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Moderator questions in Bold, Respondents in Regular text.

KEY: **Unable to decipher** = (inaudible + timecode), **Phonetic spelling** (ph) + timecode), **Missed word** = (mw + timecode), **Talking over each other** = (talking over each other + timecode).

Moderator: Morning, everyone, thanks for joining us today and welcome to this Invest Northern Ireland webinar on digitisation in supply chain. My name is Stephen Drummond and I'm joined today by my colleagues, Jo McVeigh, Kevin Johnston and Mark Allison, who are (ph 00.20) our senior supply chain advisors working in the supply chain development team that sit in Invest Northern Ireland, and Kevin and Mark are from the Invest Northern Ireland e-business team. This webinar is one on a series of supply topics that can be accessed via the Invest Northern Ireland website. We hope you find them useful. Today's webinar is aimed at developing a better understanding of digitisation as developing area and how it relates to supply chain. We'll take you through the presentation, where we'll jointly take your questions at the end. You can add chat-, you can add questions in the chat box. Thank you very much for your attendance. We hope you find this useful and we will begin the presentation.

F: (Audio cuts out 01.05) for coming today, focuses on digitisation within supply chain. We will cover what digitisation is, what does it look like and how does it benefit supply chain, how to get started, who can help you and there'll be a chance for question and answers at the end. Since the late eighteenth century, every accelerating advances in technology has fundamentally changed how we make things, increasing productivity and complexity. The use of water and steam to drive machines marked the first Industrial Revolution. The evidence of this can be seen around our cities, in mill building, buildings, it still stands. The introduction of mass production gave huge increases to productivity and brought into focus the need for sustainable supply chains that could feed the machines. The third Industrial Revolution, led by advances in computer technology, allowed the expansion of a range of products that could produced economically. This required supply chains to be much more responsive to production needs. Industry 4.0 reflected the increase and importance of data as a driving force behind business. The vision for Industry 4.0 is to connect linear supply chains, effectively removing the information gaps between individual suppliers and producers, making the complex supply chains into an autonomous ecosystem, and data is at the heart of this chain.

So, what is digitisation? Digitisation is the process to convert analogue information into a digital format, representing data as discrete elements or digits that be stored, processed and transmitted by electronic systems. Simply put, digitisation transforms information into a format a computer can understand and manipulate. There are many examples of this move from analogue to digital in the world around us. There are those of us who remember the physical phone-book and Yellow Pages in our houses, and yet, for many, an Internet search or see contracts on-, contacts on our phone is the current way to get this information. What is common here, that instead of information being held discretely in analogue form, it

is now maintained centrally and accessed from discrete, discrete locations. Innovation will continue and these technologies will evolve or be superseded in the future. There are similar examples in supply chain management, from paper purchase orders to electronic purchase orders, manual production control to using ERP-type systems, paper stock records to electronic. It is realistic to say that digitisation now impacts all areas of supply chain management, as will be shown later. Digitisation in supply chain refers to the integration of digital technologies and processes to enhance efficiency, visibility and collaboration across the entire supply chain ecosystem.

It involves the use of various tools, software and technologies to streamline operations, optimise processes and improve decision-making. Advances in technology and software go hand-in-hand. Digitisation can help improve supply chains' efficiency, visibility, customer experience and reduce costs. So, why move to digitisation? The main differences that digitisation brings are real-time information, increased accessibility information, centrally-held data and greater levels of control, changes that are easier to update and increased security. However, we will cover cybersecurity risks in more detail later in the webinar. Using real-time information allows supply chain management to predict issues and take actions and decisions that could pre-empt problems, rather than react after the fact. As you can see from the slide, this can include greater visibility of your suppliers in real-time, the increased opportunities to exploit data analytics. Adoption of a digital approach can improve a supply chain team's effectiveness and benefit the overall competitiveness of the company. Information can be used to do something else, and not just be a, a record or data entry, searching for data becomes easier, you can analyse the data quicker, trends can be recorded and sharing and collaboration can also made easier. Digital supply chain has wider benefits to the overall performance and profitability and strategic making-, and strategic decision-making of an organisation.

