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Moderator questions in Bold, Respondents in Regular text.

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Stephen Drummond: Good morning everyone. Thank you for joining us today, and welcome to this webinar on supply chain cost techniques and their impact on business performance. My name is Stephen Drummond, and I'm joined today by my colleague Jimmy Moore. We're both supply chain advisors working in a supply chain solutions team within Invest Northern Ireland. This webinar is one of a series on supply chain topics. We hope you find them useful, and they're available on the events section of the Invest Northern Ireland website.

Today's webinar is aimed at developing an understanding of the cost improvement process related to supply chain. I'm hopefully gonna leave you with-, leave you more informed with HSS supply chain costs and go about tackling them. After the presentation, we will jointly take your questions, and you can add questions in the chat box. Thank you very much for your attendance, and we will now get the presentation started.

Cost management in the supply chain is a large subject area. We're gonna focus on important aspects around the topic within the limited time available. We hope by the end of the webinar, you will have a better understanding of why supply chain cost management is critical to a manufacturing business, where it impacts the performance of the business, how to go about making improvements to supply chain cost management. We will finish with some general points on the cost reduction process.

This section covers, 'Why should you be concerned with supply chain cost management?' Cost management applies to all businesses in industrial sectors. For the purpose of this webinar, we are focusing on supply chain aspects relevant to the manufacturing sector. Over recent years, the wider environment in which businesses operate has faced numerous shocks. From worldwide economic crisis in 2008 to Brexit, COVID, war in Ukraine and large-scale supply chain problems. As a result, supply chain costs have been very difficult to manage. The issues that are ahead of us may also prove extremely challenging. Fuel (ph 02.17) politics, environmental changes, industrial strategies, and that's just the ones we know about it. So, the ability to manage and control supply chain direct costs and impacts to the business is more important than ever. Manufacturing companies, at the most simple level, take inputs in the form of materials, transform them to add value and sell the resulting goods to customers.

The three themes of this presentation are shown on the slide. Supply chain manage the inputs to the process, the price paid to suppliers has an obvious effect on cost. Secondly, availability and quality of inputs, pieces (ph 02.53), labour and overhead efficiency. Finally, cash is said to be the lifeblood of any company. Excess inventory ties up cash that could be used to invest in the business or offset borrowing.

Our intent in this section is not to give you a crash course in finance but just to point out where a supply chain impacts some of the financial measures. Companies are obliged to publish their accounts at least yearly. These documents are what your customers and suppliers see when they're assessing your company deciding if they wanna do business with you. Business accounts show the historic performance of your company, its financial health, useful measures such as profitability and strength of the balance sheet. Business accounts give a picture of how a company has performed in the past. Companies also measure financial performance internally. Often referred to as cost accounting or budgeting, and this is normally the way companies manage their finances going forward.

Ensure you're familiar with profit and loss statements. Profit and loss takes sales or income. This cost will leave the profit the company has made. A couple of points to note. In a manufacturing company, material typically makes up around 50% of cost. Sometimes more, sometimes less. Supply chain will also impact labour and overhead cost of supplies if not managed effectively. Finally, profit represents returns for investment in the company. This investment comes with risk. Investors could get more putting their money in the bank. Risk free, what's the attraction to invest in this company? Poor supplier performance can impact sales as well as the company's reputation and drive additional cost. In addition, to correct material spend and labour cost, supply chain managers should consider indirect cost within their control, such as energy pricing, consumable materials, PPE, et cetera.

The more important business account document is the balance sheet. Companies with a strong balance sheet can invest and grow. Companies with a weak balance sheet can struggle with servicing debt, even paying their bills. The takeaway from the balance sheet are minimising inventory frees up cash. Payment terms should always be considered when agreeing terms and conditions with suppliers.

Jimmy Moore: Thank you, Stephen. I will now take you through how you can achieve cost savings through effective supply chain management and some of the tools you can employ. This is a map of the improvement areas we support in the supply chain solutions team and some of the tools and techniques associated with those areas. As you can see, it covers a wide range. So, if there's something you need help with, please feel to contact us, and we'll provide support where we can. For the purpose of this webinar, though, we will focus on the areas and tools that will help you reduce costs, increase cash flow and improve stability. These are broken down into direct material costs, labour and overhead efficiency and inventory and cash.

First, we'll look at what approach you can take to reducing direct materials costs and some tools that will help achieve your financial targets. These are supply chain strategy, category management, should-cost analysis, risk management and sourcing.

We'll begin with the need for a supply chain strategy that supports your business's overall strategy. Whereas having a supply chain strategy will not in itself deliver direct materials cost savings, having one is necessary to ensure the cost reduction measures you employ get the time and resource required to make them successful. If your company strategy is not-, does not state what its supply chain needs to deliver, it is likely that you will remain stuck in a tactical, short-term problem-solving loop. And the time needed to reduce costs would not be made available.

This is an example of a straightforward sales growth strategy which most companies will have employed at some stage. It is based on growing revenue by developing new markets and products and growing share of existing markets and products. It is not uncommon for businesses to focus heavily on business and product development to make this type of strategy a success. However, if we consider the other main success factors for this strategy, it is clear how we operate our supply chain function will have a significant effect on the areas of operations, finance and environment. The most effective way to ensure this is to have a clear supply chain strategy linked to the overall company goals.

This main supply chain management needs to move from a transactional approach to a strategic one. