

# FIELD SERVICE NEWS

Issue #11

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March/April 2016

## Fit for purpose?



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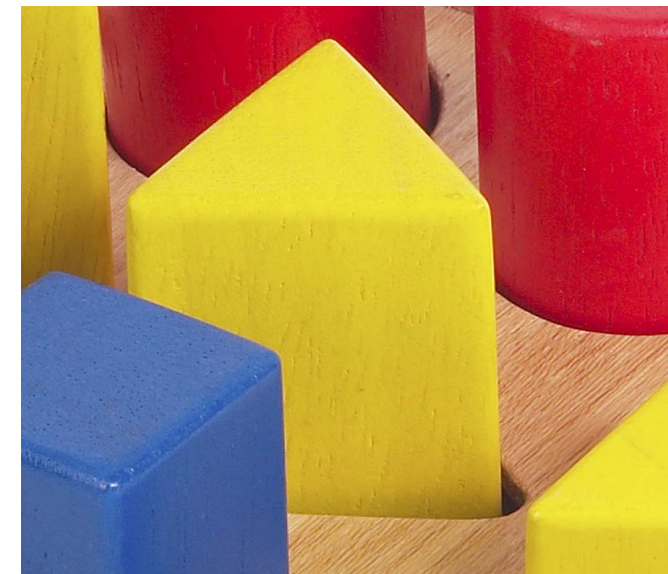
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# Fit for purpose?



Basically one product is fit for purpose and the other is not.

Yet the overwhelming majority of companies opt for the device that isn't fit for purpose because of an initial lower cost per unit. It is a short-sighted approach that leads to potential efficiency improvements being missed, which in turn could see potential additional profits melt away.

OK I may be being a bit melodramatic but I'm sure you get the point.

Considering what is fit for purpose and taking the time to make considered decisions - whether it be around hardware, software or even processes is, in my humble opinion at least, the key to long term success.

In fact this issue is full of examples who questioned if what was the accepted norm was in fact actually fit for purpose or not.

Take Dr. Bart Guthrie, neurosurgeon and founder of Help Lightning to begin with. Ultimately it was his acceptance that the standard means of communicating remotely in the medical sector, i.e. the telephone, wasn't really fit for purpose anymore that led to the creation of mobile merged reality and Help Lightning which is shaping up to be a significant game changer in both the clinical and field service sectors alike.

**"For me the issue is not thinking the choice through in terms of how these devices will genuinely fit into an engineer's workflow..."**

Then there is Kony.

A mobile app development platform who have identified the fact that the functionality of many traditional FSM solutions is constrictive and in the context of a digital mobile worlds not fit for purpose.

Or how about IFS's Tom Bowe.

In our interview he makes a great point about beginning to define new processes today in preparation for the oncoming sea change that will be mass adoption of the Internet of Things.

Very simply Bowe argues that the SLAs currently in place and the processes to support those SLAs will soon no longer be fit for purpose as ultimately technology will make them obsolete.

It is only by challenging ourselves and our decision that we can continuously improve. And the question 'is it fit for purpose' is therefore a handy one to keep tucked in our head to help us achieve that.

FIELD SERVICE NEWS

**Kris Oldland,**  
Editor-in-Chief, Field Service News



***Is x,y or z fit for purpose? It's a question that we should be asking ourselves on a regular basis but unfortunately human nature tends to prefer a make do and muddle through attitude rather than face the tougher option of re-evaluating our choices...***

Of course this isn't always true, if it were there would be no innovation in the world and as anyone who reads this column regularly can attest innovation is one thing that gets me excited.

And in fairness in our industry it is all around us, my only fear is that perhaps such examples of smart out of the box thinking are sometimes the exception rather than the rule.

A point in case is to be found within our latest research project where our findings point to so many companies taking the easy options when it comes to device selection for their field service engineers.

In their defence they will likely point to the fact that it was the cheaper option, but all too often what appears to be the cheapest option up front can ultimately be a more costly choice further down the line. Indeed the Total Cost of Ownership argument that many rugged manufacturers or distributors will put forward is based around facts and figures that support this exact notion.

However, for me the issue is not thinking the choice through in terms of how these devices will genuinely fit into an engineer's workflow. For example of the 59% of companies that opted for consumer devices to empower their engineers in the field, 71% stated that ideally the devices for field service should have barcode scanning capability.

Now whilst I know the camera on a consumer tablet or smart phone is capable of handling barcodes, but it's a cumbersome process whereas so many industrial devices are designed to incorporate this functionality with a dedicated button to make our engineers lives easier.

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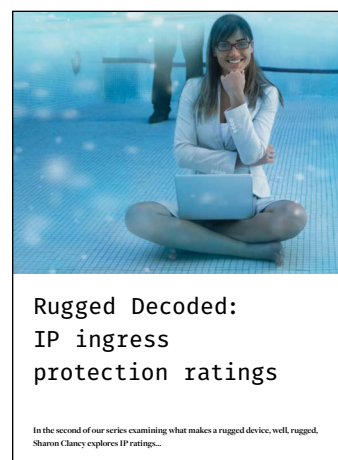
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## Advisory Panel

Bill Pollock, President Strategies for Growth<sup>SM</sup> | Nick Frank, Consultant, Frank Partners | Prof. Andy Neely, Director Cambridge Service Alliance | Alistair Clifford-Jones, CEO Leadent Solutions | Tim Jones, Northern Europe Service Manager, Waters | Ian Mapp, Director, Wyser Stewart

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Head of Service, Konica Minolta



# Salesforce launch their own FSM solution - Field Service Lightning...

*Built on the Salesforce Customer Service platform, Field Service Lightning promises to harnesses the latest mobile and IoT technologies, enabling companies to deliver connected, intelligent customer service from phone to field*

Salesforce one of the world's leading CRM companies, announced this month the launch of Field Service Lightning, a new field service solution built for today's connected world.

Harnessing signals from connected devices and customer data from Salesforce, Field Service Lightning is designed to be a modern approach to field service that is built for mobile and the Internet of Things (IoT).

With Field Service Lightning, Salesforce state companies can now unite customers, connected devices, agents, dispatchers, and employees in the field with one powerful service platform to deliver a seamless customer experience from phone to field.

With 6.4 billion connected things in use today 2020 predictions stating that number will reach 20.8 billion, the implications for field service are staggering. As connected devices become smarter and more predictive, it will create new opportunities to reinvent the customer service experience.

Built on Service Cloud, Field Service Lightning is built to enable companies to deliver mobile, intelligent customer service from phone to field.

In the initial press release Salesforce have stated that Field Service Lightning users will be able to:

**Connect their entire service workforce:**

Field Service Lightning connects the entire service organisation from call centre to the field.

Agents, dispatchers and mobile employees in the field will be on a single, centralised platform, bringing a new level of transparency and efficiency to customer service.

Service agents will have a 360-degree view of the

customer and can create a work order from any case.

Mobile employees in the field will now have access to the customer's full service and purchasing history, empowering them to easily resolve any issue that may arise and possibly upsell the customer on another product.

For instance, a homeowner requests a service visit because their Internet connection has gone down.

After resolving the issue, the technician sees within the field service app that the homeowner has previously asked about a faster Internet connection.

Using this insight, the technician presents new packaging options and the customer upgrades to a faster Internet speed at a discounted rate.

**Intelligently schedule and dispatch work:**

At the core of field service is scheduling and dispatching.

Leveraging features from ClickSoftware like scheduling and optimisation, Field Service Lightning promises to take dispatching one step further by applying a layer of intelligence.

Scheduling is automated based on skills, availability, and location to optimise on-site service. Rules can be put into place to automatically assign senior field employees to complex service issues, and junior field employees to the routine service calls.

Because scheduling is automated, dispatchers can focus on the real-time view of service operations and adjust resources accordingly.

For example, if the first job of the day ends up

taking longer than anticipated, a dispatcher can assign a different field employee to the next job so the customer's appointment does not get delayed.

Or if a mobile employee gets delayed by traffic, a dispatcher could route another field technician to the job.

**Track and manage jobs in real-time:**

Customer service moves fast and forward-thinking companies need real-time access to their service data.

Field Service Lightning promised to enable all service employees to update work orders, issue change requests and adjust job status, anytime, anywhere and on any device.

A staggering 65% of field service workers still print out their service tickets and bring them in their vehicles, slowing down the service process

Now, an employee in the field can see their open work orders on their mobile device, update them throughout the day as they complete jobs, and all the information is seamlessly updated in Salesforce.

We are just beginning to see what customer service can look like in the era of mobile and IoT," said Mike Milburn, SVP and GM, Service Cloud, Salesforce. "Field Service Lightning gives companies the ability to reinvent their approach to service by connecting the phone to the field on a single platform, resulting in an amazing customer experience."

**Pricing and Availability**

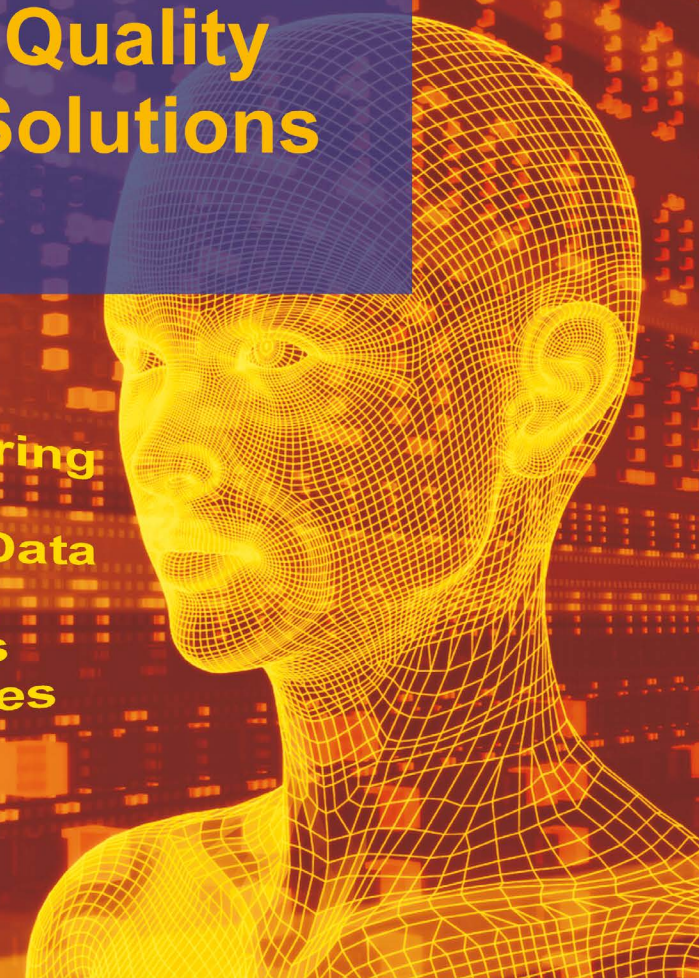
Available in most regions now Field Service Lightning starts at \$135 for organizations that have at least one Enterprise Edition or Unlimited Edition Service Cloud license.



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# Tracking, Tacking & Back Slapping

A brief round up of the key industry news stories of the last two months...

## ASTEAL HELPS BYTES OPTIMISE MANAGED SOLUTIONS

Bytes Managed Solutions is transforming its service management operations in South Africa and Africa with Astea International Inc.'s Alliance mobile workforce optimisation platform.

Bytes Managed Solutions (Bytes MS), a subsidiary of Altron Group, supports and maintains enterprise-wide end-to-end technology solutions and related services for medium to large enterprises in South Africa and Africa.

It is the exclusive distributor for NCR products in South Africa and partners with Dell, HP, Lenovo, Alcatel, Burroughs, Unity, Postec, Unisys, Alcatel-Lucent and Cisco, in the financial, retail, petroleum and infrastructure sectors.

The company supports more than 1.2 million devices in over 46,500 locations throughout South Africa and sub-Saharan Africa.

With the Astea Alliance mobility platform it wanted to gain additional efficiencies, support its green initiatives by reducing paper, emissions and fuel costs, and reinforce its commitment to superior customer service.

[More @ http://fs-ne.ws/10hlq6](http://fs-ne.ws/10hlq6)

## GAS DISTRIBUTOR SGN SELECTS KONY TO ENERGISE ITS MOBILE STRATEGY

Leading UK gas distributor SGN has selected enterprise mobility company Kony, Inc.'s MobileFabric to develop and manage its mobile enterprise applications and streamline integration with its enterprise backend systems.

The move comes as SGN seeks to strengthen customer service and increase employee productivity.

The company manages a UK network that distributes natural and green gas to 5.8 million homes and businesses across Scotland and the south of England. It operates over 74,000 km of gas mains and services.

SGN's Accelerated Delivery Team will use the Kony cloud-based mobile backend-as-a-service (MBaaS)

solution MobileFabric to rapidly develop mobile apps, secure interaction with backend services and simplify the app maintenance process.

"SGN is committed to delivering gas safely, reliably, and efficiently to every one of our customers. Our collaboration with Kony will allow us to deliver innovative mobile solutions that empower our employees and connect us to our customers," explains Andrew Quail, Director of IT at SGN.

"Customers are at the centre of everything we do and working with Kony helps us to fulfil our promise."

MobileFabric is part of Kony's mobile application development platform portfolio that allows developers to use any open mobile developer framework and tool without sacrificing security or quality.

[More @ http://fs-ne.ws/10hlHZ](http://fs-ne.ws/10hlHZ)

[Read the case study on page 56](#)

## TOMTOM TELEMATICS NAMED 2016 EUROPEAN FLEET TELEMATICS COMPANY OF THE YEAR

TomTom Telematics has been announced as the 2016 European Fleet Telematics Company of the Year in the latest Frost & Sullivan Awards.

The Frost & Sullivan panel commended the company for its successful implementation of industry best practices to innovate and meet changing customer needs. Its open telematics service platform, Webfleet, is enabling partners in different verticals to create applications suited to their individual sectors, which are available to TomTom Telematics customers through the .connect portal.

This allows fleet owners to incorporate a range of software applications that are specific to their industry, enabling them to make smarter decisions to achieve their business goals.

Moreover, OptiDrive 360 fulfils the green requirements of customers, helping them reduce idling times, speeding and vehicle maintenance. The technology provides a complete approach

to assist drivers in adopting a responsible driving style.

Sathya Kabirdas, Research Manager at Frost & Sullivan, said: "TomTom Telematics has strongly positioned itself in the European fleet telematics market on the strength of its expertise in developing diversified solutions that can help ensure optimum driver efficiency and contribute to operational cost savings for clients."

[More @ http://fs-ne.ws/10hlWY](http://fs-ne.ws/10hlWY)

## KIRONA & CARPETRIGHT IN RETAIL AWARDS FINALS

Software company Kirona and its client Carpetright have been selected as finalists in Retail Week's Customer Experience Initiative of the Year award.

Kirona is committed to providing retailers with the technology to enable optimised customer service through software applications that span the complete field-service lifecycle from planning & scheduling through to mobilising the field worker and monitoring the service performance in real-time.

The company's software has enabled Carpetright to optimise their Home Consultant service for their employees and to provide a better service to their customers.

Steve Johnson, Head of Central Operations at Carpetright commented, "Being selected as a finalist for the Retail Week Customer Experience Initiative of the Year award is a testament to the hard work of both the Carpetright and Kirona teams to get this project implemented, meeting both deadlines and with minimal disruption to our workforce.

Just as importantly it also highlights that by picking the right partner both technology and retail can merge to create systems and functionality which supports the in store sales process and most of all benefit our customer."

[More @ http://fs-ne.ws/10hmqR](http://fs-ne.ws/10hmqR)

## CTRACK HELPS ANGLIAN WATER CUT ROAD ACCIDENTS

Have reduced road accidents by 14% following its

initial deployment of CTrack vehicle tracking to 750 vans, Anglian Water is now rolling it out to a further 500 vehicles.

Since 750 vans were fitted with Ctrack vehicle tracking solution a year ago, UK water company Anglian Water has seen the number of road accidents across its commercial fleet operation fall by 14 per cent, fuel efficiency improve by 10 per cent and carbon emissions drop by 4 per cent.

The latest agreement, takes the total number of Anglian Water vehicles tracked by the CTrack Online system to 1,750. Ctrack was originally appointed in 2014 to implement a web-based tracking solution across Anglian Water's treatments, waterworks and waste water operations. This included the adoption of the Driver Behaviour Indicator (DBI), an in-vehicle device that alerts drivers to any infringements when on the road by displaying a series of traffic-light coloured warning lights.

Anglian Water uses Ctrack Online's reporting tool to capture management information regarding driver performance and driving exceptions.

This has enabled the company to identify areas of improvement and maximise its driver training initiative, resulting in an almost fifty per cent reduction in the number driver exceptions – such as speeding and harsh acceleration, braking and cornering – from 25 miles per event to 49 miles per event.

As part of the driver behaviour programme, Anglian Water also operates a zero tolerance to speeding, so a bespoke speed band reporting tool has been created to enable the company to monitor where any issues are occurring.

[More @ http://fs-ne.ws/10hn9H](http://fs-ne.ws/10hn9H)

## PEGASYSTEMS UNVEILS FIELD SERVICE CRM APP

Enterprise software company Pegasystems Inc. has unveiled Pega Field Service, a new CRM application that allows organisations to extend customer service capabilities to their field technicians and agents, improving customer service while reducing operational costs.

The out-of-the-box functionally enables field service organisations to unify data and processes across the front and back office for a 360-degree view of the customer. With predictive analytics and guided interactions, customer service reps will always know the next best action to take in real time based on a complete assessment of each situation.

A centralised management control panel monitors activity from customer service reps on the phone through scheduling and dispatching technicians in the field. The fully integrated mobile app allows field workers to efficiently complete their job with features such as digital signature capture to confirm completed work in real time and barcode scanning to ensure the right equipment is matched to the right part every time.

Pega Field Service is built on the Pega 7 platform, which incorporates improved mobile functionality including more responsive touch interactions. There is also support for larger data sets in offline mode which allows users to access data such as entire parts catalogues or full customer lists on the go.

[More @ http://fs-ne.ws/10hn1o](http://fs-ne.ws/10hn1o)

## APPRENTICE WINNER CHOOSES BIGCHANGE

The Apprentice winner 2015, Joseph Valente, adopts BigChange field service technology to springboard growth at his Impra-Gas plumbing business.