Processes, such as time to market, productivity, customer satisfaction, can all be enhanced through adoption of digital supply chain improvements. Digitisation can help automate manual processes, reduce errors and improve productivity. It can help provide real-time visibility to the supply chain, enabling better decision-making. Digitisation can help improve customer satisfaction by improving faster delivery times, better product quality and improved communication. It can also help reduce supply chain costs by eliminating manual processes, reducing errors and improving overall efficiency levels. Digitisation brings improved visibility that can help with reducing uncertainties and enable proactive decision-making. In this section, we're going to cover each broad topic. Digitisation and automation are closely linked, and this section discusses them together.

M: Here are the generally accepted elements of digitisation in industry where-, as we understand them now. It's fair to say that this is a rapidly developing field. Let's have a look at how they relate to supply chain. Supply chain function can be summed as getting stuff from the point of production to the point of use. This simple model of supply chain function in a manufacturing environment involves the movement of physical goods from suppliers through to customers, exchange of information in the form of data and customer demand through to supplier orders. Use of the MRP or ERP systems sits in-, sits in the middle of the process. You then consider the processes or activities that allow your information and physical

goods to move through the supply chain, such as forecasting demand, supplier management, moving parts and, and materials into production and moving finished goods on to the customer. Digitisation offers the ability to enhance the effectiveness of various processes by making the data work for you. The slide shows where digital can enhance existing supply chain processes. We'll cover this in a bit more detail later. (Audio cuts out 08.34) etc., so linear supply chain, as shown. Processes enter the current (ph 08.39) sequentially. Modern integration seeks to connect and digitally integrate each stage to enable real-time communications and data exchange. Where an unexpected error or event occurs anywhere in the system, all stakeholders know about it and can act accordingly. Networks can be expanded further by linking with foreign (ph 09.01) networks.

For example, supplier sub, sub-tier-, for example, a supplier's sub-tier supply chain, the company's sharing the resources or connecting to digital marketplaces. These are some of the technologies that support modern integration. Connected networks will often use cloud platforms for data accessibility and real-time exchange. Connecting ERP systems allows businesses to share information at an operational level and improve the overall effectiveness of the supply chain. Smart logistics involves the use of digital technologies and it helps the visibility and management of physical goods. It leads to more efficient decision-making and control of inventory and logistics. Examples of this technology include hand-held scanners for stock transactions, curated frequency ID tags providing real-time digital locations for parts and equipment, even people. Blockchain information is stored in multiple locations and all transactions are transmitted through all sites holding the, the data. This technology offers security, trust and traceability of information involving many parties. Electronic data interchange is the structured transmission of data between computer systems without human intervention. For supply chains, that could be automated purchase orders or issuing invoices. Value-added networks and VANs are intermediary services, trading partners exchanging data. VANs act as a bridge, ensuring data's exchanged securely and reliably between businesses.

For example, a purchase order transmitted in a customer's template could be formatted to be read by the supplier's ordering system, without manual data entry. As you can see, modern integration is at the heart of digitisation, allowing seamless information flow, facilitating the smooth exchange of data across various platforms and systems. Sensors are the backbone of any Internet of Things network and enable communications among digital devices. Sensors can monitor and relay locations and other specific data related to any asset. Particularly during shipping, searches can be used to monitor climate, critical to goods such as produce-, perishable products and satellite-enabled transmitters show where in-transit shipments are in real time anywhere in the world. Inventory management is enhanced by Internet-connected cameras and scanners that automate the inventory management and checking process in warehouses and stores. Internet of Things is used in smart warehousing to make the most efficient use of space and resources. IoT can track forklift movements and work out the best location for items. Smart watches and hand-held devices can enhance the safety and productivity of workers in logistic facilities. Automation and robotics in manufacturing uses machines to carry out heavy, hazardous or repetitive tasks, previously undertaken by people.

