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A SPECIAL SFG℠ ANALYSTS TAKE

The Reality About Augmented Reality in Field Service Management

IF AR IS NOT A FAD (AND, IT ISN'T), THEN WHY HASN'T YOUR SERVICES ORGANIZATION IMPLEMENTED IT YET?

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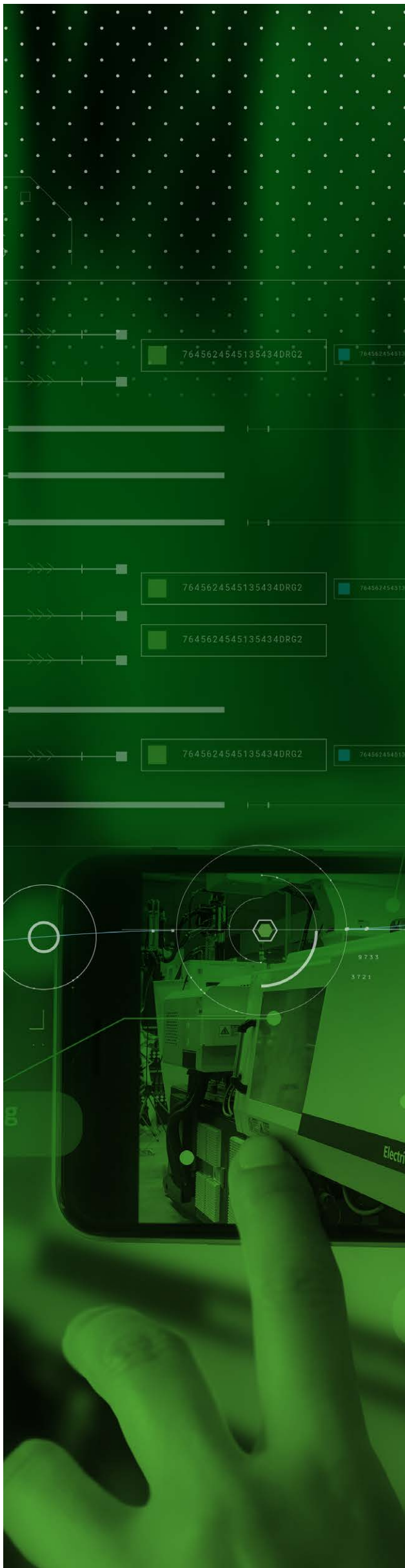


WHITE PAPER

A. Augmented Reality (AR) Is Already Becoming a Mainstay of FSM

If your business has not yet incorporated an Augmented Reality (AR) platform into its Field Service Management (FSM) or Service Lifecycle Management (SLM) operations, it has already "missed the boat"! However, what makes matters even worse, is that it's probably still waiting at the train station for the boat to come in! Spoiler alert: It won't!

As you are reading this Analysts Take report about AR, the technology is already transforming into a "mixture" of AR and Virtual Reality (VR), commonly referred to as either "Mixed Reality" or "Merged Reality" (i.e., both sharing the same acronym of "MR"), depending on which branded technology you happen to be using.

The good news is that not all of your competitors have yet implemented AR into their service operations – but that day is coming, particularly among the more aggressive – and progressive – organizations that you are likely to find yourself competing against on a day-to-day basis. The question then arises: "Why allow the leaders in your business segment to benefit from an added competitive advantage, rather than leveraging this 'new' technology to your own business' 'advantage'?"

"If your business has not yet incorporated an AR platform into its FSM or SLM operations, it has already 'missed the boat'! However, what makes matters even worse, is that it's probably still waiting at the train station for the boat to come in! Spoiler alert: It won't!"

