



# CLOUD REALITIES

## CR010

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of Cloud in Defence with Gareth  
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Capgemini's Cloud Realities podcast explores the exciting realities of today and tomorrow that can be unleashed by cloud.

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# The opportunities and challenges of Cloud in Defence with Gareth Hetheridge, Leonardo

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[00:00:00] A major project or a simple service request is going to be executed in a sensible timeframe, but then we also absolutely want to be at the cutting edge of. Taking this emerging disruptive technology like cloud or AI, big data and exploiting that. So that's absolutely where we want to be. And that gives huge utility in terms of the type of offerings that we can take to market in the future.

Welcome to Cloud Realities, a conversation show exploring the practical and exciting alternate realities that can be unleashed through cloud driven transformation. I'm David Chapman. I'm Sjoukje Zaal, and I'm Rob Kernahan.

And this week we'll be talking about digital and cloud transformation in one of the most complex and highly regulated industries, defense.

So what are the challenges, how can the latest cloud [00:01:00] tools help deal with them, and what value can be delivered?

Joining us this week is Gareth Hetheridge, IT Director at Leonardo, a key player in aerospace defense and security. Gareth is leading all the digital transformation at Leonardo across the business, including products and services. And as I said, doing this in a sector where security and confidential are of critical concern.

Gareth, thanks so much for being with us today. How are you? And tell us a little bit about yourself. Hello. Yeah, great to be here. I'm Gareth Etheridge, so I lead the IT and digital function for Leonardo UK. And that's both in terms of delivering the core IT. Services and foundational services, and supporting their digital transformations, but also on an increasing basis, helping some of our users develop their products and services and closing the gap between it and OT.

One of my key challenges is how do we take technology like cloud which is mature and many other different [00:02:00] industries and how do we ensure that we can utilize it in defense for the opportunity it gives but within the the security wrapper that we operate in. And in defense what are some of the elements of that?

wrapper that you need to be specifically aware of when you're thinking about doing new technologies like cloud. So for me, the wider than defense, we are operating in an environment where the cyber threat is high and it's becoming more sophisticated and the threat isn't going away. You could probably say that for all industries, but in particular within defense, with the classifications of data we use, there is a national security element to protecting the data.

of which we are managing and there are very different classifications and some of those mean that the technology you need to use has to be air gaps type networks. What it's challenging to do is to give as good a user experience as you can have in a commercial setting, but have that in various different security classifications within defense.

So some of those is relative, it's easier than others, [00:03:00] but certainly as you go higher up the tiers, the user experience can drop off quite significantly, which gives us a real people challenge. So maybe talk about those tiers. What are the tiers and how, as you go up them, do the sort of experience challenges kick in?

So most of the work we'll offer in defense will be a bit official sensitive, and that is commensurate with very Good commercial controls. So that does open the opportunity for us to go and use public cloud environments. But they have to be, there's a number of challenges to achieve that. So certainly around sovereignty, we need to ensure it's in our case, a UK pinned environment that support is UK only.



The data doesn't leave the UK. And that can be quite challenging from a cloud point of view, because often the operating model can be more of a follow the sun. So that sovereignty point is absolutely key. Also, what we're finding is The products in which we would like to operate be that collaboration products are moving more to be cloud native and therefore delivering those on a secure on premise environment [00:04:00] is has some limiting factors.

which is a real challenge for us. Indeed. And let's just take a step back and talk about the defense industry itself. Tell us a little about what Leonardo does and how does it operate within the wider defense context? So if I start with defense more generally, the exciting challenge defense has is, has that security challenge that I talk about.

But major programs we have to exploit and utilize digital technology like cloud to be able to drive the programs. We want to at the pace we need to. So if you take a Tempest as an example, which gets a lot of press in the market, that is our next generation combat air platform. It will go live and first fly in 2035.

And that program needs to deliver better, faster, cheaper than previous platforms. So we're talking about. Broadly, 50 percent faster than previous combat air platforms. Now, one of the key ways in which we can do that is the use of digital technology for [00:05:00] collaboration, both in the UK and internationally, but also in terms of our digital engineering to bring the products and refine the products at a much faster pace than we have done with previous combat air platforms that are flying with us today.

So the ambition and defense is very significant. What we need to do is bring this emerging technology, AI cloud, for example, some of our big data analytics, and be able to do those in defense programs to therefore enable our organization to collaborate better both UK and internationally, but also to.

be able to iterate faster in the engineering space and therefore produce the combat platform at pace. Leonardo itself has a number of key constituent parts. So we, in Yovo, we have our helicopters division that provide a number of helicopter platforms and critically there we build the whole helicopter effectively.