The winner of the BBC's The Apprentice 2015 competition, Joseph Valente, has selected BigChange's JobWatch platform to accelerate the growth of Impra-Gas, the plumbing business he owns 50:50 with Lord Sugar.

Impra-Gas is on a mission to revolutionise the plumbing industry, using the latest technology to offer people a faster, higher quality service. The company looked at a number of software companies and after a rigorous tender process chose BigChange's all-in-one Mobile Workforce Management system.

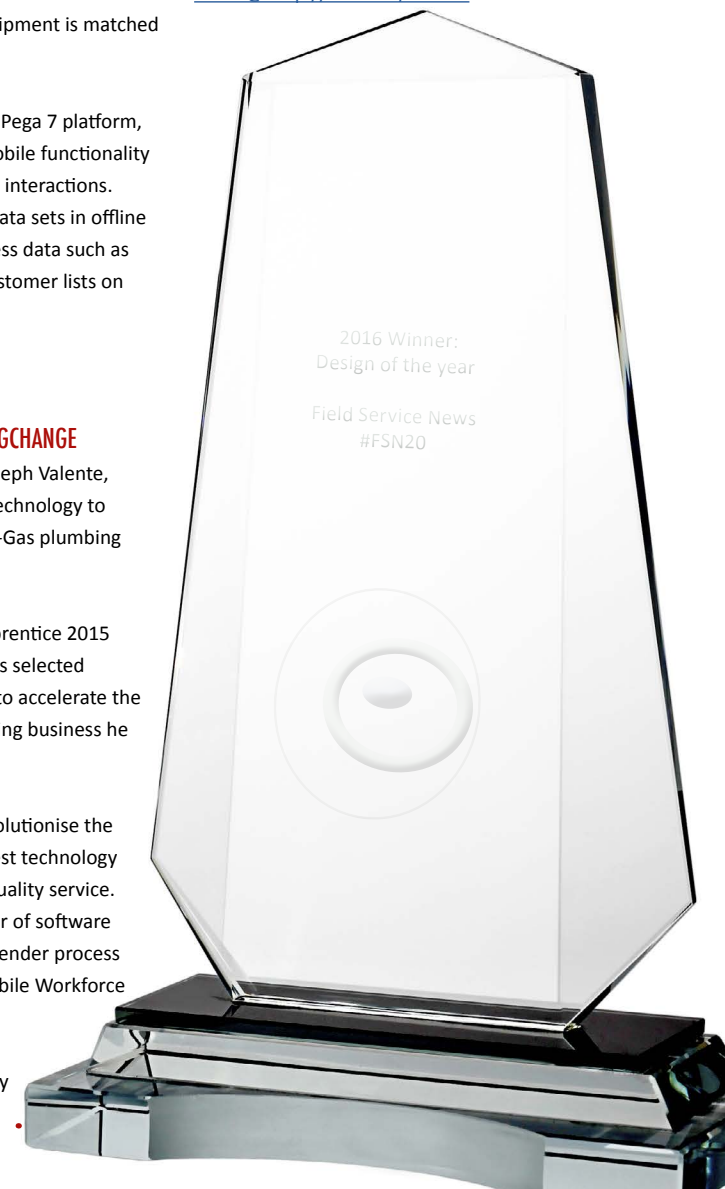
The team at Impra-Gas are totally

focused on scaling the business, whilst delivering industry leading levels of service and convenience for customers.

The paperless app-based JobWatch system allows Joseph's management team to manage the entire operation from quotation all the way through to invoice, with integrated planning, management, job scheduling and real-time vehicle and resource tracking.

The system also ensures consistent service quality and compliance with an app that guides plumbers through critical checks and procedures.

[More @ http://fs-ne.ws/10hnsk](http://fs-ne.ws/10hnsk)



# Augmented reality enables Bosch Rexroth to support customers around the world

*Swedish firm XMReality work with Bosch Rexroth to pioneer new remote service program that utilises smart glasses and augmented reality...*



Augmented reality software and smart glasses from Swedish company XMReality have enabled automation and drive system manufacturer Bosch Rexroth to roll out a new service and support programme with remote assistance.

The first Rexroth solution launched for industrial hydraulics is called Hägglunds InSight Live, the support programme involves the client company's own maintenance team in carrying out adjustments, troubleshooting and emergency work, with guidance from Bosch Rexroth's systems specialists back at base.

Using the software from XMReality with an ordinary smartphone, tablet or laptop, along with the optional smart glasses, the local service engineer works directly with one of the in-house experts at Bosch Rexroth.

The system was initially used by Bosch Rexroth in Sweden but is now being rolled out in other selected countries. Potentially, any of Bosch Rexroth's 375,000 (30k+ employees in Rexroth) personnel worldwide can access the system.

"Bosch Rexroth provides world-class services and we constantly strive to implement new and innovative ways to meet and exceed our customers' expectations."

"Using XM Reality's platform, we are now able to offer a remote service portfolio that ensures that help, assistance and our specialist expertise are available for both planned and unplanned situations" commented Rory Moore, Service Business Development Manager - Hägglunds Products

"We are proud of now being classified as an Essential Supplier in Bosch global purchasing system" added XMReality's CEO Johan Castevall.

This is a confirmation of the importance of our Remote Guidance solution in modern industrial way of work."

The augmented reality smart glasses from XMReality enable hands-free operation during the interaction with the service experts, but the software can also be used with just an ordinary smartphone.

The service expert sees on his screen what the operator sees through the lens.

The software transfers video and audio streams between the service expert and the operator with perfect synchronisation, even when the bandwidth is low.

Gestures, drawings or instructions can be overlaid by the instructor on the live image. The XMReality software is compatible with Windows and Android operating systems.

The optional smart glasses, which enable hands-free operation, can be used with prescription glasses or protective smart glasses.

Their 40° field of vision enables the instructor to see the periphery of the image – augmented reality smart glasses can often only offer 15-30° field of vision.

The smart glasses are powered by the tablet or laptop computer and battery life is usually around two hours, depending on battery size.

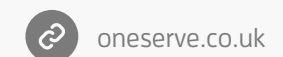
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# Service Community launch first insight event...

UK non profit organisation *The Service Community* announce the first of this years events to be held at Cranfield University in May...

UK based field service practitioners are now able to reserve a place for the next Service Community event to be hosted by the Centre for Through-Life-Engineering Services (TES) at Cranfield University by emailing [TheServiceCommunity@gmail.com](mailto:TheServiceCommunity@gmail.com).

The event will be the afternoon of the 12th May from 13.00 – 17.00.

Before the event start, there is a great opportunity to visit the Virtual Reality / Augmented Reality lab at the OpEx institute, where you can dip into what these technologies might bring to the future of service delivery. Space is limited for this tour, so please state in your email if you want to attend the VR/AR visit.

Cranfield University is one of the worlds leading global research establishments into TES and is working closely with industry leaders such as Rolls Royce, Bombardier, Babcock, Siemens and BAE, to establish within UK government a National Policy

for Services in Manufacturing & Technology. This event is the first of the Service Community's Insights Series, where we aim to provide service leaders with practical hands on insights into one of 5 themes that will stretch across many industries including software, technology as well as manufacturing:

- Moving to the Cloud
- New Service Revenues
- Art of Transformation and change
- Workflow management : soft skills, processes and scheduling
- From Reactive to Proactive business: Customer Success, Consumption Gap

The agenda for the 12th May is no exception:

- 12.00: Virtual reality / Augmented Reality lab visit
- 12.30: Pre-Meeting coffee, biscuits, networking
- 13.00: Welcome and introduction from

Mathew Caffrey (Mngr Op Ex institute Cranfield)

- 13.15: Impact of VR/AR on Services & the Servitization Business model – Professor Howard Lightfoot (Cranfield)
- 14.00: The Challenge of scaling and expanding a service operation to support a rapidly expanding technology business – Ian Cockett (Services Director Cygnet Texkimp)
- 14.40: Networking Break
- 15.20: Creating a Customer Success Culture – Chris Farnath (Director Customer Success at Allocate Software)
- 16.00: Moving from a Opex to Capex, cloud based business model – Colin Brown (Managing Director Tesseract)
- 16.40: General Discussion & Wrap up
- 17.00: Meeting Closed

To sign up for the event and the tour, please email:

[TheServiceCommunity@gmail.com](mailto:TheServiceCommunity@gmail.com)

## Field Service Funnies...

Life never goes the way it should. But at Field Service News we're pretty sure that for those of us working out in the field there are always more challenges than most folks have to deal with.

Thanks to the good team at ServiceMax and cartoonist Jerry King now your epic field service fails can be immortalised in cartoon form and we can all laugh at...we mean with, you to!

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# Finding the measure that drives your service business

Nick Frank, Founding Partner at Si2, discusses the importance of understanding the metrics you are measuring to assess both internal performance and external perceptions of your service delivery in the eyes of your customers, and how the two are closely aligned...

As a Field Service manager, imagine having one Key Performance Indicator in your business that could predict how your customers will experience your equipment.

One simple measure that your teams could use as a focus for their primary mission; to ensure customers remain satisfied, loyal and profitable.

The limitations of most measures of customer satisfaction and loyalty are that they look in the rear view mirror, in that they ask questions after the fact. Far better to create a leading indicator, but how?

To get a better feel for customer satisfaction, many managers spend time in the field talking to customers and their teams. Some will create rafts of measures to monitor and improve their operations. Their logic being a great performing team is more likely to have loyal customers. However there is a temptation to measure everything, which can start to confuse teams.

To overcome this managers bring focus through introducing key performance indicator's (KPI's) and dashboards to make it easier to see the issues and take action.

More sophisticated businesses look towards the Balanced Score Card methodology in which a more holistic view is taken of the operation.

They not only examine financial and processes efficiency, but also consider organisational capacity and customers in relation to their strategic goals.

This balanced approach is pretty sensible, but a can be too 'management speak' for the people at the sharp end of the business.

The key challenge is to create measures that drive the right behaviours and culture, and not ones where people start to find ways of working around.

So it is not quite as simple as many make out.

From my own experiences of managing a European service operation, I always felt it would be

extremely beneficial to develop a simple measure that was:

1. Easily understood by everyone.
2. That gave us a forward view that a particular piece of equipment was potentially going to lead to severe customer irritation and dissatisfaction.

Our business was injection molding systems, and we knew that something was going wrong in the customer when the spare parts spend of the machine increased, fault reporting was high and the same problem re-occurred over a 12 month period.

We created a ratio of these 3 indicators and found that at a machine level, we could start to rank problem systems and identify those that were likely to turn into an irate customer.

Our thinking was that not only could this be used by the local teams to bring focus to a specific customer issue, it also gave an indications of how well teams were managing their installed base.

Unfortunately for a number of reasons we were unable to operationalize this strategy and I often wondered how effective it would have been.

Recently I heard Mark Noble, Customer Support Director at Inca speak at a Service Community meeting in the UK. Inca design and manufacture digital printers and gave themselves the goal to improve the equipment productivity and hence satisfaction of their customer base.

For their technology, it is the performance of the print head that controls upto 256 ink delivery nozzles, which is critical to uptime.

By combining 3 key performance parameters of the machine, alarms, nozzle deviations and productivity, Inca could rank their equipment in terms of the likelihood to cause customer dissatisfaction.

They created simple dashboards that clearly identified the priority machines to be working on.

This allowed them to identify faults before they became critical therefore reducing costs, enabling their customer support centre to identify issues more effectively, maintaining better print quality and improving the planning of engineer visits around customers production runs.

A second example of this approach is at Peak-Service, part of the Qiagen corporation, a €1Bn technical services supplier for medical, analytical and industrial equipment.

As part of their transformation journey, they created a customer experience indicator which aggregated measures of machine utilisation, revisits, call response time and call completion time.

They used this to help focus their teams and people on the drivers of customer experience as they moved through a transformation programme. This gave them one measure, which was easy to action and could be used to demonstrate results.

This thinking shows that by using operational data that already exists in most businesses, it is possible to create leading measures that drive action. The analytical techniques are in fact relatively simple, it is more having the right mind-set to try a different approach which is the challenge.

As products become connected through the IoT, so the opportunities to gain greater insight into customer experience and satisfaction will expand.

Some might call this predictive and others a big data opportunity, but the name is not important. The critical insight we gain from these examples is that these companies are applying their deep know-how of their equipment and customers business, to identify problems before they happen.

Fore-armed is fore-warned!

**Frank-Partners**  
Pathways to Service Profitability  
Nick Frank,  
Senior Consultant, Frank Partners



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# Making Smart Decisions to Improve Field Service Operations: The Importance of Business Analytics

Bill Pollock, President and Principal Consulting Analyst with Strategies for Growth<sup>SM</sup> explains why Big Data isn't the holy grail, instead focus on the quality, accuracy, accessibility and application of the data you routinely collect...

While much of the ongoing discourse in the global Information Technology (IT) community nowadays seems to center around hot topics, such as the Internet of Things (IoT) or "Big Data", research has shown that it is not necessarily the size of the database that matters; but, rather, the quality, accuracy, accessibility and application of the relevant data that is being routinely collected, analysed and shared throughout the organisation.

In other words, data does not necessarily need to be "big"; it simply needs to be relevant, accessible and actionable, in order to be useful.

However, this is an important distinction that is missed by many!

First, let's talk about what the "big" in "big data" really is. According to IBM, every day, we create 2.5 quintillion bytes of data – in fact, so much that 90% of the data resident in the world today has been created in just the last two years alone.

As a result, field service organisations now have access to an unprecedented amount of data about the performance of their technicians, their vehicles, the equipment they service and their business performance in general.

However, what differentiates the best practices organisations from all others is best expressed in terms of not only "how accessible is all this data?", but, rather, "how can it be transformed into valuable information that contributes to increased revenue, reduced costs and improved customer satisfaction?"

Other questions are also bandied about, such as "how big is too big data?", and "what constitutes "big enough" data?"

It is, typically, in their responses to these types of questions, where many field service organisations initially go wrong – that is, they incorrectly believe

that since they have already collected mountains of data from multiple sources (i.e., service call activity records, closed call reports, technician-generated utilisation and/or productivity reports, machine-to-machine communications; etc.) that they must use all of these data in as many scenarios as possible.

*"The rule of thumb is more a matter of focusing primarily on the data that you "need-to-know" rather than collecting data that is only "nice-to-know"*

But, the rule of thumb is more a matter of focusing primarily on the data that you "need-to-know", rather than collecting data that is only "nice-to-know".

The difference between these two types of data may appear to be subtle at first glance, but it is an important distinction since data collection, in and of itself, requires a massive expenditure of time, resources and investment, both human and pound-wise; it must be gathered, analysed and disseminated through a highly organised and controlled process, with direct senior management oversight and accountability; and it must bridge virtually all areas within the organisation – both from the top-down, bottom-up, and all throughout.

This is what we call "business analytics" – not "big data"; but, rather, just "enough data".

In fact, it is those services organisations that

are most successful in managing their business analytics that can easily tell the difference between "big data" and "enough data".

They are also the ones that can most easily recognise when the bar for data collection, analysis and sharing needs to be raised in order to accommodate anything from the normal evolution of the organisation's evolving database needs, to more event-driven needs, such as to account for a new product/service launch; increases in the numbers of customers, installed base and/or field technicians; business mergers, acquisitions or consolidation; new strategic alliance partnerships; etc.).

So ... how big does your data really need to be?

The answer is simple: Big enough to support the organisation's ongoing business analytics needs and requirements in terms of the ability to collect, analyse and share all of the data that is deemed important (e.g., business-critical, or mission-critical, etc.); required as input into the organisation's ongoing metrics, or Key Performance Indicator (KPI), program; as input to annual or other periodic planning and forecasting activities; and the like.

Whether your organisation finds itself "swimming" in a data lake of epic proportions, or simply maintaining a modest database that fully supports its front and back offices; its field technicians, customers, and partners; its management decision makers; strategic partners; or any other stakeholders within the organisation, it will still require a sound "data analytics" program in order to make it all work.

Once again, it does not need to be "big" – just "big enough", relevant and actionable.



Bill Pollock, President Strategies for Growth<sup>SM</sup>



# Service Innovation Webinar Series

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**Dr Howard Lightfoot**

Cranfield University

February 17th  
12:30pm GMT/1:30pm CET



**Joe Kenny**

Sr Director, Customer Transformation, ServiceMax

March 30th  
3 pm GMT/4 pm CET



**Christian Kowalkowski**

Associate Professor, Linköping University

May 11th  
12:30pm GMT/1:30pm CET



**Chris Daffy**

Academy for Service Excellence

May 24th  
12:30pm GMT/1:30pm CET



**Andy Neely**

Director, Cambridge Service Alliance

June 8th  
12:30pm GMT/1:30pm CET

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# Keynote speakers announced at Service Management Expo...

Exhibition producers UBM announce an impressive line up of inspirational speakers for this year's Protection and Management Series held in London's Exel this June....



Attendees to this year's Protection and Management Series (P&M), which includes five separate exhibitions including the Service Management Expo, will be able to see keynote speeches from three highly inspirational speakers this June.

Across June 21st, 22nd and 23rd P&M takes over the entirety of London's flagship exhibition and conference centre venue the Exel in the South of London close to the iconic O2 arena and Canary Wharf.

The event which as well as Service Management Expo also includes The Facilities Show, The Health and Safety Expo, Firex and IFSEC will attract over 45,000 visitors who will be able to see key note speeches from Tim Collins OBE, Kate Adie OBE and James Cracknell OBE.

As well as the keynote sessions in the main theatre there will also be dedicated solution theatres across the whole of P&M including a field service focused theatre.

The keynote presentations will be as follows:

**Colonel Tim Collins OBE**  
21 June, 11.30 - 12.30

Colonel Tim Collins attracted attention on both sides of the Atlantic for his rousing speech to the troops before going into battle in Iraq. His autobiography, Rules of Engagement, subsequently went straight into the best-seller lists and he is now CEO of a security company.

Tim is a naturally inspiring speaker, combining extensive experience of active service with broad knowledge of military and political history. An authority on teamwork, leadership and motivation, his speeches show a clear parallel between military problem solving and the challenges faced by leaders in any walk of life.

**Kate Adie OBE**  
22 June, 11.30 - 12.30

It used to be said that if you found yourself in the same place as Kate, you should leave straight away. She became a household name as BBC Chief News

Reporter, covering the Gulf War, the demise of the Soviet Union, the protests in Beijing's Tiananmen Square and NATO's campaign in Kosovo.