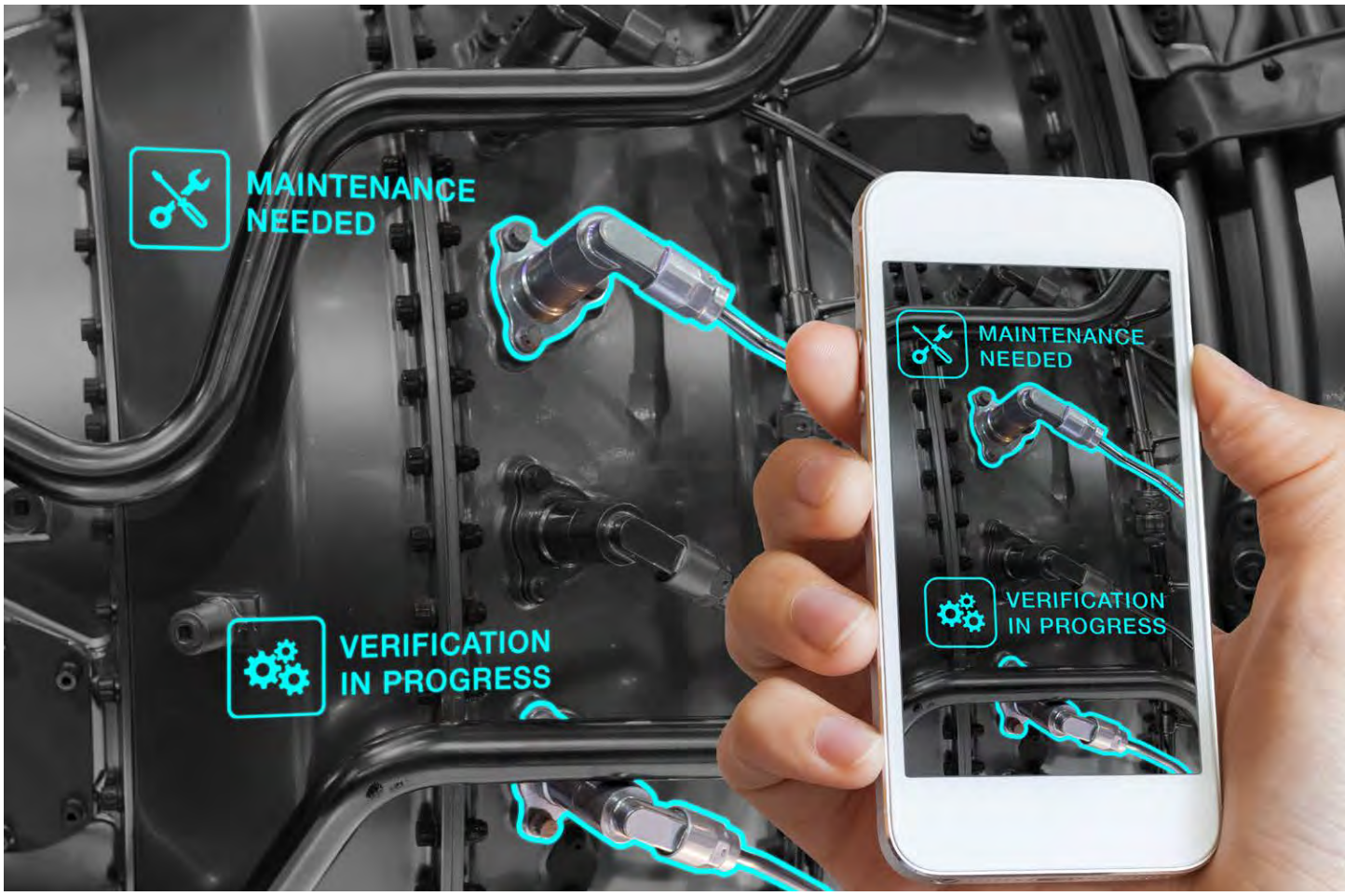
The window of opportunity for using AR to your own competitive advantage is still open; however, the opening is getting smaller over time. For example, the results of Strategies For Growth℠'s (SFG℠'s) 2019 Field Service Management (FSM) Tracking Survey reveal that:

- While only 13% of respondents are currently using AR, VR or MR in support of their field service operations, another 34% are either "very" or "extremely likely" to incorporate their use in the next five years;

- While more than one-in–five (21%) respondent organizations are currently using Artificial Intelligence (AI) or Machine Learning (ML) in support of field service operations, another 41% are either "very" or "extremely likely" to incorporate their use in the next five years; and

- While a third (33%) of respondents claim they are currently using Predictive Diagnostics or Predictive Maintenance in support of field service operations, another 56% are either "very" or "extremely likely" to incorporate their use in the next five years (including 26% that are "extremely likely").

Why are these respondent organizations so sure that they will be embracing these "new" technologies in the next five years? Because a majority are convinced that they will need to transform their service delivery.



B. AR Increases Field Technician Productivity – However, Seeing Is Believing!

It seems that for forever, field technicians have been forced to carry around dense manuals in their vans, detailing and explaining repair processes, service guidelines and product schematics. Then, once at the customer site, they would still need to flip through those hundreds of pages to find exactly what they were looking for in order to perform the on-site repair – particularly when it involved dealing with a piece of equipment that they may not have seen in years – if ever!

We have all heard the expression "seeing is believing". But, what really should stand out fairly clearly in this example is that this phrase does not say, "reading is believing"! This is the main premise that will ultimately encourage the adoption of Augmented Reality (AR) among some of the more skeptical segments of the field services industry, in that it is far more helpful for the field technician to "see" how to repair a piece of equipment, than it is for him or her to "read" about how to repair it.

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Further, while the former can take place in real time, the latter may often require several minutes – or more – of delving into chapters and indices, finding the appropriate pages, writing down notes, and otherwise wasting time – at least from the perspectives of both the technician and the customer!

Some manufacturers are now addressing this challenge, by augmenting the physical product with digital data (e.g., a "digital twin"), thus resulting in significant benefits for both the services organization and its customers.

Through AR (and the IoT platform that powers the technology), services organizations can now benefit from:

- **Increased productivity from their field technicians**, in terms of shorter-term on-site visits (or fewer in total) and, as a result, a greater number of completed service calls, per technician, per day

- **Increased utilization of the company's field technicians** (i.e., reduction in the time typically "wasted" in researching how to perform the repair – just do it!)

- **Reduced time to initiate the repair** (i.e., no need to search for paper or electronic documents and product schematics – and, then, reading them – before beginning the repair

- **Less invasive and/or disruptive service calls** from the customer's perspective (i.e., the technology should be disruptive – not the service call itself)

- **Increased customer satisfaction** (i.e., the field technician arrives, gets started immediately, and quickly completes the repair)

In fact, it is through the use of AR technology that Field Service Management (FSM) providers can now empower their customers to leverage two of the most disruptive of currently available transformational technology tools – the Internet of Things (IoT) and Augmented Reality (AR) – to deliver a new class of products that bridge both the digital and physical worlds.

C. The Benefits of Embracing AR in Your Organization's FSM Operations

The benefits to the organization (and its field force) can also be substantial as, by adopting an AR-based strategy, Field Service Organizations (FSOs) can:

- Completely eliminate the maintenance, repair and service manuals in their present, cumbersome, print copy (or, even, digital) formats;
- Streamline (and/or eliminate) formal, individual, maintenance and repair training for service technicians;
- Introduce and potentially monetize new IoT- and AR-based Field Service Management (SLM) business and pricing models;
- Improve asset uptime; and
- Improve the overall customer experience.