In supply chain, managing simple, repetitive tasks, like vending-machines dispensing low-value consumable goods, the more advanced activities, such as warehousing automation include the use of automated unmanned vehicles, UVAs, to move stock in their systems, with robotic sorting for distribution, use of drones and UVAs to deliver parts to point-of-use. Automation has clear advantages in terms of productivity. Levels of automation need to be cost-justified but the busiest stores are moving in this direction. Artificial intelligence or AI can perform tasks that typically require human intelligence. They're made to simulate human-like thinking and problem-solving abilities in machines. Machine learning is a subset of AI that focuses on building systems capable of learning and improving from experiences, without being explicitly programmed, and there's also development of algorithms that allow machines to learn patterns and make predictions or decisions based on data. Here are some examples of AI and AML in use in supply chain. Supplier selection, machine learning models can evaluate factors such as reliability, price and past performance. Supplier performance, analyse real-time data and trends to predict supplier performance management issues. Risk management, machine learning can assess and update potential supply risk, assessment factors such as geographical events, economic conditions, shipping traffic patterns and delays.

Warehouse layout, dynamic planning for stock locations in stores to minimise the movement of goods. As well as predictive analysis and system adaptability, AI can improve user experience, experiences by understanding individual preferences and behaviours and personalising the system. Enhancing security measures, identifying unusual patterns or anomalies in data, leading to fraud detection. Cloud refers to a network of remote servers that store and manage data and applications over the Internet, rather than on local computers and servers. Most people will, will be-, most people will familiar with the cloud backing up their personal computer files. The use of web-based systems is now common practice in many organisations. Supply chain activity generates a lot of data that must be managed and stored in accessible and secure fashion. Supply chain data is generated and used across large networks, processes and locations. Use of a cloud-based system is ideal for this application. The cloud provides increased flexibility and scalability in terms of capacity and computer resource required. Use of, of-, use of cloud computing will be more cost-effective for the purchasing, maintaining and upgrading local services. Data is held securely and is backed-up.

Analytics is a process of examining and analysing Big Data to uncover meaningful patterns, trends or insights from a mass of information. Spreadsheet applications, such as Excel, have numerous statistical analysis functions. More specialised software, such as Google Analytics or Power BI from Microsoft and many others are available. Supply chain planning involves coordination and optimising various processes to ensure the efficient flow of goods and services from suppliers to customers. Analytics supports this process. In helps in forecasting demand, managing inventory, optimising logistics and enhancing overall efficiency. Insights or information leading to better decision-making improve overall supply chain performance. Supply chain analytics has numerous benefits already touched upon, it can anticipate and mitigate potential risk, and importantly, AI helps ensure compliance with regulations and industry standards, reducing the risk of penalties and legal issues. Cybersecurity covers a large area of knowledge, as you can see from the list above. Managing external threats is a specialised role but everyone has a part to play. Gonna have a look at areas we can control, the human aspect of cybersecurity, in a little bit more

detail. The biggest vulnerability in any computer system is the people using the system. The way we guard against this is by having good processes in practice and enforcing them. Similar-, simple examples are locking laptops to desks in public-access areas.

Team members should be aware of legislation, such as the Data Protection Act in the UK and the enormous penalties of infringing the rules. Digital twin is a virtual computer-based representation of a model, of either a physical entity, like a machine or a factory or a store, a system, for example, in the MRP system for demand forecasting or a process, such as matching goods to receipts, to orders. It can be as simple as a offline copy of a real system, with dummy data, or a model set up in Excel, right up to a complex, specialised software. Having a virtual model allows the user to study the real-world counterpart in a cost-effective way that does not involve disruption, disruption or risk to ongoing operations. Digital tin-, a digital twin provides analysis and insights and optimise processes or performances, such as maximising capacity and minimising the inventory, and can help predict where problems may arise. Monitoring use-, monitoring, using inputs into the model from the real-world system sensors are all resources offering a comprehensive view of the entire process and enabling-, and enabling informed decision-making. Simulation, using a model allows the user to test ideas and run 'what if' scenarios. For example, 'How much can sales increase before we need to-, before we need to expand storage capacity?'