Aside from her autobiography, The Kindness of Strangers, Kate has published Corsets to Camouflage and Nobody's Child. She has won the Royal Television Society Journalism Award and the Monte Carlo International Golden Nymph.

**James Cracknell OBE**  
23 June, 11.30 - 12.30

James Cracknell is one of Britain's greatest ever oarsmen. After victory alongside Redgrave and Pinsent in the coxless four in Sydney, he went on to achieve another Olympic gold in Athens.

James will talk about his adventures, the build-up to both Olympics and how they were nowhere near as straightforward as the public seemed to think. He reveals the highs and lows of his training regime, the different characters that make a successful team and what drives him to seek out new challenges.

## The 5 Ws of Field Service (part two)

Marina Stedman, ClickSoftware brings us the concluding part of her feature looking at the multi-faceted challenges field service managers and supervisors face and a key philosophy in how to best serve customers...

In the last issue of Field Service News I outlined how our philosophy centres around helping service organisations answer five questions – the five Ws of field service, in order to best serve their customers and touched on the first of these Who does what.

Now let's take a look at the remaining four Ws and why they are important for field service organisations.

### W#2: With What?

Our second "W" is all about the tools. What tools are needed to complete the required actions? Sending out field technicians qualified to fix a specific issue still can't help if they don't have the tools needed.

Not all mobile systems are created equal. A scheduling system that can send out an alert to a field supervisor that a field technician has been double-booked isn't much help if it also doesn't provide the tools to deal with that issue.

According to a PricewaterhouseCoopers analysis on mobile deployments, implementing the right mobile tools and approach to field operations improves productivity 20 to 30 percent.

It also was found to decrease the time needed for field operations between 5 and 7 percent, which translated into saving millions of dollars each year.

We've already established that a mobile tool has to provide the functionality for a field supervisor to complete back-end and field tasks - all the "What's" of the field supervisor's job. However, to achieve the kinds of operational improvements and cost savings possible, the right mobile tool has to meet two more criteria:

- Scope and speed to provide real time data. A field supervisor can only complete managerial and paperwork tasks remotely if they have reliable, up-to-the-minute data. The opposite is also true. They can only control field operations from the office if they can see what's happening in the field.

Accurate, real time information gives the field supervisor visibility into what's happening on the ground. They can see that a field technician isn't where the schedule says he should be and they can contact that field technician immediately. There are no more blind spots.

- Easy to learn; easy to use. One of the biggest reasons new software rollouts fail is lack of adoption by the end users. Much has been written about the consumerisation of B2B applications, and with good reason. Both field supervisors and technicians need their mobile apps to just work, or they won't use them. Or at least, won't use them well enough for the company to realise the expected benefits of having a mobile system.

### W#3 and #4: When and Where?

These questions are the golden eggs of mobile because the right answers are "Whenever" and "Wherever." Information or decisions needed in any given moment can be accessed or made in that moment. A speedy, full-function mobile app releases the field supervisor's bottleneck in two ways:

1. The distinction between "field" and "office" tasks becomes obliterated. Location no longer restricts what the field supervisor can do
2. Because location no longer constricts the field supervisor, the field supervisor is no longer the bottleneck preventing other people from completing their tasks efficiently.

That holiday request? Once approved by the field supervisor on their mobile device, the system is updated in real time so the schedulers back at the office are aware of the change in capacity for that day.

An emergency service request comes into the office. The mobile field supervisor sees it, and can assign it to an available technician already nearby. Now the customer gets same day service, and your company gets maximum utilisation out of a field technician who is kept fully scheduled during the day.

### W#5: for Whom?

There are numerous stakeholders relying on field supervisors being able to stay on top of all their tasks and demands but for a service organisation, the most important "Who" is always the customer. And who is the lynchpin between the field supervisor and the customer – the field technician.

By erasing the boundary between office and field tasks, the field supervisor gains time to spend on the most critical task: mentoring the field technicians. Whether it's more time side by side with a field technician on a call, or being available to answer questions via text, chat or video camera, a field supervisor can better serve technicians once freed from the desk.

When the field supervisor has more time to train and mentor the field technicians, you get happier, more qualified people. As their skills grow, they can complete more complex tasks and finish simple tasks faster, so you're increasing your field utilisation potential without major increases in labour costs or staffing. Best of all, your field supervisors can spend more time mentoring field technicians without falling behind on the operational and managerial tasks the back-end stakeholders rely on.

### Fast pace and high pressure make mobile the release valve

Applying the Five Ws of customer service for field supervisors means using mobile to empower them to carry out all their responsibilities regardless of location.

They need the ability to monitor and act in real time. When field supervisors don't have to choose between sitting at a desk or being in the field, they can more efficiently carry out their roles by allocating their time and energy where it provides the highest return: mentoring and assisting field technicians to deliver enterprise-quality customer service.



**ClickSoftware**  
Making Service Click  
Marina Stedman, Director of Marketing EMEA, ClickSoftware



# Why selling service must no longer be seen as a black art...

AS THE OLD CONCEPTS OF SERVICE AS A COST CENTRE ARE BEING REPLACED WITH MORE MODERN THINKING AROUND SERVICIZATION OF INDUSTRY MANY FIELD SERVICE COMPANIES MUST NOW FOCUS ON THE WHAT SOME STILL SEE AS THE DARK ART OF SELLING SERVICE. BUT IT REALLY DOESN'T HAVE TO BE THAT COMPLICATED.

KRIS OLDLAND TALKS TO MICHAEL JOHNSON, GLOBAL DIRECTOR COMMERCIAL TECHNICAL SERVICE & SUPPORT AT SMITHS MEDICAL TO FIND OUT MORE...



“This guy knows how to find revenue streams.”

Selling service is almost a perennial challenge for some field service organisations...

Yet it needn't be that complicated explains Michael Johnson of Smiths Medical as we catch up over a coffee as the glorious Californian sun shines down on Rancho Bernardo where Field Service Medical is being held.

“The first thing is to get the conversation started but it's not always a simple thing. Sales is there to push a product – that's their focus, so when you start talking about service and you start talking about aftermarket warranties it is not a conversation a lot of sales people want to have because you are admitting that at some point your product breaks.” Johnson begins.

“But everybody knows that and if you have that conversation with people up front they are not going to be surprised and if you do put an extended warranty in place they are covered for multiple years. That is the angle to really just give them peace of mind.”

“And from a sales perspective it gives them peace of mind that they have a long term customer. Its not about just sell and run. However, it is a process that takes time to get through to your sales people and the sales rep has to be commissioned for it. You want to make them a partner but you also

want to make sure they've got their purse strings tied to it.” He continues.

“We've been pretty aggressive offering 10% commissions on a service contract so there is a real value to them. That was on the initial launch – we put a big spin back then to help them start getting the conversation started. If it's a 600 or 700 asset deal then it could be some significant money, a hundred dollars per asset per year. So if they see now they can make \$60/\$70 \$100/\$200K on just selling service then you've really got their attention.”

However, there is more to the process than just holding up the dollar signs. Communication and training are also key to a profitable service operation.

“I'm always involved from a training standpoint with the sales staff so when a new sales rep comes in I make sure the training department contacts me.” Johnson states

“That's been vital just to establish that relationship plus if you get them when they are brand new, then it really makes a difference.”

There is also one other key ingredient in pushing sales staff to embrace the service sell and that is channelling their natural competitiveness Johnson

believes.

“The other thing then is that cross-competitiveness from sales rep to sales rep. Make sure they know what each other are up to, copy the sales manager in and copy the VP of Sales in on that email that goes out to say thank you.”

Aside from energising and encouraging your sales force, another key factor in success is gaining the buy in from both the board and also other departments.

“The major part of it is that I've got to get buy-in at a marketing level; I've got to get buy-in at a high level sales perspective. The pressure is from a ground route up right at the sales level but then also down.”

“Remember that it's vital to the business success, we're all silo'd to a little extent but we want to open it up to say service, sales, professional service, software – it's all one system. What your'e ultimately selling to a customer is not just bits and pieces your'e selling them the whole solution – the end-to-end offering across multiple years.”

“A warranty will be usually one to two years depending on the product, I'm trying to go in with three to five year extended warranties so if it's a two year warranty and it's extended by a five year

warranty they are covered for seven years.”

“We've priced it reasonably too, so it really is a competitive advantage to keep us in that hospital setting or care setting for multiple years and hopefully it bridges to the next product.”

“That's really what I draw out when I explain it to my guys I is that service is that bridge from one product to the next.”

“When you look at it from that standpoint again you've got point a to point b and I want to connect the dots and that's what the sales people do recognise it as. I've got a product. I've got a consumable I want to sell alongside that product and if the asset is operating it's generating more revenue.” Smith outlines.

“I've found that is one of the easiest ways of explaining it to the sales rep. It's simple that if a device is working it's using more consumables, so your making more revenue. It's all part of your sales process and then that helps you again get to the next process with them.”

How does this approach apply in different parts of the world though? Given Johnson's position as a global head of technical service has he found certain geographies where the culture is much more geared towards free service, more

challenging to implement such a strategy?

“Normally what happens in certain areas where there is a tradition of service being free, like in certain areas of Europe, the model is different.” Johnson explains.

“If we go into Spain or we go into Portugal or Italy there is no service because it is a model that the device was given to them so they don't have the obligation. So that actually falls back on us where we have to allocate funding for those devices in those countries.”

“Now that's more of a marketing and sales initiative and we need to see that this is the marketplace that we have so we have to fall in with that region and do it this way.”

“But also there is that push-back that we have to keep doing where we say 'you know what, this doesn't have to continue this way.' What we can say is 'we'll give you the device but we expect X dollars of service to either be funded through the consumable or set aside a warranty reserve – you must still find some way where you put value onto service.”

“I just went through this with one of our devices in France.” He continues “I don't have any manpower allocated there because there is no revenue. But I

have a problem because these devices have to be serviced annually, how do I manage that?

Well what we did was go to a distributor and say can you handle this and got a price from them, compared it to what it would cost us to do it internally and said you know what we'll hire you and marketing will pick up the bill.”

“It's the same thing in the Far East. We'll get into China, but it's a very, very low cost so they don't want to have to pay any extra for service.”

“So we needed a product that is more disposable than it is a repairable device so we scaled back because they don't need a product that is as sophisticated as what we might need in the USA or Europe.”

“So it's a lower price of entry for lower technology but at some point they are going to want to come up to higher level too. So we're going to have to start building that model, and start thinking of that revenue journey from point of entry to bringing the cost of service in slowly.”

“Again you can bring it in as a price of service, as a price of sale or as a price of consumables what ever way that you want to do it and that the local market is comfortable with, but obviously ideally you would want it as price of service because then you can quantify it, justify it and so on.”





# IS IT TIME TO RETHINK OUR ENTIRE APPROACH TO FIELD SERVICE APPLICATIONS?

With the launch of a dedicated field service application, enterprise mobility platform firm Kony has stepped firmly into the busy arena of FSM software providers. However, they bring with them a new set of thinking that could change the way the entire industry approaches app development in the future. Kris Oldland spoke exclusively with Jonathan Best, VP EMEA at Kony to understand why they believe they are changing the game for the better...

**A**s we sit down to discuss the new launch of Kony's dedicated field service application I am genuinely intrigued.

The launch seems to fly in the face of the logic that has underpinned the success of Kony in many senses. Kony has established an enviable reputation for being a slick and intuitive platform that facilitates the ease of developing mobile apps. Facilitating bespoke app design is what these guys do and they

do it brilliantly. So surely an off-the-shelf, vanilla field service app goes against their very ethos?

However, my mistake here was thinking that the app stopped at being just plain old vanilla. Sure the base layer may be the same for everybody, but to continue the metaphor the ability to tailor this app is as open and as varied as the contents of a tin of hundreds and thousands.



“Principally what we have is a platform for the development of apps within enterprises. And that’s where most of our customers are investing,” explains Best

“But when we see the same app requested in multiple places rather than us doing custom built apps for every single client, it makes sense for us to provide at least a foundation that they can start from,” he adds.

And here in lies the rub. Kony’s approach is very much centred on client empowerment and in the understanding that whilst there are core requirements across differing companies in differing verticals, ultimately no two businesses are identical, and therefore no two businesses will require an identical field service app.

“Probably the big difference between our apps and the more traditional field service app is

“And most of those field service applications that have been developed for mobile historically have come from some kind of core system provider be that a ClickSoftware or a SAP or an IBM, whoever, where it is a mobile part of wider solution.”

“What we are trying to say, as a mobile company, is lets look at the mobile process and then try and figure out all the ways that you connect that to whatever your back-end systems might be.”

“So what we are doing for customers is helping them to develop the mobile use case and connect that to their back-end systems. What we saw with field service is that lots of people wanted a field service capability - they either had one that they weren’t very happy with or they didn’t have one and they wanted to create one, and what they wanted was the capability to tie that into whatever their back-end systems were.”

the software provider, the customer being the driver of the demand and the expert in what the processes are; and a system integrator sits in between and takes the Kony technology and builds the app together with the client.”

Fundamentally what the Kony platform provides is an ability to plug into your existing systems and then provide a dedicated tool for mobile interaction with the data stored in those systems based around the needs of any given individual within the enterprise.

And as we enter more fully into an age where information and data is key, the free flow of data facilitated by deep level integrations is of course highly advantageous for the field engineer, enabling them to arrive on site fully prepped for the job they are about to do.

However, such movement of data is of course a two way street and the amount of valuable data that is available to a field engineer could also be highly useful if fed into the right place, whether it be sales, R&D or even third party partners.

“There is a lot of good stuff in those back end systems that you want to be able to provide out to salespeople, that you want to be able to provide to service engineers and you probably want to be able to provide it to business partners as well,” Best begins.

“A lot of our customers have got a core field service organisation of their own but then they use a third party to fill in the gaps around peaks in demand etc. and they probably want to provide different amounts of information about assets and customers to a third party than you would do to your core sales force.”

“What Kony traditionally provides is the platform that allows you to say ‘we want this information to be available to this person on this device for this purpose.’”

However, perhaps Kony’s greatest strength in coming to the field service sector is that they arrive less encumbered by the rules and formulae of any previous iterations of their product, meaning they can take a fresh pair of eyes, that are customer focussed, when it comes to what should or shouldn’t be included within a field service application.

“A lot of people say to us there are gaps in the field service solutions that are available on the market.

“Again, if you look at a lot of the typical field service solutions that are on the market, it’s difficult to extend them to have an additional capability or to add something new into the mix. For example if you look at IoT,” Best ventures.

“As people are putting more and more sensors in the capital equipment that is getting serviced, they want to be able to integrate it much more with the field service engineer and the system they are using but it’s very difficult in a lot of the traditional field service solutions that weren’t built with IoT in mind.”

“We are saying lets provide the core capability that allows you to do scheduling, that allows you to push jobs out to the field, allows you to do all the things that any field service person needs you to do. But lets do that on our platform which enables you to tie back into a much broader set of back-end systems than is probably the case in the offering that you are using today, and lets do that in a way that opens up the capability to integrate new things like IoT.”

Of course one of the most exciting factors of the field service industry right now is that it is in a state of almost constant beta, with new technologies being integrated and adopted every year.

With such a dynamic technology base at play future proofing any investment as much as possible is crucial. Which is another benefit of Kony’s approach to FSM app development.

“One of the reasons people are increasingly investing in Kony is because we provide that future proofing at both ends,” Best claims when the subject is brought up.

“Our capability to integrate into back-end systems is recognised as the best in the industry and our ability to support differing device types and OS that are getting produced is unparalleled.”

Another factor to be considered within the development of any enterprise app, whether it be for field service, or other areas, of the business is the User Interface.

This is something Best is acutely aware of and believes the move to a platform based approach, will see user experience in business to enterprise apps improve vastly as costs of development become greatly reduced.

“One of the things that is happening in the current generation of apps is that people are paying much more attention to what can be done with the interface”

“A large driver for this is that now with Cordova and HTML5, and tools like Kony provide, we can produce native output at a much lower cost by using technology to create it and so there’s ‘this write once, run everywhere’ approach to building apps which has taken a lot of the cost out what previously used to be associated with glossy native development.”

Of course there is another benefit of the ‘write once, run everywhere’ approach as well. There is a growing demand amongst field service providers to be able to provide their own clients with applications that show information on their assets such as maintenance history, mean time to repair, current uptime availability and so on.

Such apps are powerful sales and marketing tools, and as such, a slick user experience here is an absolute must. However, Best points out that whilst the idea is sound, outside of a platform such as Kony’s actually implementing such apps could be a significant resource strain.

“Of course that sounds like a very logical business process to have,” he comments. “But if you think of what it means logistically, you are going to push that out to the end customer where you can’t control what their devices are. Maybe they want to access it on an iPhone or an Android device; or, in the future who knows what else.”

“That means our customer, using our platform has to provide that app in whatever format their customer wants to consume it in, so they need that capability to provide apps for various OS or device agnostic apps and that’s one of the key capabilities that Kony provides.”

Whilst both the ability to provide customers access to service information as well as being able to tailor an app to meet your exact workflows both sound exciting, it is the potential of the Kony platform to enable field service companies to simply and intelligently expand the role of the service engineer.

That could be the potential game changer. And as our conversation progressed Best was able to reveal a number of ways that this was already happening with their existing clients.

“The field service engineer is on the customer site and the customer says something about wanting assistance with a new project – that’s great sales data that you want that field service engineer to capture and pass to the right guy in the organisation to follow up with,” Best says outlining one such scenario.

“That functionality typically isn’t built into a field service engineer’s general workflow but of

course its very easy to build that into an app. For example, if you have got a notes field and some sort of capability that says press a button here if you think the sales guy should give them a call and follow up.”

“Another example is a utility firm we are working with. They have a customer feedback form which they ask the customer to fill in to show how prompt were they, did they fix the issue, did they leave things neat and tidy after they left etc.”

“That’s a logical business process but when we dug in and looked at it we found that it was actually only about 1 in 12 customers who filled in the form. Then at the end of the month the engineer was supposed to have collected all this stuff up and mail it back to the head office.”

“So he had this massive pile of paper in the back of his van which he’s then got to pick up and put into an envelope and mail to HQ: and then there is somebody who’s job it is to go through each one.”