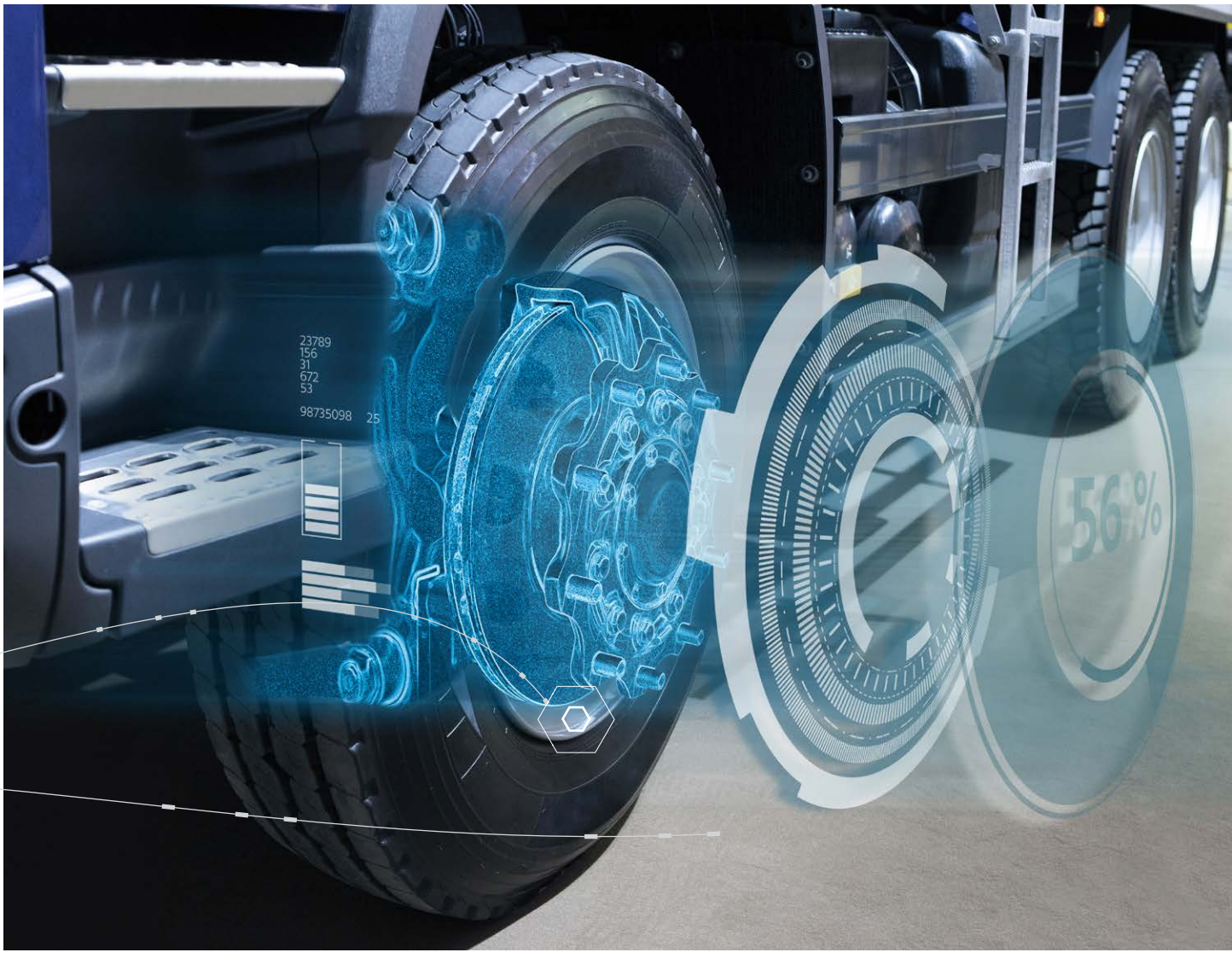
As early as 2016, Fortune magazine reported that, "More and more we see products that are part physical and part digital – and we see new models wanting to be part physical and part digital. The idea of being able to project a digital experience onto a physical product to figure out how to service it or show operating metrics … is a killer idea."

However, merely talking about Augmented Reality – rather than actually seeing it in action – is like trying to explain to a Southerner how cold the Northern Winters are – in words. It's just not possible! That's why AR is best understood by actually seeing a demonstration of how it works in action.