So it is all done through life is all done in Yeovil. Our electronics business produces a number of radar and electronic warfare technology. [00:06:00] So a census business effectively, but that is a fascinating area for anyone in the IT space because they are effectively very large edge devices that collect a huge amount of data and therefore the opportunity to converge the space.

OT space is quite significant. Talk about hyperscale edge when you're talking about something like that. Absolutely. So there is a fascinating opportunity for us in the data space and how do we close the gap between IT and OT. And then finally our cyber division where we sell a lot of cyber consultancy and cyber services out to the market.

Can you just tell us Gareth, what you guys are working on? How does that connect to the MDI or multi domain integration strategy that I think the MOD is talking about? So one The fascinating parts, I think, for Leonardo is we operate across all five of those domains. Within the electronics business, we provide sensors onto our air, land and sea platforms.

Starting in helicopters is obviously a clear linkage to to air. We have a... A large and growing cyber division on. Then we [00:07:00] also have some utility within space. The exciting part in my role is how do we bring together data at the edge on those various different devices and provide an environment where we can start to using most likely.

mission cloud type platforms to be able to bring together data from all of those different



sources and then provide data analytics on top of that. So we can really become a learning organization and provide insight into our users in the organization, but also into ultimately to our customer. And what we're finding is that many of the techniques that we need to.

Deploy for data analytics and some of the more complex side of that work. So data science and into some of the AI use cases, the techniques in which we need to employ in the I. T. space are very similar in the O. T. space. So as a really basic example, I have software engineers in my organization.

Within electronics, we have a number of software engineers who will engineer onto the radar system. For example, [00:08:00] the process in which they go through, the type of skills we need, the DevSecOps pipelines we're starting to co develop is very similar. So what we're finding is a real convergence of IT and OT.

Be that in the data analytics space or be that in the software development space. I think Leonardo is a fascinating opportunity to provide these integrated sensors. capabilities, be that on the Tempest platform or be that on wider use cases within multi domain integration. Let's just talk about your I.

T. setup that you have at the moment. So you explain the I. T. organization and the digital transformation programs that you've got within Leonardo. Yes, absolutely. So the. One of the benefits we have for Leonardo is a relatively small and agile organization. So I say relatively small, we're a 2. 2 billion pound company, about 8, 000 users across the UK.

But we are able to move at pace and we have demonstrated that this year. If I talk in the IT sense, we have delivered our accommodating environment [00:09:00] platform, initially within four months from launch. That was pretty rapid implementation of capability on we will be on cloud in the not too distant future.

That cloud program will be 67 months from inception to delivery, and that's including production workloads. So I think the Leonardo digital opportunity is to be able to move at a faster pace. Then. the many in the defense organization. In terms of how our organization or my organization is set up, I have a business partnering team that are out into the various parts of the division, a CTO function, then I have our delivery team.

Within applications, we have insourced applications, so all of our applications and software development, most of which we do in house. And I think that will really start to pay dividends in the long term when we talk more about DevSecOps, having the developers and the support engineers in house, I think will, We'll start to really drive a great opportunity.

We have a platform of service ops team and then we have a business management team. The peripheral roles is [00:10:00] we're bringing in a head of data analytics to really drive the data governance, culture, and strategy, not just within IT, but also helping for 8, 000 employees across Leonardo to really grow their digital acumen.

And the data culture. And then in terms of business transformation programs, be that our helicopters transformation, be that future factory, which is the big electronics business transformation. Myself and my leadership team have a strong view, strong supporting role to enable their business transformation for them.

Very good. So let's dig in to the setup of your digital transformation program. I believe you've got five pillars. Yeah, absolutely. Initially, we have our cybersecure backbone, so this is all around our traditional foundational IT, our networks, our storage, our secure environments, which I touched upon earlier, how do we ensure we deliver foundational technology at all classifications and certainly look to where we can utilize As always.



and more cloud technology going forward. So that's our [00:11:00] side of the backbone. A digital employee experience is all about our user. So how do we ensure that we provide them the collaboration tools and the right client and the right service and touch points into IT to ensure that they can be as efficient as possible.

So that's purely for employees. How did the customers of Leonardo come into it in terms of how you're thinking about their experiences? So that's certainly in terms of what we call our mastering innovation and products and services, which is very much the customer facing element. How do we ensure that not just it, but how do we help Leonardo face off to the customer in different ways?

