leidos

Resilient supply chains through digital transformation

An eBook by Leidos and SHD Logistics

SHD LOGISTICS

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Leidos, a Fortune 500 information technology, engineering, and science solutions and services leader, is working to solve the world’s toughest challenges in the defence, intelligence, homeland security, civil, and health markets. The company’s 37,000 employees support vital missions for government and commercial customers.

Primarily, this eBook aims to provide a collection of examples of how Leidos overcomes these less than straightforward logistical problems. It will become obvious over the coming pages that the complex nature of both medical and military operations requires unflinching delicacy and sensitivity.

As a secondary point, I also wanted to draw attention to the fact that while the majority of Leidos’ work revolves around technology, the premise that people remain at the core of any business echoes throughout these articles - the company does not let their importance fall into the background.

With that in mind, I would like to thank all of the contributors in this eBook for their work,
I hope it is of value to you.

James Burman,
Editor, SHD Logistics

Introduction - Leidos

2020 has put every industry under pressure and logistics has been no different. Such challenge drives new thinking and in the logistics sector this pressure has spawned innovation and evolution, with the pandemic accelerating the integration of technology within supply chains as nations have sought to efficiently deliver food and medical equipment to those in need. In this Future of Logistics series, we explore this in further detail and highlight the emerging trends, technologies and challenges that will shape the logistics industry in the years to come.

At the start of this series I discussed the Ministry of Defence's (MOD) and Leidos UK's Logistics Commodities & Services Transformation programme (LCST), which has become an integral part of the UK's response to the pandemic when it comes to the storage and distribution of ventilators and Personal Protective Equipment (PPE). In the five years LCST has been operating, we have introduced a technology-based supply chain integration platform – fusing different systems across procurement, supply, transportation management and payment systems. The positive impact of this work makes the perfect case for why technology should be at the heart of logistics, as we have already seen enhanced transportation, planning and warehouse operations providing a cleaner and faster service to the frontline.

Later in the series, we convened a number of experts to discuss how commercial operations are embracing logistics technologies, the importance of building resilient supply chains, and the digital transformation of defence logistics. These conversations highlighted how elements such as data analytics, artificial intelligence, robotics and automation may dictate the direction of our industry, if implemented correctly and in the right areas.

Sustainability will also form a key tenet of the future of logistics and as the UK hosts the 26th UN Climate Change Conference next year, logistics operators should be leading the charge in demonstrating how to make fast, efficient operations as low-carbon as possible. At Leidos, we have employees in our team who champion sustainable procurement and ensure that we are transporting the right items - in the right configuration - into the supply chain in the first place.

With the latest positive vaccine developments and progress with plans for distribution, all industries are hoping for a related positive economic recovery starting in 2021. Therefore, logistics providers should think critically about how to emerge from this period more resilient and ready for success than ever. We must continue to demonstrate the value in evolving logistics in line with the latest innovations, pushing the industry to the cutting edge of technologies such as automation, artificial intelligence and machine learning.

Furthermore, we must also have honest conversations about what digital transformation means and how it translates into practice. Many see digital transformation as simply the replacement of any manual system or process with technology; in my experience true transformation comes from identifying how the fusion of people, processes and technology improve the system or supply chain as a whole enterprise.

Whether delivering PPE to frontline workers or supporting small and medium enterprises as they adapt their business operations, the logistics sector has helped ensure the flow of essential goods and has been a vital contributor to national effort during this unique time in our history. As we look to the future, we must all learn lessons and adapt to increase effectiveness, efficiency and resilience.

Damian Alexander CBE,

Vice President, MD Logistics Division and Programme Director LCS(T)

Resilient reality

Interview *with* Damian Alexander

One of Leidos' best-known projects is its work with the Ministry of Defence. This £6.7 billion contract involves innovative programmes designed to transform the MoD's logistics operation, combining a series of discreet operations into a smooth, well-oiled machine. SHD spoke to DAMIAN ALEXANDER, Vice President and Managing Director for the Leidos UK logistics division spoke to SHD Logistics about the company's fascinating and transformative work.

SHD (SHD): Damian we first spoke about the Ministry of Defence's (MOD) and Leidos UK's Logistics Commodities & Services Transformation programme (LCST) early last year for our podcast. Can you tell our audience more about the logistics project with the £6.7bn price tag?

Damian Alexander (DA): Our key aim of the 13-year LCST programme for the MOD has been to take a series of federated operations - across commodities, procurement, storage and distribution globally - and transform those operations with better technology and processes. Technology is being used to underpin an enterprise approach and provide a more streamlined, faster and tech-based service to the frontline end-user.

The programme kicked-off in 2015 and runs until 2028. We went through a big phase of transition in the first few years which involved consolidation of stock, closure of certain sites – or handing them back to the MOD – and building a brand-new fulfilment centre. We put technology at the heart of our procurement, transportation, planning and warehouse operations to provide a cleaner and faster service to the frontline.

SHD: How will the defence frontline be improved even further over the next eight years?

DA: LCST has transformed a part of the supply chain within the MOD. It's dealt with depots, warehousing - but it hasn't reached the end user yet. The new capabilities developed for LCST can now be applied to a broader set of processes, systems and new way of working, end-to-end.

We're in dialogue with the MOD about where those opportunities may be. There could be further automation in some of their systems and processes, more robotics, or even drone capability.

Over the next 2-3 years, we will look at how we can leverage and utilise the technology and facilities which we have already invested in to provide wider end-to-end efficiencies across the supply chain from the supply base to the end-user.

SHD: Damian what is true digital transformation?

DA: I think a lot of people see digital transformation as the replacement of a system and a process with technology, and I think there's some truth in that. But in my experience, it's the fusion of doing things in a smarter way, where technology either expedites or changes a way that a process is done from a manual way of the past to a more agile tech-based way of the future. It's about the fusion of the individual, the use of technology and the improvement of a process.

It's easy to apply digitisation to a substandard process or way of operating in logistics, but then all you get is an automated sub-standard process. Part of the opportunity with digitisation is not just about what technology can do but applying it in a smarter way – to do things in a more innovative way - as opposed to just replacing a standard process.

SHD: How have you digitised processes for the MOD?

DA: The previous systems and management for procurement of commodities, storage, distribution and payment at the MOD were very federated. Different teams in different places, using paper-based forms. Through LCST we introduced a supply chain integration platform – fusing different systems across procurement, supply, dynamic transportation management and payment systems.

We've brought them together, not just joined the dots between legacy processes, but really streamlined those processes. Because we designed the whole solution, we've been able to take a clear view of what a smooth process looks like and use technology to underpin new processes.

That's how Leidos applies itself to complex transformation, with the integration of different systems.

SHD: What's Leidos' approach to sustainability and carbon reduction?

DA: We have employees in our team which champion sustainable procurement who ensure we're transporting the right items - in the right configuration - into the supply chain in the first place. We have halved the packaging for our shirts by removing some of the nonessential items within it like cardboard inserts, the tissue paper, the clips, and what that means is we get a reduction in volume, and that reduction in volume can then be translated into a much more efficient load, which can help us reduce carbon during transportation.

Another example is our food ration packs. Via the tender process we make sure suppliers reduce single use items/plastics and a create a better composition within those items. It's those types of initiatives, and having individuals which champion that within the organisation, which also help us to reduce transportation and fuel costs and be kinder to the environment generally.

SHD: What has the COVID-19 pandemic meant for logistics, Leidos and the UK?

DA: In the last few decades we have moved into a very globalised market and economy. I think supply chains and logistics have been the lifeblood of that in many respects, certainly in the retail sector. Due to the pandemic, operators will start to question their place in a globalised market.

We've come from an era of 'Just in Time.' But what is the next era? We must find out what resilience and security means in this new normal. It doesn't take much, as we've seen, for there to be a massive change in behaviour impacting the supply chain. For those providing high demand items – food or PPE – it's been a real challenge.

Operators and clients will start thinking more locally. I'm not saying this is the end of a globalised supply chain – but I do think there will be an inwards focus towards more local suppliers, which is a good thing from a national economic perspective. I think what COVID-19 has done is bring logistics to the fore in many respects, as the lifeblood of both support to the front line and the national economy. It has proven the centrality of good logistics and good support to the national effort, to the front line, and to the nation as a whole.

SHD: How do you build smart resilient teams at Leidos?

DA: The selection of the right team is absolutely critical. We are building teams of diverse thinkers. We want different, innovative thoughtful ways of approaching problems.

If we look specifically within Leidos we have people join us from the military service (20% plus of veterans) at different stages of their career who have a particular understanding given the nature of Leidos' customers. But we also bring in experts from different industries, different sectors.

