

HOW TO: GROW YOUR BUSINESS WITH 5G

Introduction

Throughout this series of How To guides, we have looked at what 5G is, the ways in which it can support manufacturers and how to identify if 5G is right for their organisation.

We have also outlined the fundamental role that 5G and other digital technologies will play as part of the journey to Industry 4.0, and how organisations can deploy 5G and overcome barriers to connectivity.

In this guide, we'll explore the practical considerations of a private 5G network and how this can help you grow your business.

AE Aerospace, a leading manufacturing business in the West Midlands, is the first UK SME to deploy a private 5G network, working with WM5G, Worcestershire 5G (W5G) and technology partner BT.

What's the use case?

If you've read the previous guides in this series, you'll already know just how important having a defined use case – or even better: several use cases! – is to the successful implementation of a private 5G network.

A use case is the real-life application in a manufacturing environment, a usage scenario for a piece of software. The use case will provide a sense of purpose, clarity, and direction throughout the deployment, underpin all decisions made and set out what you aim to achieve and offer a clear benchmark for success.

Before deploying any type of 5G connectivity, manufacturers must decide on their use case, and outline the anticipated scenario where software or technology can solve a defined problem or series of problems.

Use cases should link to business benefits and particularly whether or not implementation of a private 5G network will increase revenue and/or decrease cost for your business.

For added inspiration, you can view examples of WM5G use cases across the manufacturing industry: <https://www.wm5g.org.uk/projects/manufacturing/>.

What are the practical considerations?

Installation of a private 5G network can require significant investment in terms of people, infrastructure and updating, revising, and streamlining your processes.

While there are a wide range of more specific considerations, there are three which should be considered at the earliest stage. These will help to guide you as to whether the installation of a 5G network will be practical within your organisation:

1) What are your long-term business goals?

Having a clear vision of your long-term business goals will help to inform whether a private 5G network will offer benefit to your company. If you're looking to only maintain the status quo, then a private 5G network may not be right for you. But, if you're keen to expand and futureproof your business, then it could be just what you need.

2) Future-proofing your business

The many practical applications for 5G are continuing to grow as the technology continues to be adopted and deployed. While it may currently seem that 5G is solving smaller issues, what will those applications and benefits look like in 2-5 years' time? With increasing digitisation in

manufacturing, it's easy to imagine a future where businesses that aren't connected using these kinds of next generation networks may be left behind.

3) People and skills

Having a next-generation network installed at your business may be great, but if your team doesn't have the right skills to operate it, it won't offer you any value, rather the contrary. Please see Guide 5 for more details on what skills and training you should put in place and how you can help your workforce to embrace these digital changes.

Alongside understanding the benefits that you could realise from the installation of a 5G network, it's just as important to understand when this may not be a suitable solution for you

Understanding the Return on Investment

As with any new business process, it is essential that we begin by understanding the Return on Investment (ROI) for the installation and operation of the infrastructure that will power the network.

While it's possible to measure the outputs from a private 5G network in a number of ways, the prime drivers must be financial – if the numbers don't add up, this may not be a solution.

Ultimately it comes down to whether installation and utilisation of a 5G network will be able to either increase your revenue and/or decrease your cost.

While 5G may be a relatively new technology, the same rules apply when evaluating its ROI as with anything else. Consider it in the same way that you would the cost side of machine time, or material costs.

In its most basic format, a private 5G network operates in much the same way as a traditional network. Calculating the ROI of a 5G network can be defined through the following factors.

Costing of a 5g network	Benefits of 5G network
Main hardware components ≈ Core (can be bought in as a service) ≈ Base Band Unit ≈ Radio Units (RAN) ≈ Antennae ≈ Fibre deployment and connection (Mobile Edge Computing)	≈ Revenue per head (before and after) ≈ Savings in materials ≈ Process time savings ≈ Cost of poor-quality, rectifying products savings ≈ Increased OEE → higher output ≈ And many more!
Software (that may already exist in operations) such as: ≈ ERP system ≈ Applications software	
Training costs	

Look at where you will be able to make cost savings along the line to maximise your return. Whereby the core component be brought in as service, for example, Malvern Hill Science Park features a core and offers the connection as a service. It is to this that sites such as AE Aerospace are connected.

At the other end of the spectrum, there is the potential for an organisation to host its own core on-site. There are also examples of core models where an industrial park could share a joint core for each of the business present at the park, for example.

While this will elevate the cost considerably, it also brings significant added advantages. Firstly, while the latency of a signal carried by 5G and then fibre broadband is already exceedingly low, reducing the distance that it must travel to the server will make it considerably faster.

This would add an additional layer of security, as no data is being sent off-site, and enable the hosting organisation to run a subscription to the core, leasing out access to other private networks.

This access could be easily commercialised, with anyone using the core paying a set monthly fee in exchange for a service level agreement.

Learn more

There are a range of organisations that can support with 5G procurement,

including us! Get in touch with us to discover how we can help you.

If you've identified an operational issue and have a desire to explore new technology, we'd love to hear from you. Contact us to begin your 5G journey:

<https://www.wm5g.org.uk/contact/>.