“It was a horrendous process and of course that guy is already there, with the customer, with a tablet doing his field service work – how much simpler to give that tablet to the customer at the end of the job with a brief survey?”

“In this case just 6 questions, each with a slider ranging from very happy to very dissatisfied at either end ,and they don’t have to fill anything in because that is already captured from the job data. It takes them literally less than a minute.”

“The response rate went from 1 in 12 to 1 in 2. It gets immediately processed at HQ, there is no re-keying and then there is the cost saving - no paper, no postage, no wasted man hours...”

“So all of these business benefits came about but it’s not something anybody had ever thought of as a field service process. Yet it’s a completely logical add on for a field service capability.”

“It’s also something that no FSM system today provides but it’s the kind of thing that we can add on very simply because its just an extension to the app.”

I often comment that technology at its finest just makes things work better, and given the flexibility and ability to adapt and evolve applications on the fly, it seems the Kony platform could well go some way to helping companies achieve that.

Indeed the biggest change Kony’s arrival in the field service space may bring is in how we approach our service engineers’ workflows in an increasingly mature digital age.

# More than just a journey planner

Fleet management is about far more than keeping track of your where your engineers are and how they get from A to B writes Sharon Clancy...

It's becoming increasingly apparent that not knowing where your service people are at any given point in the day is likely to impact on the future prosperity of your field service business.

In this connected world of ours, live location data is becoming a given, it's a core element in being able to react to real-time events such as unexpected delay to the planned schedule.

So, having acknowledged that you need to know where your field service workers are in order to be able to respond to dynamically developing situations appropriately, where do you get this live, real-time, location information?

The arrival of the smart mobile device has made live position fixes much easier to obtain. You can locate a device on a cellular network mast, or you can get a location fix from a satellite. GPS has become a generic term for the latter: it stands for Global Positioning System, the US Government's free-to-use network of 24 orbiting satellites.

Satellite transceivers (often called GPS chips) in telematics black boxes and smart mobile devices communicate with a minimum of three satellites to obtain a location fix, which is accurate to between 10 and 15 metres. By contrast, accuracy on the cellular network is only as accurate as the distance between the masts.

## Why fleet management pays

Given that priority number one for most field service companies is on getting engineers to their next job and maximising the number of technician visits per day, why bother with vehicle tracking-cum-fleet management system if you can get all the information you need from, say, scheduling software with location-enabled smart devices?

Well, an important part of any engineer's day is, actually, the driving of the vehicle from Job A to Job B and so on.

Having an integrated or stand-alone fleet management system provides a lot of potential

performance improving data and more field service companies are beginning to recognise that they can deliver a lot of data about what your vehicles and engineers are doing, and they capture that information automatically.

For smaller SMEs, it can be an alternative to scheduling software.

Exception reporting underpins fleet management software, whether it is for tasks such as on-time arrivals at customer premises, working time compliance and speeding alerts. You set up the parameters as to what is "normal" for that vehicle and receive live updates.

Some service management processes now receiving attention are, in fact, long-standing elements of fleet management packages, especially those relating to driver management and reporting: on-board telemetry fuel consumption, trip data, idling time and harsh braking.

For example, fleet management systems provide historical analysis of trips, helping confirm the scheduled route is the most economical in terms of miles, fuel and timing. Analysis of the routes driven can identify any issues, whether it is regular hold-ups at customer premises, congestion hotspots and engineers going off-route.

For those companies who've not yet progressed to a dynamic scheduling software, you can get a lot of similar features with fleet management systems: engineer location, automated alerts on arrival and departure from customer premises, paperless data capture.

There's less upfront cost, too - fleet management specialists were early adopters of the pay-as-you-go cost model, charging on a per-vehicle-per-month basis. If you've acquired your fleet on a lease basis, fleet management can often be included in the monthly costs.

For some benefits, you do not actually have to do much at all. Geofencing, for example, is a virtual

fence around a site such as customer premises, depot, or engineer's driveway. Once set up, it alerts managers if a vehicle is moved unexpectedly out of hours, and when vehicles arrive and leave customer premises.

## Going green

Fuel represents a significant cost for any field service business and it's also a big contributor to carbon emissions.

Any company with a business plan to reduce its carbon emissions needs to pay attention to the contribution from its vehicle fleet. If they haven't already, larger companies with their own commitment to carbon reduction are starting to ask suppliers and contractors for more specific information about their carbon emissions reduction strategy is - it's becoming included in contracts.

Several of fleet management companies now offer "Eco" or carbon footprint calculators. Masternaut, for example, has a carbon calculator that uses vehicle mileage and the known carbon output per km for each vehicle to calculate the footprint.

Fleet management companies use the on-board diagnostics port (OBD) now required on new vans to capture vehicle and driver performance data. Congestion in towns and cities doesn't just affect schedule times, it can have a big impact on fuel consumption - slow-moving traffic and idling.

## Duty of Care

There is renewed focus on what processes are in place that demonstrate compliance with duty-of-care responsibilities. These combine an element of lone-worker protection and risk-analysis of employee behavior.

For field service companies, the van is there to get your asset, the engineer, from job to job.

They might have all the on-site safety checks nailed but because vehicle operation is not



the main focus of the business, field service companies won't necessarily have a dedicated person to check driving behavior - from whether the engineer has a valid licence to whether he is guilty of always driving at 40mpg in a 30m0h zone.

The risk is therefore higher that these drivers will behave inappropriately and that no-one at the company will be responsible for picking it up.

Over the past year at Field Service News we've seen encouraging signs that more field service companies are recognising the need to monitor the driving part of their engineers' daily lives, both in terms of fuel consumption and from a Duty of Care and safety viewpoint.

It's in-built into fleet management systems - not an add-on. You can prove compliance with duty of care responsibilities.

## There's an app for that.

At any field service company, one of the biggest administration challenges is following the paper trail. Whether it is worksheets, job manifests, invoices, timesheets, expenses or vehicle safety records, losing vital pieces of paper is all too easy.

Fleet management companies have been big adopters of mobile app technology to help mobile workers do a host of things, from timesheet entries to holiday request. Everyone's familiar with

an app, so no great training is required.

## Time and tax management

Fleet management systems can also provide proof of when employees start and finish work - this is particularly important in the EU, for example, where the Working Time Directive imposes limits on weekly working hours.

Service companies have to manage the fact that for many employees, their work vehicles will be also be used for non-business driving and one key benefit that fleet management systems can bring for van operators is the ability to automatically differentiate between business and private mileage - in some countries, employees are taxed on private mileage.

Driver log-on systems ensure there is no confusion about who was driving at a particular time, or you can set up a geofence - any vehicle which leaves the premises or the engineer's home address outside normal working hours is deemed to be being used privately.

Tracking logs provide detailed breakdown of business/private mileage for each day and the week as a whole can be exported to other applications such as payroll. It's easy to set up on most fleet management websites.

Asking an engineer to complete a daily vehicle

check might be prudent from a safety viewpoint but the engineer might see it as delaying him getting to that important first call.

He's probably logging on to get his job manifest anyway, so give him an app to do the check and not only is it faster and easier, it closes the compliance loop because once it's complete, the data is sent live to the office. Managers can see non-compliant vehicles and any defects needing urgent attention. In the event of an accident and a claim, you have proof the vehicle was compliant.

Driver check apps can also be useful if vehicles are shared, pinpointing when the damage was done and whether the driver was at fault.

Miscellaneous small repair bills for items such as minor scrapes and cracked deflectors can add up and identifying if one engineer is more prone than another to this type of incident can identify a training need.

Fleet management systems deliver some quick wins for field service companies, especially in terms of vehicle utilisation, route management and fuel economy.

Quick-fix apps continue to offer still more opportunity to remove time-consuming unprofitable tasks from fleet operations. And if there isn't one yet, someone somewhere is probably writing it.



# Down the Stretch with Technology

*Marne Martin CEO of ServicePower argues that to be a thoroughbred amongst your competitors you must seek out the best-in-breed technologies...*

Spring is the start of the racing season in some parts of the United States, especially in Kentucky where the Kentucky Derby, the first race of the Triple Crown, is run the first Saturday of May.

The 2015 race was historic.

American Pharaoh, a horse owned by an Egyptian immigrant, with half a tail, took the Triple Crown on Saturday, June 7, 2015 by winning the last and longest of the Triple Crown races, the mile and a half Belmont Stakes.

He's only the 12th horse in history to ever win all three races: The Kentucky Derby, the Preakness and the longest, the Belmont Stakes. And, he won that last race decidedly, taking it in 2:26:65 minutes and 5 1/2 lengths ahead of the 8 horse field, the fastest Belmont since 2001 and 6th fastest time since Affirmed ran it in 2:26 4/5. Only Secretariat, the legendary race horse featured in the movie Secretariat in 2010, ran the Belmont faster at 2:24 by 31 lengths in 1973.

The Pharaoh stands happily at stud now at Ashford, a 2,200-acre farm in Versailles, Kentucky, where, even as unproven, first-year stallion, he commands a record \$200,000 stud fee.

Thoroughbreds are athletes in every sense of the word. They train for years and face stiff competition. Some of them are born with an edge, like Secretariat, whom had a larger than average heart rumored to have contributed to his racing success.

But, most winners are the product of preparation and execution including the latest, best tools and technology. Field service organization are exactly the same.

We must focus on preparing our people and executing seamlessly by enabling ourselves with the tools and technology that ensure success.

Out of the gate, we must seek out the best in breed field resources.

New technologies like social, mobile, cloud and IoT are second nature to the emerging millennial workforce. Find field technicians comfortable with new technologies and provide them with

complementary tools which improve their personal success.

Collaboration tools like video chat, mobile applications and wearables help them help your customers.

Satisfied field resources, trained to use their technology, with access to tools and information to get the job done will increase your first time fix rates and customer satisfaction.

***“To beat the competition down the stretch, we must execute flawlessly by enabling ourselves with the best tools and technology”***

To beat the competition down the stretch, we must execute flawlessly by enabling ourselves with the best tools and technology.

Mobile workforce management software is not optional. I think most enterprise level organizations, with several hundred or thousands of field resources get this.

But the necessity of scheduling technology is still nebulous for some small or medium sized enterprises. Every business, no matter the size absolutely can benefit from real time route and schedule optimization, mobile dispatch and field service management software.

There are many options for route optimization, but not all are the same. While some vendors offer ‘scheduling’, that doesn’t necessarily mean they offer real time, intra-day route optimization like ServicePower.

ServicePower has invested significant effort into enhancing our scheduling software, filing 4 patents on Quantum Annealing, the first new optimization algorithm in decades, which offers all businesses more efficient, faster route optimization by harnessing the cloud and distributed computing.

For those small, medium and even large enterprises whom do not or cannot deploy a full on MWFM software, Optimization on Demand™ released this summer provides improve productivity and reduced costs without a full workforce management software deployment. Optimization On Demand™ enables field service organizations to book jobs for customers, then pass a set of appointments to ServicePower to optimize, on demand, into the best, least costly order.

Optimization On Demand™ provides a more intelligent tool set, without the expenditure of an entire workforce management or field service optimization software solution.

NEXUS FS™ provides field service organizations of any size an enterprise quality, wholly configurable, cloud-based field service management solution with a comprehensive mobile application. It supports work order management, dispatch, scheduling, inventory management, time sheet reporting and geolocation, enabling focus on providing high quality service to customers, while benefiting from productivity improvements.

Technology is available accessible at any level of business operations and is the key to winning the race, beating the competition.

To cross the finish line, use of technology is key. Optimized scheduling, mobility and field service management are all critical components of mobile workforce management software. But, to cross that line, field service organizations must deploy collaborative, operational intelligence and real time control consoles to monitor ongoing operations from across the enterprise.

Monitoring what’s happening today ensures high compliance levels and happy customers. Mining the data, using custom scorecards and predictive analytics enables teams to manage work, coach staff and fine tune processes to get over the finish line today, setting up a successful tomorrow.

Do all this, and your organization will have also won the Triple Crown.

 ServicePower  
Innovating Field Service  
**Marne Martin, CEO,**  
ServicePower Technologies Plc



# Consumer versus Rugged

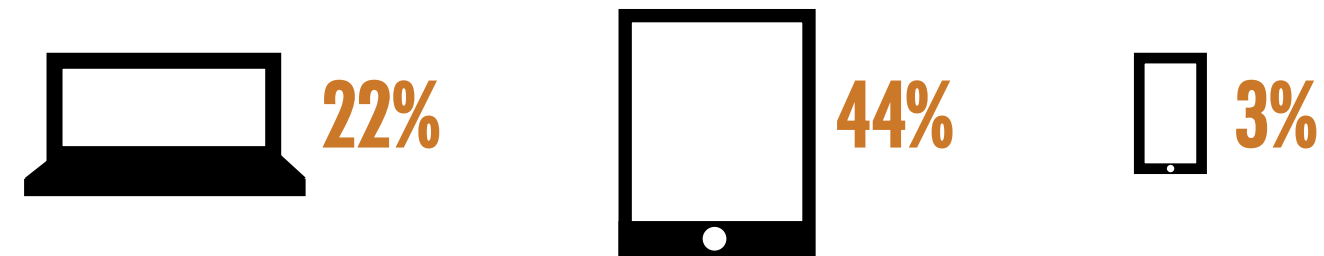
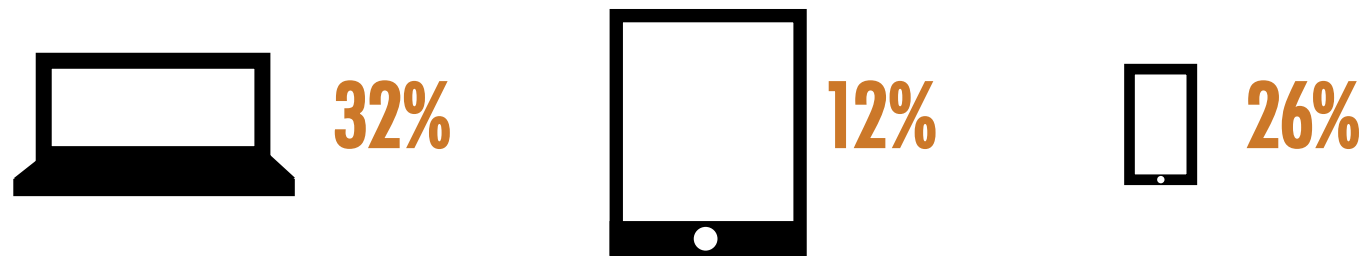
Our latest research report run in partnership with Xplore Technologies explores what tools field service companies are turning to, to empower their engineers when out in the field and asks what is driving the selection process...



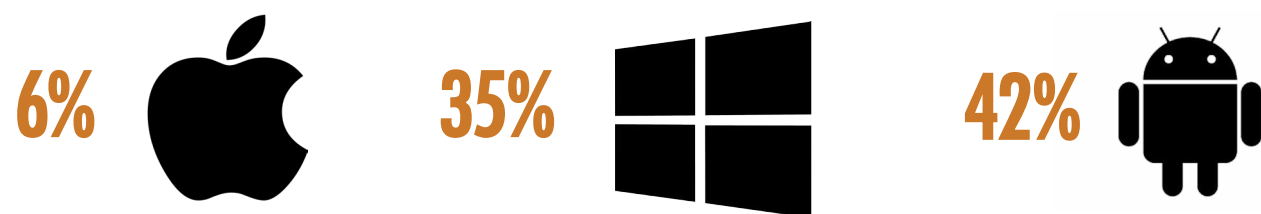
# Consumer

# Rugged

## FORM FACTOR:

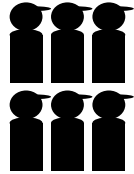


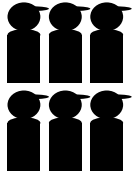
## OPERATING SYSTEM:



**68%** of companies who use consumer devices do so due to lower costs per unit **\$**

**!** The percentage of companies choosing rugged for reliability was **78%**

**59%**  of companies provide their field engineers with only consumer grade devices

**16%**  of companies provide their field engineers with only rugged devices





# SO WHAT EXACTLY ARE THE TOOLS FOR SUCCESS?

In our latest research project we've teamed up with rugged tablet manufacturer Xplore Technologies to find out what are the tools field service companies are investing in to ensure that they are giving their field service engineers every chance to ensure they are delivering service excellence...

As technologies such as the Internet of Things, Artificial Intelligence and Augmented Reality dominate the headlines in field service it is perhaps a bit too easy to forget just how recently field service operations were being revolutionised by the emergence of mobile computing.

The improvements that come with the digitization of a field engineer's workflow are well documented from more efficient processes, greater customer service delivery to even simple straightforward cost savings via the sheer volume of paper forms no longer being used.

Yet whilst for some companies the move to a modern mobility solution happened over a decade ago and they are now exploring their third, fourth or even fifth iteration of mobile hardware, there also still some companies that have yet to move away from pen and paper.

At the same time, the options for field service companies looking to invest in a mobile computing solution for their service engineers, whether it be for the first time or an upgrade of their existing system, are ever more complex.

For a start, the lines between rugged and consumer devices are becoming more blurred with companies such as Samsung making a play for what is seen to be a growing and lucrative market with semi-ruggedised versions of their consumer products such as the Galaxy Tab Active.

At the same time rugged manufacturers have become aware for the growing desire from their client base for more consumer looking designs in the rugged space and as such products like the Motion R12 have begun to emerge which combine the sleek, cleaner lines of a consumer tablet in a rugged device that can fully withstand the rigours of the field.

However, rugged versus consumer is just the tip of the iceberg when it comes to the many, many factors to be considered when selecting the right device for your field service engineers.

What about form factor? Has the rugged handheld that was all prevalent not so long ago been surpassed by the smart phone?

Are tablets, which can bring the mobility of a smart phone to the table, but with greater processing power (on a par with high end laptops in some aspects) becoming the go to tools?

And of course then there are the considerations around peripherals - is a keyboard required for large amounts of manual data entry perhaps? How about vehicle docking? Or even carry straps and cases?

To find out more about the latest trends within the industry we decided to return to this topic (having explored it some 12 months previously) to see what trends were emerging or evolving

when it comes to the devices being selected by field service organisations for their engineers and technicians.

With additional expert input into the survey design provided by rugged specialists and partners with us on this project Xplore Technologies, the survey took in the responses of around 150 field service professionals from a wide range of industry verticals including manufacturing, telcos, engineering, HVAC, and many more.

