Is your field force evolving to meet current needs?

Perspectives on opportunities from disruption and digitisation - from remote sales teams and community nurses, to first responders and trackside engineers

Business

Introduction

Desk-based work has transformed beyond recognition since the start of the COVID-19 pandemic. While the digital transformation of field work has been much steadier. Yet field work is subject to many of same external drivers across society, within organisations and among employees.

- How has field work changed for individuals – from remote sales people to paramedics and engineers?
- What considerations do organisations need to take into account as the country reopens?
- Why are societal demands influencing the way field work is done today, and what does it mean for the future?

In this paper, we aim to give you insights into the drivers of change in field work. From the continual requirement to address the fundamentals of efficiency, productivity, safety and customer experience through to the different demand and supply factors. And on to a form of Maslow's Hierarchy of Needs that highlights how innovation and transformation depend on the ability to meet 'deficiency' needs first.

We've captured these perspectives to spark a conversation. And to present a fresh approach to adding value in an area of business that is all too often ignored in market commentary.

Why do we still send someone 20ft up a ladder when we don't have to?

What small changes can we make that would save field workers time on the job? What lessons can we learn from mobilising desk-based workers and apply to our field teams? These are just some of the questions businesses are asking us now they're not all-consumed by the immediate priorities of the COVID-19 pandemic.

Much has been made of the effects of the pandemic on desk-based employees. News and social media are full of discussions about the relative merits of home working vs. hybrid working vs. a return to the office. No doubt these conversations are prevalent because so many people were forced to work in places that were ill-equipped for a full day's productivity during the first lockdown. Plenty of organisations already had plans in place to digitise areas of work. But the pandemic brought these plans forward and the acceleration of digital working caught many off-guard, including employees themselves.

Our own research[1] shows that almost a third (31%) of desk workers say their organisation did not support them during the COVID-19 pandemic. And a similar percentage (32%) say they never want to work in an office again. This is a pretty seismic change when you consider that before COVID-19 almost nine in ten (88%) desk-based workers operated from a fixed office.

Yet such dramatic change hasn't been felt in the same way in field work. Field forces were already mobile enabled to varying degrees. While some still relied on paper processes, there has been a move towards digitisation in recent years – from scanning packages to workforce scheduling to contactless signing. Another key difference is that most field workers are told where they have to work. Either at someone's home, on a construction site, at a client's office or beside a stretch of road.

As a result, organisations have not had to scramble to find ways to support field workers in a new 'workplace'. So does that mean that disruption and digital advances have not affected field forces?

1. Creating a dynamic workforce: Research report, O2, March 2021

Different drivers of disruption

Field work may not be experiencing the same extreme pace of disruption as desk-based work. But it is experiencing a similar digital transformation

To understand what is changing in field work, we can look at it through three lenses:

Society

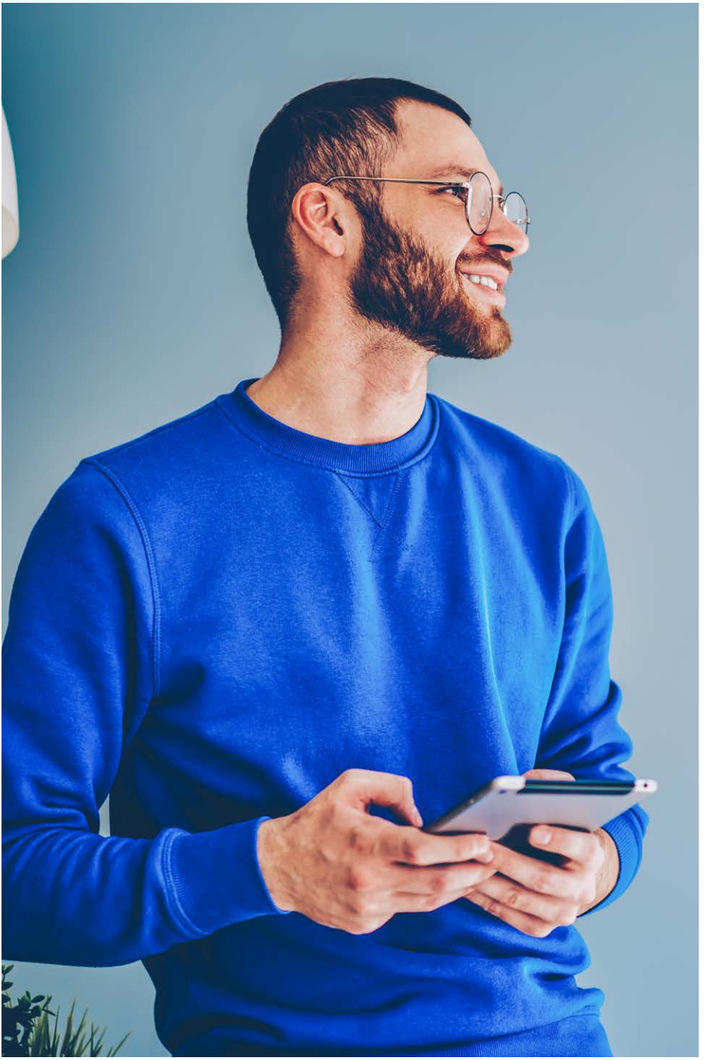
What do we want from the organisations we engage with and how have our digital experiences changed expectations for field work?

