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HOW THE BEST-IN-CLASS USE AUGMENTED REALITY FOR SUPERIOR SERVICE MANAGEMENT

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Technician turnover continues to create challenges across the Field Service Management industry, and organizations are scrambling to keep up. Best-in-Class organizations are embracing emerging technologies like Augmented Reality (AR) to help manage these new workforce pressures. This report explores Augmented Reality successes, and charts a path to success for those businesses ready to embrace an augmented future.

Service Management Has a Major Workforce Problem

Each year, Aberdeen surveys service organizations on the top pressures leading them to invest in new technologies. The top two choices consistently relate to business' drive to maximize efficiency and manage competition in products and services. The third biggest challenge after those two has been the same, year after year: Organizations, across disciplines, feel the pressure to manage increasing workforce turnover.

Aberdeen's recent State of Service Management study looked to explore that further, and the findings provided additional insight – on average, organizations are seeing technician turnover of 31.5%. To add to this problem, an increasing number of service technicians are contracted (an average of 26.4%), meaning less consistency in service delivery, and more short-term labor that needs to be quickly on-boarded, trained, and given an understanding of the appropriate standards and practices.

We know that this has a detrimental effect on businesses of all sizes. Organizations with higher-than-average turnover see a 14% lower first-time fix rate compared to firms with lower turnover (52% compared to 66%). These operational failings don't just affect service costs. High-turnover companies also see customer

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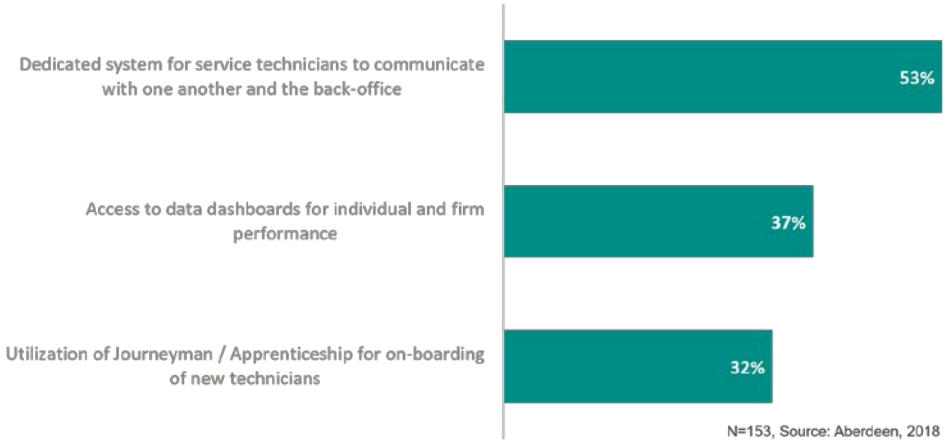
retention at a mere 60%, compared to 72% for those with lower-than-average turnover.

Service management recognizes technician turnover has a range of causes, including an aging workforce, fewer young people entering the trades, and more service offerings and service organizations diluting the existing workforce. More important than understanding the causes is identifying appropriate and effective workforce solutions, including the best technology to implement them.

Facing the Challenges of the Service Labor Market

There are several strategies that organizations employ to reduce the impact of these labor challenge trends. The top actions that organizations are taking today are outlined in detail in Figure 1.

Figure 1: Workforce Management Capabilities to Manage Service's Labor Woes



These are not new solutions. We've had the means to communicate with on-site technicians for decades, and we've had apprentices for centuries. These solutions alone will not solve the labor challenges facing organizations today.

Apprenticeship programs are beginning to gain some momentum in service management, but in certain industries, they can actually cause more problems than they solve. New employees – apprentices or hired – need oversight from more experienced technicians. But this traditionally happens on-site, and results in a costly and labor-intensive model that compromises service

The Aberdeen maturity class framework is comprised of 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.

effectiveness and efficiency. Newer models that enable industry veterans to provide guidance without being physically on-site, and deliver guidance to more apprentices, can make this model more viable.

The top capability that organizations are employing to manage workforce challenges – dedicated communication utilities between the back-office and field employees – can help mitigate this challenge by limiting the amount of necessary on-site time. Traditionally, this means picking up a cell phone and making a call, or using a work-specific messenger application.

All of these approaches rely on emerging technology for success; as technology improves, so do the range and depth of these service capabilities.