And certainly as we start growing our investments in data, how we provide data marketplace type solutions so that those opportunities can be consumed is absolutely something we're thinking about. So let's just go back through. Let's talk about the data strategy that you have in place and the challenges that you have in driving out what I think is a core component of your digital transformation program.[00:12:00]

It is absolutely a core component and out of the five pillars, so our digital experience, our cyber backbone, enabling business transformation and mastering innovation. The fifth one, data, is the one that really cross cuts all of those for the challenge. I think we have one of the main challenges that many have is the approach around the heavy lifting on data.

So the data classification, the data cataloging those. Pieces of work. I'm really driving the data governance. We have to be able to demonstrate value to the business. So if we can provide a data dashboard, for example, and we can drive efficiencies into operations by giving the data they need at the fingertips of the users, that is really tangible.

It's very easy to see and it's very to see how it drives benefit. To do that at scale, you need to really invest in your data cataloging. For example, and I think that is a much more difficult benefit to drive and articulate the value of doing that and the value of that investment. So I think one of the biggest challenges on [00:13:00] data is how do you get the balance between being able to put.

Data and data products in the hands of the user, which is very tangible, very beneficial, but also doing the underpinning foundational heavy lifting that is required to enable that to be secure, highly governed and also scaled going forward. I certainly think the people and skills part of it is key. So for us to become a really mature data organization, we need to have 8000 people in the organization.

who understand the benefits of data governance, data control and data exploitation. That is absolutely a key challenge. I think the opportunities I've touched on before is many of the way in which we're going about addressing data is as applicable to the IT space as it is to the OT or the product space, which I think if we can get that right, opens up some fantastic opportunities going forward.

Let's dig in a little bit to the cloud implementation, so maybe we could start off by telling us what you're envisaging as the cloud exploit when you take a step back and look at [00:14:00] the digital transformation program. So first step is to ensure we have a secure and accredited cloud platform.

We're using Microsoft Azure, but I think over time we would look to grow that into AWS, etc. So having our landing zone, which is classified. to the right level, but then ensuring that we have our production workloads and the first production workload we will have there will be our common data environment.



So all of our data analytics will be cloud based. We will then look to migrate our applications from our on premise environment across. We believe 20 to 30 percent roughly that we will have in a cloud based environment going forward. That of course may change as time goes on. Leaving the remaining on prem or doing some retirement at the same time?

Yeah, absolutely. So we've already done what we call the Gartner time assessment, tolerate invest, migrate and eliminate. So we absolutely know which of the applications that we are looking to retire or eliminate. Where we're [00:15:00] focusing on is where do we want to lift and shift certain applications or where we want to re architect before we migrate.

So we're absolutely in the planning stage of that. And what criteria are you applying to, to make some of those decisions? It's obviously like a key decision, isn't it? that most organizations go through about like how you categorize your applications and where you're going to take some lift and shift, potentially some tech debt risk versus where you're going to modernize.

So I'm interested in knowing how you're differentiating that. So I think. What I probably would say is firstly is ensuring that we time the migration this is the start of the journey for us. So really understanding cloud operations is a fundamentally different way of working for some of our on premise environments.

Albeit when I say on premise, we're really talking private cloud and therefore the commercial models are not dissimilar. There's a learning aspect for our organization. So I think part of it is pacing ourselves to ensure that we fully understand that we have the right environment. We have the right organization and we have the right people and skills to be able to operate [00:16:00] cloud effectively before we go too fast.

So I think the pacing of it is absolutely key. So I have considerations of business criticality of applications, which of those applications are better suited to be on a cloud like environment. I think the other area is not just The migration on lift and shift what we have today, but probably more exciting is the opportunity that cloud presents which we don't have today.

So certainly some of the data analytics work back to the data governance. There are some fantastic tools on cloud to help us automate and drive and accelerate some of that data governance. I think the exciting bit for me is not just the migrating what we have today, but it's actually opening the door of new capabilities that we can't do today, but we will be able to do on public cloud.

Absolutely. I'm interested in your end state environment, which is effectively going to be a hybrid cloud situation. How are you thinking about that? There's lots of definitions of hybrid cloud that can go at one end of the spectrum. Is really it's not a hybrid cloud. It's just traditional data center workloads running traditionally and then some cloud.