There was also a wide representation of companies of differing sizes with some respondents having as few as 10 or less engineers in their workforce whilst many had over 800 or more engineers in their teams.

## Dual digitality

One of the key findings of the 2015 study was that many companies are now providing their field service engineers with more than one digital device for use in the field.

However, when reviewing the questions from the previous study we felt that perhaps the meaning of this question could have been slightly ambiguous, so in this year's study we wanted to refine this notion further by including the response "Multiple digital devices - e.g. smart phone and laptop etc used equally for field work

simultaneously" as an option to the question "Which devices are your field engineers currently using as their primary device for field work?"

And it seems that this digital duality that we uncovered last year remains very much a key trend for field service organisations with one in five companies now providing their field service engineer with at least two devices to undertake their work in the field.

However, one of the perhaps most interesting findings of this year's survey was the amount of companies who are providing their engineers and technicians with laptops as a primary device for work in the field.

Whilst the response group across the two surveys was different - meaning that direct year on year analysis is always at risk of being slightly skewed - both surveys had a sizeable enough response set to provide a fairly reliable snapshot of the industry sentiment to allow for some meaningful comparison.

With this in mind it was interesting to note that amongst this year's respondents laptops were the most prevalent of devices being given to field service engineers with a third (33%) of companies seeing them as the best device for their field service engineers compared to a fifth (20%) of companies opting for smart phones whilst 15% opted for tablets.

In comparison to last year this would indicate that despite the claims in some analysts' quarters of tablets emerging to eventually replace the laptop, the laptop remains a regular tool amongst field service engineers.

One reason for this could be simply a cost decision as when we look deeper into the research findings we see that of those companies that provided their field service engineers with laptops the majority (61%) had opted for consumer based devices. This is compared to just 11% who were providing their engineers with rugged laptops.

Further to this within, this group almost two thirds (64%) stated they opted for consumer devices because of a cheaper cost per unit.

However, when we look at those respondents who indicated that they are providing their field service engineers with tablets we saw a much greater parity between those who were providing their engineers with rugged devices versus those providing consumer grade products.

In fact the split between the two was exactly even with 40% of respondents opting for rugged and

40% opting for consumer whilst 20% provided as mix of both rugged and consumer.

Indeed, when we look at the data from only those respondents who provided their field service engineers with rugged devices a completely different picture emerges entirely.

Amongst this respondent group the most common device deployed amongst field engineers was the tablet by some margin with just under half of companies (44%) selecting them as the right tool for their field engineers.

In comparison rugged laptops and rugged PDAs/ Handheld computers were the next commonly used devices with a just over a fifth (22%) of companies opting to implement these devices,

laptops were the next commonly used devices with a just over a fifth (22%) of companies opting to implement these devices,

“WHILST THE LAPTOP AND SMART PHONE ARE REGULARLY DEPLOYED AS MOBILE COMPUTING TOOLS FOR FIELD SERVICE ENGINEERS, AMONGST THOSE COMPANIES WHO SEE THE NEED FOR AND BENEFITS OF RUGGEDISED TOOLS, IT IS THE TABLET THAT HAS BECOME THE DOMINANT FORM FACTOR”

whilst 11% of companies provided two or more rugged devices.

What is clear from this initial view of the data is that whilst the laptop and smart phone are regularly deployed as mobile computing tools for field service engineers, amongst those companies who see the need for and benefits of ruggedised tools for their engineers it is the tablet that has become the dominant form factor.

## Consumer versus Rugged

This of course leads us on to perhaps the biggest question within the discussion around which tools are best suited for field service deployment - rugged or consumer.

In last years findings we saw that the market was

largely dominated by consumer grade products with over two thirds (67%) of companies opting for consumer products over their ruggedised cousins.

Whilst this year's survey does show a slightly greater leaning towards the rugged sector the shift is generally minimal with 59% of this years respondents still identifying that they are deploying consumer grade devices. This is in comparison to 16% who are deploying rugged devices and 20% who provide their field service engineers with a mix of both rugged and consumer devices.

So what are the drivers behind these decisions?

Well in terms of consumer devices being selected,

the key over-riding factor as touched on a little earlier is simply the cost per unit.

In total well over two thirds (70%) of those companies who opted for consumer devices had done so because of the lower cost per unit.

The second most common reason cited was the faster potential user adoption via user familiarity which was cited by just under a quarter (24%) of those respondents providing consumer devices.

Interestingly this figure rises to two thirds (33%) when we look at those companies that provide their field service engineers with mobile phones.

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What is really interesting, however, is when we compare these findings with those who provide their engineers with rugged devices.

Essentially, we see the primary drivers for device selection completely reversed.

Whereas those that opted for consumer devices were driven primarily by the lower initial unit costs, those who opted for rugged devices were driven overwhelmingly by a need for reliability with over three quarters of companies (78%) providing rugged devices stating this was the driver behind their choice.

Also important to this group was the durability and longevity of the device which was identified by around a fifth of respondents (22%).

This set of results is particularly interesting when viewed in the context of the common TCO (total cost of ownership) argument put forward by rugged OEMs and their distributors.

The argument being that across the general accepted lifespan of an asset a rugged device will generally end up costing a lot less than its consumer counterpart (when factoring in breakages, downtime, lower reliability rates, etc etc).

Given the majority of companies still opt for consumer devices because the lower cost per

unit there could be considerable savings made if companies began to adopt a more pragmatic and longer term approach to device selection perhaps?

This is of course great news for the rugged manufacturers but surely what makes for an even more compelling argument is the fact that of those companies that did opt for rugged, such long term cost reduction was only a side point with the benefits of reliability and durability being much more widely acknowledged as the driver for rugged adoption.

When we consider the mission-critical nature of field service, the need for reliability is of course likely to be anticipated. However, given the TCO argument as well, it is perhaps surprising that in both this year's and last year's research, consumer products have remained so dominant.

Perhaps there is a need for further education amongst the industry on this topic?

## The importance of OS

Of course one other factor that could play a part on the selection of devices is the operating system (OS) requirements of a field service management application that a company may have already in place.

Indeed: one respondent stated that his reason for

selecting a consumer device was for 'compliance with the field service management solution'.

Whilst many if not most dedicated field service management apps will be either device agnostic or available in a variety of native formats, this may not be the case if a company has developed their own system perhaps.

Certainly in the wider world of enterprise mobility, where the iPhone remains king having wrestled the crown from Research in Motion's Blackberry some years ago, iOS is the de-facto choice for native designed apps.

However, whilst this is certainly a plausible theory the reality is that within the niche world of field service the Apple brand is far less powerful with in fact just 7% of our respondents stating their engineers use iOS.

Of course given the inclusion of laptops and tablets as key tools for field service engineers Windows operating systems fare well within our industry with 35% of companies stating this is their OS of choice, whilst Android's dominance in the consumer markets is almost echoed amongst our respondents also with an impressive 42% of field service engineers using the Google owned OS.

But just how important is the availability of any given OS when it comes to device selection?

In fact, it is a fundamental part of the decision making process for almost all companies, it seems, with nearly nine out of ten (86%) of companies saying that the availability of an OS on a device is at least one consideration for them.

However, further to that, over half (52%) of field service companies in our survey group stated that it was very important and they 'decided our choice of device based on the OS it supports.'

## Connectivity and Data Capture

Another key factor in what was driving the decisions around which devices field service companies were selecting for their field engineers was the various options for both connectivity and data capture.

Perhaps it is no surprise given the growing importance of Cloud computing and the prevalence of connected devices that in terms of connectivity, the most desired technology within a device was Wi-Fi capabilities which was cited by 87% of companies as being a key technology that

was ideally required in a device deemed to be suitable for field engineers.

Similarly the inclusion of 4G mobile internet was also stated as ideally needed in a field service device by over two thirds (69%) of our respondents.

Perhaps an indication of how much we have moved already to a wireless world is how these figures stack up against the desire to have a wired Ethernet connection which was cited as being ideal by just under a quarter (24%) of companies.

Additional evidence to support this desire to move towards wire-free technology is also indicated in the fact that Bluetooth was desired by almost three quarters (73%) of companies as well. This is significantly higher than older, wired methods of connectivity such as RS232 which just over a fifth (21%) of companies desired or even USB which just half (47%) of companies stated they felt was an ideal inclusion.

However, when we look at data input requirements it is the well established, tried and tested technologies that remained the most sought after.

The ability for a device to capture photographic or video data remains the most important means of data input for most field service companies with well over three quarters (79%) stating that they would ideally expect this in a device.

Second to video/photo capture was the inclusion of a barcode scanner which was desired by almost two thirds (65%) of our respondents.

What is interesting is that amongst those companies who opted for consumer devices (which of course are unlikely to have such features embedded within them) the desire to have barcode reading capability actually increased slightly to 71% of respondents.

Again, this perhaps indicates that whilst a number of companies are lured in simply by the initial lower cost per unit of consumer devices perhaps there are wider considerations such as how fit for purpose a device is, that should be considered alongside the initial cost.

In terms of manual data input, it is interesting to note that although laptops remain the most popular device for field engineers overall, the assumption that this is based on the requirements of a physical keyboard is proven to be somewhat flawed by our findings.

Indeed, there were almost three times as many

“IT IS NO SURPRISE GIVEN THE GROWING IMPORTANCE OF CLOUD COMPUTING AND THE PREVALENCE OF CONNECTED DEVICES THAT IN TERMS OF CONNECTIVITY THE MOST DESIRED TECHNOLOGY WITHIN A DEVICE WAS WI-FI CAPABILITIES WHICH WAS CITED BY 87% OF COMPANIES AS BEING A KEY TECHNOLOGY”

companies who stated that they felt an on-screen keyboard was desired rather than those who stated they felt a physical keyboard was ideal.

In fact over two fifths of companies (42%) backed an on-screen keyboard whilst just 15% identified physical keyboards as their preference.

Another indication of the changing nature of how we interact with our hardware is also highlighted that handwriting recognition software was also desired by two times as many companies (32%) than a physical keyboard.

Perhaps one of the most curious findings of the research is that yet again we see NFC/RFID overlooked by field service industries as the technology - which could have such an effective impact within a number of elements of a field service engineers workflow, from checking the service history of an asset in the field being repaired through to ensuring accurate parts inventory, was only cited by 13% as being required in an ideal field service device.

Similarly, voice recognition software, which in an industry where the ability to work hands free is a major factor, one would think would be a significant tool for data input in any given field service focussed device, was also relatively shunned with just over a tenth (11%) of companies stating they saw this as being an ideal inclusion within a field service device.

## The benefits of mobile computing

Finally, one area where it would seem there is certainly a growing consensus is in the way field

service engineers appreciate working on a mobile device.

We asked our respondents: "Do you think your field workers have appreciated a move to using a mobile device?" And the response was overwhelmingly positive. In fact over two thirds (69%) stating their field service engineers had provided mostly positive responses and 35% going further and stating their engineers had 'absolutely taken to going mobile'.

When we look at the reasons why we've seen such wide acceptance of mobile technology amongst field service engineers the single most commonly cited reason was that 'it made their workflow easier' which 45% of companies revealed their engineers benefited from.

A similar amount of companies (41%) also stated that their engineers felt that the adoption of mobile devices as part of their field service tool-kit also allowed them to be more productive and to get their work done more swiftly.

So whilst there are many decisions to be made for field service companies in terms of device selection - rugged or consumer, tablet or laptop, even one or more devices, the one thing is abundantly clear for the 5% of respondents who are still using pen and paper.

A move to a digital device will inevitably be embraced by their engineers whilst delivering clear R.o.I

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“THOSE THAT OPTED FOR CONSUMER DEVICES WERE DRIVEN PRIMARILY BY THE LOWER INITIAL UNIT COSTS, THOSE WHO OPTED FOR RUGGED DEVICES WERE DRIVEN OVERWHELMINGLY BY A NEED FOR RELIABILITY WITH OVER THREE QUARTERS OF COMPANIES (78%) PROVIDING RUGGED DEVICES STATING THIS WAS THE DRIVER BEHIND THEIR CHOICE”



# HANDS ON: GETAC V110 CONVERTIBLE LAPTOP

*Tablets have proven to be a huge success amongst field service companies providing a good mix of portability and processing power. However, when it comes to significant data input or powering particularly CPU intensive applications the laptop still remains king. Therefore the rise in prominence of the convertible laptop makes perfect sense in the world of industry.*

*Here we look at Getac's latest convertible model the V110...*

## What the manufacturers say...

The breakthrough design of the Getac V110 rugged convertible enables the computer to be amazingly strong while also being unbelievably light. It truly is a revolution in rugged computing. At 1.98kg and 34mm thin, it's 27% lighter and 30% thinner than the previous generation.

The V110 is built to perform, featuring a powerful 5th generation Intel® Core™ processor, flash storage and responsive graphics. It's the fastest rugged convertible we've ever built.

The V110's dual batteries are 66% smaller and 57% lighter than previous generations, and the unique, hot-swappable dual-battery design allows for potentially infinite, uninterrupted battery life.

This enables you to remove one of the two rechargeable batteries and replace it with a fresh battery without ever shutting down apps or your

Windows OS.

The V110 rugged convertible has been built using the highest quality materials to make it unflinchingly resilient.

The V110's main chassis structure is precision cast using Magnesium Alloy, an incredibly strong structural metal that also happens to be one of the lightest in the world for its strength.

We combined that with an advanced rugged polymer in areas of less impact and rubberised absorption polymer at the main points of contact.

## First impressions...

A quick look at the V110 and there is absolutely no mistaking this device for what it is - i.e. a heavy duty rugged device that can handle itself in the field.

In fact the V110 would look right at home in a

modern war film set in the deserts of the Middle East such is its rugged outward appearance that reveal its manufacturer's roots as a leading provider of rugged devices to the military sector.

However, up close and in hand the device is a lot smaller than one might imagine and certainly comes in a more compact form factor than some of its fully rugged convertible counterparts.

Weighing in at just 1.98kg the V110 is over 15% lighter than Panasonic's C19 and over 20% lighter than Durabook's U12Ci semi rugged convertible making it certainly one of if not the lightest device of its kind in the market currently.

This is largely to do with the V110's slim depth which at a particularly sleek 34mm which is considerably smaller than other similar rugged convertible devices.

With all of its I/O ports tucked away behind

lockable, rubberised seals it is perhaps a touch surprising that the V110 isn't a fully submersible however we shall touch on that a little later.

In terms of actually using the device, the full size keyboard is comfortable in hand, and both the touch screen and tracker pad are pleasingly responsive.

Meanwhile the 800 nits LumiBond® display with Getac sunlight readable technology, was certainly a match for the brightest British sunshine available during the testing period and there were no problems with using the device in the outdoors at any point.

Using the device in laptop mode, whilst it was obviously a more robust device than your average laptop, there was never a feeling of trading usability for ruggedity. However, this did change substantially when switching to tablet mode.

*“Using the device in laptop mode, whilst it was obviously a more robust device than your average laptop, there was never a feeling of trading usability for ruggedity...”*

In fairness this isn't particularly the fault of the V110 itself more so the 'convertible' form factor as a whole. In tablet mode comparisons will naturally be made with other rugged tablets such as the Xplore XSLate B10 which being just a tablet

rather than a convertible, is of course a lighter, more portable rugged computing tool.

Essentially, if the sole reason you are considering a convertible is for a keyboard then a rugged tablet with a bluetooth keyboard would be a more slimline and mobile solution for your field service engineers.

However, the point remains of course that the biggest selling point of any laptop over its tablet rivals would be what kind of processing power, storage and optimised inputs and outputs can be squeezed into the extra space under the bonnet.

So lets take a closer look.....

## Processing power

The V110 comes in four different processing power flavours with the top end specifications boasting an Intel® Core™ i7 vPro™ Technology





chip set with an Option Intel® Core™ i7-5600U vPro™ Processor 2.6GHz Max. 3.2GHz with Intel® Turbo Boost Technology and a 4MB Intel® Smart Cache.

When it comes to storage the V110 has 4GB DDR3L which is can be expandable to 16GB and has storage options of a 128GB, 256GB, or 512GB solid state drive.

This gives the V110 enough processing power to handle almost any application that could be required of it within a field service environment.

In fact at its optimum configuration the V110 is pretty much at the top of the pile. The only other fully rugged convertible that can keep pace with the V110 is Panasonic's CF19.

### Operating system

Given the power the V110 holds under it's bonnet it makes complete sense for the convertible to be on the Windows platform in order to support the more comprehensive applications that may be used by field service engineers who would require such a powerful tool.

However, what is an impressive inclusion is that in terms of OS the V110 is available in three different versions of Windows - Windows 7, 8 and 10.

This flexibility could be particularly useful for those companies that are making the transition from one iteration of the operating system to another with Windows 7 proving to be the XP of its generation in that is a reliable and robust platform which many companies are reluctant to move away from.

However, many of those that have made the switch to Windows 8 are keen to move on quickly to 10 due to some of the well documented flaws in its predecessor. And it is Windows 10 that shows off the full capabilities of the V110s flexibility as a convertible laptop with the OS being a perfect match for the V110s impressive specifications.

### The Ins & Outs:

Aside from the obvious benefits of having a keyboard for data input, perhaps one of the biggest reasons for selecting any form of laptop over a tablet equivalent is the available I/Os - and in this regards the V110 certainly doesn't disappoint.

As mentioned above all ports are protected within closable rubber sealed enclosures. In total the V110 boasts:

- Serial port (9-pin; D-sub) x 1
- Headphone out / mic-in Combo x 1
- DC in Jack x 1

- USB 3.0 (9-pin) x 2
- USB 2.0 (4-pin) x 1
- LAN (RJ45) x 1
- HDMI x 1
- Docking connector (24-pin) x 1

### Connectivity:

In terms of connectivity options the V110 comes with dual band Intel® Wireless-AC 7265; 802.11ac meaning it should be able to take the maximum speed from any available Wi-Fi signal whether it be on the 2.4Ghz or 5Ghz frequency.

The V110 is also capable of supporting internet speeds of up-to 1000 mbits per second across an Ethernet connection which could be useful for the transfer of large files from the field back to HQ.

The convertible also comes with Bluetooth 4.0 which should provide reliable, stable and fast connectivity with mobile devices.