This report explores the next natural step in the technology evolution of these service strategies: Augmented Reality. Similar to previous technology innovations, Augmented Reality doesn't upend these service and knowledge-sharing strategies; it simply takes their effectiveness to a new level. We know this because top-service performers are beginning to employ Augmented Reality, and the data strongly indicates success.

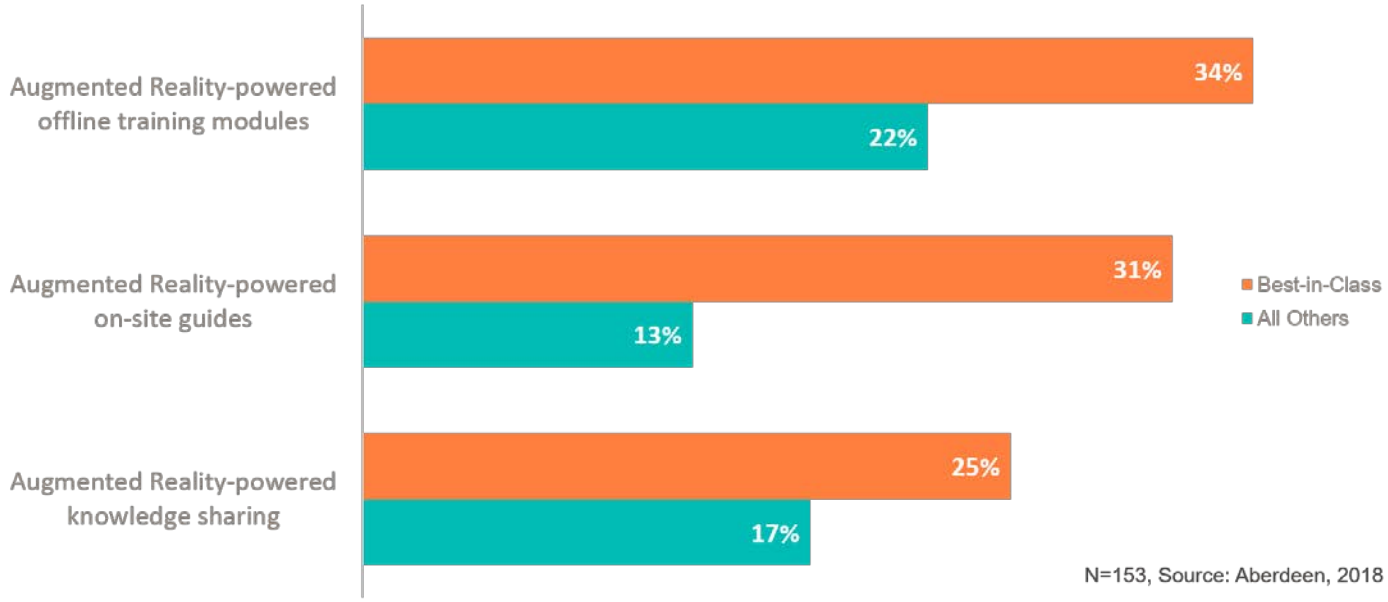
As an example:

Among Best-in-Class service professionals, we're already seeing movement towards an AR-powered future. With 22% of these top-performing firms currently implementing AR on some level, and more than half planning to employ it within the next twelve months, top-performing organizations clearly see value in this hardware. As with any new technology, Best-in-Class companies assume greater risk as first-movers, but they potentially stand to enjoy much more dramatic benefits.

Augmented Reality: The Ultimate Onboarding Utility

Enterprise Augmented Reality has several applications that can be employed in the service of onboarding employees more effectively. Figure 3 explores how the Best-in-Class is using AR to improve onboarding and skills building.

Figure 2: Augmented Reality for Recorded Training and Real-time Knowledge Sharing



Notably, AR-powered knowledge sharing is being employed by 25% of Best-in-Class firms. This is largely being accomplished through *shared-view communication* applications which utilize touchscreen devices. AR shared-view communication apps link pairs or groups of users, enabling off-site experts to see what other technicians see. By combining video chat and AR technology, user pairs can communicate more effectively. In addition to traditional video and audio, users can annotate what they are viewing – literally drawing onto the screen – to call out specific areas and steps.

This capability supports the #1 most utilized capability from Figure 1: dedicated communication systems between field workers and the back-office. More advanced AR utilities map to the workspace, so as the on-site technician scans the camera around a given space, the annotations stay where they should.