But as an IT [00:17:00] department, you have to manage both all the way through to a fully integrated platform, on prem and off prem, swapping workloads, that kind of environment. Whereabouts on that scale are you? And how did you manage to find the right balance in all of that? So we're certainly working through some of that at the moment.

The aspiration is from a user perspective to have pretty much a single front door because the user shouldn't really need to worry as long as they see the right classification, is it a non prem or off prem? So you're going to have some sort of scripting, handling where the workloads go and such like?

Exactly, that's the intention. I think there's a level of maturity to get to exactly that point. But yes we want to be able to provide a catalog effectively to the user of different



workloads and then we can provide the intelligence is where's the best way of executing that workload based upon a price point or based upon data classification or based upon the use case that particular workload has.

And let's dig into sovereignty a little bit. Have you found that [00:18:00] the tools that you needed and the environments that you needed were available in a way that's helping you unlock the cloud, or are there other elements to data classification and sovereignty that are currently unsupported that are causing you some headaches?

I would say it depends on the classification. So certainly at the lower classifications, I believe we are there now to be able to exploit that cloud technology. The, there are a number of changes you need to make to ensure constraints, limitations you need to make. for the workloads we're talking about.

So it isn't the same as a commercial offering a public cloud. We have to put a slightly different wrap around it. But that is absolutely feasible and we're in the process of doing that. So I think historically we've talked around this point for probably a number of years now, and the maturity of the technology is there now for defense to consumer to that classification.

The cloud journey is an interesting one from a leadership point of [00:19:00] view in the security. I'm probably some of the historic thinking about the security of cloud. Do you mean by that the sort of the perceptions that people have? Absolutely. Yeah. Yeah. Yeah. I think there's a legacy perception that if it's in your data center and you can go and touch it, then it's secure.

And if it's in the cloud, it's more difficult, which that's been quite a journey to take people on. And I certainly think more recently, being able to have eyes on, having enhanced monitoring is the important bit. And if that's in the cloud environment, and actually you can. You have better integration with our cyber security tooling.

You have, you can start using some of the cloud native cyber security tooling as well. And you can start having enhanced monitoring. You actually get to the position where you say we can probably see and hear our cloud environments maybe better than we can with some of our on premise environments.

So that shifting of that culture has been has been really important. I do think the higher classifications is a bit more difficult. And the big challenge we have there is the, There isn't necessarily the [00:20:00] appetite to invest in the technology of the higher classifications. And the challenge that gives our user base is due to the ongoing threat.

Whilst we can try and utilise some of this exciting technology at lower classifications, more work is going to. Some of the higher classifications, and what is incredibly important is that we can provide an as close user experience, digital employee experience to people that are working with different classifications, because there is a significant people and skills gap in the UK at the moment.

We have to be able to provide a. a very sensible offering to people to be able to operate at different classifications. So that's a real, I think the biggest point we're wrestling with today is that balance between employee experience around security and around investment in the right technologies.

From a data analytics perspective, how are you going to handle those higher classification documents or data? The approach should be the same. The issue is [00:21:00] if the technology isn't mature enough, then we have to invest heavily to give a commensurate user





experience, and then we get into an affordability challenge.

So when you look at the five pillars of your program, it's obviously a very comprehensive program within a challenging environment. What occurs to me is that. your IT organization is going to have to really respond to how to run this in future, how to operate these environments in future, and actually go on the transformation journey itself.

Have you got any perspectives at the moment about how you think it might impact your organization? Yeah, lots of thoughts and we've Throughout 2022, we've invested in a new IT operating model to help improve the way which in which we deliver all IT services, but also help us pivot into that world of the future, certainly consuming more emerging and disruptive technologies like cloud, but also being able to ensure we can support the [00:22:00] business in their growing transformation, their ambition.

So there's quite a lot of change there. What I would say is. Certainly, many of the organization I've inherited in the last year, and this goes for both new starters, be the graduate apprentices or people joining a different point in their career, or many of those that have worked in Leonardo IT for 10, 20, 30 years.

Actually, when we've given them access to the technology, we've Unlocked them. And by that, give them the opportunity to grow and to flourish, giving them the access to the training. The vast majority of them have relished that opportunity. And we're seeing people really accelerate and flourish when they can operate on being an architect on the cloud environment, for example.

They've got the right support network around them, they've got the right training they've got the clear objectives of what they need to do, and they're working on something that's industry leading. And that is incredibly powerful for some of our users, because, it's exactly the work [00:23:00] they want to be doing.

