The Changing Face of Utilities

Aligning Investments in Mobile IT to Put Customers First

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Introduction

The utilities sector is undergoing massive transformation as organizations look to counter their most pressing challenges. According to a recent 2014 survey by Utility Dive, the greatest issues facing utilities included old infrastructure, current regulatory model, the aging workforce, and flat demand growth. In addition, changes due to smart technology and distributed generation are challenging the very fabric of how utilities operate and, more specifically, how their customers are served. Gone will be the days where utilities considered their customers merely as "rate payers" and did not have to seriously consider churn. Today's customer is significantly more sophisticated and engaged and, with trends like distributed generation, has more options to consider.

Utilities and their customers take each other for granted with the expectation that the other is there when the switch is turned on. Moreover, interactions between customers and utilities are predicated by bad experiences such as outages, billing issues, and occasional rate hikes. The transformation of the utility market and the pace of change will differ substantially by region. However, one universal trend is that consumers will have more options, and as the cost curves of some of these emerging options improve, so will their disruptive impact. Successful utilities will need to better communicate that they not only understand their customers' needs but are also willing to invest the necessary resources to deliver value and create a trusted relationship.

Aligning technology investments to elevate workforce performance and to better empower customers will represent a key opportunity for utilities organizations. From mobile workforce management to customer self-service portals, innovative data analytics applications, and smart metering solutions, utility investments in technology are far-reaching and will pave the way for how utilities will operate. From a workforce optimization perspective, investments in mobile computing and communications solutions that enable a more connected enterprise will help counter many of the workforce challenges confronting utilities today.

State of the Industry

Slowing Demand, Aging Infrastructure Placing New Pressures on Utilities

The state of today's utility sector is one of adapting to slowing demand, old infrastructure, changing business models, and an aging workforce. According to a recent 2014 survey by Utility Dive, these were the very concerns expressed by executives at more than 500 utilities. However, many of these organizations see the process of replacing and upgrading their infrastructure, integrating a new generation of more tech- and service-savvy employees, and responding to trends such as the

migration from centralized to distributed generation as opportunities. Utility organizations are clear in their understanding and prioritization of the challenges they face.

The current transformation in this sector will likely not yield one specific global business model but rather will spawn many options based on the choices on the customer side, in combination with IT and energy technology changes. This diversity in possible business models will impact the number of strategic choices for utilities. Regarding customers, the future will be largely characterized by the digitalization of the customer relationship, which means more and faster communications with customers about their actual demand leading to greater demand-side management and energy auto-generation. This greater focus on customer services and greater involvement by consumers in the whole energy system will require utility organizations to enter into a new dialogue with their customers and create services that more directly fit their needs.