We bring in young graduates, interns and people at the early stage of their career, and really try and build a very inclusive, open and diverse workforce that enables us to get the best. We don't see ourselves as a traditional hierarchical organisation, we try to apply diversity of thought, different approaches and ideas that help reach the most efficient solution. ■

Logistics technology in the new normal

Interview *with* Professor **Richard Wilding**

With the pandemic causing massive shifts in the way the logistics sector operates, organisations like Leidos have had to adapt quickly to the new reality. RICHARD WILDING, Professor of Supply Chain Strategy at Cranfield School of Management, and non-executive director for Leidos UK's logistics division is at the heart of that shift. He spoke to SHD about the new technology Leidos has been embracing, and how this will continue to transform logistics in the coming years.

SHD: How has the pandemic changed how operators think about and how they use technology?

Richard Wilding (RW): Before the pandemic, changes caused by supply chain 4.0, were starting to be applied across nine technology areas. These areas are systems integration, big data and analytics, simulation and virtualisation, the internet of things, the cloud, cybersecurity, autonomous systems, augmented reality and additive manufacturing. We found that elements of these were being combined. Additive manufacturing for example, was enabling people to do small footprint, localised manufacturing.

We were starting to see organisations like Nike reshoring and nearshoring their production. We also found an increase in autonomous systems within warehouse systems, and that the internet of things was being embedded within those processes. These changes were already gaining momentum. What has now happened with the pandemic, is that it has created a burning platform for all these technologies.

We're already hearing how back offices at logistics companies are seeing 25% improvement in overall productivity because they've started to automate processes.

Existing technologies which have been moving forward over the last couple of years, have received incredible focus during lockdown, catalysing organisations to do things differently, and invest heavily.

SHD: How could this disrupt supply chain models?

RW: So, the offices we wanted in 2019 are probably very different to the offices we need in 2020. Do we actually want them in London for example, or can they be remotely dispersed? From a supply chain perspective what we're finding is we can start implementing distributed manufacturing, and other small footprint manufacturing, in lots of locations. That raises some big questions about distributed warehousing as well.

We have discovered that having one big warehouse and one big manufacturing facility might be less resilient in some cases than if we actually have lots of smaller warehouses and manufacturing facilities - because when we have a situation like we do now - we're able to mothball some elements of the network without shutting down the whole supply chain.

This distributed network of smaller warehousing facilities with new technologies embedded in them, offers greater resilience, flexibility and brings operations closer to the customer.

SHD: Is it critical to invest in new technology right now?

RW: If we start investing in various new technologies, we might be able to operate in 'the new normal' but maintain a low-cost level. If you try to push a new way of working through old processes/systems, you end up with hugely increased costs, because you've pushed the system in the wrong way. But, if you change the system, you're able to create a new minimal cost, minimal inventory, minimal lead time point, which then enables businesses to compete in a more effective way.

SHD: How is artificial intelligence transforming back end operations?

RW: Artificial intelligence (AI) can be used very effectively in planning. If you're able to turn to your warehouse management system and instruct in very simple terms, 'here's the game we're playing, and what we want you to do to win, is increase throughput…' that will enable the AI system to manipulate some of the key variables, to enable the winning of that game.

If the game is, for example, to reduce costs to a minimum, what the artificial intelligence system can do, is focus on the minimal cost side of things.

We as humans must decide, what it is we are trying to win, at this particular point.

SHD: Can blockchain improve supply chain operations?

RW: With blockchain we're able to take information from a variety of different sources and put them into a block. Even photographs. If we're moving goods across Europe for example, it could be a photo of the case with the seal on the lorry. What you end up with is lots of blocks of information. What you can then do, if you want to, is assign people different keys for 'opening the doors' as it were. So, they can look at some of the data within that blockchain.

You might provide customs with a key which will open everything up. For a particular supplier within the supply chain, you might have a key which can only open up two or three of the blocks. The customer might have another key to open other blocks of information.

So blockchain is quite an interesting technology, because it enables you to have very good levels of transparency. However, they're finding blockchain technologies use an incredible amount of energy. .

> "COVID-19 is causing massive shifts in the way the logistics sector operates."

SHD: What will warehouses look like in 2030?

RW: In 2030, we're probably going to need smaller warehouses with very strong foundations. Well connected, probably going to involve rail. That will create some interesting challenges. If we're going to be running electric vehicle fleets and everything else, just think about the amount of power which might be required to go into those facilities.

Rolls Royce are talking about very small footprint nuclear power stations. Who knows in the future, maybe we'll have these very small power stations in warehouses? If you've got all this automated and autonomous equipment within the warehouse, running on battery, we're going to need to charge those elements too. I think it will be utilities feeding into an operation that could mean make or break for some facilities. We need to start planning for that now.

SHD: What disruptive technology should we be thinking about in 2020?

RW: If I suddenly insert an additive manufacturing facility into a warehouse, I no longer need to have much racking because I can make the items I need in a short lead time. That will disrupt the way the supply chain works. Disruption might be something that's out there already, that is simply plugged into a supply chain in a slightly different way, creating a big change in what people are actually doing.

To some degree, the pandemic created a disruption. In the new normal, remote working and an increase in automation is going to change the way we work as individuals, as a society, as well as within physical facilities.

SHD: What could the jobs of the future be then?

RW: There's going to be a whole raft of different jobs required. Some in data analytics and robotics. Specialists in battery technology, for example. You're going to find your maintenance engineers are software engineers. We do have those in place already, but we're going to need more and more of those skillsets operating within these environments. With high levels of integration, people are going to start managing these areas as a network rather than as individual entities. ■

Business modernisation

Interview *with* Richard Hill

RICHARD HILL, Royal Air Force Air Vice Marshal and Director of Defence Support Transformation at the Ministry of Defence has been at the heart of the transformative within defence logistics. SHD sat down with him to discuss the challenges he has faced over the course of the COVID-19 pandemic, and new projects, technologies and ways of working are helping the British military adapt to a changing reality.

SHD: What challenges have you faced over the course of this pandemic?

Richard Hill (RH): Like many people, our major challenge has been the response to the COVID-19 pandemic. And as the immediate response to that starts to settle down, we're thinking about what lessons we might learn from it, and how to avoid any false lessons.

As a defence organisation, we have ongoing operations and other business-as-usual activities that we have had to run alongside the pandemic response. We have also embarked on a ten-year programme to transform the way in which we do logistics and support across defence; I've been trying my best to keep that going while people are working from home, and while dealing with the very urgent pandemic response.

SHD: How do you see the industry changing as a result of COVID-19?

RH: Across the industry there is a view that COVID-19, as well as being a tragic set of circumstances, has been something of an accelerator of innovation and change, specifically in connection with digital transformation.

Our challenge has been not to be moved off course. What the pandemic has done is reinforce that logistics and support is a key enabler of activity. The response to COVID-19 in the UK has undoubtedly been in large part, a question of logistics. And defence has realised this too—hopefully we'll be able to gain the sponsorship and financial backing for all the work we need to do based on the understanding that we're key enablers and not just back office "administrative drag".

SHD: Do you have any examples of specific projects?

RH: We have three interesting programmes underway. The first of these is a new defence support operating model. Our logistics and support arrangements have become fragmented, so we need to rearrange our operating model and configure it to deal with new challenges. The second big programme is "Business Modernisation for Support", which is about making sure we have a set of standard logistics support processes used across the Navy, the Army, and the Royal Air Force, rather than the hundreds of separate, overlapping processes.

Once we've got those new processes embedded, we will introduce new digital tools, apps and cloud-based technology to make sure we have the new information services to support those business procedures. Elsewhere, we have a range of what we call "discovery projects", which are all about bringing discreet parts of the organisation up to date with new ways of thinking, often with commercial partners. One of these is a fuel enterprise project to modernise our fuel operation; elsewhere we're trying to get better at understanding provisioning, procurement, and how to turn stock levels into availability.

SHD: Could you tell me how you've been working with artificial intelligence?

RH: I think we in defence are slightly late to the party, but we're keen to catch up—and I think we're quite well placed to do so. We recognise that the central feature of our business is data, and 20 or 30 years ago we were absolute masters at collecting—on sheets of paper—lots of data on the availability, repair and overhaul requirements of our large capital equipment assets. Then we would employ lots of human beings with a great deal of experience to analyse that information and use it to predict when failures would happen, what the likely modes of failure would be, what repair work we would need to undertake and then what that meant in terms of tools, spares availability, servicing profiles and intervals between inspections.

But we've lost that in many ways over the last 20 or 25 years, as we have outsourced quite a lot of that maintenance and servicing activity to contractors, so we've lost the ability to be an intelligent customer. Now, given the desire not to spend any more money than necessary

on human resources, we need to replace that intelligence—those armies of middle managers assessing and analysing data—with software. We want to have the computing power available to do that intellectual exercise of crunching the data at machine speed, ahead of time, with the ability to model in a digital twinning type of environment so that we can forecast and take action to prevent issues occurring. All that space is where artificial intelligence can be brought to bear, and we will be taking forward a significant amount of pilot activity during the Business Modernisation for Support programme.

SHD: Is blockchain going to form part of that?

RH: We don't use blockchain yet to any great extent, but we do recognise that there is real value in doing so. The security benefits of blockchain, and the resistance to change of records, and the ability to have a real clear audit trail is hugely useful for records of engineering activity and certification, particularly where there's a safety aspect, such as air worthiness for aircraft and sea worthiness for ships.

SHD: How quickly are you adopting this technology compared to the rest of the industry?

RH: From what I've seen, they seem to be embracing new technology far more quickly than we in the defence and the public sector are—that's probably not surprising. Our approach is to learn from the experience of others—in some areas, such as our information services, we are leaping literally decades forward as a result.

We don't need to be right at the bleeding edge of innovation, but we are improving our access to technology, and from our perspective it's a huge leap forward. If we manage to do it in that four or five- or six-year period of BMFS, then that will feel quite quick to us.

SHD: What other innovations are in your sightlines

RH: We're seeking to harness machine learning, the ability of machines to evolve their activity by learning from what they do. Then there's robotics. That means both robots operating in the back office cleaning up the data, finding gaps in policy, and providing suggestions for new processes, but also robots in the more traditional sense.

We are very interested in last mile delivery, but in defence that interest is even more profound because the last mile in a tactical operational environment is often the one in which enemy action is most likely. If we're able to use autonomous vehicles, for example, then that is of great interest to us, and there is experimentation ongoing in all those areas.

The other technology is additive manufacturing, such as 3D printing. We've finally discovered the problem it needs to fix—I have certainly felt for a long time it has been a solution looking for a problem. If, for example, we're building a hospital in a deployed location, the plumber may print all their plastic pipes, t-pieces and taps rather than having a large supply chain behind them. I think there is a lot for us to exploit in the additive manufacturing space.

SHD: What do you think logistics and support in defence will look like in ten years' time

RH: Significantly different. The organisation will have been refined. The merits of having a very senior officer at the board level in the centre of the department with responsibility for logistics and support will have proved its worth, because of the focus that can be brought to bear across the whole business on understanding the risk being carried in the logistics and support space, and to take investment decisions to mitigate those risks and prevent them becoming issues. In order to do that, balanced investment decisions will need to be taken, and therefore it's important to have a voice on that board.

The people doing logistics and support I think will be differently skilled to the ones we have today: for instance, they will be experts in blockchain and all those new technologies. There will also be fewer of them, but they will be more highly valued by the organisation for the force multiplier they become in making sure that logistics and support is delivered properly for defence.

I think we will finally see the demise of green screen computers that have been running on the same IT hardware for 20 years, with people having to know different languages in order to access them. We will be operating in a much more tablet-based environment with people operating instinctively and intuitively through apps. .

SHD: What do the next few years hold for you?

RH: As I said, we've got a ten-year transformation programme going on. I'm probably going to do about five of those ten years, and that will probably see me out of my career in the military. And at the end of a career, being given the opportunity to spend five years making a difference and transforming the world in which I've operated for the last 35 years, and to fix some of the challenges I've seen develop over that period will be a good way to finish, and will be a professionally rewarding way to cap off a thoroughly enjoyable career. ■

Mission support

Interview *with* Lisa DeVine

LISA DEVINE is a logistician with over thirty years of experience in the industry. A former United States Army officer, she now supports the US Department of Defence as a chief technology officer for the Logistics and Mission Support operation. SHD spoke to her about the significant projects Leidos has been working on in the United States, including how logistics even plays a role in space travel.

SHD: Hi Lisa. Firstly, can you tell us about what significant US projects Leidos has been working on?

Lisa Devine (LD): One of our common sayings is we execute logistics from glaciers to galaxies, which references our Antarctica Support Contract and our NASA Cargo Mission Contract.

The Antarctica Support Contract is a National Science Foundation project that provides all the logistics support—from ice breaking ships and materials to facilities operations—required to support McMurdo Station in Antarctica. It's the longest supply chain in the world.