One area where the V110 is perhaps let down however, is when it comes to mobile internet.

Whilst the device does have the optional inclusion of Gobi™ mobile broadband, for field service engineers mobile broadband is absolutely essential for jobs where there may be no conveniently available wi-fi signal.

Similarly a dedicated GPS is only available as an optional extra also.

Connectivity is an essential factor in selecting the right tool for our field service engineers and whilst the V110 is clearly capable of being able to deliver high end levels of mobile connectivity, given the importance of such tools for communications in the field one can't help but feel these should perhaps be standard features rather than optional extras.

### Ruggedity:

When it comes to the rugged specifications of the V110, Getac's convertible is a pretty robust beast. With an IP rating of 65 the V110 is fully protected from dust ingress making it an ideal device for more arid climates whilst it is also certified to survive protection against low pressure water jets from any direction so could be easily cleaned.

It is also well protected against water ingress and as mentioned previously all I/Os are protected by rubber seals. Also the V110 also has an option Salt Fog feature that could make it an ideal device for wet locations such as oil rigs or offshore wind-farms etc.

Whilst not fully water proofed, or capable of being fully submersed, the fact is that the device remains well protected from water means it

is almost certainly able to cope in most wet environments just as long as you don't drop it in the sea!

In terms of drop specs the device is certified to Mil-Std 810g and it is tested by an external third party meaning that it should be able to cope with almost all knocks and drops and it also e-Mark certified for vehicle usage.

### Battery Life:

In terms of battery life the V110 is again well provisioned with a dual battery system.

In fact the V110 is powered by 2 separate Li-Ion smart battery (11.1V, 2100mAh) which promise to deliver up to 13 hours of battery life and using the device during our test period we found that this was in fact achievable even with the device being used constantly throughout the day.

Getac also provide LifeSupport™ battery swappable technology which could theoretically extend the battery life forever although running on two fully charged batteries is likely to be sufficient for even the longest jobs.

### Conclusion:

In conclusion the V110 is very clearly a well designed, highly specced piece of kit that sits right at the top of its tree when we look at the rugged convertible form factor.

In terms of processing power, rugged specifications, battery life, and I/Os the V110 is either as good as it gets or pretty darn close.

In the hand the device is light and comfortable and as we saw earlier compares favourably to similar competitor models in this respect also.

The one major criticism would be aimed not so much at the V110 but at the convertible form factor itself. Whilst they work well as laptops, as a tablet they feel that much more cumbersome and one can't help but feel the convertible form factor is a stepping stone, towards fully detachable rugged devices that truly offer the best of both worlds.

That said, detachables are still a new concept and as such relatively untested whereas convertibles have been around that much longer and are perhaps the safer alternative currently in a mission critical environment such as field service.

And when it comes to convertibles the V110 is certainly a formidable tool for field service companies and an excellent option for those companies whose field engineers need more computing power than a tablet yet still want the reliability and robustness of a fully rugged device.

# KPI's – What are they good for?

## Nick Shipton of scheduling specialists Kirona takes a look at the importance of measuring performance and constantly shifting KPI focus in a journey of ongoing improvement...

Kirona recently collaborated with Bill Pollock from Strategies for Change, hosting an interesting webinar covering the key points raised in Bill's field service benchmarking report.

During the webinar we discussed key trends across field service in terms of what organisation are looking to implement and improve in the future.

The most popular item on the agenda for UK and European organisations was to develop and improve metrics or KPI's to measure performance. The thought here was that organisations need to be measuring things better in order to improve and help with the following:

- Customer demand for quicker response time
- Workforce utilisation & productivity
- Service process efficiencies
- Customer demand for improved asset availability

This of course is all very commendable and is absolutely the correct things to be striving for however, is developing new and improved ways for measuring what we are doing actually going to help us achieve these goals, or does it simply stop short and tell us simply how are we are doing today, last month, last year?

Back office systems, scheduling solutions and mobile solutions give us a whole wealth of potential data to look at and report upon (although those organisations who are yet to jump into the world of scheduling and mobile will only have the very basics), but are we using this data to the best of its ability.

Traditional KPI's are great for telling us how we are doing now, allowing us to answer the question is the business performing to set metrics? But they stop short of actually giving any insight into how we can improve?

The setting of targets doesn't answer the questions that allow us to improve, it merely creates a benchmark.

Having access to information that addresses; I am

meeting the set number of field service jobs I need to complete today that's great but could I do better if the organisation was configured differently.

The key point is that KPI's are just a set of controls we like to put into a business to give us some comfort that we are running on track, which is as I say great but do they actually give us any view on how we could improve and deliver a better service to our customers, even if we are doing well.

For us at Kirona it's about taking that wealth of data we have and giving tools to our customers that not only allow them to look at the standard KPI's to ensure they are on track but also to allow them to start analysing where they could get better and implement those improvements.

*“Traditional KPI's are great for telling us how we are doing now, allowing us to answer the question is the business performing to set metrics? But they stop short of actually giving any insight into how we can improve?”*

If you only currently have only a fairly static back office system your ability to get access to meaningful data is going to be very limited, however with scheduling and mobile solutions such as Kirona's DRS and Kirona's Job Manager solution you suddenly have an extra dimension to the quantity, quality and type of data available.

Analysing this in the correct way then allows an

organisation to start pinpointing exactly where efficiencies in the business could be made.

This extra dimension of data enables the organisation to understanding questions such as; We may be completing our set number of jobs per day, but actually how much is it costing us to do that?

Are some geographical areas better performing than others?

Can we improve this by looking at the distribution of our workforce across those areas?

Am I giving my customers the most efficient times for appointments for my organisation, and can I improve this without impacting my service?

Am I deficient in certain skills and abilities in different regions?

Are we selling or completing certain services in specific areas of our region and therefore do we need to move the workforce around to support that, or could we be offering a higher level of service in those service areas?

In conclusion I believe what organisations should be looking at in addition to developing new and improved ways of measuring performance, is actually looking at ways at tools that enable your organisation to analyse your business to help improve your performance, without impacting on efficiency, keeping customers happy and attracting new customers.

Also if you want to keep ahead of your competitors, hitting your targets isn't going to do this, the only way to do this is to continually challenge those targets, continual improve your business and analyse what the data is telling you.

Look beyond your KPI's!



**KIRONA**  
Nick Shipton,  
Dynamic Resource Scheduling Executive,  
Kirona





# Rugged Decoded: IP ingress protection ratings

**In the second of our series examining what makes a rugged device, well, rugged, Sharon Clancy explores IP ratings...**

IP environmental ratings along with MIL standards (MIL-STD) are perhaps the most widely recognised yet also perhaps the least fully understood of the standard definitions of what makes a mobile computer or tablet rugged.

Ingress protection is an important element in fit-for-purpose and Total Cost of Ownership considerations because it underpins reliability in the field.

Over-specify and you'll certainly get a rugged device that won't let you down, but you'll push up the price because the more rugged it is, the more expensive the components.

You'll also add weight, so potentially making it less appealing to your field workers.

In contrast, under-specify and you'll be plagued by in-service unreliability and higher costs - not just of repairs but also those incurred by having technicians unable to carry out critical tasks.

As with all field service buying decisions, it's a question of ensuring the mobile devices you select for your team are fit-for-purpose: reliable, user-friendly and able to cope with the demands made of them. And when it comes to environmental protection, it's obvious that the device used by a technician fixing office equipment is less exposed to nature than a utility engineer working outdoors for much of the day.

There's been lots written about the risks of under-specifying mobile devices

for field service, but over-specification, particularly with IP ratings, is also widespread. It adds both unnecessary cost and can have a detrimental effect on productivity – taking us full circle back to the fit-for-purpose question.

"Specmanship" has led to the over-design of many rugged mobile computers, which has quickly led to the (completely unnecessary) over-budget predicament many field service organisations are struggling with," a spokesman for Xplore technologies commented

"In the case of IP ratings, less can be more (peace of mind and money in your pocket) and excess protection is counter to the mission of mobile workers, as surely as too little protection will be. It's a Goldilocks-type situation that can be resolved by having just enough."

On the other hand, rugged device manufacturers warn against "rugged" versions of consumer smartphones and tablets – often delivered with the addition of a case rather than designing in protection from the start with components such as sealed keyboards and ports and enclosed internal components.

## **What the IP figures mean**

IP ratings are defined by International Electrotechnical Commission (IEC) standards and tell you how well devices are sealed against dirt and moisture ingress and the level of protection components have against whatever is thrown at them.





IP ratings have two numbers: the first indicates the degree of protection against dust, dirt and foreign bodies entering the device while the second is about how resistant the device is to the ingress of fluid from drops, sprays and submersion.

Ingress protection ratings can be affected by the number of ports on a device and whether they are sealed or open, by keyboard design and a number of other factors.

We've included a link to access a full IP ratings table at the bottom of the page, but for field service the numbers to look out for on a rugged mobile device are "5" and "6" for dust protection and 4,5,6, or 7 for water or fluid ingress. (In comparison, consumer devices typically have a rating of IP42 or lower.)

Both are important when assessing devices: if, like me, you've ever spilled tea or coffee on a computer keyboard, you'll know that water ingress can be the kiss of death to electronic components.

Less dramatic but in the long term just as damaging are ingress of dust and dirt particles. They can cause keys to stick and generally penetrate causing damage to components.

While "6" is dust-proof, a "5" rating doesn't mean the device will prove unreliable, just that it isn't completely sealed against dust ingress. It's worth noting, too, that complete sealing against water and dust ingress may increase internal temperatures which in turn might impact on processor performance.

There are more numbers for fluid or water ingress: a "4" rating signals protection from splashes, "5" against water from a nozzle, "6" will cope with more powerful water jets or sprays, while "7" means you can submerge the device in water and it will still survive.

Again, which is best for your operations depends on the working environment - for many field-service environments, a "5" rating and even possibly a "4" will be perfectly adequate.

### MIL-STD 810G

We'll be taking a closer look at MIL-STDs later in this series, but we think

it's worth mentioning here that while most people associate MIL-STD 810G with drop and vibration checks, it also includes water-resistance and particle tests which tablet and notebook manufacturers also use to demonstrate the ruggedness of their products, especially in the ultra-rugged sector.

Panasonic, for example carries out water resistance tests in accordance with MIL-STD-810G, Method 506.5 Procedure I (Blowing Rain) and Procedure III (Spray). The test items are subjected to this test with the LCD open and the unit operating, but with ports closed.

Unlike some computer manufacturers, says Panasonic, it does not shorten the duration of liquid resistance tests. For instance, for the Blowing Rain test, Toughbook fully-rugged computers are tested for a full 30 minutes per surface with a 70 mph wind at rainfall of 5.8in per hour.

Toughbook fully-rugged computers are tested for a full 40 minutes on liquid resistance. Although different Toughbook and Toughpad models have different levels of water resistance, all can survive 6oz of water poured on a keyboard.

Panasonic's dust resistance test uses MIL-STD-810G, Method 510.5, Procedure I (Dust) and Procedure II (Sand), at up to 140°F, using both fine-grain silica flour and abrasive sand. To pass the test, a device must continue to operate with no binding or blockage of moving parts and no malfunctioning contacts or relays.

### A testing question

While IP ratings do provide a standard for comparing devices from different manufacturers, some buyer caution is advisable.

Testing costs money, so some low-cost units may "conform" to IP65, for example, but may not have "passed" the required test or even been tested at all.

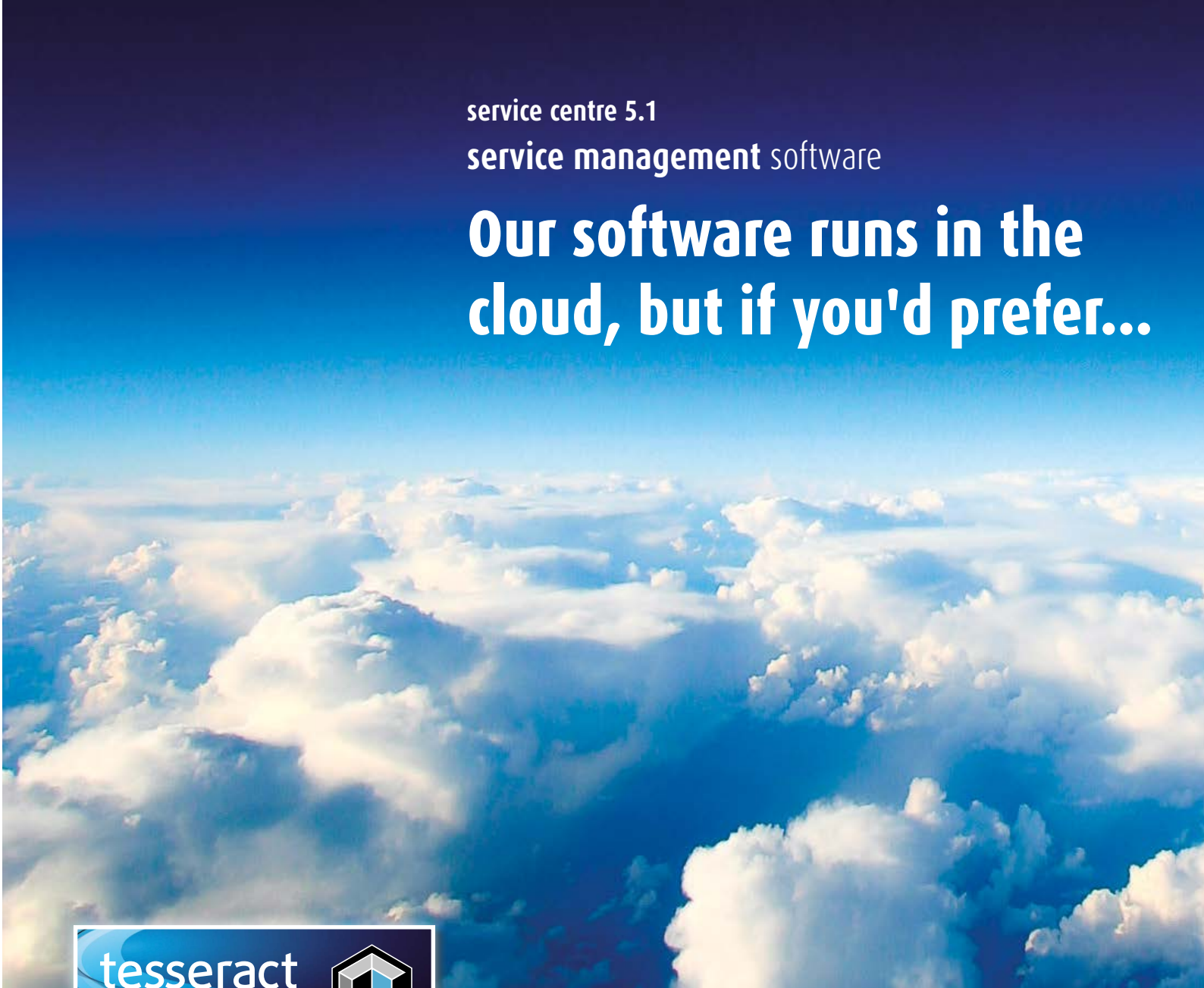
It's also sensible to check how the testing was done - in-house by the manufacturer, or by an independent lab.

Getac, for example, uses a 3rd party to test its tablets and notebooks to ensure they are done to the full requirements.

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# Are we ready for the 15 minute SLA?

As the industry wide adoption of IoT comes ever closer, now is the time for companies to focus on service-led processes and reducing SLAs or be at risk of falling behind their peers warns Tom Bowe, Global Field Service Specialist with IFS...



The 15 minute SLA may seem like an impossible task but in his presentation at Field Service Medical recently Tom Bowe, IFS, highlighted two separate examples of companies doing just that.

Further more it is just a stepping stone on the way to companies offering 100% uptime he believes.

The two great examples of companies hitting 15 minute SLAs Bowe cited were firstly IFS customers Cubic Transportation Systems who in San Francisco are hitting 15 minute SLAs on the local transportation system and are doing so with a 100% record.

Meanwhile on the other side of the country the NYPD are hitting 7 minutes response times for life threatening calls and 9 minutes for non life threatening calls which is quite frankly incredible.

Of course not every company can hit these heights but how close should your average company be trying to get towards these kinds of numbers?

“If you’re looking at it from a company perspective then it’s very much a road you need to take – a journey from where you are today to where you want to be in the future with a number of key points along the way.” Bowe explains

“The goal should be to improve 20% a year. I don’t think it can be incremental, like 3% productivity per year. It’s more significant than that.”

“A total transformation is unnecessary, but I think you have to realise change is coming fast – the train has left the station. So where is it going to end up? Personally, I think it is going to be in real-time.”

So why does Bowe foresee such dramatic sea change?

Well like many in our industry he sees the impending arrival of the IoT as a seismic game changer within the way field service will operate.

“I believe equipment will be able to self-monitor themselves and leverage intelligence in the cloud to perform decision analysis and determine what actions to take, and to do that before any kind of serious failure.”

Bowe pauses just briefly to highlight the magnitude of the change.

“It’s going to take the SLAs and collapse them down to a fraction of what they are today. People are talking ‘predictive this’ and ‘proactive that’ and listening to the marketing wizards out there so expectations are already building.

“Whether or not a business changes in advance of this will determine how much pain their business will go through when it actually becomes mandatory for them to massively reduce their SLAs.”

Bowe speaks with a passion and it is clearly a topic he has given a lot of thought to.

But realistically how at risk are those companies who don’t adapt? How much is hyperbole?

“If you have a choice between two service providers where one is responsive in days and the other one is guaranteeing zero down-time and monitors it all the time...who wins? Imagine if a service provider could remove the customers’

concerns by saying, Hey, we’ve got you covered, we’re always watching, we’re always monitoring. What if they didn’t have to worry about anything?” He replies wryly

“I think it is a complete game changer. People will make different choice for that level of service.”

One of the other big take aways from Bowe’s presentation was that whilst IoT is already beginning to happen, for those companies that begin to embrace the change it is bringing it is not just about getting sensors on all of your assets in the field.

“If we literally have to wait until everything is sensed up, we are talking about a decade from now.” Bowe explains.

“Companies can’t wait that long. They are going to be way behind competitors who have taken that first step.”

“That first step is changing your service business in evolutionary ways and incorporating the IoT elements, the theory of the case. So even though you don’t have a machine learning algorithm right now, that’s OK because you can still significantly improve by leveraging what you already know through past history and service maintenance.”

“How many service calls did you get (by product)? Don’t you already have condition reports on each piece of equipment and take the readings, record measurements, generate log files and create cases?”

“You probably have customer complaint records, and your field engineers enter notes like ‘there

was a buzzing sound’ or ‘we had to reset a bunch of times,’ right? Well these are all key observations.”  
So you already have all this data, and as a software guy, it’s pretty easy to make some calculations and put together a score based upon your current existing knowledge.”

“And that score can help you respond faster. Sure, maybe it’s rudimentary today, maybe it’s not even worth getting that excited about – but with the score and some new service processes around it, you can start evolving your business to fit the eventuality of the IoT model, which is then going to take that score and significantly amplify the meaning and importance of it.”

“The benefit short-term is that you’ve started to build the infrastructure, you’ve started to incorporate IoT into your business model and you start thinking around new service offerings.”

“It is important to get a head start and be in front of the wave.”

Indeed the way Bowe describes his thinking is almost like a prep-school for IoT, essentially creating an additional route for service companies to be adopting as they wait for the unified standards that will facilitate the mass adoption of

IoT to arrive.

“At the end of the day it’s better to start sooner rather than later.” Bowe comments. However, he also warns of jumping into the technology too quickly before the standards are settled.

“If you go to far down a proprietary route when the standards do come into play you may be locked into that technology and have built processes in around that technology.”

“Then it becomes problematic – you are stuck with a Betamax.”

So how does Bowe see these standards emerging?

“I think right now it is moving towards a utility. The big guys are investing heavily in dozens of IoT services. They are coming out with data lakes, event hubs and machine learning and underneath that is a massive amount of technology.”

“It’s going to be a utility because you can’t expect every company to have a bunch of PhDs in the back room trying to work this stuff out. So we’ve got to standardise in order to be efficient.”

The normal model in the software industry is to

build things in layers and you typically start with a few infrastructure providers that everyone can leverage which I think will be the large Cloud providers as soon as we have some standards.”

“IoT needs standards to help everyone with flexibility, re-use, enormous data volumes, analysis, cost efficiency and achieving the original objectives.”

“Without those standards we are kind of stuck in this proprietary high-cost model, which is not scalable. Without standards, IoT won’t become a life-changing type of technology.”

It’s an interesting point. All too often we talk about IoT as though it has already arrived but in reality how far are we away from universal standards being adopted because these are the true final barriers to mass adoption?

“I wish I could say that a solution is right around the corner, but there are still competing bodies and some very large organisations have gotten behind three or four different standards,” bemoans Bowe.

“But they’ve got to work it out, the opportunity is extraordinary and when they do IFS will be ready for it. I can’t wait.”

# Industry Overview: Medical/Healthcare



Field service in the medical industry is a complex and challenging sector. Having recently attended the two key events Field Service Medical and Field Service Medical Europe, we look at some of the key challenges service directors working in this vertical face...

It is an often quoted maxim that when it comes to field service highly disparate companies from completely separate verticals can face many of the same pain points. Within the niche of the medical industry these challenges remain but there are also additional hurdles that can make service delivery even harder.

Fortunately for those working within medical field service, global conference producers WBR sit right at the heart of the industry hosting two key events, one each side of the Atlantic to help foster knowledge sharing within the community.

The first of these Field Service Medical was held in San Diego in February and in the Californian sunshine the debate was lively with a highly senior audience coming together and putting commercial rivalries aside to address some of the key challenges within the sector.

Of course as with the wider field service sector, technology has a huge role to play in enhancing the levels of service companies can provide, a number of additional challenges such as tighter regulation, greater security fears and fragmented purchasing structures can make the implementation of technology just that little bit harder within the medical sector.

Thus a number of conversations centred around integration, with FieldOne's Ted Steffner's presentation on the topic 'Integrate, Don't isolate' being a particular highlight for a number of delegates.

Another specific focus of the medical sector is that the sale of consumables within the industry is perhaps disproportionately higher here than in other verticals such as manufacturing. Largely driven by the clean room environment, this leads to an even greater pressure to ensure good inventory management and as well as a number of presentations around

this topic, Stacey Blakely, Service Sales Director, Hill-Rom led an excellent interactive round table that provided plenty of food for thought and helped drive the conversation.

Indeed, the sale of consumables is viewed very as a key part of service revenue still within the medical sector and in some respects the thought processes of many within the vertical is still focussed on the traditional break-fix approach to field service.

This was apparent when Professor Tim Baines, Aston University, gave a presentation on the topic of Servitization at Field Service Medical Europe in Berlin a month later.

Whilst in many other verticals the topic of servitization and phrases such as through-life-cycle service, advanced services and outcome based solutions are becoming familiar concepts, for many within the medical industry it remains a new concept which faces the dual barriers of both a relenting and strong traditional approach to revenue through consumables, as well as the additional challenges of fully implementing IoT solutions due to the aforementioned fears around security fuelled by the need to protect patient data.

However, whilst in some areas the medical industry maybe a touch behind the broader field service sector, it is also home to some truly innovative

thinkers and service leaders.

One such person is Alec Pinto, Associate Director of Qiagen who gave a fantastic presentation on maximising utilisation. Pinto and his colleagues have done some exceptional work on developing mathematical modelling to truly define their available resources in terms of man hours, and then redistributing their workforce accordingly to improve customer satisfaction levels, efficiency levels and engineer engagement.

In summary, the field service industry within the medical sector has a number of unique challenges that are perhaps not felt within other verticals yet the market still continues to see innovation and development on both sides of the Atlantic.

"There is an overall them of companies being more proactive and less reactive across the sector at the moment" commented Greg Ashton, Conference Producer for WBR at the end of Field Service Medical Europe.

"People have been thinking about it for a long time but now the technology is at a place now where there is a fusion of people and technology all arriving together at a critical point."

"It's really the solution providers that are driving it forward, the solutions themselves have improved a lot over the last year" he added.



# Are we witnessing the consumerisation of logistics?

Could the UK consumer's passion for Internet shopping be heralding in a new era in parts deliveries for field service engineers? Sharon Clancy reports

UK consumers are renowned as some of - possibly even the - world's most enthusiastic on-line shoppers. In the process, they have driven up delivery and service standards, raising expectations of what they consider acceptable service from the companies they deal with to new levels.

They expect to order up to 10 p.m. in the evening and receive delivery the next day - some don't even object to paying for an early delivery.

What they will object to (and quite possibly take their business elsewhere) is if you can't offer them a one-hour delivery window or a choice of delivery options.

Faced with the complications and costs of providing doorstep-deliveries that come even close to meeting the ever-rising expectations of hundreds of thousands of consumers, on-line retailers have developed a raft of alternative delivery solutions, including locker banks and click-and-collect points at local stores.

Locker banks for through-the-night deliveries to service engineers are not new, of course. What is new is that, thanks to this huge demand for flexible deliveries of Internet purchases, there has been a veritable explosion in the numbers of locker banks throughout the UK.

They've become a common site all over the UK - supermarkets, railway stations, fuel stations.

Accompanying that, has been more click-and-collect parcels networks at local convenience stores.

On the face of it, this might seem a less secure destination for those vital parts, but in fact the

delivery companies have invested huge amounts in ensuring those on-line goods end up with the right customers, so this is a less a concern than it might have been in the past.

Of course, getting this sort of collection right requires integration of order-intake and scheduling, but field service companies have plenty of expertise at that.

It also suits, too, those smaller service companies who rather than have a huge parts inventory, will source required parts from on-line parts suppliers and an on as-required basis.

So how do all these delivery solutions work?

## Locker banks

ByBox and InPost are the best known of the European locker bank providers. ByBox actually built its business in providing an overnight pre-8 a.m. secure locker service to the field service sector using its own delivery network.

Located at easily -accessible sites such as fuel retailers, railway stations and supermarkets, locker banks are increasingly popular as a click-and-collect choice.

Consumers like them because it puts them back in charge of the delivery.

Engineers will like them for the same reason - they can collect at a convenient time to them and drop off returns (either pre- or -post the last call of the day, for example).

Behind the apparent low-tech façade of locker banks, there's some clever real-time technology

enabling a seamless collection process.

Security is a top priority - suppliers need to have proof that the correct part was delivered to the correct box, for the correct engineer.

There are numerous methods of authorising access to an individual - pin coded access, digital signature, QR code.

Some box banks incorporate video camera images as a further security measure - for themselves and their customers.

When the locker transaction is complete, immediate notification is sent to the sender. In the event of any dispute, there's a record of box activity.

Once goods are delivered to a locker, of course, it's no longer available until the engineer collects the parts.

It's a fine line between allowing the engineer maximum flexibility on when to collect the parts and freeing up the locker for future deliveries - of parts or goods to a consumer.

Goods sitting in a locker uncollected benefit no-one and create locker congestion - a particular issue over busy periods such as Christmas and one that is not going to go away as consumer demand for click-and-collect grows.

ByBox's expertise has been developed providing secure collection points for parts deliveries to field service technicians. The company has manufactured over 57,000 lockers, installed in 20 countries.

It also licences its technology providing turnkey



Click-and-Collect solutions as software-as-a-service to global partners - including UK supermarkets.

Its Thinventory solution incorporates an integrated SupplierDirect service, in which stock can be ordered from suppliers and sent directly to their engineer's Smart Box before 8am the very next day.

Locker customisation options include self-closing doors, integration of engineer signature and image capture, and the option to provide customer support at the locker via a video link to a customer support centre.

Each locker is connected to ByBox Cloud for real-time management of activity, including door openings and configurations.

The Locker server manager connects to each locker via ByBox Cloud to provide real-time communication with each locker, managing openings and configuration.

InPost operates in 16 European countries and has a 1,000 strong UK network of electronic locker

banks. The lockers have integrated closed-circuit TV cameras and barcode scanning capability. Consumers with smartphones can be sent a QR code as collection authorisation, and the box bank's central console will be able to scan this from the phone's screen and open the relevant locker door purely on this basis - potentially making the pickup extremely fast.

An API (application programming interface) integrates the click-and-collect service into retailer web sites, offering consumers a choice of the five locations nearest to their target address.

## Convenient convenience stores

On-line parts distributors are also able to offer an alternative to locker-collection via local convenience stores.

Convenience store chains have enthusiastically signed up for click-and-collect, attracted by the promise of extra footfall into their shops. From the engineer point of view, they are very local and

they tend to be open until late evening. CollectPlus is one of the biggest with a network of over 5,800 local stores in the UK, including Londis, Co-operative McColls, Spar, Nisa and Costcutter. Customers simply visit the store and sign for their parcel.

Standard parcel size is limited to 60x050050cm and maximum weight is 10kg - mainly due to potential lack of storage space at the store the customer chooses.

Pay extra, and you're allowed bigger parcels and more weight.

To allay consumer fears about parcels going astray, CollectPlus provides online tracking and, for £1, a signature as proof-of-collection. Insurance of £50 as standard with up to £300 available.

For sellers with high volumes, CollectPlus offers the option of sending customers an email and/or text including a unique collection code.

The customers present this code and proof of ID to collect their parcel - the CollectPlus store and IT systems do the rest.



# The best of both worlds...

One of the most exciting developments in technology currently emerging the field service sector is the potential of Augmented Reality and at the vanguard driving the technology forward is US based company Help Lightning, with their own take on the tech 'Mobile Merged Reality'. Kris Oldland spoke to founder Bart Guthrie to find out more about the origins of the technology and just how big it could potentially become...

Help Lightning has been a technology that has been causing conversations for some time now amongst field service organisations in the USA, fuelled primarily by a number of appearances by their charismatic founder Dr. Bart Guthrie on the US conference circuit alongside some slick booth demonstrations.

But what exactly is a neurosurgeon doing disrupting the field service technology space? I caught up with Guthrie at Field Service Medical in San Diego to find out more about the background on how Help Lightning was born.

"Early on when I started practicing, even during my training I it became apparent to me that there were opportunities for both technology and certain relationships to improve processes that could sustain or improve health." Guthrie begins

"The earliest thing I became involved in was image-guided surgery. That is where you take a CT or CAT scan and you use the device to register to the patient's head in surgery and then as you do the surgery you can see what you are doing on the MRI cast."

"So I think what that did for me was to open my eyes to the capability of technology to bring information to bear and then after that I became pretty heavily involved in medical image distribution. In my field medical imaging is our currency. It is information dense and we will use it to make most of our decisions to get outcomes in terms of certain things that we do so

we developed a system to acquire and manage medical imaging and formed a company around that which did very well."

"Then right about that time when visualisation in the operating room was becoming usable – endoscopes, microscopes, video cameras and then this notion of connectivity... It's one thing to have an operating microscope that is high res. but if you can't connect it to anything you're only as good as you."

"So that started coming around I began thinking would it be possible to use connectivity to export information, whether that be medical information or guidance and movement."

"We approached the Department of Energy about a call for technology development they issued around surgical robots and we got funding for around \$1M for a pilot scheme. Needless to say the funds were completely insufficient but surgical robots are remarkable."

"They are in the field, they work and they do what they are supposed to do which is take your movements, then gear it down and they'll effectively make the same movement. They are going to be tremendously valuable."

"For us though there were some limitations to the robot. One you can't teach it very well, there is a time delay, there were all these technical issues that separate you from what is going on. And the other thing in my job is that I am constantly

getting requests about remote calls with patients that have a problem. And those patients end up in healthcare systems that have the skills but not the experience."

We have been speaking for barely a few minutes yet it is clear that Guthrie has a clear passion for technology and its ability to enhance the world we live in. As you would expect, he has the gentle tones of a experienced medical consultant, enhanced further by his soft Alabama accent.

However, he also clearly has a mind built for problem solving and out of the box thinking and it is this skill that led him to the concept of what was to become Help Lightning, the development of which was a direct response to a major problem Guthrie saw in his day to day working life.

Namely getting expertise where it is needed in an emergency situation.

As Guthrie explains "Any of the surgeons in a small hospital where someone has been in an automobile accident for example will know how to make an incision, how to sow, how to support a patient. But any surgeon may not know how to do that in the brain, or in the heart etc.

"Yet the movements and the principals are very similar, you just need the experience. So we started thinking about the idea of somehow capturing the experience of someone who has that skill set and transmitting it real time to a local





task-force.”

“We came up with this idea of bi-directional video and if we could capture the remote task field view, look at it, insert instruments, hands, whatever, interact with it and then combine the two and distribute it back that may solve the problem.”

“It would allow us to impart a little bit more expertise remotely. It wouldn't solve everything but it would be advancement over what we could do for example over a telephone, which is the standard conveyor of medical information remotely right now.”

And so Help Lightning was born (albeit originally under a different moniker of VIPAR) and with the support of his mechanical engineering and computer science departments at UAB the concept soon became a reality with pilots in operating rooms in both UAB and the Veterans Hospital.

In its initial configuration VIPAR (an anagram of Virtual Interactive Presence and augmented Reality) was a high-end manifestation that worked superbly but simply wasn't scalable.

So after the

patents were written Guthrie took the concept and founded Help Lightning and sought to develop a lighter-weight version of the concept.

Modestly he states: “I procured enough funding to get it going and I sort of stepped back out of the way and hired a bunch of just excellent people to get it going and they've reduced the concept to a similar functionality on just a mobile device.”

What is certain however, is that the team Guthrie has put in place, headed up by CEO Drew Deaton, have done a quite remarkable job of scaling the technology down to an app - which of course makes the business incredibly scalable itself.

“It achieves a couple of things,” Guthrie explains when discussing the move to an app based approach.

“It gets this team out of the hardware business and it makes it available ubiquitously.”

So with the team and technology in place the challenge now is identifying the markets that Help lightning is best suited for. Given the origins of the product clinical care is of course one of those, and Guthrie is directly involved with the pilot program.

“That presentation I gave here where I presented those pilots was the very first step in trying to understand will the patients accept it? Will the providers accept it? Will we find things at the physical visit that we didn't find at the virtual visit. Or vice versa – is it safe or is it unsafe?”

Of course these same questions will apply to the initial projects within the field service space as well.

However, the potential for cost savings of using a tool such as Help Lightning could be truly remarkable. Particularly for those companies whose engineers have to travel long distances.

### Best of both worlds: Augmented Reality

Indeed Help Lightning or other similar tools could have a huge impact on the way companies structure their field services workforce.

With the ability to dial experience in from a remote location to provide the key knowledge and expertise required for a complicated maintenance or repair job, it could make sense for companies to have their most experienced engineers in one office centrally and utilise cheaper, local technicians when it comes to remote locations?

Or simply it could be a tool to improve engineers work life-balance, whilst reducing the costs of travel and accommodation.

Another alternative could be to implement a new tier of service offering based around remote assistance whereby the engineer guides the customer themselves through maintenance?

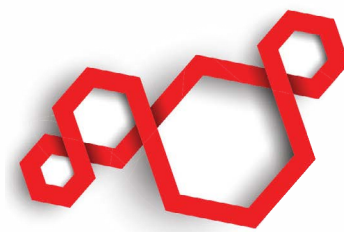
Certainly the applications in field service are wide reaching.

“The way I see it is its all about the relationship you have,” Guthrie explains.

“If you just take two people as a construct and their relationship is remote and some kind of expertise or procedural expertise has to be conveyed from one to the other it's a natural fit.”

“So any market where there is an existing relationship that is benefited by the transmission of expertise to a remote site in a manner that facilitates the relationship, that engages both people, I think is a natural market.”

“I feel patient care is a natural fit, field service is a natural fit. I think maybe the space shuttle even, wherever there is that kind of dynamic in the relationship, I think this concept could fit.”



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A selection of the latest resources to help you stay ahead of the trends in Field Service. You can find these and more at [fieldservicenews.com/category/resources ...](http://fieldservicenews.com/category/resources...)



## Briefing Report: Field Service, Mobility and the Cloud

Having undertaken a research project to assess the current appetite for the Cloud as a platform for field service management systems, Field Service News in partnership with ClickSoftware brought together a panel of senior field service executives to discuss the findings at the iconic Gherkin building in the heart of London's business district...

This exclusive briefing report documents the full days conversations including a detailed exploration of both the pros and the cons of the Cloud as a platform in field service as well as conversations around security, mobility and the changing role of IT within the field service management sector.

## Video interview: John Cullen, Metso

Metso are a global mining organisation who have recently made the move towards a servitized business model.

