

The Mobile Connectivity ROI Index 2025

Venues

How **stadiums, hotels, and leisure facilities** could benefit from better indoor 4G and 5G coverage



Make sure you're connected; your customers notice when they're not

Customer satisfaction is seen as the biggest opportunity for venues when it comes to enhanced 4G/5G connectivity

68%

70%

of organisations from the venue sector say **real-time personalised experiences** for customers is driving demand for better indoor mobile connectivity

Organisations in the venue sector say they would **gain**

£2.6
BILLION

in productivity benefits from improved indoor mobile connectivity

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Let us help you make the case for better connectivity

By Brendan Hourihane, Senior Director at Freshwave



Did you know that venues are seeing a 67% growth in data usage year on year?

If you spend any time on social media, you'll recognise the familiar stream of posts: a friend sharing videos from a gig they went to, a colleague posting highlights from a sports match they attended, or a relative sharing clips from their visit to a museum or art gallery – all thanks to the ubiquitous mobile phone.

We take for granted that we can use our mobile devices while on the move, a convenience made possible by the substantial investments the mobile network operators (MNOs) have made. Understandably, these investments have been focused on areas that serve the largest number of people – typically outdoor locations.

"When 20,000+ people all try to stream, share, or connect at once, the network simply can't keep up: calls drop, apps stall, and messages fail to send."

But indoor environments, especially high-density venues and stadiums where thousands of people gather, face a very different type of pressure. With steep increases in mobile data consumption – particularly with 5G – these spaces generate extraordinary demand. Building materials block outdoor mobile signal and when 20,000+ people all try to stream, share, or connect at once, the network simply can't keep up: calls drop, apps stall, and messages fail to send.

As a leading neutral host, we're privileged to partner with all the MNOs to extend their networks into venues with high footfall. We've been connecting fans, guests and staff in a range of spaces since the London Olympics in 2012. Our multi-operator mobile deployments include nine stadiums, many five-star hotels, and other mixed-use venues such as the International Convention Centre Wales, Outernet, and Frameless, bringing connectivity not only to visitors but also to staff.

Many venues are already leveraging mobile connectivity to support digital transformation, create new mobile-first revenue streams, enable mobile ticketing, and increase productivity. Reliable mobile coverage optimises operations by enabling live data collection that creates significant efficiencies, particularly in energy use and for crowd monitoring. Beyond enhancing visitor experience, it also helps keep people safe and able to contact the emergency services easily if needed.

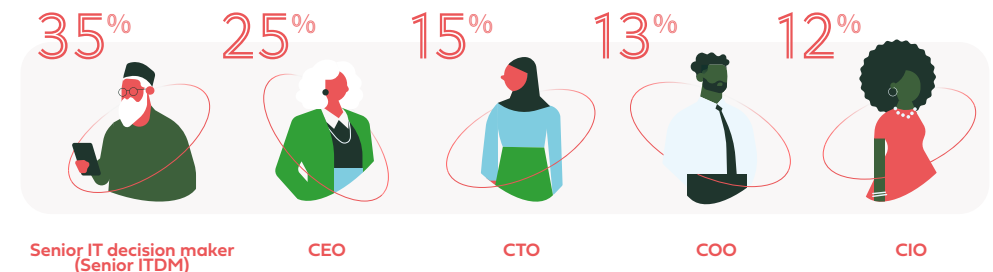
"Reliable mobile coverage optimises operations by enabling live data collection that creates significant efficiencies, particularly in energy use and for crowd monitoring"

As behaviours shift and demand for real-time personalised experiences increases, reliable mobile coverage has become a core part of how venues deliver value and stay competitive. But we also understand that venues need help articulating what they stand to gain from investing in dedicated multi-operator mobile connectivity – both in year one and in years to come.

To better quantify these opportunities, we surveyed 100 C-suite leaders and IT Directors from stadiums, hotels, and leisure facilities across the UK as part of our wider ROI Index. This report includes both a venue-specific deep dive, as well as results from the full 900 respondent sample.

Across venues, respondents estimate poor connectivity costs them £3.8 billion annually. They also believe improved indoor mobile coverage could deliver £2.6 billion in productivity gains, representing a significant return on investment for dedicated multi-operator mobile connectivity.

I hope you find the insights of your peers useful. Read on to find out more about how to use our data in your organisation to build the case for enhanced mobile connectivity, how it can be used to drive productivity, improve customer experience and safety, and demonstrate a return on investment.



