A CUSTOMER-CENTRIC FIELD FORCE WITH AR

Field service engineers are instrumental in maintaining existing infrastructure, expanding optical fiber and laying out new 5G networks. But there is a problem. Expert engineers move on or retire and take niche knowledge with them. What's needed is a new way of servicing the customer, using cutting-edge AR-enabled applications. In this new paradigm, precious engineering knowledge is kept in-house and new recruits are upskilled in real time.

Field service engineers and technicians are instrumental in laying out the new fiber and 5G network while maintaining and repairing existing network infrastructure. They provide communication service providers (CSPs) with a competitive edge through many collective years of invaluable experience. Their role has a direct impact on the quality of networks and services, increasing confidence in both enterprise and retail consumers. During the COVID-19 crisis, this expertise has made the difference – where a robust network infrastructure and agile field force has done much to keep the lights on for many enterprises.

The field service management market – driven by prompt customer service and enhanced field technician efficiency – will reach $11 billion by 2026, growing at a CAGR of 16.9% from 2019 to 2026.[1] For many CSPs, a productive field force will be key in achieving long-term aspirations of 5G roll out, better fiber infrastructure, and the ability to serve customers at the edge of mobile and computer networks.

Upskilling an aging field force

There is a problem, however. Expert technicians are in short supply and the existing workforce must regularly update their skill sets to meet ever more arduous network technology standards. 4G engineers must now understand 5G RAN technologies as the technology leaves its mark on the coming decade. Manpower Group conducted a survey of 40,000 field service companies. The most pressing problem for CSPs was difficulty in filling technical roles on the front line.[2]

Further, as members of the field force retire, switch jobs or move on, they take niche domain knowledge with them. This reduces CSPs' competitive advantage. With a mix of less-experienced recruits on the job, McKinsey research has found that

field technicians waste as much as 40% of their workday on non-value-added activities.[3] According to experts, some engineers spend as much as 10 minutes on the phone with a more experienced person and pore through manuals looking for the right fix to a specific vendor solution. This leads to growing costs, reduced first-time fix rates and, most importantly, growing customer dissatisfaction, which impacts the bottom line.

> Field technicians waste 40% of their time on non-value-added activities

Instead, experienced hands need a way to share their experience and knowledge quickly, easily and in a way that preserves it in a readily accessible form. New recruits must also be able to learn quickly on the job, with higher first-time fix rates. A solution here should ensure that precious knowledge is kept in-house while making new engineers more productive in as short a time as possible. This would also reduce the

need to rely on partner organizations that provide field force services at a cost to the CSP while bridging the talent and knowledge gap. As such, the solution would ensure the whole field force acts as brand ambassadors, increasing corporate sentiment across the board.

Customer-centric augmented reality

Augmented reality (AR) is rapidly approaching maturity, according to Gartner Research.[4] It has passed the trough of disillusionment and is now becoming more integral to business and IT. Devices like Microsoft's HoloLens 2 are no longer emerging technologies, and applications for AR range from training new employees in HR to giving retail customers a chance to try on clothes before purchase. All these use cases accounted for, AR is set up to be a $50 billion industry by 2024, according to MarketWatch. Smart glasses alone have seen a CAGR of 78% between 2015 and 2020.[5]

AR makes field technicians more intuitive, productive, and customer centric

This new paradigm of overlaying intelligence onto the physical world is making field service technicians more intuitive, productive, and more customer centric. In this paradigm, details of target hardware components (and necessary repair and maintenance steps) can be displayed on a smartphone, tablet or wearable glass device. AR component-infused applications increase first-time resolution rates by offering contextual help in real time. For example, one engineering services company found that AR increased remote resolution rates by 50% and first-time fixes by 30%. This led to a 20% increase in profits and a 40% reduction in on-the-job training times.[6]

However, before implementing the technology in their field force, CSPs will need to factor in four key considerations (Figure 1).

Embracing these considerations, the target AR application will have intuitive workflows, contextual information, collaboration modules, etc., to help in

Figure 1. Implementing field force AR requires four key considerations

	AR application development needs to be both fast and cost-effective.
	The AR application needs to be actively configured to take advantage of the remote rendering and cloud VR model.
	An AR application development platform should be used for maintenance and enhancement of the applications.
	The AR platform should have the modules to capture the expert engineer's knowledge in form workflows and models. These can then be used to create AR application assets and interaction steps.

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repair and maintenance activities as well as enabling new use cases.

Once the AR application suite is developed and is implemented effectively, more experienced technicians can take on an "overseer" role and concentrate their time on critical infrastructure. Junior technicians can be instructed via the AR application suite, becoming increasingly self-reliant. This has the potential to increase operational efficiency, and with it, customer centricity.

CSPs around the world are waking up to this fact. As many as 20% of field service departments are deploying experienced engineers within a remote capacity role, and of those, a fifth are utilizing AR.[7] In the situation where a problem occurs at the customer site, the engineer can instruct the customer using the visual device, reducing time spent traveling to and from the site. This exciting area of customer-centric self-serve applications is where AR is making inroads, substantially lowering the number of engineer visits because customers can self-diagnose and self-serve for common faults at home.

Making the leap to field force AR

However, a lot of work needs to be done before AR can be implemented at scale. By 2022, only 30% of field service providers will be able to deploy AR applications in the field.[8] This is mainly due to development technicalities, with custom apps difficult to design, deploy and maintain. The most pressing need, however, is for engineers to get up to speed with the technology. This means that apps need to be accessible, intuitive and technically easy to understand.

Some vendors are introducing easy-to-use out-of-the-box configurations that work across field service use cases. Most of these apps cover "remote expert over video" functions and "screen-based component identification" and are housed in a suite called Field Force Management to take care of more visionary field service organizations. For its part, Infosys is investing in the AR application development platform and with resources that cover a set of target devices. In this way, it is poised to help CSPs in their AR field force applications journey.

CSPs should clearly weigh the benefits of AR applications for their field force before making the leap. Of course, as with any emerging technology, there will be significant challenges to surmount before appreciable business benefit is discovered. But CSPs must act now, put an AR field force application road map in place and gain a first-mover advantage. Research has found that field force organizations that prioritize field service upskilling, collaborate with solution providers, and rewire the organizational structure to include automation and AR can achieve seven percentage points of revenue growth in a three-year time horizon.[9] In this paradigm, AR is part of a wider enterprise drive to improve the efficacy of serving the customer, breaking down silos between sales, forecasting, dispatching and field operations. The result is a field force that reacts in near to real time to customer complaints, with increased flexibility of labor scheduling and a continuously evolving business and operating model.

> AR can achieve seven percentage points of revenue growth in three years

Those that have taken this first step to AR have also found that it serves a wider move toward digital transformation, keeping the customer in focus throughout. With time, these visionary firms can also give their customers a taste of AR-enabled self-service apps, and upsell entertainment-centric AR applications as part of a bundle of connectivity offerings. In fact, the only uncertainty here is whether CSPs have the confidence in their teams to take this leap of faith, or cede the future to their competitors.

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