An expert's time can be managed much more effectively by no longer having to be on site, being available in an on-demand capacity, and, in many instances, providing more robust resources than they'd otherwise be able to. Moreover, aging technicians who may not want or be able to be on site can utilize these technologies

to advise new technicians, save time, and improve workforce effectiveness.

In many industries, this new strategy also complements existing Internet of Things (IoT) applications. 72% of Best-in-Class organizations already use IoT to capture and share diagnostics data with off-site stakeholders. This represents an enormous opportunity for Augmented Reality to exponentially increase the value of this data for service use.

67% of users of Augmented Reality technology use IoT as a means to conduct remote repairs.

Moreover, 67% of users of Augmented Reality technology use IoT specifically as a means to conduct remote repairs. While this can sometimes be as simple as remotely adjusting the output of a connected device, sometimes a pair of human hands is required. Consider shared views, which also provide real-time diagnostic information for a serviceable asset on the screen. Seasoned employees understand more fully what a temperature spike, for example, might indicate, and are armed with information that they wouldn't have off-site access to. These capabilities can be leveraged between two technicians, or even between a technician and an end-user, taking remote repair to a whole new level.

Operationalizing and Future-Proofing Your Knowledge Base

As technician turnover continues, valuable knowledge leaves the company, and Augmented Reality is perfectly positioned to help avoid a technical brain-drain. AR-powered on-site guides are employed by 31% of Best-in-Class organizations. These instructions – easy to create, update, provision, and use – can help reorient technicians of all experience levels on best practices, and ensure that jobs are completed correctly the first time.

This typically works by having the technician use a device camera to scan a serviceable asset. The AR utility recognizes the asset, and provides step-by-step instructions for repair. This is a huge step up from traditional repair documentation, and gives technicians a much more accurate view into what they are doing. Not only does this teach new employees how to do something, it ensures that they're doing it right the first time.

Augmented Reality Offers Relative Ease-of-Deployment

Unlike many other enterprise technology solutions, Augmented Reality is fairly easy to deploy – with lower technical barriers to development, and a flexible set of hardware requirements.

The best Augmented Reality utilities are designed to be developed in a low-code environment by practitioners, rather than application developers. This is an important distinction; when it comes to maintaining and repairing assets, service technicians and engineers are the true subject matter experts, not software developers. By leveraging existing CAD product data, service organizations are utilizing AR platforms designed with easy-to-master user experiences to quickly prototype and build usable AR training, guidance, and service tools.

62% of Best-in-Class organizations employ all of their Augmented Reality utilities on consumer-grade devices.

Another major consideration is the type of device that these tools are employed on, and in terms of hardware investment, there are certainly options. Sixty-two percent (62%) of Best-in-Class organizations employ all of their Augmented Reality utilities on consumer-grade devices – smartphones and tablets – usually provided by the organization itself. This allows for a great deal of flexibility, and helps democratize service functions so that a technician and an end-user can, theoretically, both have easy access to an AR interface.

