AUGMENTED REALITY: FAR FROM A GIMMICK WHEN IT COMES TO FIELD SERVICE
Augmented reality (AR) and virtual reality (VR) are beginning to have their day in the realm of consumer products, but these technologies were really meant for business purposes, such as service. This report explores the business challenges that AR/VR can be used to address, and where your firm will see the most benefits.

**Definition: Augmented Reality (AR)**
Aberdeen defines AR as the software and hardware designed to provide overlays of information on top of a visualization of the environment in which this technology is used. Hardware may include handheld mobile devices, wrist-mounted items, or headsets.

**Definition: Virtual Reality (VR)**
Aberdeen defines VR as a system deployed through a headset that allows an end user to experience an environment and circumstances different from those of their physical location. These devices can be used for purposes such as training and remote diagnostics.

**Tomorrow’s Tech for Today’s Problems**
When discussing field service, it’s easy to focus on the embedded devices in place right now, and how applying new software to those devices can be used to address the needs of technicians and customers. There’s no denying that focusing on those things can help deliver solutions, but Aberdeen’s research has shown that firms leading the transformation of field service have begun to look outside those areas, realizing rightly that smartphones and location services alone can’t solve some of service’s more nuanced challenges. Figure 1 discusses the major challenges impacting service firms today.

**Figure 1: Complex Service and Constricted Resources**

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growing complexity of service offerings</td>
<td>37%</td>
</tr>
<tr>
<td>Lack of budget for investment in service</td>
<td>36%</td>
</tr>
<tr>
<td>Lack of collaboration within service and other business areas</td>
<td>28%</td>
</tr>
<tr>
<td>Aging service workforce</td>
<td>22%</td>
</tr>
</tbody>
</table>

% of Respondents n = 179, Source: Aberdeen August 2017
These challenges illuminate an important fact about the state of service today: Firms are inundated with new, complex technologies in serviceable assets on one end, and they are constrained by limited resources and an aging workforce on the other end. Technology solutions should then be tailored to address the fact that the candle is burning from both ends.

To start, let’s take the growing complexity of service offerings. As technology becomes more intricately embedded into serviceable devices, the number of potential issues expands dramatically. Take, as an example, refrigerators: IoT-enabled refrigerators not only suffer from the litany of mechanical issues present in traditional appliances, but now can also suffer from firmware issues, viruses, and user errors, among other problems.

To address these issues quickly and effectively, traditional thinkers have centered on extensive employee retraining, which can provide a good baseline, but can cause slowdown as employees fumble with reference materials for new systems.

This slowdown is exacerbated by another major challenge impacting service: the workforce is changing. As older technicians age out of businesses, the new workforce needs to be brought on and trained. Aberdeen’s research has also shown that organizations are looking for more ways to capitalize on contingent labor. For those businesses, training is an ongoing challenge.

While organizations have developed a variety of technologies to approach this, for the purposes of this report, we will focus on arguably the most compelling of these advancements: AR and VR.

**AR/VR: Getting the Full Picture**

Augmented reality and virtual reality have both existed in consumer and business environments for years, and have long struggled to find the right fit. Figure 2 illustrates how this is beginning to change.

The Aberdeen maturity class framework comprises three groups of survey respondents. This data is used to determine overall company performance. Classified by their self-reported performance across several key metrics, each respondent falls into one of three categories:

- **Best-in-Class**: Top 20% of respondents based on performance
- **Industry Average**: Middle 50% of respondents based on performance
- **Laggard**: Bottom 30% of respondents based on performance

Sometimes we refer to a fourth category, All Others, which combines Industry Average and Laggards.
Figure 2: Best-in-Class Firms Address Complexity with Technology Innovation

As the data illustrates, Best-in-Class firms are beginning to see the value of new solutions to bolster their support offerings. While technologies like augmented reality may seem like an abstract solution to the challenges listed in Figure 1, the Best-in-Class see it as doubly beneficial: These technologies, when implemented correctly, can not only relieve business and workforce challenges in service, but also serve as a vehicle for new service offerings. Indeed, 52% of Best-in-Class firms (compared with 16% of all others) have focused their future technology spending on new service offerings. Virtual reality and augmented reality offer an answer to those challenges, as well as a path to brand differentiation.

Let’s use a contingent workforce, as mentioned earlier, as an example. Depending on the complexity of serviceable assets, onboarding new technicians can be lengthy and expensive, and does not work well with a freelance workforce that would need on-site training and guidance. An AR solution, delivered through a wearable, can provide itemized instructions and keep the technician moving efficiently and accurately without having to consult reference materials.

The benefits of this are clear: Organizations can increase the productivity of on-site technicians, saving time, money, and manpower through augmented reality. Additionally, Best-in-Class firms looking to build new service offerings can provide clients faster on-demand service through alternatives to salaried staff, saving money and offering more options to the end-user.
A Business-Focused Approach to Implementation

An overreliance of emerging tech is not without its critics—and for good reason. Technology for technology’s sake is not the answer: Rather, investments in tech need to yield solutions to the challenges of the firm. Figure 3 considers how AR/VR technology addresses these challenges, and highlights some of the key capabilities that organizations that employ them possess in the field of customer service.