Exhibit 1: Most Pressing Challenges Facing Utilities (Source: UtilityDIVE)
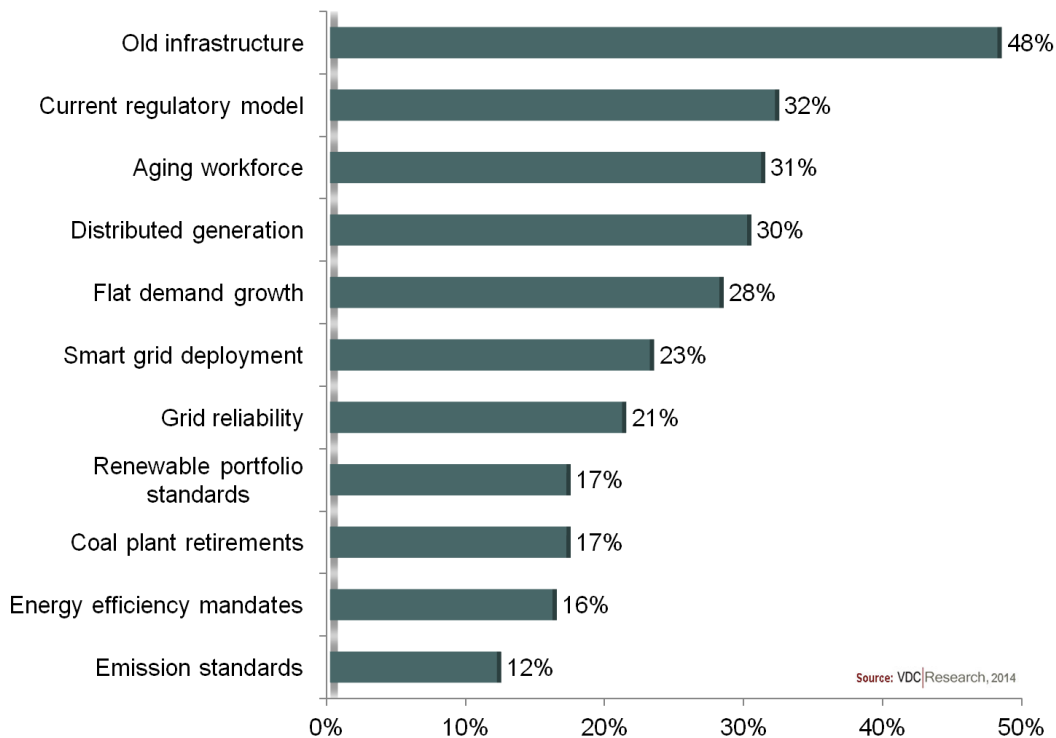
Shifting Focus to Customer Service, Workforce Agility and Infrastructure Management

Due to stagnant growth, the next significant phase for the utility sector is improved customer service and improved communication with customers. For utilities, customer service needs are most acute at times of crisis, such as during an outage. As utilities have shifted their business models to become more customer-centric, technology use has expanded substantially over the past several years with

even broader adoption anticipated. Solutions need to enable bi-directional communication with customers; however, this remains an industry challenge for utilities due to integration challenges and a lack of customer experience strategy. Customers want more in terms of clear, bi-directional communication on outages, rate increases, and billing issues. Yet very few utilities have a complete integrated view of each customer in order to analyze the information and deliver on those expectations.

Customer-centric solutions typically span those that support the organization's engagement with customers and those that are designed specifically for customer use. Most of the recent investments have been in the first category and have centered on call center technology loosely coupled with field-based connectivity solutions. In the future, these solutions will be increasingly coupled and tightly integrated with tools such as social media and two-way messaging.

The second category of customer empowerment will see substantial investment and innovation, often driven by big data and analytics, to ultimately enhance the overall customer experience. While utilities are increasingly using social media and the Internet to communicate with their customers about critical issues such as outage management, there is substantial opportunity to expand, considering current adoption is only at 50%. An additional benefit to improving these services and relationships could be that customers become more open to participating in utility and demand response programs, improving the utility brand in today's increasingly competitive market.

As utilities focus on transitioning into more customer-centric organizations, a key challenge facing most organizations has to do with their aging workforce and the talent gap it is creating. Utilities are losing key workers at an accelerated pace, and although the sector offers among the highest wages relative to others, organizations are increasingly challenged by attracting new workers. Moreover, much of the institutional knowledge has not been well codified and often "retires" with the workers and the traditional "word of mouth" approaches to on-the-job training is not sustainable. More than ever, utility organizations need to better document and continuously improve work processes.

In addition, focused and efficient knowledge transfer and succession planning among the workforce should align with the organization's operational imperatives. Effective use of workforce management solutions can help bridge these transitions and address some of the more complex workforce issues, especially regarding field-based asset management and maintenance. Especially facing stagnant demand and an aging infrastructure, it is upon utilities to better manage their operational costs.

Leading utilities are leveraging IT investments more strategically, especially in the context of their customer initiatives and operational mandates. In this context, mobile solutions are especially valuable, considering the distributed nature of the workforce and need to be connected to workers at all times, especially during emergencies. In fact, according to VDC's research, the mobile utility workforce is the fastest growing workforce segment. It currently consists of 2.2 million workers, and by the year 2018, it will reach the 3.0 million mark.