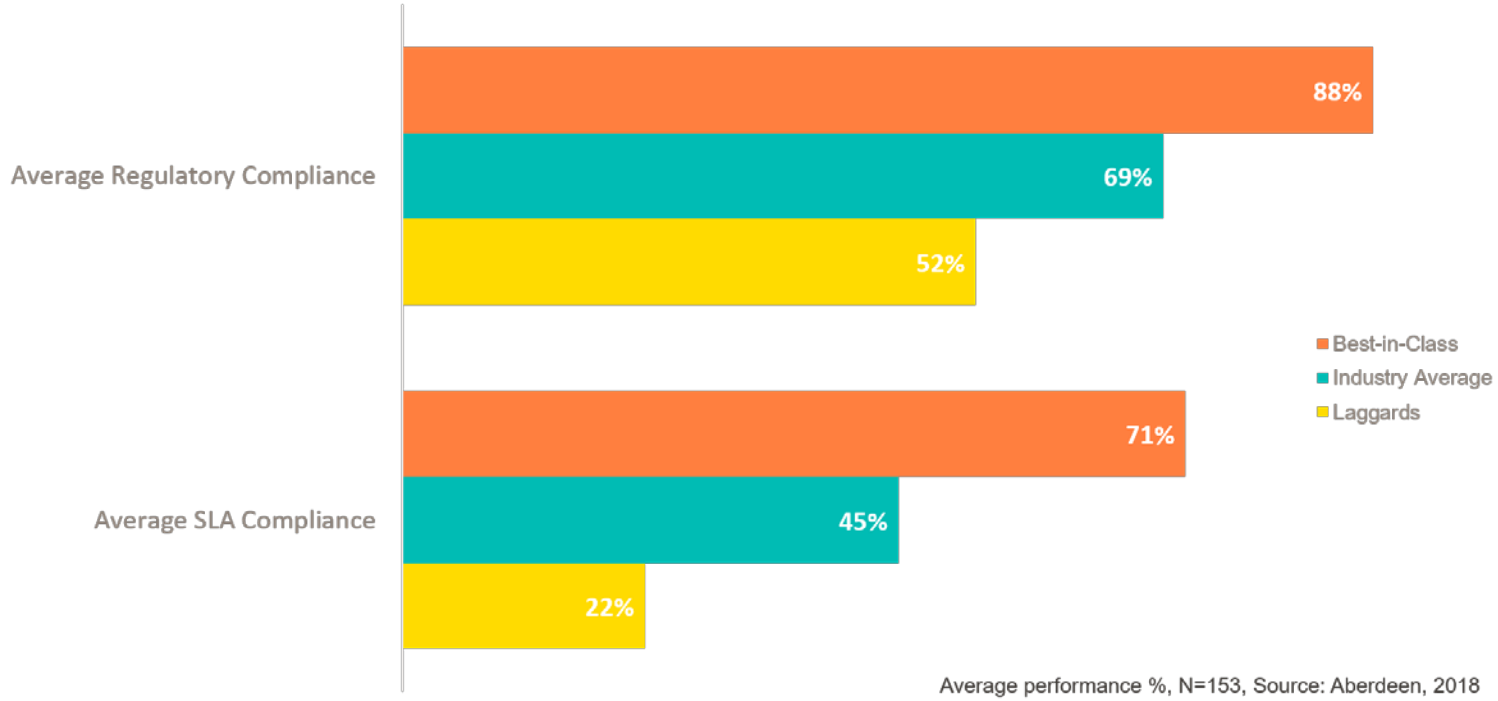
Smartphones, of course, are not the only way. But when we look at Augmented Reality users as a whole, we see that 71% of them do indeed have some form of wearable technology implemented. Mileage will vary, and the right mix for one business will differ dramatically compared to another. It's up to your firm to understand the specific needs of its technicians, and make the appropriate hardware steps to put Augmented Reality in place.

The Proof is in the Performance: Compliance, Customer Satisfaction, and Increased Efficiency

The data makes it clear that the Best-in-Class have embraced Augmented Reality, but how are these leaders actually performing? Has Augmented Reality had a measurable impact on these service organizations? The Best-in-Class perform, on average, 25% better

than their peers across most performance measurements, and it's easy to see the correlation between AR and service success. Let's start by looking at the Best-in-Class performance in Figure 4.

Figure 3: Whether Regulatory, or Client-Mandated, The Best-in-Class Have Mastered Compliance



Average performance %, N=153, Source: Aberdeen, 2018

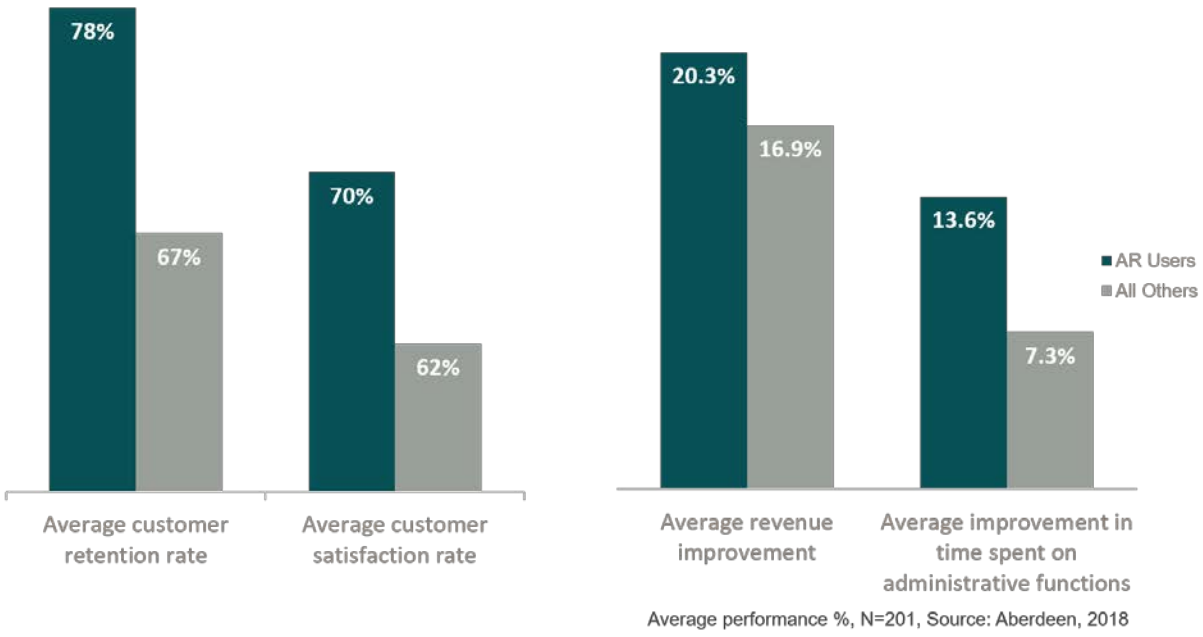
Compliance has long posed an ingrained challenge among service firms, with SLA compliance in particular remaining one of the top five pressures among these organizations.