The organisation

What work needs to be done, how are workflows connected and where are the efficiency, productivity or health and safety gains?

The individual field worker

Where are the commonalities between them and what do they all need to be more effective?



Societal drivers

Macro change is influencing how we consume products and services. The pandemic has influenced consumer behaviour.

And we now expect the same super-fast, super-convenient service from field-workers as we get with the digital ordering process. The pandemic has affected the way the public want to interact with people in their home or on their doorstep. Contactless interactions are now part and parcel of delivery field work as it can make people feel safer and more comfortable.

With customers reopening their doors too, field sales forces are returning to face-to-face meetings. But those meetings may not always be at the customer's office. With people missing out on these interactions, there may be more willingness from customers to meet halfway at a coffee shop, serviced office or other location. The experience of working remotely has given both the customers and sales teams confidence in being able to work from anywhere while staying productive.

However, not all field service is customer-focused. Some is clearly operational and subject to different influences. Instead of changing expectations, the pandemic led to restrictions that have led to a backlog of work. So maintenance teams and construction workers are under pressure and playing catch-up.

Such factors are forcing organisations to consider how to respond to the demand for speed and immediacy.

Organisational drivers

Those same organisations will have adopted new ways of working during the rapid digitisation of desk work. Some of these new practices and processes have a direct impact on field work.

Take an appliance manufacturer. By automating elements of customer service through a tool like Robotic Process Automation (RPA), the company may have sped up the initial engagement for a customer needing maintenance support.

But it may have also introduced extra pressure on its field workers to get to customers to mend those appliances faster than before. The restrictions in place during the pandemic extended the working day and time slots were less of an issue as most people were already at home. So now the appliance manufacturer's field force is expected to be available earlier and later in the day.

Just as being productive at a desk requires the right tools, so too does work out in the field. Especially when offices have closed and more field workers are spending more time away from the depot, service hub or dispatch centre. Speeding up the physical activity might mean using shared documentation between customer service, workforce scheduling and field work teams. Or linked cloud storage and analytics of field data to inform customer experience design. Or digital signatures that help speed up shipments or deliveries as stores, restaurants, cafés and shops begin to reopen.

While the direct connection with offices and depots may be getting weaker, the integration of workflows is becoming stronger. Much of that is down to the ever-present demand for efficiencies that drive the adoption of new technologies, enabled by faster mobile connectivity.

There is also an imperative to meet compliance regulations and provide transparency in operations so customers can place their trust in the organisation. Field workers are having to capture more data than ever before to help the organisation prove it's doing all it can. Not just text but images as well. Workflow analysis, data collation and analytics can provide insights into how well the organisation is doing in these areas. And much of this comes from the digital tools that replace traditional paper-based reporting. Armed with the data, the organisation can assess health and safety risks, maintain compliant operations and see what performance looks like 'on the ground'.

All this is taking place at a time when organisations are also dealing with a surge in demand. From logistics tackling the rise in direct-to-consumer deliveries instead of single drops to retailers through to construction companies needing to take on more contractors now that building work has resumed.

This brings its own challenges in terms of scheduling and programme management. And with more teams working away from the central location for longer, it means sending out large files and tracking work in progress. Like sending blueprints to council workers and monitoring which jobs have been completed so the scheduler in the office can work out what's required the following day.

Employee drivers

There is added pressure on individual field workers too. The continual drive for efficiency and productivity not only means learning about new technologies or skills. It also means adapting to changing roles.

On the surface this seems relatively straightforward. But with highly skilled people leaving the workforce, there is also a rapid loss of core skills. Retaining talent and passing on those skills to a new generation of employees has become an urgent priority. Those new trainees also have different expectations. So organisations will need to adapt to the demand for things like rapid and regular communications.

There is also growing awareness among all age groups of the need for better wellbeing at work among field teams. Less time spent together with colleagues may be productive but it's also isolating. Lone engineers, emergency crews or those operating in remote locations are rarely in personal contact with the wider team. The pandemic certainly reduced the opportunity for people to come together. All this has an impact on how individuals feel isolated and how they relate to the organisation.

The same issues affect skills and health and safety training. Where should people learn about new protective equipment, for example? Online? On the job? In a classroom? Via a VR headset?

The widespread adoption of video calling during the pandemic offers a solution to the feeling of isolation. Simply engaging in a one-to-one call with a field worker can enhance the sense of connection between remote work and the central hub. Introducing apps that monitor stress and happiness levels would take this a step further. Knowing what will work within a team will come from asking people how they feel, what they need and whether anything has changed.

What is clear from all these perspectives of field work is that change is not one-sided. It's multi-dimensional. It involves human beings. And it's also affected by the twin forces of demand and supply.

Field service in action

Coordinating field work productivity gains

Driving productivity improvements in field work is often complex and means making coordinated changes across a number of different elements. Yet the gains are there. One McKinsey article[2] noted that some field technicians, for example, wasted up to 40% “of the working day on non-value-adding activities, like filling out timesheets.”

It went on to highlight the growing number of organizations that have turned to lean management techniques.

In one example, one company’s 5000 strong field force increased its internal work rate by more than 20%. Alongside improved collaboration between dispatchers and the field force, the company also “led a nine percentage-point increase in customer appointments met.” The lean management model developed by McKinsey shows how each part of the journey creates a virtuous cycle. From establishing metrics that lead to better forecasting. Then influencing dynamic dispatching that leads to continuous performance and, ultimately, a change in performance culture.

2. https://www.mckinsey.com/business-functions/operations/our-insights/how-lean-is-your-field-force-really

Demand vs. supply

As an increasingly digital society, we demand more speed and convenience at lower cost

Waiting at home for a delivery driver or engineer visit for a whole day (or even just a few hours) is a perceived ‘cost’. And competitors are building business models or customer experiences around faster and more effective field service. The result is that the notion of value in this exchange has shifted from the supply of the engineer’s time to the demand for reducing customer waiting times.

However, organisations must also balance the corresponding demand for efficiency and productivity with the supply of available resources. The rapid transformation of desk work has highlighted to those in field work that there are opportunities to do better work with better technology.

Whether it’s simply integrating video calls into everyday processes or sharing previously inaccessible files right through to the added trust of better cybersecurity. The advances experienced by desk-based workers are leading people to think of what more they need from their organisation.

The competing pressures of demand and supply influence the investment in and adoption of technology. Whether it’s upskilling staff members or autonomous machinery or smart vans. For example, you could have a small maintenance crew fixing half a mile of potholes. Or you could have them remotely supervise three different robotic machines that fill potholes and cover much more ground.[3]

There are other advantages to remotely operated machines. If people are not required to be at the roadside, for example, then the health and safety considerations change. In turn, this could have a knock-on effect by reducing the need for traffic controls that inconvenience road users.

Demand and supply influence workforce and HR decision-making too. The rise of the gig economy enables organisations to meet spikes in demand with the supply of highly skilled specialists.

You also don’t necessarily have to let skilled engineers with 40 years’ experience retire. You could offer them a part-time, well-paid role supporting younger or inexperienced team members remotely.

Besides the obvious cost savings of this virtual/physical set-up, there are opportunities for organisations to rapidly scale out their field operations to be more competitive. Or diversify the services they offer with more sales teams on the ground directed by experienced staff at central HQ.

The question is whether these decisions introduce a step-change in the fundamentals of field work.