We surveyed 900 senior executives from medium and large organisations across the UK's private and public sectors. The industries represented include transport and logistics, professional and financial services, healthcare, retail, manufacturing, hospitality, stadiums and leisure, property development, law, and government.

Enhancing venue experiences and operations

We surveyed 900 C-suite executives and IT decision-makers from a range of sectors to understand what impact poor indoor connectivity has on their operations, as well as what they think they stand to gain from investing in dedicated mobile connectivity.

This included 100 leaders in venues, on which the findings of this sector deep dive are based.

According to Statista, 100% of UK adults aged 16-24 now have a smartphone. In 2024, 89% of all UK adults used their phones to go online (up from 28% in 2009). Today, people expect to be connected at all times; they rely on their devices wherever they go, and venues are no exception. This makes reliable, seamless connectivity a baseline necessity, needed to support the integration of technology in all aspects of the guest and operational experience.

We rely on our phones. Our phones rely on connectivity.

Poor connectivity at venues results in frustrated visitors who are unable to share their experiences or access digital services, leading to negative reviews from visitors and lost revenue opportunities for venue owners.

It also hinders venue operations, limits the deployment of digital services (such as mobile ticketing), impacts fan engagement, and can lead to higher costs due to productivity losses and the need for reactive upgrades.

Poor connectivity at venues results in frustrated visitors who are unable to share their experiences or access digital services.

For venues, poor connectivity is more than an inconvenience; it directly affects reputation and revenue. In today's competitive landscape, reliable mobile coverage is a key reason why visitors stay longer, spend more, and come back time and time again.

Seamless mobile coverage is no longer optional – it's business critical across the venue sector.

Whether it's conference attendees needing reliable signal for work calls, or on-site security systems at stadiums requiring uninterrupted connectivity, modern venues must be fully mobile enabled to meet expectations and ensure smooth operations.

And strong mobile infrastructure goes beyond customer satisfaction; it enhances the overall performance of a facility. Mobile-connected systems can power everything from smart access control and real-time security monitoring to predictive maintenance, driving down operational costs. Robust mobile signal also ensures both customers and staff can contact the emergency services easily when seconds can make all the difference.

"The poor network coverage affects my organisation a lot. When connectivity goes down, we're unable to carry out our daily services."

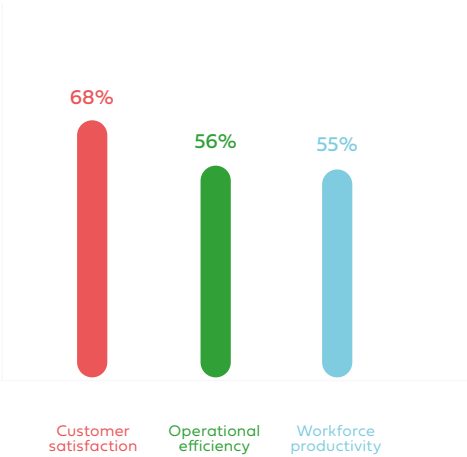
– CEO, Northern Ireland, from the venues sector



According to the venue decision-makers we surveyed, issues with current connectivity are costing them £3.8 billion in lost productivity a year.

However, they also believe that dedicated indoor mobile connectivity would recoup the majority of these losses, delivering £2.6bn in productivity gains.

Top 3 organisational outcomes that would be improved with better onsite mobile connectivity in venues ▼