On the job site, newer technicians (particularly 3rd party contractors) will be less adequately equipped to grasp the nuance and minutiae of these requirements. This is where Augmented Reality, as a guide, can help.

Whether through two-way communication or prerecorded guides, the unique nature of client relationships, as well as broader regulatory requirements, can easily be provided to the on-site technician. And depending on the AR platform, this guidance can potentially be provided in real time while service professionals are working.

These capabilities also have an impact on the bottom-line, increasing customer retention rates, locking in more customers, and mitigating SLA-related costs. Figure 4 looks at this as it more specifically relates to users of Augmented Reality.

Figure 4: Augmented Reality Has a Tangible Impact on the Business



Average performance %, N=201, Source: Aberdeen, 2018

Comparing AR users to non-AR users, there's clearly a business impact beyond simple workforce utilization – though, of course, there are improvements that could be made there as well. Sure, AR tools keep customers satisfied and increase customer retention rates, but when you evaluate year-over-year performance, an average 5% edge in year-over-year revenue improvement over firms without Augmented Reality adds up quickly.

AR-enhanced service improvements provide a host of benefits, including happier customers, decreased on-site service costs, and recovered revenue previously lost to workforce strain. Looking ahead, we can begin to understand the idea of an AR-powered service environment: helping service leaders edge closer to a "failure free" environment, ensuring maximum customer retention, and increasing service value. This is clearly a win-win, and it's a

discipline that can be supercharged with smart use of Augmented Reality.

Recommendations

While the value of Augmented Reality in service management is clearly recognized by service leaders, implementation is not yet widespread. By building an AR infrastructure today, you'll be that much further ahead of the companies scrambling to catch up in the years to come. But AR as a tool in a vacuum is not particularly useful; thoughtful implementation and addressing key business challenges will help to maximize its potential. Consider the following guidance when charting your AR-Powered knowledge sharing utilities:

- **Find the mix of modules that's best for you**. Best-in-Class organizations have implemented AR in a variety of different ways. Two-way communication and shared view make the most sense with equipment of various sizes, and are fairly dynamic, but require workforce management oversight. Step-by-step AR tutorials mitigate workforce needs, and can also provide opportunities for customer self-service, but can be more rigid.
- **Be thoughtful about implementation**. Think about the embedded infrastructure in your serviceable assets. Are there any ancillary technologies like IoT that organizations can take advantage of? Also, think about how Augmented Reality tools fit into your technology stack. Is utilization of consumer devices the best path forward? For Best-in-Class organizations, the answer is yes.
- **Evaluate your desired outcome**. Be specific. KPIs such as time from ticket to invoices are great general benchmarks, but you know your workforce, you know your industry, and you know the desired outcome of every potential job. As it relates to failed service visits, or workforce utilization, how far are you falling short? How will you measure the ways that Augmented Reality gets you back on track?

Related Research

What Will Drive the Future of a Maturing Mobile Field Service Landscape?; January 2018

How Integrated Fleet and Data Management Systems Drive Better Results; December 2017

How Today's Investments Shape Tomorrow's Field Service Landscape; November 2017

Augmented Reality: Far from a Gimmick When it Comes to Field Service; September 2017

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