The NASA Cargo Mission Contract resupplies the International Space Station. We procure and assemble the supplies used by the scientists at the International Space Station, which is particularly complex because we have to get all of those supplies into very specific containers and which also have weight limitations. Included in the shipments are sensitive scientific equipment that must be packaged and handled in a very specific way.

SHD: This is very different from how logistics is perceived. How has the industry changed in recent years?

LD: Logistics today requires software development, data science, and as we just discussed with our NASA effort, systems engineering. Logistics has not traditionally been perceived as a white-collar job, but it is increasingly becoming one. And that's probably the cultural change that people will have to adjust to.

As you can see from the success of Amazon, there is opportunity for real even in the most common, mundane type of effort. As you recall, Amazon initially sending books to people's homes.

SHD: What trends – in particularly new technology – do you see shaping logistics in the coming years?

LD: I would say that data analytics will change how logistics is done going forward, but fundamentally it's the whole suite of technologies around logistics that is changing how work is performed, for both defence customers and any other federal government customer.

As an example, in logistics, we have significant amounts of paperwork. There are procurement activities with invoices, and significant back office functions. And the paperwork that's generated, including the data that is generated in those activities, can live in silos.

So "robotic process automation", which is fairly new, is taking away a lot of the tedious and intensive writing of documents and manually transferring of information from one system to another system, by training bots to go and fetch all those different pieces of data and assembling them into a new form or visualisation. It's taking tens of thousands of labour hours out of a back-office function. That allows people to focus on the tasks higher up the value chain rather than working on tedious tasks.

SHD: How are these new innovations meeting supply chain challenges?

LD: One of the biggest challenges that all companies are facing is what we call the Amazon effect. The rise of Amazon has meant the expectation of instantaneous deliveries permeates all areas of supply chains. Technology that accelerates your ability to process and execute a delivery from the time it is ordered to the time of delivery is hugely important.

I just talked a little bit about robotic process automation: within a warehouse itself, Leidos is investigating technology such as wearables like AR/VR enabled glasses that help you find a supply in a warehouse within the lenses themselves, down to the exact row and shelf. Similarly, as you're walking down an aisle in the warehouse, the glasses will connect information and inventory the stocks, giving you a near real-time understanding of the inventories.

Automation is another key innovation, including autonomous forklifts and automated warehouses. You see these types of technologies in high-volume, high-scale

operations, and we believe as the technology becomes more affordable for small entities, you will see significantly more application of automation.

We also have additive manufacturing, or what they call 3D printing. Instead of holding large stocks of items on the shelf, particularly if they are low demand items, we can print parts and components on demand, so you can meet the need for parts without storing large stocks. This will present more opportunities for small businesses with 3D printing capabilities to partner with companies that hold stocks.

Underpinning all of this is 5G. As 5G infrastructure is built, the opportunity to put sensors within a warehouse and on items will increase. You'll see data being pulled from those sensors and then aggregated, which will further reduce the amount of manual labour needed for activities and increase our abilities to be predictive about our operations.

SHD: You mentioned data analytics. Do you have any examples of how that's transforming logistics?

LD: The best example has to do with the supply chain itself. If a shipment is disrupted, your data analytics dashboard can alert you not just when the shipment failed to arrive, but also if it failed to depart the originating location. Data analytics give you a better understanding of the events happening right now, but far more importantly, it gives you the ability to predict what the impact on your supply chain will be.

COVID-19 revealed the fragility of a lot of supply chains, in that they discovered they only had a single-source supply or a single location from which that supply was coming. If there was a positive case of COVID-19 in that location, and that office or business was required to close for a 14-day quarantine, suddenly your supplier was no longer available.

I think companies really need to invest in artificial intelligence and machine learning. The insights that data analytics can reveal to a company will deliver such a significant return on investment, they really need to be focused on that, because understanding what you have today, what you might need tomorrow, and the ability to predict the impact of this lets companies see where they can improve their efficiencies, and more importantly, where can they grow.

Leidos has made a significant investment in people, tools and algorithms to perform the analytics. We also have a significant up-scaling programme within the company because the demand for data analysts and data scientists is so high that we can't find them on the market. We've decided to educate our own workforce to turn them into data scientists.

SHD: How has Leidos gone about recruiting and training new data analysts?