I just want to bring our conversation to a bit of a conclusion for now then, on... What additional challenges so obviously working in defense with the data regulatory challenges that's got brings, brings a whole initial set of sector specific challenges. Do you have any others that you're losing sleep over?

I would say I probably wrestle with the same challenges as most CIOs in any industry. The cyber challenges is absolutely there and not going away and it's certainly getting more sophisticated and the vectors aren't. aren't getting any easier. So that's definitely a worry. We have to balance the the new technology with the cost base.

So we need to continue demonstrating value back to the business. We need to enable the transformation, so our divisions have some more than others, but a very ambitious transformation program, and that's largely being delivered by technology. So how we deliver that for them, but also how we help coach them in terms of the art of the possible, what technology can do for them.

which [00:24:00] ones, which are the elements in the hype cycle that we should absolutely be investing in. And I would say data and cloud are two of them. Always tricky reading those hype cycles, man. It is indeed. There's always something. Which are the ones that, we probably shouldn't invest in going forward.

So that's a challenge. I think the people and skills challenges is acute everywhere. Defense has its specific challenges around asking people to work at different classifications, given it means they can't work from Costa coffee with a, with their laptop, that is a constraint. And that limits the scope of the pool that we can go for.



But the flip side is we're doing some incredibly exciting work. And I think we can make offerings to our engineers that you can't do in other industries. So I think that's a real value of defense. And now if never before the role of defense is very much front and center in the national press. I think it's very obvious the value of defense and the work that the defense industry does out to protecting all of us in the UK. [00:25:00]

Sjoukje, what's trending this week? So every week I do some research on the recent tech trends and pick one I find interesting to share with you. And this week, unfortunately, I want to cover the massive layoffs and hiring freezes in the tech industry at this moment. So we see lots of technology companies that have been hit with global economic turbulence that is slowing down growth and leading to widespread layoffs.

According to true UPS tech layoff tracker, there have been around 1,138 rounds of layouts, layoffs at tech companies globally so far this year, which affects more than 182,000 people. It's dramatic numbers. What's going on underneath that. Do you think if we look at the public statement that most companies have given around this there are [00:26:00] two.

prominent reasons. One is that they hired many employees during the pandemic when people spent most of their time online. And now you see that this is starting to fade and they move on and get back to their daily lives. And secondly, inflation in the world has made lots of brands also stop their spend in advertising.

It's a very difficult situation of course. The world is facing increasingly difficult economic headwinds and tech is a sector that has grown hugely over the course of the last 10 years, even I think it's also important to acknowledge that the spend going into tech is still on the increase. We are still seeing kind of huge growth in a lot of areas.

But I think the market for tech consumption is still looking pretty buoyant, even if we're heading to an economically difficult couple of years, right? Yeah, that's true. The prediction is that the worldwide spending on IT will continue to grow next [00:27:00] year, especially in the cloud domain. The cloud itself is going to provide some of the tooling that helps consumer organizations actually deal with some of the cost related challenges that they have.

Yeah, that's true. And it also gives the opportunity for organizations to use lots of innovative technologies and to actually do more with less. and to use this innovative technologies without the need for huge upfront investments, for instance. Yeah. So very difficult situation, but caused by, I think, very visible world circumstances.

And we hope that anybody impacted by it is okay and find some new opportunity soon. We like to end the show by asking our guest, what are you excited about doing next? So Gareth, what have you got coming up? So outside of work, I'm certainly looking forward to the weekend with my wife's away. So I've got my my two young boys I've got to entertain for the next two days.

That's going to be entertaining for me. I think inside of work, the whilst it is relentless and exhausting, the pace at which [00:28:00] we're trying to operate at the moment in terms of transformation is it's hugely exciting. And every time. You get a snippet of the change we're starting to make and it, it makes it all worthwhile.

So for me it's continuing on our journey for the next few years and trying to drive at the pace we are and and seeing the changes it's making to our to our users, which is great. It's, it's such an exciting time embarking on the sort of transformation you're embarking on.

And we we wish you the best of luck as you start your journey into the foothills of that



adventure. A huge thanks to our guests this week. Garrett, thank you so much for being on the show. Thanks to our producer Marcel, our sound and editing wizards, Ben and Louis, and of course, to all of our listeners.

We're on LinkedIn and X, Dave Chapman, Rob Kernahan, and Sjoukje Zaal. Feel free to follow or connect with us and please get in touch if you have any comments or ideas for the show. And of course, if you haven't already done that, rate and subscribe to our podcast.

See you in another reality next week.

[00:29:00]

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