3. https://www.constructionenquirer.com/2020/10/23/pothole-repair-robot-unveiled-in-liverpool

Finding new ways to address the fundamentals

Operational efficiency. Individual productivity. Health and safety of field workers and the general public. Health and safety of field workers and the general public

These are three key fundamentals of field work. The focus on efficiency is often about finding marginal gains in what's already being done. Like route optimisation for delivery drivers. With productivity, the focus may be slightly broader and about doing things better. Like workforce scheduling that matches demand with supply across the day. And with health and safety, the focus tends to be on meeting the latest standards set down in law. Like redesigning elements of a particular workflow to meet new fire regs.

Addressing each of the areas of efficiency, productivity and health and safety, along with the need to look at the customer experience (CX) are essential to maintain competitiveness, but also ensure relevance in a market that is changing quickly. Bu there is one key constant that each is reliant on – connectivity.

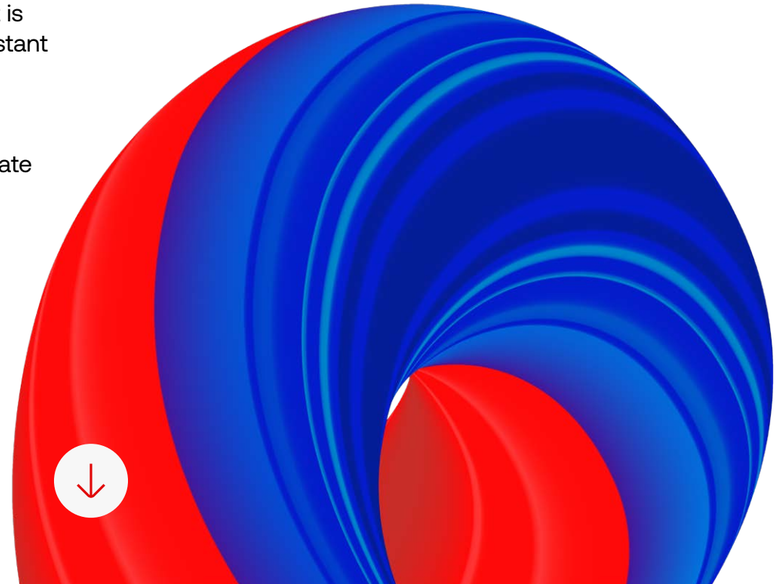
For the pop-up office needs of say a building site, or temporary offices to facilitate event management, fixed technologies such as optical fibre in conjunction with SD-WAN can help enable temporary offices to be established.

When extended to reach employees and contractors with Wi-Fi and cellular technology options, sites should be able to have the same levels of access to cloud and on-premise data centres within their corporate offices.

This ability to connect people, places and things also has an additional aspect of providing better health and safety options. Instead of seeing a new piece of remote machinery as just a way to dig more holes, it could also be a way to reduce accidents at work.

A Nokia blog explained, **'For industrial sites such as mining, 5G enables network reliability for higher volumes of connected devices for better security, capacity and overall performance. Today, 90 percent of mining accidents are caused by human error or worker fatigue. A fleet of remote controlled or autonomous trucks, shovels or drilling systems – all with limited human presence – can greatly improve safety, productivity and efficiency.'**[4]