Facing the combined pressures of maintaining and upgrading aging infrastructure and delivering improved customer service, utilities are focusing on increasing IT investment resources toward mobile solutions with 2014 mobility budgets expected to increase by 11% over 2013. These investment sentiments were clearly expressed in a recent survey VDC Research conducted among utility decision-makers who cited improving worker productivity, reducing operational costs, and enabling faster decision-making as the top three metrics most closely aligned with their mobile solution investments.

Exhibit 2: Three Most Important Metrics Organizations Use to Measure Mobile Solutions

Source: VDC Research, 2014

Among field mobile applications that utilities are investing in, there are solutions that address core workforce management, support maintenance, and repair operations in addition to providing customer support. Traditional maintenance and repair, dispatch management, and work order management are – as expected – the most widely deployed mobile applications for field utility

workers today. Emerging applications include customer-facing solutions such as mobile POS and enterprise asset management, which helps organizations fulfill their asset management plans and decisions and gives them visibility and control over their critical assets while increasing the useful life of physical assets.

Exhibit 3: Utility Field Mobile Applications
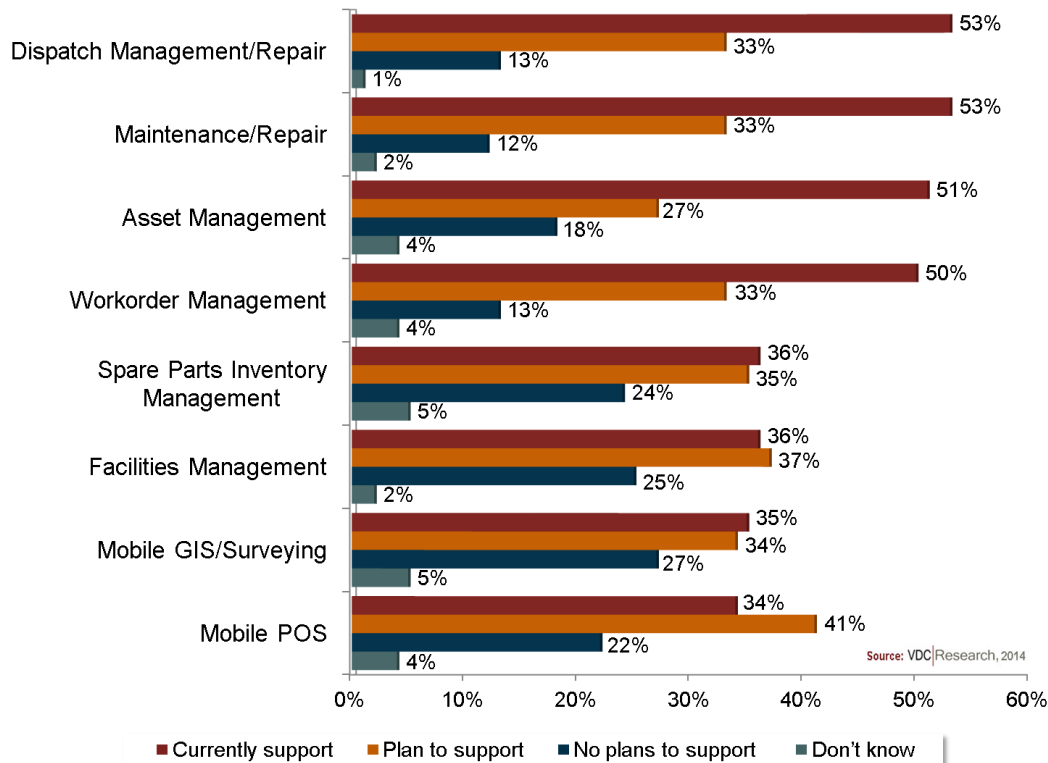
Aligning Investment in Mobile IT Solutions with Utility Initiatives

Mobile investments within utilities are far-reaching and range from lightweight BYOD solutions to specialized mobile resource management solutions in addition to customer engagement portals. With access to increasingly powerful and affordable mobile devices, availability of intuitive applications, and support from robust networks, the impact of mobile investments in the utility sector is more immediate that ever before. Almost seven in 10 utility organizations are "extremely satisfied" or "satisfied" with their mobility investments, citing an ROI of 18 months or less. Some of the benefits experienced by organizations include higher workforce productivity rates (with job completion rate improvements of up to 40%), substantially lower workforce costs, and enhancements to both customer service and loyalty.