F: So, how do you start on the journey to digitisation? Hopefully, throughout the webinar, you will have seen areas of digitalisation that you're already using. Your journey may already be underway. For others, it is knowing where to start. One thing to be mindful of is it doesn't need to be a big bang approach. It does take time, so making sure you pick areas with the greatest benefits first, this can really help with success of the overall digitisation strategy and ensures the right money and resources are being used for the greatest effect (ph 19.58). Some questions you may want to consider, how is the data currently being gathered and stored? Is it analogue or digital? How is it processed? In what format are the current inputs? What are the opportunities of error? If the level of error or inaccuracy is high, it can be a great place to start, as there is a quick and real improvement to be seen. In many cases, the decline of available resources to complete manual data entry has led to process and accuracy issues. The change to a digital solution can bring an efficiency improvement by reducing the time taken to enter data, an improvement to the accuracy of the data itself. What are the pain points of your business?

It can be useful to map the current processes for things to get started. Make note of what information and data is used in each process, what data is transferred to other processes within your business. What do you want it to look like? How could you possibly move from analogue to digital? Which makes the most sense for now, for example, if you've issues with stock accuracy and slow processing of goods in and out of your stores, then handheld scanners could bring enhanced processing time and higher accuracy of stock level. There are some key considerations as you move in this journey, some of what we've learnt from our clients as they undertake digitalisation improvements are, clean and accurate data is critical, garbage in, garbage out. Ensuring new systems can talk to older systems, so they can seamlessly get data from each other. If you are building a factory of the future, understand how to transfer data and connect assets within it and ensure that this is a key part of the planning process. Access to data is very useful, when

holding data and customer data, you need to know how to store it, and how to protect it, and ensure that cyber security is robust.

So, who else can help you in this journey? There are a number of government-sponsored schemes, supporting digitisation, such as Digital on a Shoestring, or Digital Catapult. Just check their websites to see the latest information on schemes available. There's also opportunities to learn on a peer-to-peer basis, through networking events and see what others are doing. You can contact us, the supply chain team, via the website, and there will be a QR code at the end of this webinar. If you currently work with a client executive then reach out to them, or contact the business support team. You can also work alongside our e-business team, we will now hear more from them, on how they've supported supply chain improvements in the past.

M: My name's Kevin Johnston, I manage the Invest NI e-business team, the team provides ICT advice and financial support to help businesses make better use of information technology to help them digitise their business processes, which will ultimately support their growth and export ambitions. The ICT e-business advisors can provide one-to-one advice to businesses, we also contribute to the development and maintenance of much of the practical, digital, IT guidance, and best practice available on the nibusinessinfo.co.uk website. Marc Ellison is one of our ICT advisors and he-, from the team, and he'll be available in the Q&A session later. MIS is a scheme that we actually operate, although the financial advice on NI Business and the ICT advisory support is open to any business, the financial support is only available to active Invest NI customers that are small or medium-sized enterprises. MIS is a grant scheme that can offer up to £25,000 of grant, at a rate of 40% of eligible costs. It supports businesses to purchase associated software and implement a management information system. These management information systems help digitise business processes, allow the capture and processing of key business data to drive efficiencies and increase the visibility of important information in the business. This, in turn, helps with more informed business decisions, and making the business use this information to scale the business and improve the digital systems and processes. Management information systems, there's a lot of examples of projects that we've supported the typical projects we'll support will be e-commerce website integration, self-service customer portals or supplier portals, CRM software, to manage your customer relationship management, accounts, order management, stock control, traceability, ERP, enterprise resource planning systems, paperless systems, digital document management and version control, business intelligence reporting and data visualisation software, and general production and manufacturing workflow software to capture data in key elements of the system.