In this exclusive interview Cullen talks about the challenges he and his team faced as they made this transition, what were the pain point and what were the key drivers and enablers that allowed them to adopt servitization as their new business model.

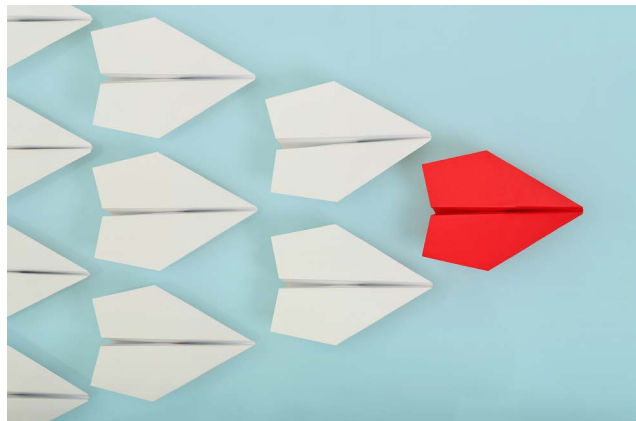


## #FSN20: The twenty most influential people in field service

In it's second year the #FSN20 is our celebration of those in our industry who are pioneering the way forward and helping our industry strive towards excellence.

This year's list contains a mix of practitioners, solutions providers, academics and analysts.

Check out the list online to find out who you should be paying attention to if you want to stay at the cutting edge of the industry.



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# Why Field Service Managers Are Talking About Virtual and Augmented Reality

Both virtual reality and augmented reality could have an important place to play in the future of field service writes Manuel Grenacher, CEO of Coresystems...

At this year's Mobile World Congress, the world's largest mobile device conference and show, virtual reality and augmented reality were everywhere.

Aside from a photo of Mark Zuckerberg walking amidst a sea of oblivious audience members strapped into VR headsets, companies like Samsung, LG, and HTC were all keen to show off their latest VR gear.

Virtual reality isn't just for video games. There's been growing interest in the field service industry on how companies might take advantage of it.

## Virtual vs. Augmented Reality

First, however, it's important to step back and clarify the distinction between virtual reality (VR) and augmented reality (AR).

As their names suggest, virtual reality immerses the user in a completely virtual environment, while augmented reality keeps users in their existing world and simply enhances it.

Deloitte Consulting expects to see VR technologies rapidly adopted by enterprises in the next 18-22 months. And the company specifically cited field service as an industry that stands to benefit from them.

ABI Research makes the case for AR, noting that while virtual reality tends to grab the headlines, AR has one foot that remains in the "real world" and will allow more practical enterprise applications.

The research firm sees 2016 as a turning point for AR smart glasses, predicting that 21 million units of AR smart glasses will be shipped in 2020, with sales expected to reach \$100 billion.

Both technologies could have serious benefits for the industry by improving the two key metrics that are important to all field service managers: first-time fix rates and average repair time.

They can also benefit staff training and skills shortages.

## The Case for VR and AR in Field Service

Field service engineers, wearing a special headset, for example, could be dispatched to a job where they could see the instructions or information about the product directly overlaid on it.

There would be no fumbling for a laptop or tablet; the information they need would be accessible with a flick of their head.

With such detailed information available, this could even mean that field service companies could dispatch less skilled technicians into the field, while the more experienced engineers could stay at the main headquarters supervising and troubleshooting more difficult issues.

In a pilot project with KSP Steel, a steel mill that produces steel pipelines in Kazakhstan, workers used a smart hardhat to safely access information when they needed it, without having to leave the production line and go back to the control room.

The control room data was projected onto the helmet's visor, leading to a 40% increase in worker productivity and 50% reduction in factory downtime.

## Managing Brain Drain

In an interview first published in Field Service News, Professor Howard Lightfoot of Cranfield University School of Management outlined what he saw as the biggest benefits to augmented and virtual reality tools in field service: Said Lightfoot, "It could de-skill field service activity.

There [are] parts of the world where you can't get the right people. With augmented reality you can link them to a skilled technician back at the base who can take them through the process. Not with a manual and not on the phone, but he can actually see what they are doing.

He can overlay information for them and digitally point at things, like: That's the nut, this is the one you turn. Don't torque that one anymore than this. Torque that one to this level. Undo that cabinet first, and make sure you disconnect this before you

do that."

Moreover, that skilled technician could be "back at base" thousands of kilometers away, reducing the cost of flying specialists out to every complex job. NTT DATA, the Japan-headquartered telecommunications and IT services company, now uses the Vusix M100 smart glasses to allow continuous, remote monitoring of technicians in the field. Senior engineers can share the point of view of a technician wearing the M100 Smart Glasses working on-site and can provide immediate instruction in real-time using an overlaid augmented reality marker.

Before using the smart glasses, NTT DATA needed at least two engineers at the work site to ensure quality control, resulting in higher operating costs, a heavier burden for senior engineer staff, and reduced productivity.

## Training Techs

The other benefit of augmented or virtual reality is its potential as a highly detailed, highly visual training tool. Just as children's educators get excited at the idea of breathing life into history or science lessons that put students right into the environment they are learning about, field service managers are seeing how AR or VR could be used to train technicians or engineers on complex tasks or fixes.

Automobile maker, Ford, has recently added the Oculus Rift virtual reality headset to its virtual reality platforms. It's used with a shell of a car, where the parts such as the steering wheel and seats can be repositioned to match those of a prototype car. Other field service uses are for training technicians.

By giving engineers the tools to fix problems thoroughly and quickly, you can increase first-time fix rates and lower the average time it takes to fix a product.



Manuel Grenacher, CEO Coresystems





# Energising field service at SGN

Andrew Quail, Head of IT at SGN, explains how the energy supplier is transforming its mobile app delivery. Sharon Clancy reports...



Gas companies are one of the most heavily regulated in the UK – after all, gas leaks have the potential to be fatal.

The UK’s energy sector regulatory regime is acknowledged as world-class, but safety and innovation are rarely comfortable bedfellows, and innovation has not traditionally been a strong point for the UK’s utilities companies, who have focused on meeting the demands of the industry regulator Ofgem.

So we were intrigued to hear that one of the UK’s biggest gas distributors, SGN, is embarking on a business transformation process that includes greater use of mobile tools and data for its 2,000 strong field service engineers.

SGN distributes natural and green gas to 5.9 million homes and businesses across Scotland and the south of England via a network of over 75,000 km of gas mains and services.

Critical business processes such as emergency gas response procedures have been automated for over a decade and have been mobilised to help ensure SGN meets its legal obligations to respond within an hour to any reports that might indicate a potentially lethal gas leak.

“The safety culture at SGN is core to our business and will never diminish. Data on performance has to be accurate and readily available to the regulator, and mobile data played a big role in providing that,” explains Andrew Quail, Director of IT at SGN.

Quail credits Ofgem with now encouraging an innovative climate that still puts safety first.

“We have relied on our mobile solutions for over a decade to deliver safety-critical services. Our legacy estate was great for some parts of the business: it’s solid, reliable and highly available.”

“However, with the legacy estate, if we change a piece of code or an element within an app, it has potential to affect other things.”

With such a large field workforce, SGN could appreciate the benefits of mobilising other activities in its business.

“Our existing estate was not agile enough to meet the changing needs of our customers and employees,” continued Quail.

“Customised apps take too long to develop and deploy and we wanted faster improvements to our efficiencies and customer services.”

“At the same time, we could not risk any mobility initiative affecting our ability to respond to core emergency repair work. We also wanted to control app distribution to ensure it met our IT security needs.”

The solution has been to retain the legacy SAP platform for emergency gas response services, while deploying Kony Inc’s MobileFabric cloud-based mobility platform to develop and maintain mobile apps for other parts of the business.

MobileFabric decouples corporate front- and back-end systems so changes can be made quickly.

Connectors and adaptors means back-end integration for mobile apps is configurable and flexible rather than being custom-built.

“We were looking for a platform that would allow us to quickly develop well-designed apps that are attractive to our workforce.”

“At the same time, we wanted to capture data in a standard format that could be distributed and presented to any part of the business.”

“Mobile Fabric is an enterprise-grade mobility platform which is tightly integrated into our legacy systems. One of the attractions was the fact that is

cloud-based, says Quail.

“It is a scalable consumption-based model requiring minimum financial commitment. That reduces the risks to our business.”

A cloud-based solution also suits the fast-paced environment of mobility services, he thinks, and help delivers quick wins.

“Our first priority has been to develop customer-focused apps to improve the whole customer experience.”

“So one of the first apps we have deployed is a customer satisfaction app that has digitalised feedback.”

“It encourages engagement between our staff and the customer and also simplifies the back-office process of keeping the regulator informed about customer satisfaction scores.”

“We get real-time feedback into our ERP system, which means we get early notification of any potential issues for customers and we also get to hear about customers’ positive experiences – which was not always the case in the past.”

Another benefit, says Quail, is the app allows SGN

to respond quickly to employee and customer suggestions about improving service.

The app was developed and deployed within weeks – much quicker than on a legacy platform and at much lower cost, points out Quail.

## Security

IT directors have form when it comes to security concerns about Cloud computing, but Quail is one of the converts who believe Cloud platform services actually can enhance IT security. “

There is no denying that IT security is a sensitive topic and an area with potentially huge corporate risk for SGN.

However, cloud platform providers invest heavily in security, and we are confident the Kony platform is actually extremely secure.”

Moving to a mobility platform has also enabled SGN to define exactly what security standards it needs in various parts of the organisation, he explains.

## Future plans

So what’s in the pipeline for the future, we asked?

There are lots of possibilities for efficiency

improvements beyond the regulatory environment enthruses Quail.

“We are looking at productivity tools such as inspection apps that can make life easier for our engineers and simplify mobile data acquisition. We can digitalise site safety procedures and inspections, and move from paper to mobile apps for tasks such as time-sheets.”

Quail believes the introduction of mobile apps will help change the image of IT within the business from enforcer to enabler.

“We don’t want mobile app development to be a top-down process where IT comes up with all the new apps. We are encouraging our colleagues and employees to suggest what mobile apps might improve their work experience.”

Nor is it just field service engineers who are benefiting from the digitalisation of the business, says Quail.

“The Internet of Things” is beginning to transform our operations. When we deploy robots for pipe inspections, for example, we’ll be capture that data in real-time helping us to optimise maintenance with less disruption for our customers.”

## Enabling the 4th industrial revolution - "industrie 4.0" or the "internet of things"?

Professor Andy Neely, Head of the Manufacturing and Management Division of the University of Cambridge Engineering Department explains why IoT is the key ingredient now driving manufacturing beyond the factory and into services...

I've been struck recently by the range of people talking about new digital and data developments in manufacturing.

Of particular interest has been the apparent explosion of discussion about industrie 4.0 (which is extremely popular in Germany), internet plus (which is being pushed by China) and the industrial internet (being promoted by GE among others).

Managers, consultants, policy makers and academics are all getting very excited about the potential of connected devices.

The basic idea is that increasingly things (of all types) will be stuffed with sensors and connected to the internet.

They will stream data back to the original equipment manufacturers who in turn will use sophisticated analytics to analyse and interpret the data.

There are loads of examples.

Caterpillar streams data back from mining and construction equipment, using this both to monitor the health of individual machines and also to identify ways in which productivity and efficiency might be increased.

Rolls Royce monitors aero engines in flight, using sensors to track vibrations in fan blades, which allows them to predict whether or not maintenance is required.

In the consumer world - wearable devices (e.g. Nike's fitbit or Garmin's forerunner) track and record exercise levels with the data being uploaded to the internet for benchmarking and comparison purposes.

One thing that I find interesting is the rate at which some of these ideas are developing and the level of interest there is in them.

A good way of looking at this is to explore Google Trends, which basically tracks the popularity of search terms and plots these over time.

One could argue that industrie 4.0 is not a new vision.

There has been interest in the industrial internet for at least a decade and indeed my colleagues at Cambridge IfM, most notably in DIAL (the Distributed Information and Automation Laboratory led by Professor Duncan McFarlane) have been getting our students to build demonstrators and simulations of intelligent factories for years.

However, the recent excitement is a testament to the growing maturity of the technology and underlying data infrastructures that will enable a wider adoption of industrie 4.0 and this excitement has driven significant Government and policy interest, as well as research and development investment.

***"Its clear that industrie 4.0 and the industrial internet are important component parts, but the real key to driving future success in manufacturing lies beyond the factory walls and this will be enabled by the internet of things"***

So is industrie 4.0 the answer? Are smart factories where materials and machines seamlessly collaborate to drive productivity and efficiency the future?

I think the answer is "yes" and "no".

Much of the discussion about industrie 4.0 is still very internally focused - its a factory view of the world. A recent YouTube video illustrates the point. The video talks about a vision of tomorrow

- the factory of the future - where machines and materials will use wireless data infrastructures to communicate and coordinate their activities.

Yet the examples I started with are ones where the product has left the factory - manufacturers are worrying about how they can track their products once they go out into the field and are used in mines and quarries, on the wings of planes, or in our houses and cars.

Here I would argue there is scope for a bigger and more impactful industrial revolution. The fourth industrial revolution will not just be about what happens inside factories, but it will encompass the entire value chain. It will involve remotely monitoring products as they are used in the field. Data will be collected and streamed back to original equipment manufacturers who will use these data to assess the health of assets, to determine whether any maintenance is required, to predict potential product breakdowns and failures.

They'll use the data to improve the next generation of design, learning from experience. They'll use the data to look at how the customer's operation might be optimised.

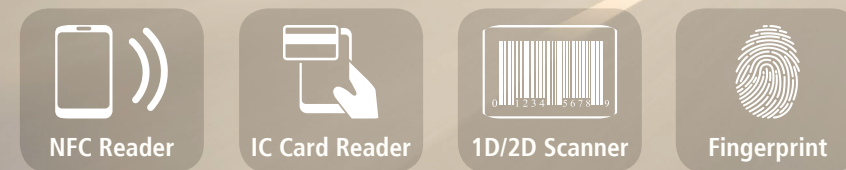
By gathering data from multiple machines in a quarry its possible to build a system model of the quarry and identify where bottlenecks lie and hence how productivity can be improved.

This extended view of the fourth industrial revolution won't just be enabled by industrie 4.0, but by the "internet of things" and that's why when you add "internet of things" to the Google Trends data a rather different picture emerges.

Its clear that industrie 4.0 and the industrial internet are important component parts, but the real key to driving future success in manufacturing lies beyond the factory walls and this will be enabled by the internet of things.



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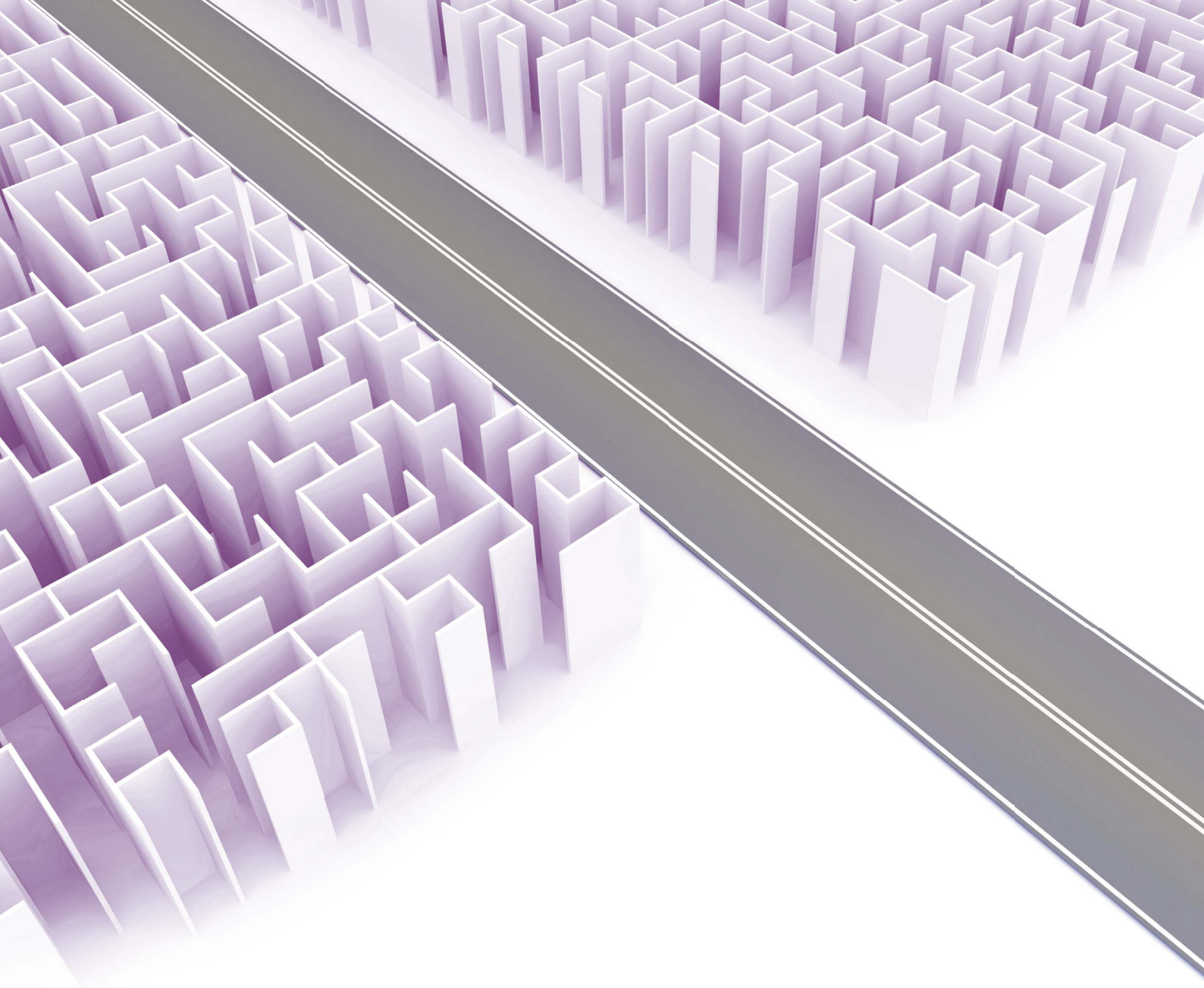
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