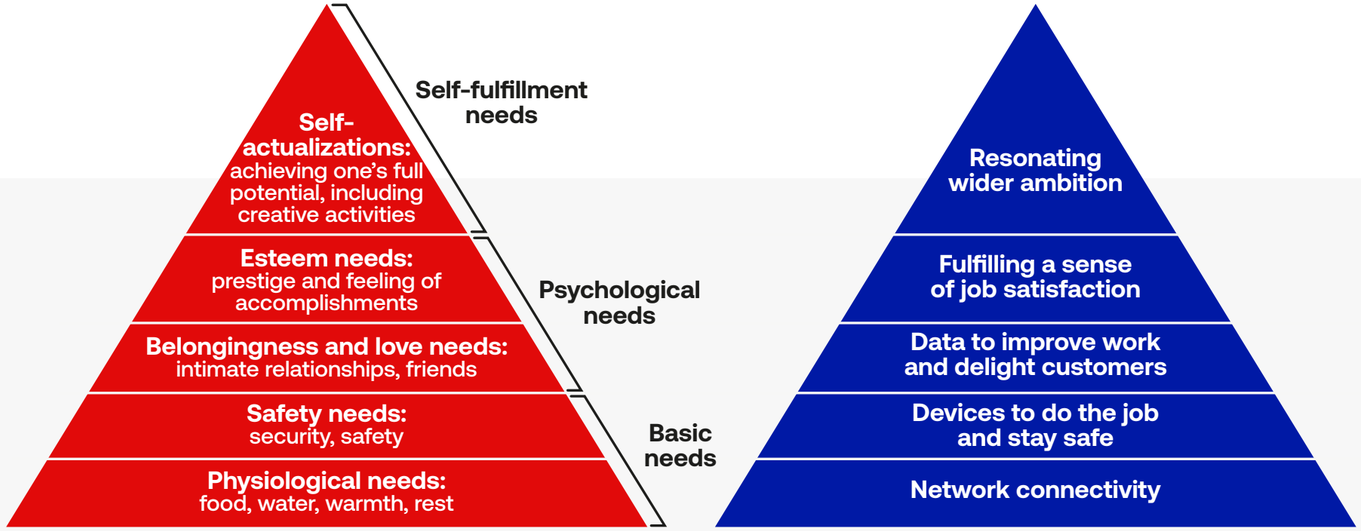
With health and safety at work, there is the duty of care to consider too. In some cases, public bodies are expected to replace existing practices if new technologies are proven to be safer.



4. https://www.nokia.com/blog/transforming-machine-remote-control-operations-through-5g

A layered perspective

Perhaps one useful way of helping us understand field work is by applying the principles of Maslow's hierarchy of needs. This is a psychological model with five core needs, often depicted as hierarchical levels within a pyramid. And we can map the factors that influence field service provision to this hierarchy:



The pyramid structure represents the order of priorities. Needs lower down the hierarchy must be satisfied before individuals can attend to needs higher up.

Mapping the pyramid onto a field-based operation, the base layer is the need for mobile network connectivity – either wifi and cellular for mobile workers or even 5G private networks for campus-based operators. Further needs build on this, including having the tools to do the job efficiently, productively and safely while protecting customer data.

At the next level is the need for data to improve operations and deliver that 'wow factor' for customers. This helps to satisfy the need for respect and pride in the activity.

All of this provides a platform to meet the need for doing things better. By re-designing ways of working for future opportunities and encouraging the adoption of new ideas.

The bottom four levels are often referred to as 'deficiency' needs and the top level is known as 'growth' or 'being' needs.

Deficiency needs are said to demotivate people when they are unmet. For example, the longer a field worker goes without the right tools for a job, the more impatient and strongly disenfranchised they will become. Yet when a deficiency need has been satisfied it will go away.

However, growth needs continue to be felt and may even become stronger once they have been engaged. In the context of field work, this is when there is a strong sense of loyalty among field-based workers as well as customers.

Unfortunately, progress up the levels can be disrupted by a failure to meet lower level needs. Therefore, a coordinated effort is required to address these needs (through the choice of network, devices, data and decisions) before attempting to introduce transformative change that would add value to the organisation.

Field service in action

Helping people stay in their communities longer

Mobile connectivity – the base of the field work hierarchy of needs – is not only enabling new technologies but new lifestyles. Navigil's wellbeing wristwatch is just one example of many around the world[5]. It relies on a low power, wide area network (LTE-M) connectivity. And it's helping elderly people or those with dementia live independently for longer.

The watch monitors vital signs and safe zones at home to check the individual is okay. It tracks wellbeing indicators and makes recommendations for personal improvements. As a direct result, long-term care field workers can manage interventions more accurately. They only need to respond directly as and when they are needed. All of which has a positive effect on the amount of time carers have for each patient. And on those patients who might otherwise require sheltered accommodation much sooner.

5. OECD long-term care questionnaire and interviews, 2018

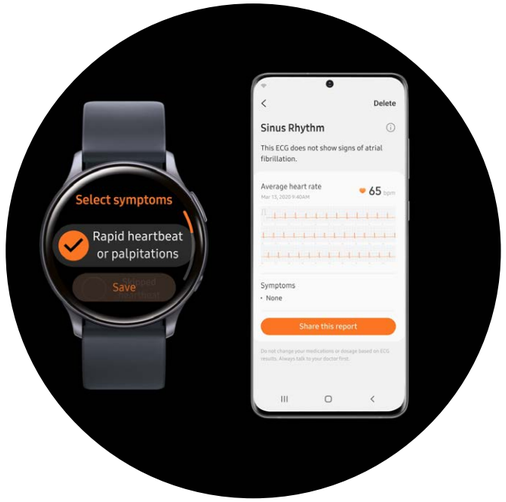
Adding value

What would added value in the context of field work look like?

Field work has not experienced the same degree of disruption as desk-based work. And the introduction of new technologies that work alongside people has been part of a steady trajectory of change within field service over the decades. Yet adoption of these technologies has also depended on improvements in mobile connectivity. The underlying connectivity enables new use cases, like these from a 2020 SOTI report[6]:

Safety:

Tizen smartwatches are being used for real-time communication during emergency situations, and fatigue monitoring technologies alert drivers who may be falling asleep at the wheel while driving, helping to save lives – both the driver's and the communities they service.



Productivity:

IoT predictive analytics is being used to identify patterns and determine the likelihood of equipment failures, help monitor and re-order inventory for replacement parts in real-time and pinpoint any potential risks and hazards for workers.

Mobile connectivity digitally enables field teams to minimise handoffs or have a lasting, positive impact on customer experiences. As a 2021 EY report[7] demonstrates:

"Digitisation, mobile enablement and intelligent automation offer new, sustainable ways to minimise human contact without negatively affecting customer satisfaction. Emerging technologies allow you to rethink what your workers do and how they do it, and, while COVID-19 will pass, these operational efficiencies will have staying power."

6. OECD long-term care questionnaire and interviews, 2018
7. Why contactless field service presents an opportunity beyond COVID-19, EY, 2021

From new ways of working to new sources of value

There are instances of significant disruption taking place in field work wherever you look.

Take the car-maker Tesla. Instead of operating garages across the UK – with all the fixed costs that come with maintaining real estate – its Tesla Mobile Service are remote technicians who come out to your location. As with traditional field service teams, these Tesla-trained individuals cover a particular area. But what they can offer is more flexibility. They can attend to problems faster than a traditional garage network can. And provide a better customer experience in the process.

They still need to have the correct spares and tools available to them to ensure a first-time fix. And this is where the customer self-diagnostics come into play. By remotely analysing data from the car itself, as well as photos and descriptions a customer enters into its app, Tesla can understand problems with an individual car. It can then ensure whoever comes to fix it has everything they need when they arrive.

As we have seen from the hierarchy of needs, the enabler of new use cases like this is mobile connectivity. Faster transfer of detailed schematics.

Patching in experts to support life-saving activities. Seeing underground cables via an AR headset. Lower latency mobile connectivity and higher bandwidth speeds are enabling completely new ways of working.

Remote-monitored Internet of Things sensors are already reducing the need to drive to distant locations just to check if an asset is still working. And 4G and 5G enabled private networks for constructions sites and campus-based production lines are transforming operations with humans and robots working side-by-side. 5G allows for a higher density of devices. Not just with lower latency but also with lower power consumption. And the economics of this further supports the proliferation of IoT use cases.

There is an opportunity for organisations to see mobile connectivity as not only a way to fulfil the lower level deficiency needs of field work. But also to support the top level need in the hierarchy – transforming what is being done today and creating something completely different in the future. In other words, to think ahead. Not just finding efficiencies, productivity gains or health and safety improvements but enabling much bigger opportunities to add value.

One example is using field work to gain market share through better customer experiences. A 2019 Gartner report[8] states that:

> "By 2022, it's estimated that more than 50 percent of field service providers will offer a specialised digital customer experience that enables two-way interaction and workflow initiation across multiple channels."

Image above: AR Remote Expert solution product

8. https://smartercx.com/2019-magic-quadrant-for-field-service-management-released-by-gartner/

Thinking further ahead

Rapid connectivity will lead to faster field response times. A larger group of employees with AR/VR headsets can be instructed by a smaller group of remote experts (who previously would have been booked out for weeks on end for site visits).

This can be taken to the next level too by putting remote expert technology in the hands of the public. Like sending people headsets or asking them to use the ones they are starting to receive with modern mobile devices then talking them through how to fix a problem. This could even start to influence the way products are designed so that they can be easily fixed.

It's not just customer experience and product design where opportunities exist. But improvements to productivity via process re-design too. Facing congestion on the roads and the cost of individual deliveries, medical suppliers are already trialling drone deliveries[9]. Reducing the waiting time for medicines and other supplies is not simply about efficiency. It's about potentially speeding up life-saving interventions like blood donations.