For example, the article suggested, "imagine pointing your smartphone at your car and being able to see visual warnings that your wiper fluid was running low or your tire pressure was sub-optimal on a rear tire. That's possible as information gathered by the car's sensors can be pushed to the Cloud, then retrieved and shown in a visual format on the phone. That same format could also offer simple to follow directions on how to fix the problems". This is just another example of how AR can work on behalf of the organization's field force.

AR doesn't create a new virtual reality; but, rather, it enhances the perceptual reality that the viewer is able to visualize while looking at a piece of equipment. This is exactly how AR will be able to assist FSOs in an FSM environment; that is, to provide the field technician (who may not ever have been called upon to service this particular piece of equipment) to still be able to perform the repair by "overlaying" an enhanced (again, augmented) reality – in 3D motion – over and above what he or she would otherwise be able to visualize, in order to make a quick, clean and complete fix.

"Not only does 'seeing is believing' hold true for those field technicians supported by an AR platform, but if 'a picture is worth a thousand words', then being able to 'see' how to repair the equipment via Augmented Reality must expand upon that equation by another thousand-fold!



D. The Strategic Impact of the IoT in Field Service Management

The greatest strategic opportunities for Field Service Management (FSM) organizations will be to gain additional efficiencies as they use the IoT to power their service operations. Of course, the converse is equally true, in that those organizations that do not step up to the challenge will ultimately find themselves falling further and further behind the technology curve; their customers' expectations for quality of service delivery; and their ability to compete head-to-head against not only the market leaders, but even the small, medium or enterprise-sized services organization that has already embraced the new technologies.

There may still be somewhat of a "wait and see" attitude toward AR, VR and MR at this time, as no single FSM solution provider has come out with an industry-leading platform just yet. Does anyone remember the decision as to whether to go with the Sony BetaMax or VHS? For many organizations, it's the videotape wars all over again! However, regardless of the organization's size, vertical industry segment or geographic coverage, there are ample opportunities for ALL services organizations to take advantage of the IoT and Cloud-based FSM solutions to take their operations to the next level.

From Strategies For Growth℠'s (SFG℠) most recent Service Management Benchmark Survey Update, conducted in January/February 2019, we find that the top five drivers influencing the global services community, as cited by a majority of respondents, are:

- Need to improve workforce utilization and productivity
- Customer demand for quicker response time
- Internal mandate to drive increased service profitability
- Internal mandate to drive increased service revenues
- Need to improve service process efficiencies

The question arises, then, "How can the services organization adequately address these five key issues without the strategic advantage of an IoT-powered FSM solution?" The answer, of course, is increasingly, "It can't!"

For many services organizations, the reliance on standard scheduling functionality is simply not doing the job anymore, and many have set their sights on solution providers that can offer optimized scheduling and predictive maintenance, etc. The same applies to the use of standard business analytics vs. advanced analytics, for both field service and parts and inventory management. In fact, what used to be “passable” in the past, now looks a bit “dusty” and, as such, some organizations have elected to move forward with more robust functionalities made possible through the integration of the IoT into their FSM systems.

Nowadays, legacy platforms may not be able to accommodate such new technology apps as AR, VR and MR, and, as a result, newer platforms need to be implemented to power these new capabilities. The same goes for implementing predictive diagnostics and remote diagnostics capabilities for many organizations.

E. The Transformation of the FSM Industry

The Internet of Things (IoT) is becoming an integral component of any services organization's desire to be able to improve its services operations, streamline its services processes, collect and share business analytic data, and serve the customer better. It's already here!

However, some services organizations may find themselves greatly behind the technology curve if they do not yet have IoT-powered FSM capabilities built into their service operations – or are at least using a primary FSM solution provider that does. The IoT is quickly becoming the chief differentiator that divides those organizations that can meet the challenges of the present – let alone the future – from those that cannot.