Management information systems are a key part of supply chain management, and I'm going to talk through two examples. The MIS support that we gave to a company, in relation-, it was in the food sector, the business is a small business based in Northern Ireland, distributing its own products and other products to supermarkets across the Republic of Ireland, and the UK. Employees, 42 employees with a turnover of £27 million, and they implemented a, a modest ERP system, at a value of £100,000. Project took about eighteen months to complete. Key benefits of the project to the business were around traceability, there's now an automated process in the case of product recalls, products can be traced to

individual pallets. This means faster recall in an emergency, and less expense, not having to recall unnecessary batches that may not have been affected. It's much easier for the business to demonstrate compliance with food standards such as SALSA. EDI, electronic data interchange, the new system links with an EDI intermediary, to send information which is converted into the preferred format for each specific supermarket across the UK and Ireland. For example, the customer invoices, credit notes and payment notifications are integrated and in the format the customer system can accept automatically. Pricing, it's easier to implement pricing adjustments, all 600 SKUs or product lines that the business actually had can be downloaded on a live spreadsheet that can be adjusted, saved and will automatically update within their ERP system. Before the new ERP system, staff had to go into each SKU, manually, and adjust this-, prices and quantities, which is very time-consuming.

Customs clearance, the new ERP system makes it easier to provide information required when moving food products between GB and NI. The system now handles details of ingredients and commodity codes required for declarations. Stock control, the new system makes it easier to track stock entering and leaving the warehouse, the system uses barcodes and handheld scanners to quickly and accurately identify products and manage stock movement, to provide accurate stock levels in real-time. Reporting and proactive monitoring, there are now departmental-specific reporting dashboards, customised to the needs of the departments and teams. It's much easier to track and visualise selling trends, the real-time information helps feed into reordering strategies and predicting lead times. The next example is a manufacturing company, that manufactures products locally, a lot of the products are custom to specific orders, they employ 24 staff, there's £3 million of turnover, and they implemented an ERP system with some support from ourselves. The key benefits from that project for the business were around the accounts system, they had improved tracking and reporting on financial data, automated profit and loss reports, and automation of the reconciliation tasks needed for their accounts system. The CRM system for managing their customer relationship management, there was better tracking through an integration of the CRM solution. Marketing is tracked against each customer record, and all business emails are automatically filed against each customer for ease of access at a later date. Purchasing, the automation of the sales order processing, the purchasing order processing, procedures, were full automated, they're reporting on the customer financial performance in real-time, on demand reports were available to the staff. Inventory, tracking of stock going into and out of the warehouse, picking and packing automation throughout, the use of barcodes and low-cost mobile phone-style barcode readers. The customer portal allowed customers to self-serve key information, such as invoicing, raising help desk tickets, and downloading technical product documentation and information.

Manufacturing, scheduling and production management, the product, production of specific products can be prioritised now, scheduled and tracked throughout the manufacturing process, manufacturing costs are better recorded and controlled for use in pricing and estimates for future orders. As you can see, digitisation is an important part of supply chain management, hopefully, this has given you a good overview of what is possible. I hope you've found the webinar useful, you can find links and QR codes to further information on the screen now. Thank you.

Moderator: Okay, so we, we'll move on to the, the, the questions and answers, so, we, we've a few questions here, and, and we'll try to, to, to sift through them there. The first one is, 'How AI can impact business supply chain management?,' so, the question is, 'How does it impact supply chain management.' I suppose machine learning automates a lot of the routine tasks that we do, you know, as, as supply chain managers and supply chain professionals. There is a lot of information exchange with suppliers, so it automates all of that, and then it, that, what, what that does gives it the opportunity to make-, for, for the system to make simple decisions. So, that, that takes away a lot of the, the routine tasks. But I think where, where the, the, the big benefits come is rather than just looking at a scorecard, waiting for suppliers to, to turn red or turn amber, AI machine learning gives us a, a much wider field, literally, with (inaudible 31.06) managing supply chain. So, markets change rapidly, and, and there are many variables, you know, lots of moving parts in a supply chain, rate of exchange, commodity prices, neighbour markets, etc. etc. etc. Also, supply chain demand at, at, sort of like, at a macro level, and a local level, constantly changes and, and AI gives us the opportunity to get ahead of all that and, and make faster and better decisions. So, as well as the, the, sort of, communication side with suppliers and joining up suppliers networks, it gives us the opportunity to look at the wider market and, and make better decisions, basically. So, that's-, the next question then is, 'What are the potential cost savings associated with supply chain digitisation?' So, maybe Jo, you could have a go at that one?