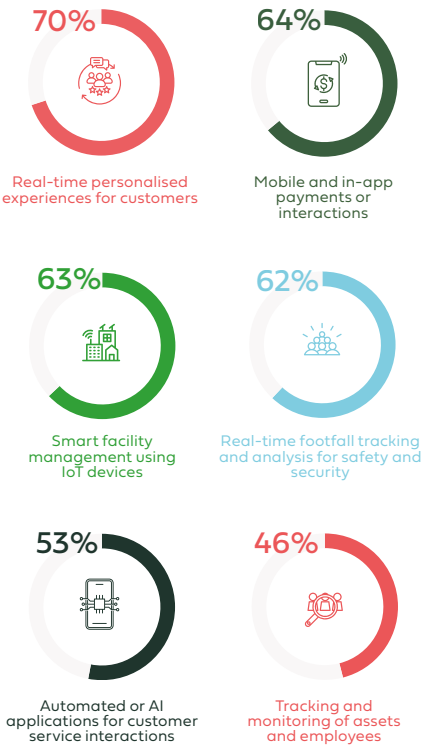
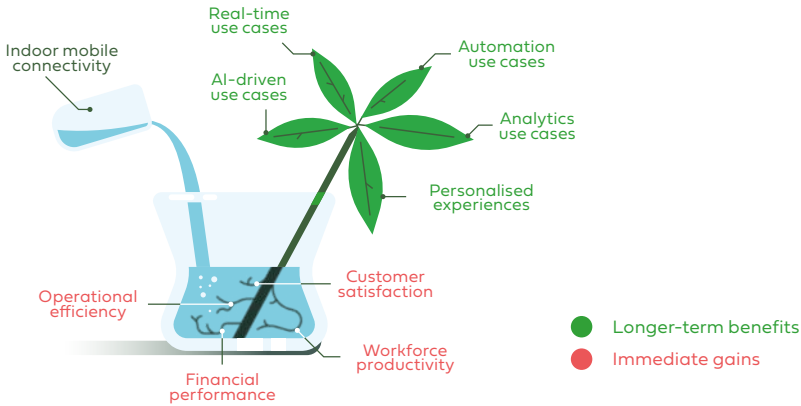


Value destroyed by poor current connectivity
=£3.8BN

Getting connected unlocks immediate gains and longer-term opportunities

The UK venue sector is shifting towards delivering higher-quality, more sustainable, and digitally enhanced experiences, and this transformation depends on reliable mobile connectivity. Strong mobile coverage is critical for daily operations, supporting everything from digital wayfinding for visitors to footfall analytics for operations. It helps venues improve customer satisfaction, drive revenue, and keep staff in contact at all times.

Investing in mobile-first infrastructure also enhances the value of existing technologies. Systems like air quality sensors, smart vending machines, and venue apps all function more effectively and reliably. Hotel guests can book spa treatments effortlessly on their phones, fans in stadiums can order refreshments from the comfort of their seats, and at corporate away days, audiences can use their mobile devices to engage directly with presentations.



The future use cases your peers believe could be unlocked by dedicated indoor mobile connectivity

Looking to the longer-term, dedicated multi-operator mobile connectivity is unlocking a new era of smart venue capabilities. For example, venues can integrate live sensor data to monitor and optimise energy usage in real time, enabling lighting and HVAC (heating, ventilation, and air conditioning) systems to be adjusted based on occupancy patterns – reducing energy consumption.

By enabling a wide range of use cases on a single digital backbone, including mobile-first experiences, automation, and digital twins, robust connectivity supports “use case stacking”. This approach increases the cumulative return on investment in applications that are enhanced by reliable mobile connectivity and helps future-proof venues against growing guest expectations and tightening regulatory requirements.

Improved venue connectivity in action

We've already connected millions of square feet to multi-operator connectivity – here are some real-world examples.

Freshwave bring neutral host mobile connectivity to Principality Stadium

We acquired and upgraded the existing 4G distributed antenna system (DAS) at Principality Stadium to add a 5G overlay which was designed to accommodate all the UK mobile network operators (MNOs). It covers the venue across the bowl, concourses, hospitality boxes and other key internal areas. Vodafone, Principality Stadium's Digital Transformation Partner, was live across the system in record time for the Six Nations match held there on 3rd February, 2024.

The stadium, the fourth largest in the UK, can accommodate 74,000 fans and tens of thousands of operational staff. With everyone congregating close together this is an extremely challenging environment in which to assure mobile connectivity, with carefully optimised radio planning required. The retractable stadium roof was another consideration that needed to be factored into the radio design.

People expect to be able to stay connected wherever they are, whether that's for Instagramming a concert they're at or arranging where to meet their friends at the venue. It also powers marketing opportunities for businesses at the stadium and keeps operational staff connected, helping them provide a safe environment. Our high-capacity DAS provides robust mobile connectivity and uninterrupted coverage.



"As Wales' national stadium, we want to give fans the best experience possible, with both the event they've come to see and the time they spend in the stadium. It was great to support our Principal Partner Vodafone working alongside Freshwave to achieve this."

Rhodri Lewis, former Commercial and Legal Director at Welsh Rugby Union

Keeping Wales' premier convention venue on the cutting edge of connectivity

We designed and delivered a 3G/4G DAS connecting all UK mobile network operators which went live in 2020; the first private remotely managed DAS to have all MNOs connected. In 2022, we integrated a 5G overlay network, working very closely with O2's network design teams to make the most of the existing fibre and other infrastructure. World-class connectivity is now available throughout the facility, with the 5G layer targeting the public spaces with the highest data demand. This was the first venue of its kind to have 5G connectivity.

The 5G overlay design and deployment opportunity arose from an O2 services partnership. One spanning 15+ years that has seen Freshwave and O2 engineers and project managers deliver 5G networks at more than 50 sites around the UK. This shared experience has allowed the companies to develop common best practices, collaboratively delivering faster and more cost-effective deployments across a range of indoor scenarios. This included similarly large-scale and complex venues ahead of the 2012 Olympics and the 2014 Commonwealth Games.



"Connectivity is a fundamental part of the conference experience and is only going to grow in importance as technologies such as AR and VR develop. Thanks to Freshwave, our venue had a multi-operator DAS within nine months of sign-off. And then Freshwave's strong and longstanding relationship with O2 saw them choose us as their first 5G-connected conference centre, which was very exciting."

Jowee Sarmiento, Head of Infrastructure Operations Information Technology at ICCW

5 key indoor mobile connectivity trends

When 900 business leaders shared their views on improving indoor mobile connectivity, five core themes stood out.

- 1 **Poor current connectivity is costing the UK £billions**
- 2 **Better indoor mobile coverage would bring immediate payback**
- 3 **Investment returns increase over time as organisations progress in their digitalisation journey**
- 4 **CEOs are the biggest advocates**
- 5 **Wales, London and the South East would benefit most**

All sectors summary

The UK is ready to unlock the benefits of better indoor mobile connectivity.

Across all the sectors we surveyed, 66% of organisations expect their overall budget for connectivity to grow in the next two years. And of everyone surveyed, CEOs felt there was greatest potential for productivity gains from better indoor mobile coverage at their sites, estimating it as 2.1% of their annual revenue or budget.

We surveyed 900 leaders from a range of sectors to understand what impact they hope that extra budget will achieve.

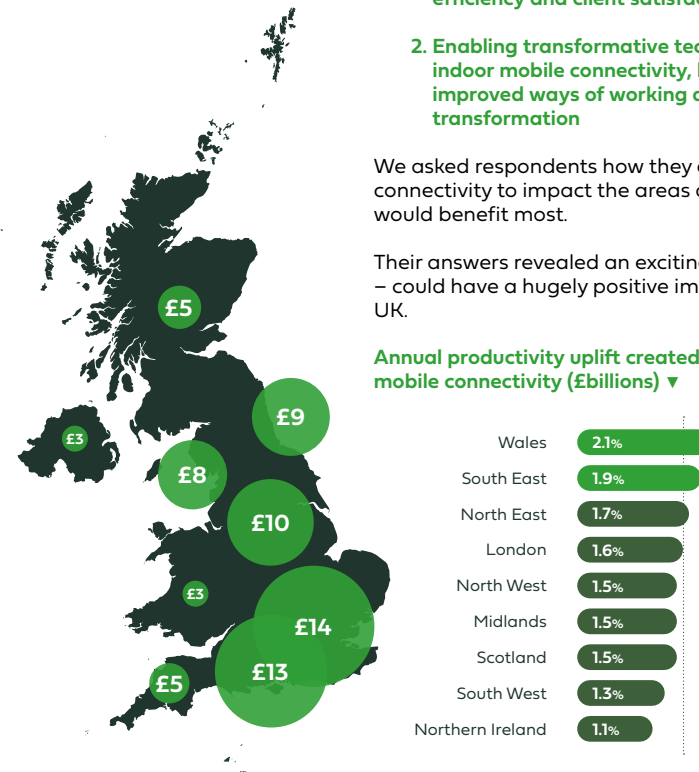
Our research uncovered two key opportunities from improving indoor mobile connectivity:

1. **Optimising the current operational model, using enhanced connectivity to improve everyday processes by boosting workplace productivity, financial performance, operational efficiency and client satisfaction**
2. **Enabling transformative technologies through advanced indoor mobile connectivity, like unlocking new and improved ways of working and accelerating digital transformation**

We asked respondents how they expect improved indoor mobile connectivity to impact the areas above and how their sectors would benefit most.

Their answers revealed an exciting opportunity that – if realised – could have a hugely positive impact across all regions of the UK.