LD: We have partnered with several universities, and specifically for data scientists, we are sending them to graduate school, identifying between 10 and 20 students per semester to participate in both online learning and virtual lectures.

Probably the more relevant up-skilling effort in our company is that we have partnered with several different companies which deliver on-demand, virtual learning courses available in 45-minute to one-hour segments, where an employee can go online and learn about a topic. Several of these courses will provide a certification of learning; they start from a virtual learning course you can watch in the background to train yourself on a particular course all the way up to graduate degrees in data science.

By offering multiple levels and types of training we offer training to the whole workforce in a time and a manner that works with people's personal situations, which in the age of COVID-19 is key: in America, most of our kids are not back in school so a large majority of people are telecommuting from their homes.

SHD: Leidos are already investing a lot in training and recruiting people. Do you think the way the rest of the logistics industry approaches this will change too?

LD: I believe that the traditional model of going to school as a teenager and then a percentage of people moving on to university is not how we will be educated, and this will have a big effect on logistics.

I believe there will be more certification programmes, in which you gain a skill and then certify that level of knowledge, like how trades are done in the US today. A person will study to become an electrician, then get an electrician's certificate. I believe that significant amounts of education will be certificate-based, even in the white-collar world.

I would tell a young person to focus on the areas that they enjoy and have an interest in, then look at what types of certificates are associated with those activities, because a certification will demonstrate they have a certain level of knowledge and capability. And in that way, people can embark on lifelong learning and reimagine themselves just by having a new interest.

I believe the future workforce is going to be significantly more dynamic and less structured than today. ■

A matter of transformation

Interview *with* Huw Jenkins

Leidos has felt the impact of the COVID-19 pandemic, but it has also played a role in the fight against the coronavirus. SHD spoke with HUW JENKINS, Chief Operating Officer, Logistics Commodities and Services Transformation Programme at Leidos, about how the firm has responded to the pandemic with new ways of working, and how it has provided vital services for the NHS and MoD.

SHD: Hi Huw, to start things off could tell me a bit more about your prior career, and your current role?

Huw Jenkins (HJ): My career has been dominated by retail logistics. I started with Coca-Cola, then hopped from in-house operations to third-party logistics providers. I've worked with DHL, Wincanton and Asda, and in private equity with Poundland. In the 3PL world, I've looked after big retailers like Argos, Boots, Halfords and Amazon.

That's brought me to the fantastic and interesting world of defence logistics, with Leidos as a Chief Operating Officer. It's a role that really appealed to me given the transformational scale of what we're charged with achieving.

SHD: Could tell me a little bit more about Leidos' new LCST programme?

HJ: It's a truly transformational programme. It takes antiquated systems infrastructure and drags it into the cutting edge. There are two main elements. Firstly, building and commissioning an 800,000 square foot defence fulfilment centre, and centralising and consolidating all the stock into this single, modern facility. Accompanying that is the SCIP, the Supply Chain Integration Portal, which is the technology that underpins the operation. You can only imagine the web of legacy systems the MoD has previously utilised. We've integrated those into one leading-edge solution.

SHD: I'm curious to know how the defence distribution centre differs from that of a regular retailer, and in particular what that means for the challenges you've been facing this year.

HJ: There's a vast array of products we have to hold. I think, in a retail world you might say you've got fast-moving goods, and you may even have fast-moving warehouses and slow-moving warehouses.

In defence we've got a large number of slow-moving lines, which means the tail of products is quite long. These are crucial items, such as a piece of equipment that maintains an aircraft or a piece of clothing that only comes out once every blue moon for a particular – maybe royal – event, or something like that. The diversity of product we're holding is phenomenal, and I've never seen anything like it in the retail world.

As for the impact, COVID is something we've all had to experience. And in the logistics world, people were in one of two camps: they were either "we're absolutely dead, nothing's happening, I'm on furlough" or they were working at a hundred miles an hour. In defence, everyone was in the latter camp!

We took some really early action in March when we saw what was happening: we closed our operations, our sites and our offices—we've got a number of offices in Donnington, Bicester, Bristol, and a few others beside – and we took the decision very early on, in the interests of personal safety, to send everyone home.

So, we got people up and running working from home really quickly. Our IS department was inundated with requests for more equipment, so we had to develop a better understanding of internet capability so we could solve problems that arose. The feedback we had from all our colleagues is that we nailed it, and in fact, following colleague feedback, it would appear that the interaction with the senior leadership team is better than it has ever been because we're trying extra hard to have dialogue with colleagues across the business.