F: I suppose, I mean, when you think of, of what was said through the webinar, and obviously as well, the examples that, that Kevin has given us from the work that the business team has done. I mean, a lot of the cost savings come from quite simple areas of either looking at efficiencies that you could do, reducing errors in your system, and, I suppose, overall, you're looking at an enhanced level of performance. If I can go back to, kind of, the basic side of it, I mean, there's, there's productivity savings to come from training (ph 32.25) up your supply chain professionals, in that a lot of those transactional type-, I can't even say that, transactional, transactional, there we go, type tasks that we, we end up getting involved in, chasing purchase orders, following up with vendors, the joy of matching invoices to goods receipts. I mean, all of those things take time and I think as we'd said in the-, in the webinar, resources become almost as, as scarce a commodity as actually trying to get items through your supply chain. So, anything that can, kind of, reduce that non-value added, kind of, activity there, or reduce the error level within it, to, to, you know, come with that increased productivity saving as well. You know, it's time is, kind of, at the heart of a lot of these things, of, you know, you streamline your process, and you get something done, kind of, a lot quicker and then I always-, I love the example of the handheld scanners in, in inventory because, you know, how many times do you walk into a store and you see lots and lots of stuff sitting? And just with the amount of people available to put it away, the, the manual transaction of that just takes a lot of time, whereas, the interaction of the handheld scanner, you know, gets that information in the system, you know, you know what's there. And the chances of things even getting lost, as well, kind of, can reduce. I think the other bit, I mean, just to build on what Stephen had said, around this idea of having data available to do something with and I think trend analysis, that bit of looking for when things are just about to maybe go out of control, and making good decisions that, that means we don't spend as much money, on, on, kind of, fixing it after the event. So, again, I mean, those, those types of-, those types of savings, kind of, come to mind, I think.

I suppose, if I was summarising it, it's that bit of, you know, before you put a digital solution in, that bit of looking at your process and, kind of, streamlining it a bit anyway, a bit of train up your staff to do more complex supply chain issues. And, you know, any of us who've been involved in supply chain in the last five years have probably seen more complexity than we've ever come across, so the ability to take-, use that skill level that you have, to work on those, to me, becomes even more important. I mean, really you're looking at the, at the digital element to join up, you know, your process across your stakeholders, your suppliers and your partners. And I think probably the line we used in the webinar, and, and, I suppose, it, it's useful for this again, is to say, 'How do we move towards a more connected and efficient supply chain ecosystem?' So that we don't lose information through the gaps. But, to my point, of go and start slowly, you know, and once you begin to see some of the ideas of cost saving, I think there's a greater appetite to then spend money towards, towards some of the bigger things that Kevin had mentioned in the two projects he talked about. Anybody else want to add to that or are we-,

Moderator: No, thank you, Jo, that's, that's very good. A couple of questions here, maybe Marc or Kevin could comment with, 'What's the best strategy in introducing barcode and tracking scanners, etc?'

M: Do you want me to take this one?

M: Aye, Marc, you go with that one.

M: Yes, it, it really depends on your interface with your existing equipment, you know, if you have some sort of an ERP system then they would probably be able to recommend a few solutions for you, that work well with their systems and have a really good interface there. If you're working with Sage there's, there's a, a couple of different obvious solutions there. So, having something that's gonna to add and, and easily interface to your existing stock management system is, is the way to go with that one. If you're starting from scratch, then it's maybe a bit more complicated because you're going to need something for that to interface into, but, your existing supplier would probably be really good advice to start that, that journey off, there.

Moderator: Thanks, Marc. It's another technical one so over to yous guys, 'What is INI's, INI's view on supporting cloud 5 (ph 36.52), in-house servers and purchase hardware products?' 'What is INI's view on supporting cloud 5 in-house server and purchase hardware products?'