Annual productivity uplift created by better mobile connectivity (£billions) ▼



Three key benefits of better indoor mobile connectivity

1

Reduce the impact of poor connectivity

Large organisations across the UK are losing £100 billion every year due to current connectivity limitations.

This impact could be reduced by 70% with better indoor mobile coverage.

Annual productivity uplift created by improved indoor mobile connectivity
+£70BN

2

Improve a range of critical KPIs

62% of those we surveyed said better indoor mobile connectivity could boost workplace productivity, making it the biggest opportunity for improvement.

Organisational outcomes identified as being improved by indoor mobile connectivity across all sectors ▼

Workforce productivity

62%

Most improved industries



Law (73%)



Manufacturing (71%)



Healthcare (62%)



Professional/financial services (60%)

Financial performance

57%

Most improved industries



Property development/real estate (71%)

Operational efficiency

56%

Most improved industries



Government & public sector (66%)



Transport & logistics (65%)

Customer satisfaction

52%

Most improved industries



Hotels, stadiums, leisure (68%)



Retail (68%)

But other key outcomes like improving financial performance, boosting operational efficiency and increasing customer satisfaction also came out strong.

- **Workforce productivity** is particularly significant in sectors such as legal, manufacturing, healthcare, and professional/financial services, where faster, more reliable connectivity is crucial to enable flexible working, seamless collaboration, and real-time access to critical information.
- **Financial performance** was the main focus for property development and real estate, where reliable on-site mobile connectivity can facilitate better site management, faster deal closures, and improved client relationships.
- **Operational efficiency** was particularly important for government/public sector and transport/logistics. In these industries, reliable connectivity can enable smoother coordination, better use of resources, and minimised downtime.
- **Customer satisfaction** is particularly vital in consumer-facing industries such as hotels, stadiums, leisure, and retail. In these sectors, mobile connectivity can allow businesses to provide seamless digital experiences to their customers, from improved mobile payment systems to real-time personalisation and immersive entertainment options.

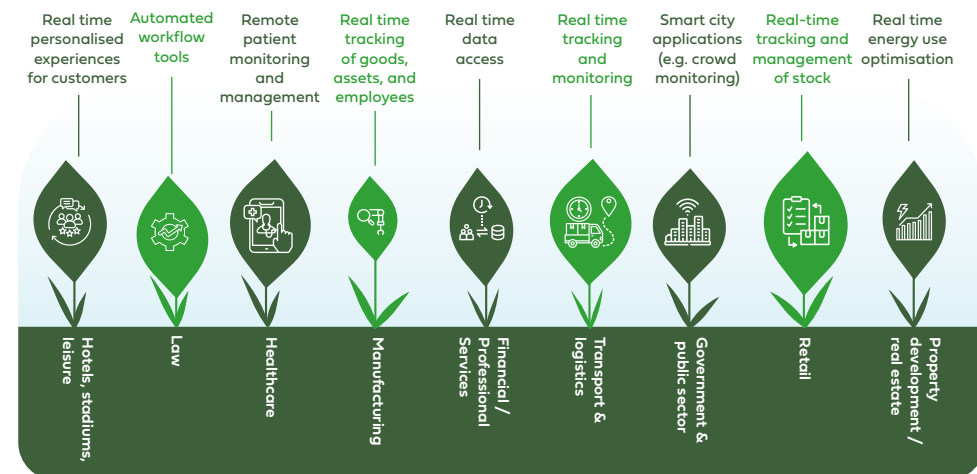
3

Accelerate digital transformation

The growing demand for improved indoor mobile connectivity is driven not only by the need to optimise existing processes but also by the push for digital transformation across all sectors in the UK. Organisations are looking to break down traditional operational silos, enhance their responsiveness to dynamic environments and deliver more value to customers and stakeholders.

Organisations are increasingly seeking to enhance real-time data collection, gain actionable insights and improve monitoring and management capabilities through advanced mobile connectivity.

The top digital transformation activity driving demand in each sector ▼



Next steps

A huge opportunity for venues across the UK.

The growing preference for experiences over possessions presents a significant opportunity for venues. A well-connected environment allows visitors to enhance those experiences through real-time digital engagement – sharing moments, using venue apps, accessing information instantly, and discovering additional paid activities.

Venues of all types benefit from increased dwell time, as people can use their mobile devices seamlessly and don't need to leave to find better signal. Investing in reliable mobile connectivity delivers measurable returns through increased visitor satisfaction, repeat visits, and stronger commercial conversion across food and beverage, retail, and premium experiences.

