinforced by robust online resources—accessed from any device. Targeted apps provide intuitive self-service experiences. Website graphics and maps ▶



WPL Information Center

Report an Outage or Streetlight Issue

Report an Outage

Where are you experiencing the outage?

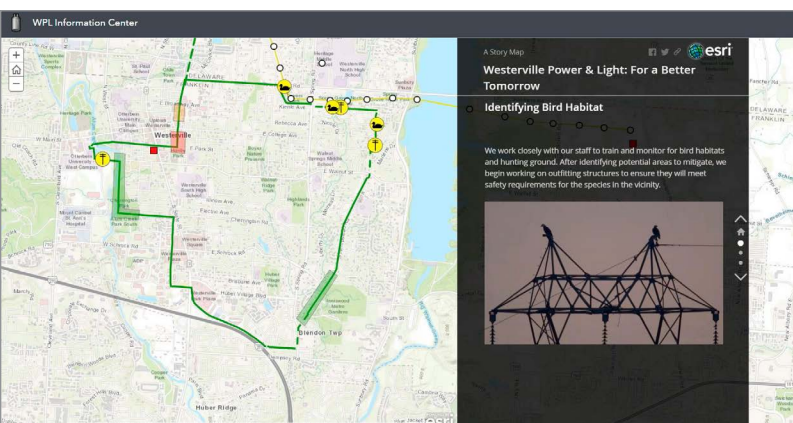
Track

Is the outage consistent or irregular (on and off)?

Report a Streetlight Problem

What is the problem?

Select Location



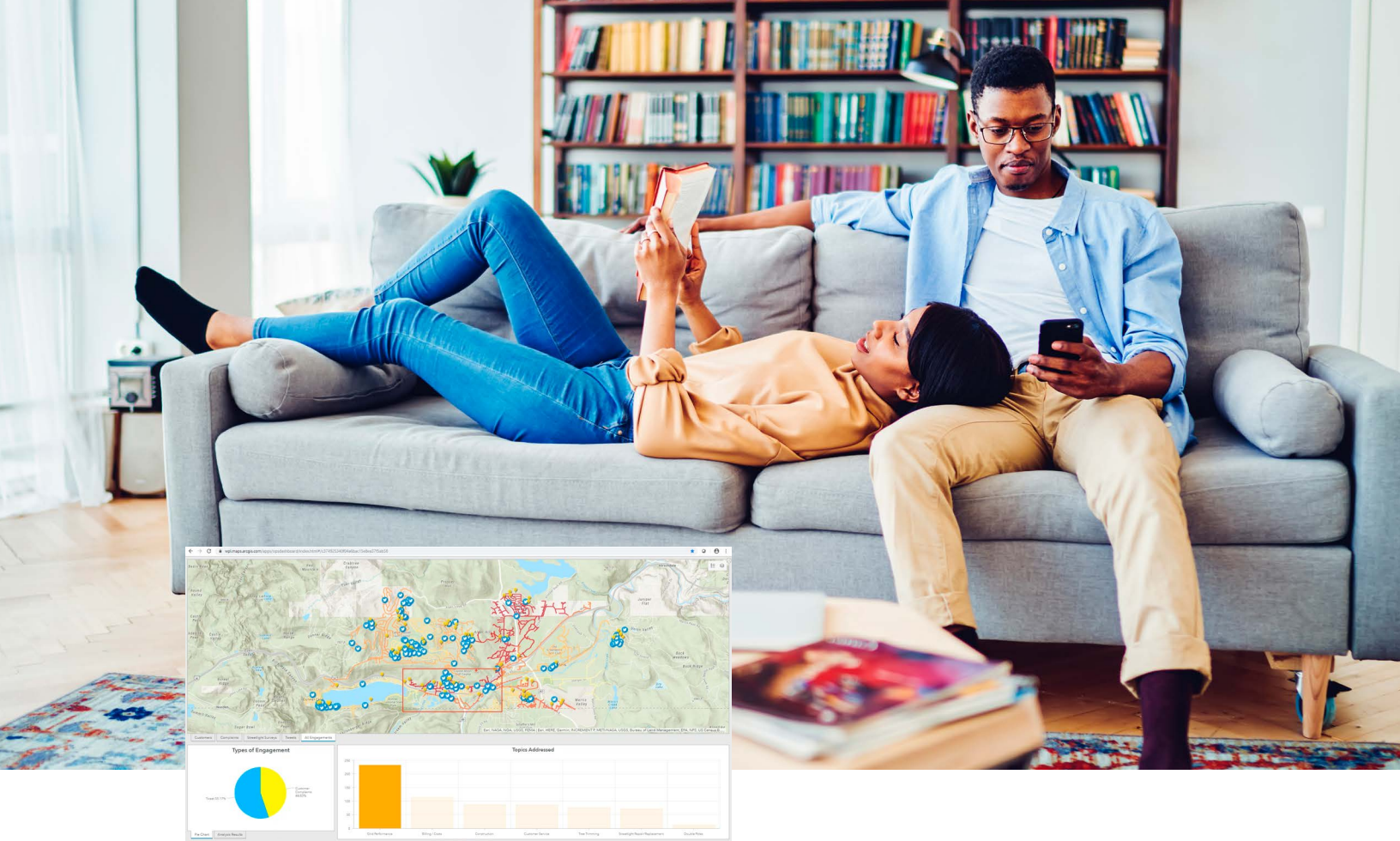
WPL Information Center

Other Resources and Maps

- EV Charging Stations
- Distributed Generation Opportunities
- Tree Trimming Schedule
- Avian Protection StoryMap

Tweets by @wpl

Tweets by @weatherchannel



Delivery of Timely Communication (continued)

instantly show service areas and information about starting, stopping, or transferring service. Using ArcGIS tools, customers readily report issues with smart forms, pay their bill online, and even identify how they prefer to receive alerts (email, text, phone, etc.). In this way, customers get the answers they need, in the way that they prefer.

Energy utilities work collaboratively with local governments, neighboring utilities, regional organizations, contractors, and regulators to meet their goals. This can be challenging, as each organization manages data in its own systems according to its own priorities. ArcGIS draws on the one attribute they all share—location. It applies *The Science of Where* to integrate, analyze, and visualize data in maps, charts, and colorful graphs. Easy-to-use applications bring this information to

stakeholders, expanding cooperation and collaboration. Everyone is provided with the same information, enabling them to achieve their goals and better serve customers. ■

CASE STUDY

Social Media Powers New-Age Outage Reporting—Seattle City Light is the 10th-largest public power system in the United States. In an effort to improve reliability and strengthen customer relationships, the utility mines social media data and generates powerful visualizations to engage with customers. When someone communicates via social media about utility topics, staff get real-time notifications so that they can act fast.

[View Story](#)

ArcGIS— Enabling Exceptional Customer Care

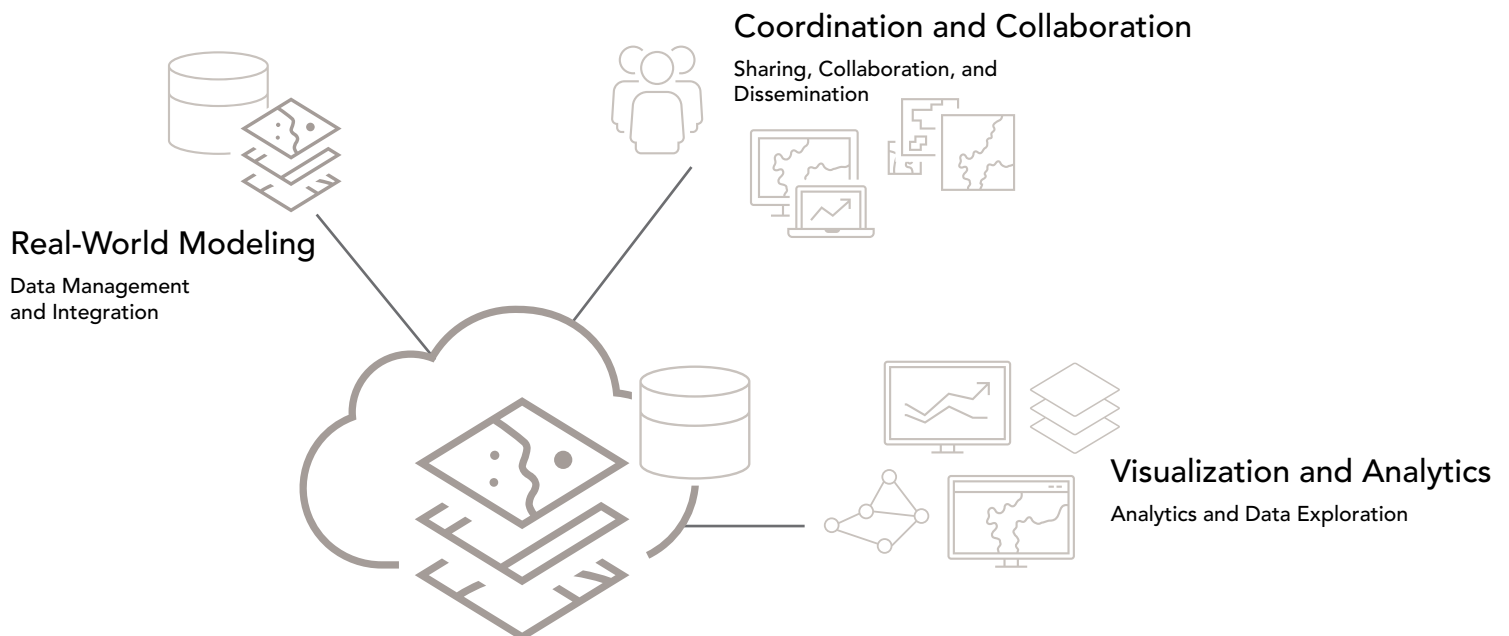
Most utilities have used GIS for many years. Yet how they use it is changing. Electric and gas utilities are using ArcGIS to meet customer service challenges—not just to make conventional maps. They use it in a threefold manner—as a system of record, a system of insight, and a system of engagement—to apply location-based technology and work better, capture the information itself, help users understand it, and then share that understanding with others. ArcGIS forms a comprehensive system—one that creates real business value across the utility enterprise.

Going further, ArcGIS integrates business systems, providing a holistic view of customer information in one place. Understanding customer's demographics and their relationship to critical assets and utility projects increases the ability to engage them. Timely communication and engagement are key to

managing customers who are impacted by construction, maintenance, or outages. Utility alerts and announcements shared via online resources and real-time messaging keep customers informed 24/7/365.

Providing extraordinary service isn't limited to customer communications. Information flow between mobile workers, back-office staff, utility departments, and stakeholders is critically important. ArcGIS streamlines internal workflows and communications, providing customer service representatives with the information they need to support and resolve customer inquiries quickly.

As utilities continue to struggle with limited resources, ArcGIS continues to provide solutions that enable them to do more with less. ArcGIS empowers every department with solutions that help staff work more efficiently. ■



About Esri

Esri, the global market leader in geographic information system (GIS) software, location intelligence, and mapping, helps customers unlock the full potential of data to improve operational and business results.

Founded in 1969 in Redlands, California, USA, Esri is deployed in more than 350,000 organizations globally and in over 200,000 institutions in the Americas, Asia and the Pacific, Europe, Africa, and the Middle East. Esri has partners and local distributors in over 100 countries on six continents, including Fortune 500 companies, government agencies, nonprofits, and universities. With its pioneering commitment to geospatial information technology, Esri engineers the most innovative solutions for digital transformation, the Internet of Things (IoT), and advanced analytics.

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