The pioneers of this process in the UK is a consortium of partners – each with its own area of expertise. The drone logistics operators. The drone engineers. The academic researchers monitoring trials. The traffic management experts. And the mobile connectivity specialists.

In other cases, the starting point may well be efficiency. But instead of incremental gains, it's possible to look further ahead to big changes. Remote asset monitoring and data extraction already exists. Aligning that data with AI and ML to understand how people are working can support a typical efficiency drive. Yet it could also be used to address on-going business challenges. For example, answering questions like, 'Can we make unplanned outages a thing of the past?' In particular, reducing the 'demand' for field work rather than only ever addressing the supply of field workers.

These questions are a useful starting point for looking at the future of field work. But only a case-specific proof of concept will be able to show the viability of new, strategic ideas.

9. https://news.o2.co.uk/press-release/first-medical-drone-delivery-network-set-to-take-flight-in-the-heart-of-england-potentially-cutting-waiting-times/

Field service in action

Saving time, saving lives

Emergency services teams are there to protect people and save lives. So perhaps it's unsurprising that this field is experiencing rapid breakthroughs in field technology. In the U.S., we're already seeing enhanced communications being used to aid firefighters. The C-THRU Visual Communication platform[10] uses an AR headset and computer vision to give more information to the individual firefighter.

It represents a step-change in field technology by reducing the time it takes to find people who are trapped or extinguish a fire. The VR headset is integrated into the helmet and works alongside navigation and object detection sensors that provide visual support in places where it's often hard to see. And it could add another layer of intuitive insights alongside existing smartwear sensors for temperature, chemicals and health status[11].

10. https://www.forbes.com/sites/charliefink/2020/12/02/qwake-technologies-funded-to-fight-fires-with-ar-tech/
11. https://crunchwear.com/viking-turnout-gear-high-tech-firefighter-safety-clothing/

Taking a strategic yet specific approach

The fundamentals of field work have not changed. Jobs still need to be done on time and as safely and effectively as possible. But addressing efficiency, productivity, health and safety and customer experience through advances in mobile connectivity, digital tools, analytics and robotics can lead to huge change.

As Nokia highlighted in a 2018 report[12],

> "Technologies such as the Industrial Internet of Things (IIoT), edge cloud supporting augmented intelligence, advanced security analytics and end-to-end 5G networks will radically speed up the digital transformation of sectors like manufacturing, logistics, transportation and energy."

The ability to do something entirely different to deliver game-changing productivity, efficiency, safety and CX is not just about introducing one new technology over another. Or creating radical and complex consultancy propositions that are unworkable when you consider the current reality of your field service operation.

The transformation of field work requires strategic coordination from the top to the bottom of the hierarchy of needs. Especially at a time when society's expectations are continuing to increase. And it has to be applicable to the organisation involved.

Change will need to be agile (sometimes fast, sometimes slow). It will need to focus on strategic goals (where you want to be) as well as interventions (how you're going to need to get there). And it will require the synchronisation of different people, processes and technologies.

The individual actions to improve performance are not the issue. There are plenty of companies that have solutions for different needs. But handling the complexity of change as whole is where those responsible for field service should focus attention.

As with the example of drone deliveries, only the coordination of an ecosystem of trusted partners can help internal teams address demand and supply in field work and fulfil each of the levels:

- By providing reliable mobile connectivity that enables technology adoption.
- By selecting from a wider range of devices and digital tools to enable field workers to get work done well.
- By securing and analysing data in transit and at rest to gain insights into performance and support the business case.
- By driving major improvements in the employee and/or customer experience to build brand evangelists.
- By meeting all these needs to be able to experiment, test and then adopt new use cases that could prove to be a major source of revenue in the near future.