Consumer mobile devices are setting the new benchmark of what any mobile device should look and feel like and are motivating a new breed of enterprise mobile devices. Moreover, the lower adoption costs of consumer devices on a device-to-device comparison, and the perception of a lower cost of ownership, is adding to their popularity. So what characterizes a good enterprise mobile device for frontline field workers? This fundamentally comes down to a function of target user and application. While consumer devices are designed for the masses, their capabilities have evolved considerably. Furthermore, an active accessory partner community has introduced a variety of solutions – from sled scanners and payment peripherals to protective cases – to further narrow the gap with devices designed for a more enterprise-focused customer and use case.

Fundamentally, however, it remains a consumer device supporting an enterprise workflow. Issues including wireless performance, lifecycle support, security, device failure, and others counter many of the real and perceived benefits of consumer devices. At the same time, gaps in the enterprise mobile solution portfolio need to be filled to address the growing value erosion perception of enterprise-designed devices. Learning from successful consumer device OEM to deliver similarly immersive and intuitive user experiences in a more ergonomic and functional form factor without sacrificing any of the key enterprise requirements is a growing requirement.

Exhibit 4: Top Five Selection Criteria for Evaluating Mobile Devices to Support Applications

Source: VDC Research, 2014
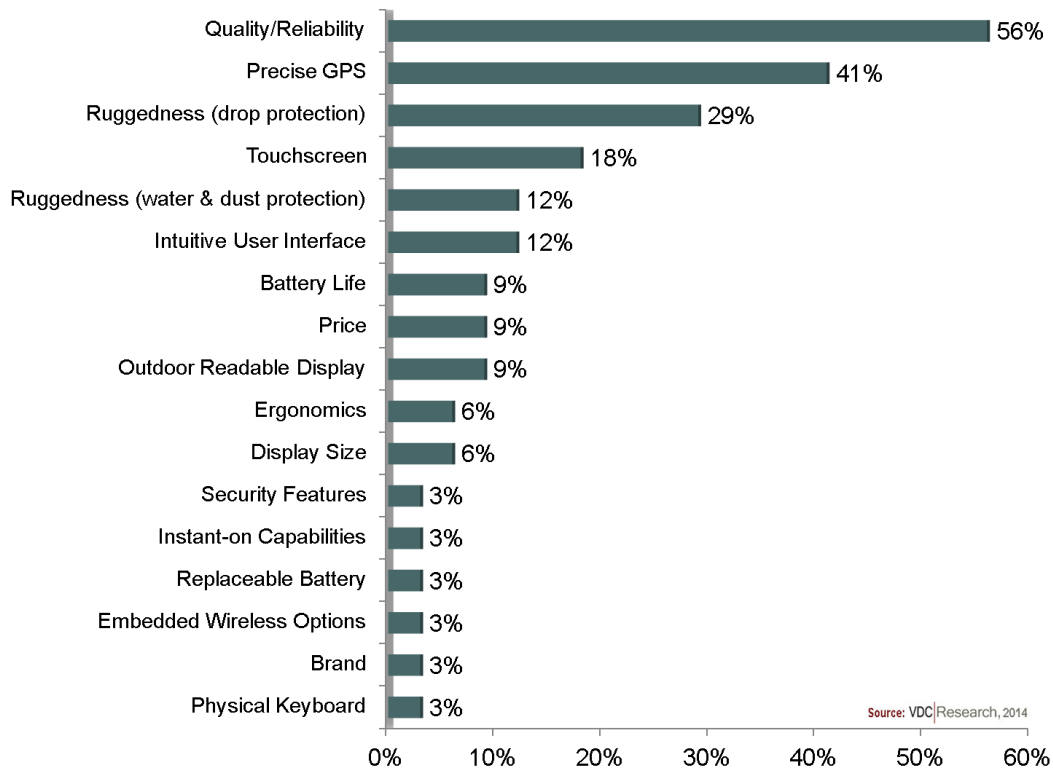
The largest determinant for making appropriate mobile investment decisions are mapping device capabilities and specifications to the application requirements as well as potential hazards in the deployment environment. In addition, a critical element for any successful enterprise mobility solution is to analyze the business elements. These include length of deployment/replacement cycles, failure rates and causes, and opportunity cost of lost productivity, to name a few. Through a full analysis, organizations can determine the solution that will best serve the company.