Figure 3: Knowledge-Management Benefits from Centralized Data

<table>
<thead>
<tr>
<th>Capability</th>
<th>AR/VR Technology</th>
<th>All Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technicians have access to up-to-date work instructions while on customer site</td>
<td>78%</td>
<td>41%</td>
</tr>
<tr>
<td>Process to provide field workers with access to remote expertise while at customer site</td>
<td>70%</td>
<td>34%</td>
</tr>
<tr>
<td>Real-time visibility into parts availability</td>
<td>65%</td>
<td>29%</td>
</tr>
</tbody>
</table>

It should not be surprising that up-to-date service instructions are the leading capability employed by firms with AR and VR solutions. Providing workers with access to expertise on site can seem similarly straightforward on the surface, but how this is implemented can take a variety of forms.

One example would be a situation where a new or contingent worker is on site and meets an unfamiliar configuration. Organizations could allow on-site technicians to consult managers or experts elsewhere, granting those experts visual access through the feed from an on-site wearable to an off-site VR helmet. This could save time and avoid costly errors, while providing a frictionless experience across the value chain.
**Augmenting Success**

It’s natural to have some trepidation about leaning too heavily on technologies such as augmented reality, especially in tandem with contingent labor. Figure 4, however, shows that implementation of these technologies has a dramatic impact on both the efficiency and the effectiveness of service technicians.

**Figure 4: Augmented Reality Leads to Business Benefits Where It Matters**

Furthermore, companies that have incorporated these technologies see their year-over-year (YoY) growth in a variety of categories more than double, as laid out in Table 1.
Table 1: Augmented Reality Gains Extend Beyond Operations

<table>
<thead>
<tr>
<th>YoY Change (n=179)</th>
<th>Using AR/VR</th>
<th>All Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer satisfaction</td>
<td>13.7%</td>
<td>5.7%</td>
</tr>
<tr>
<td>Annual decrease in average repair time per job</td>
<td>8.2%</td>
<td>2.2%</td>
</tr>
<tr>
<td>Annual company revenue</td>
<td>7.9%</td>
<td>4.1%</td>
</tr>
<tr>
<td>First-time fix rate</td>
<td>7.2%</td>
<td>-1.7%</td>
</tr>
<tr>
<td>Service workforce productivity</td>
<td>5.6%</td>
<td>0.6%</td>
</tr>
</tbody>
</table>

Given this information, the benefits of these solutions are evident. Take first-time fix rate as an example: Our research has shown that for companies not investing in these technologies, year-over-year performance is declining. As shown earlier in this report, this can be traced back to a pinch on the existing workforce from aging technicians and scaled-down service budgets. It’s clear, then, that part of the mix for successfully navigating the future of service will be built on the backs of emerging technologies, and augmented reality and virtual reality are leading the way.

Recommendations

- **Consider where your organization is on the maturity curve.**
  Best-in-Class organizations have begun to invest in Augmented Reality technology at nearly three times the rate of other firms. While one reason is that Best-in-Class firms understand the importance of emerging technology, this isn’t the full picture. Realistically, more mature firms are focused on higher-level business challenges. This doesn’t mean that certain firms wouldn’t benefit from augmented reality; it just means that the capabilities that this technology offers will differ between firms. To that end …

- **Start with business questions. Use AR/VR as the answer.**
  Augmented Reality shouldn’t be a solution in search of a problem. To make things work properly, this technology should function as a natural extension of the goals your organization is working towards every day. If your firm is struggling with staffing, develop systems that address this. If you need to improve first-time fix rates, leverage resources for that.

- **Once you excel in one area, look for ways to expand.** Once technologies are embedded in your system, you can use this as a
launchpad to future advancements. For instance, if you’ve employed augmented reality as a tool to bolster on-demand training and expertise, perhaps it’s time to consider how this capability can save money and increase efficiency through staff shakeups and contingent labor.

Related Research

Field Service Knowledge Management: The Link Between Service Excellence and Efficiency; February 2016

Follow the Best-in-Class to the Future of Connected Service; July 2015

Service Management Capabilities Propel the Best-in-Class Advantage; July 2017

How Service Parts Pricing Can Increase Margins and Delight Customers; July 2017
About Aberdeen Group
Since 1988, Aberdeen Group has published research that helps businesses worldwide to improve their performance. Our analysts derive fact-based, vendor-neutral insights from a proprietary analytical framework, which identifies Best-in-Class organizations from primary research conducted with industry practitioners. The resulting research content is used by hundreds of thousands of business professionals to drive smarter decision-making and improve business strategies. Aberdeen Group is headquartered in Waltham, Massachusetts, USA.

This document is the result of primary research performed by Aberdeen Group and represents the best analysis available at the time of publication. Unless otherwise noted, the entire contents of this publication are copyrighted by Aberdeen Group and may not be reproduced, distributed, archived, or transmitted in any form or by any means without prior written consent by Aberdeen Group.