12. An intelligent supply chain for a connected world, Nokia, 2018

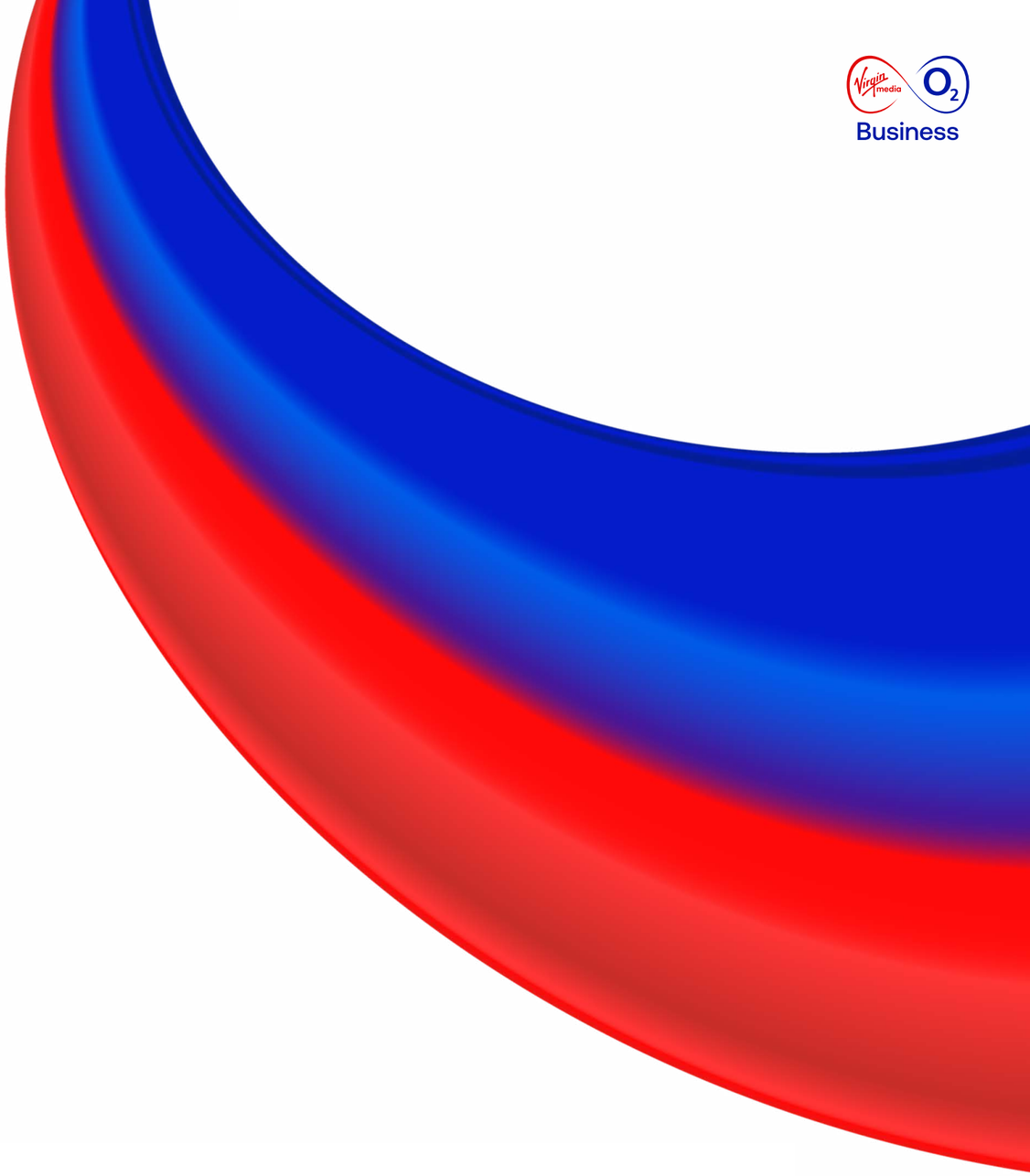
Bringing the experience of managing our own diverse field force operations to you

We spent time analysing desk-based work in our Creating a dynamic workforce research. But field work is a subject just as close to our hearts here at O2. Not only do we have a large field sales team but we also have hundreds of remote engineers up and down the country. They represent our organisation on the ground so we're interested in all the ways we can support them to do their jobs and continue to provide the customer experience we're known for.

While it may not have had the same attention as desk-based workers during the pandemic, there are still plenty of opportunities for change within field work.

Digital transformation at every level of the hierarchy of needs will allow field teams to do more, faster and better than before while enjoying their jobs and even introducing market changing innovation.

So whether you're looking at your connectivity options. Or digital tools to improve field productivity. Or even looking a few years ahead and wanting to bring partners together to do field work in a completely different way. Talk to us.



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