Mobile device requirements for enterprise customers and consumers are measurably different, especially when it comes to security, management, reliability and uptime, IT integration, ability to audit, and support. Some of the more critical include the following:

▶ **Durability and reliability**. Based on their design and portable use cases, the risks of damaging a tablet are great, increasing the premium for durability. Annual failure rates of consumer tablets supporting field mobile applications was recently measured by VDC Research at 19%, substantially higher than the 4.5% of rugged tablets. Consequently, it is not surprising that categories for ruggedness (both drop and water/dust protection) are rated as 'top five' mobile device selection criteria for utility decision-makers. The impact of mobile device failure, especially for highly optimized field mobile applications, includes a significant disruption to workflows and lost productivity and the potential for customer service erosion and employee fatigue.

▶ **Connectivity options**. Mobile utility solutions rely on access to networks to be most successful. However, mobile workers frequently find themselves in highly remote environments with no network access. Therefore it is critical that applications are designed with occasional connectivity in mind and remain functional even in the absence of network connectivity. An additional key requirement for mobile utility workers – especially those supporting surveying and applications leveraging GIS information – is the need for highly accurate and sensitive GPS transceivers. This feature was cited as the second-most critical for field mobile applications in the utility sector.

▶ **Battery Life and Management**. A major requirement for enterprise mobile solutions is a strong all-shift battery performance without significant design implications. The desired target is between 8-10 continuous hours of operation. According to VDC's research, 65% of enterprise tablet users today indicate that their batteries 'frequently' or 'occasionally' do not last the full shift. Mobile devices designed for enterprise use – including rugged devices – fared better than consumer devices in battery performance. Moreover, the ability to replace batteries in the field – including hot swappable batteries – is a critical feature for field applications.

▶ **Ease of use and support**. Leveraging consumer design styles to deliver greater ease of use and user experience is critical when considering next-generation enterprise tablets. However, beyond ease of use, ease of support is of equal importance. Key support requirements include mobile device and application management, help desk services, depot, and advanced maintenance and repair services. In addition to application design consideration, many use cases for utility field mobile applications expose the worker to direct sunlight conditions, making sunlight viewable displays a commonly required feature.

▶ **Security**. A critical requirement for any enterprise mobile solutions, it becomes only more important with the adoption of increasingly sophisticated customer-facing and engaging mobile applications. Today enterprises are mixed in their impression of mobile security with only 50% stating that their organization has installed effective mobile security policies to address the potential risks mobile devices pose to corporate networks. Nevertheless, as far as mobile investment barriers are concerned, respondents cited security as only the fifth-highest barrier, behind other concerns such as application integration complexity, budget pressures, and lack of resources to support mobility initiatives.

Conclusion

Mobility is transformational in how utility organizations are operating and responding to the growing challenging they are facing. Mobile solutions represent a crucial channel for interfacing and interacting with customers and employees, especially as the mobile utility workers scale to 3 million over the next five years. Considering the recent advances we have witnessed in mobile device, network, and application sophistication, opportunities for enterprise mobility solutions are scaling rapidly. By applying technology to help manage their mobile workforces, utilities are seeing almost immediate benefit through lower costs, higher workforce productivity, improved security, and enhanced customer experiences.

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