SHD: Since the MoD is part of government, what kind of role have you been playing in the fight against coronavirus?

HJ: Because the MoD are part of government, the government is driving a lot of decisions around COVID, and it was clear the NHS needed support, so we supported significantly the acquisition of PPE through our commodity services. We were inundated with suppliers trying to sell us product; although this is a normal thing for us, we had to be ruthless in making sure everything was the right quality, because there was a lot of profiteering opportunists evident at the time.

In terms of operations, we were asked to take in ventilators from all over the world. It was all new to us, so it was coming

in without being able to be logged into our system. So, we had to turn this into a slick operation, to take ventilators in and consolidate those that could be operational in Nightingale hospitals.

We went from a standing start to a 24/7 operation in about ten days.

We were also supporting what is called "MACA" activity, which is military aid, where the armed forces support civil requirements – flooding is a good example of where that would happen, and obviously COVID was exactly in that space.

So, we were ensuring we were well-placed to support whatever MACA activity was undertaken by the Army. The way that worked effectively was through fantastic communication with the Ministry of Defence – we were able to react much quicker by being given good information.

SHD: When you're dealing with these very sensitive areas, does the extra pressure of a pandemic change the way you do business from what you normally do?

HJ: There's a number of people who work in our organisation with military experience, so there's a culture of confidentiality and security in our DNA. That means we won't have certain conversations on the phone, or we won't send certain emails. I don't think that materially impacted us, we're already used to that environment. But, think back to what we were reading at the time, some of the horrendous stories coming out, and the heartache people were feeling. There was a real feel-good factor about what we were doing. We genuinely felt that a spotlight had been put on what we do, and we were supporting the greater good. That was evident in the way people responded. The vast majority of people were working from home, but they were working long hours because they wanted to support the national need and play our own part in that.

SHD: How do you see the logistics industry changing as a result of COVID-19?

HJ: There's definitely something about personal welfare and colleague welfare. Working from home is not for everyone, yet people are being forced to work from home. It's important that we as a business really support the mental wellbeing of our colleagues: we need to reach out to them to make sure they know they've got someone to talk to, not just wait for people to tell us.

But in terms of the logistics industry, my first observation is about collaboration. When lockdown kicked off, we had some people in the logistics industry significantly underutilised, potentially on furlough, and others really being stretched. If you were in the food and retail sector, suddenly you were seeing Christmas and Black Friday volumes. If you were in another sector, possibly home delivery or furniture, you were stood down. And what happened very quickly was organisations shared facilities, infrastructure, assets, to support the priority which was COVID-19, which meant food and medical equipment. The way that the industry mobilised operations, collaboratively, was phenomenal.

I also think COVID has put sustainability under the spotlight, and I think there's going to be an acceleration of people's objectives in that space going forward.

SHD: Are there any other innovations in your sights at the moment?

HJ: Leidos are thinking of where we can be the leader in things like blockchain, autonomous vehicles, but also where we don't want to be a leader. We don't just jump on the first trend that might be emerging, but we really try and understand the value of each developing innovation. We've talked, for instance, about providing drones for deliveries of goods in war zones, but realistically we need to understand whether there's true value in that. We have really got to make sure we spend taxpayers' money wisely, and ensure we're investing in the right spaces.

But we're interested in autonomous vehicles. For moving heavy goods, electric vehicles aren't going to work yet, but for moving light products we will test whether we could exploit that opportunity. 3D printing is another interesting one. Could we see a day where soldiers are in theatre and they're printing the goods they need for a mission, sortie or tour. We have embraced the innovation agenda by setting up innovation hubs in our organisation, which are creative working environments to stimulate that creative thinking.

SHD: And finally, what do you think the next few years hold for Leidos?

HJ: Firstly, we'll continue the transformation. While we've done a hell of a lot, this is a 13-year programme so there's still more to do—and there's still some legacy operations. We've got the shiny Defence Fulfilment Centre in Donnington, but it's surrounded by some buildings that still need a bit of care and attention. I think we'll continue the modernisation of the infrastructure and the estate, and we'll continue the modernisation of the IS infrastructure.
We want to keep our best people and attract more superstars to drive our business. We want to be a place where people really feel the value of what we do. If we do that, we look after our people, and we do a great job for our customers, then growth will come. ■

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