Many venues have evolved from single-purpose spaces into dynamic, multi-use environments hosting everything from hybrid conferences to immersive events. Customers now expect personalised, digitally enabled services such as smart check-in, location-based offers, and AI-powered apps – all of which rely on seamless mobile coverage.

The most improved organisational outcome from enhanced 4G/5G mobile connectivity cited by our venue respondents was customer satisfaction at 68%.

In stadiums it keeps crowds moving with mobile ticketing and in-seat digital services, while supporting smarter operations like live football monitoring. Hotels rely on strong connectivity for mobile check-in, digital room keys, and smooth in-room services, alongside real-time housekeeping and building management. And in attractions, museums, theatres and conference centres, dependable coverage powers digital guides, mobile payments and interactive experiences,

while enabling smoother operations through contactless entry and live crowd-flow tools.

Based on the insights in this report, organisations that move quickly to invest in assured mobile connectivity stand to achieve substantial gains in productivity, operational efficiency, and customer satisfaction. Assured connectivity ensures every square foot of a venue delivers maximum value – and the time for that payback is now.

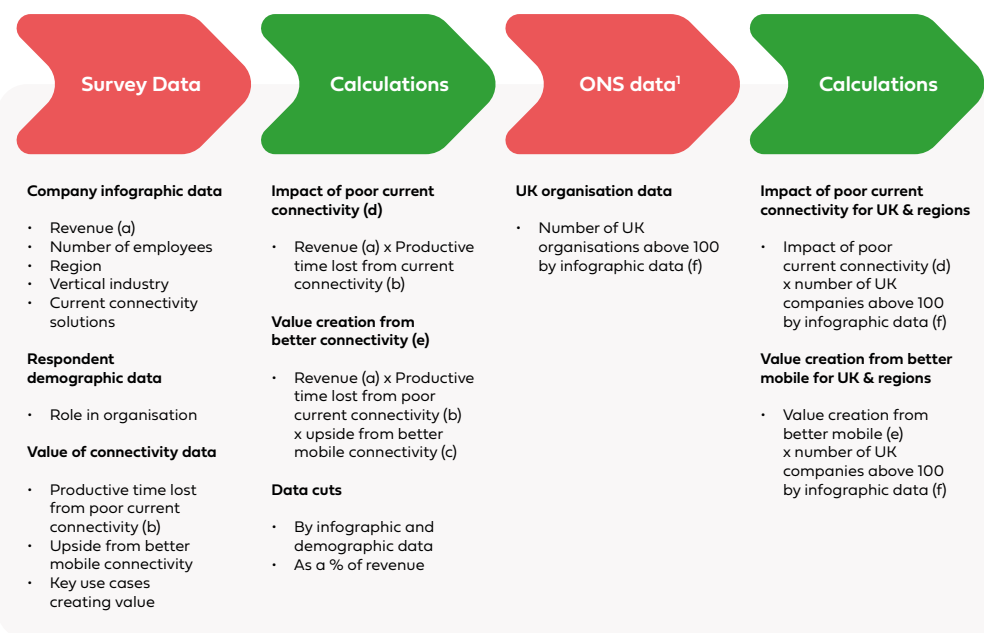
If great experiences start with great connectivity, isn't now the moment to transform that potential into performance?



Methodology

The survey we ran posed several questions for organisations across the UK from nine different sectors (100 organisations with greater than 100 employees) including the impact of existing connectivity issues on their business. We also asked them how much of this impact could be mitigated through improved mobile connectivity. This enabled us to calculate the average loss and mitigation value for businesses of different sizes within each sector across different regions of the UK.

We then used these average values and applied them to all relevant businesses across the UK – those with greater than 100 employees, within our target vertical industries, within each region. This enabled us to calculate the impact on specific industries, specific company sizes, and specific regions. The venue figures in the vertical deep dive were drawn from analysing the 100 responses from those in venue-specific organisations.



Definitions

Current connectivity

Network system within an organisation, consisting of predominantly fixed connectivity.

Large organisations

Organisations with more than 100 employees.

¹<https://www.ons.gov.uk/businessindustryandtrade/business/activitysizeandlocation/datasets/ukbusinessactivitysizeandlocation>

Ready to assure mobile connectivity for staff and visitors alike?

Let's start the immediate payback and high ROI conversation.

mobileroi@freshwavegroup.com