Without the IoT, there can be no predictive diagnostics; there could be no AR, VR or MR; there could be no chance of being able to compete directly against those services organizations that do have these capabilities. Just as Cloud-based FSM solutions have normalized the playing field across all services industry segments, the IoT is now doing the same – but on steroids!

"Watch for the IoT to first change the way services organizations deliver their services, and then the way they package – and price – them."

In the past, falling behind the technological curve still afforded an organization the opportunity to catch up in another year or so. However, there is not that much time available for catching up anymore. Falling behind for just a few months may represent too much of a gap to make up. The IoT allows all organizations to keep pace with the market leaders, regardless of their size, reach or reputation, etc.

The broader global economy also affects businesses of all types, including services. However, the servicessegment has one thing going for it that many other industry segments do not – that is, while not necessarily recession-proof, businesses will always need their systems, equipment and devices to be up and running for the duration – in many cases, in spite of what it may cost to do so.

Even at reduced capacity, factories will need their production lines to continue to operate; hospitals will need their medical devices to be readily available; banks will need their transaction-related systems to run continuously; and so on. However, Business-to-Consumer, or B2C-focused services organizations may feel the full brunt of any economic downturn, as a majority of consumers may opt to wait until they can afford to have their home electronics serviced until they can better afford to pay for those services.

Nonetheless, through the use of Augmented Reality (AR) apps, now actively being combined with Virtual Reality (VR) to form a more complex and robust "Mixed Reality" (MR) capability, we are likely to see even more advances in the types of technologies that will ultimately reduce the cost of performing service – for both on-site and remote repairs – over time. The process goes on and on, and field service management will continue to evolve over time, as a result.

"Leveraging IoT will allow services organizations to perform more maintenance and repair services remotely, rather than on-site; and on-site repairs will be facilitated and expedited through the use of AR. The growing use of predictive diagnostics will also reduce the need for on-site services. In fact, many customers may not even know that their systems or equipment have been serviced remotely."

Through the use of a portal, customers can see exactly what types of maintenance have been performed, on which systems, when, and with what results. But customers who choose not to use a portal, or whose provider does not offer one, will have virtually no visibility into the maintenance that has been performed. This ultimately becomes problematic for some services providers that must report what they have done on behalf of the customer and convince them of the added value provided.

Packaging the new way of providing services through an IoT-powered field service management system also involves an entirely new way of serving customers. For example, instead of providing a certain number of hours of support, within a designated time window, and providing a guaranteed uptime percentage, some organizations are now selling uptime – period!

Instead of "throwing" service contract hours at an aviation customer, for instance, they can now provide an "airplanes in the air" guarantee to this segment. Similarly, instead of selling a standard Service Level Agreement (SLA) to a utility customer, they can sell "power by the hour." And, instead of selling standard SLAs for pest extermination services, they can sell a "rodent-free" environment.

This new way of packaging services may be difficult for some services organizations to embrace, and for some customers to get used to. It may not be an easy conversion for some, but it is the future for field service organizations. And only through the reliance on the "new" technologies spawned by the power of the IoT can this new means for providing services organizations with total FSM support be made possible.

F. What's Next For – and After – AR?

The Internet of Things (IoT) is transforming the field service industry in ways that most analysts – and practitioners – could not have foreseen just a few years ago. While most of us were focusing on machine- to-machine (i.e., m2m) communications and the prospects for utilizing Augmented Reality (AR), the IoT was already beginning to be leveraged into smart systems and Connected Field Service (CFS) solutions among the more progressive services organizations in the global marketspace.

The proliferation of Cloud-based FSM solutions has also moved many organizations from the historical perpetual license pricing model to a much more practical subscription basis pricing model. This is also having a significant impact on facilitating the entry of smaller and medium-sized organizations into the world of the IoT, AR and smart solutions.