M: Well, basically, if it's a, through the MIS gain for clients, it's a capital grant, so, typically aimed, it's aimed at the one-off costs involved in that. So, if it was a management information system project and there was an element of costs that were hardware based or recurring revenue, we don't typically cover that. But, what we do cover is all the implementation and the customisation and the setup, including the cybersecurity aspect of that, and making sure it's secure, configured, operating and also end user training, how to use the system.

Moderator: Okay, there was, kind of, two other ones here that, kind of, relate to security, 'Is there a risk in placing control of the full supply chain with a single digital system?' And also, 'How do companies ensure data security and privacy in a digital supply chain environment?'

M: Yes, well, so, from a security point of view, sort of, taking it broadly first of all, this is usually-, you know, cybersecurity is usually a combination of technology, procedures and people within the organisation. So, your IT systems need to be configured securely, and initially by experienced professionals that, you know, are, are accustomed in setting these systems up. You need to check them regularly, make sure they're up to date and their security patches, operating system updates regularly happen, so it's important to make sure they always happen. And that's maintained by professionals, IT professionals. Also, it, it's important to have good operating procedures, with cybersecurity considered within your business processes. There's a lot of risks out there and it's important to try and mitigate those risks through proper procedures, whether it be approvals for releasing payments or people having access to the systems and how you grant access, or how you share private information between yourself and suppliers, or even among, amongst staff. And again, staff is key to this, staff need at least basic, sort of, cybersecurity awareness training on what to look out for, you know, malicious emails, ransomware, phishing attacks, scams of all sorts. Whether it be digitally initiated or even random calls or text messages as well as emails, and they need to be aware of data privacy and how to maintain that and what should or shouldn't be shared. It's also very important, even after you train people, to have regular refreshers because it's, it's very easy for people to, sort of, get, get complacent with these things and also there, there are new risks that appear, so it's important to make your staff very aware. And they are one of the key, sort of, elements of your cybersecurity within the business and making sure everything is secure.

Also there's, there's recognised international standards people can apply, you know, ISO 27001 business can be certified to that, and that's independent certification. Sometimes it helps, whenever you're dealing with big supply chains that you're expecting, or sorry, the, the people you're supply into expect you to be ISO 27001 certified or they are and you're part of that, so you need to be aware of what's the requirements. Even starting off with something a bit more basic, like the cybersecurity essentials scheme. It's aimed more at providing businesses with straightforward guidance on how to implement security best practice, and there's also two levels for certification within that. There's, there's the basic Cyber Essentials, and then there's Cyber Essentials plus certification. There's a lot of information online, there's information available through NI Business Info, there's information on the National Cybersecurity Centre website, and there's even access to some training videos that your staff can, can make use of.

Moderator: I think we've just time for, for one more question there before we wrap up. 'What are the key factors to consider when selecting and implementing digital supply chain solutions?' So, again, Marc or Kevin, maybe just help us with that one?

M: Yes, yes, I, I think, I think it's really important, at the very start, to make sure you do a good scoping exercise. Normally there's one or two loud voices within a company, and they maybe get more than their

fair share of the solution. I think a really good scoping exercise to start, you involve all the stakeholders in the solution, like finance, sales, operations, warehousing, logistics so that everybody gets a say. And with that scoping exercise, you end up a list of outputs of just necessary for each of the departments. So, when you go look for and interview two or three vendors, when they-, they'll have-, give you their sales pitch, and they're going to be able to do everything, but if you have a-, that list with you, of-, on an A4 sheet, with bullet points what everybody needs, then you can score them that way. And also, in that journey, if a vendor is we, we've got a selected vendor, I would ask them for a list of three or four people, or companies who have had that solution, similar size, but maybe not in the same vertical market, and interview, interview those people as well, to make sure that they can deliver that, and they have delivered to a similar scale, so, does that help?

Moderator: That's brilliant, thank you very much, well, listen, thanks very much, all the people online that, that, that attended the, the webinar and thanks to the guys that, that did it, so that's it from us, thank you very much. All the best. Bye.

M: Thanks.

Captions by Verbit Go