The integration of AR, VR and/or MR platforms into services operations is normalizing the playing field even more, thereby empowering services organizations of all types and sizes, to compete head-to-head against each other (as well as the market leaders) with essentially the same levels of service delivery capabilities. It is also leading to quicker customer equipment "fixes", at reduced costs (to the services organization), and with far fewer visits required to the customer site to perform the repair.

The last couple of years have also seen a "push" toward the further leveraging of AR. In fact, the trend lines for AR adoption have begun to increase at an accelerating rate.

“After having spent a number of years positioned more as a perennial line item on an organization’s ‘wish list’, AR has now gained a much wider acceptance, and is presently in use by more than twice as many FSOs as just a year earlier.”

We are now also seeing the further incorporation of AI and Machine Learning into existing FSM systems. As a result, many FSOs are now completing their respective transformations from a reliance on the traditional break/fix service model to the use of predictive diagnostics and AI-powered chatbots to facilitate and expedite service delivery.

Further, the enormous amount – and wealth – of data that is now being generated through the use of an IoT-powered FSM platform is turning many of the traditional ways of thinking upside-down. For many organizations, it has created an environment where the “old” (i.e., last year’s) way of measuring service delivery performance is becoming almost instantly outdated.

For example, last year, an FSO might have been assessing its service delivery performance on the basis of asset uptime or SLA compliance, etc. However, this year, they may need to gauge their performance via an entirely “new” set of KPIs! Measuring your performance in providing “power by the hour” or “airplanes in the air” is quite a bit different than measuring it on the basis of the number of monthly site visits, PM calls and asset uptime.

What’s next for AR will likely be its working closer in conjunction with AI and Machine Learning to further change the way in which service is delivered – and priced. Traditional break/fix service is essentially “dead”. Long live predictive diagnostics and predictive maintenance! In fact, have you spoken to any chat bots lately? Well, if you haven’t, you will shortly!

About The Author

Bill Pollock is President & Principal Consulting Analyst at **Strategies For Growth℠ (SFG℠),** the independent research analyst and services consulting firm he founded in 1992.

Previously, Bill served as President & Chief Research Officer (CRO) at The Service Council; Vice President & Principal Analyst, heading up Aberdeen Group's Service Management Practice; and Managing Analyst, Services Industry at Gartner.

Bill has been cited as "One of the Twenty Most Influential People in Field Service" by Field Service News (UK); one of the "Top 10 People Every Field Service Pro Should Follow" by Field Service Digital; one of Capterra's "20 Excellent Field Service Twitter Accounts"; and one of Coresystems' "Top 10 Field Service Influencers to Follow".

Bill has also had more than 350 articles, columns and features published on topics including Field Service Management (FSM), Service Lifecycle Management (SLM), Customer Relationship Management (CRM), Warranty Chain Management (WCM), Reverse Logistics, Augmented Reality (AR), the Internet of Things (IoT) and others for leading international services publications.

He writes monthly feature articles for F*ield Service News, Field Service Digital, Field Technologies Online*, and *Future of Field Service*, and is a regular contributor to *Warranty Week* and other services-related publications.

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Strategies For Growth℠ (SFG℠) is an independent research analyst and advisory consulting firm that supports services organizations with a full range of strategic, marketing, business planning and consulting services.

During the past 25+ years, **SFG℠** has consulted to more than 300 client organizations around the globe. These engagements have involved strategic services planning, market research/custom surveys, thought leadership content development and market outreach support, customer needs & requirements analyses, customer satisfaction measurement & tracking programs, business intelligence gathering, vertical market segmentation, services assessments and the development of strategic recommendations for improving service performance and customer retention.

SFG℠'s thought leadership content develop- ment services include White Papers and Analysts Take reports; Webinars, ghost- written/published articles, data support for Infographics, guest Blogposts, expert interviews, User Group keynote presenta- tions and development of Website content.

The original **SFG℠** website is now archived, and has been rebranded as www.PollockOnService.com. However, previously published articles and white papers are still accessible for download at www.s4growth.com.

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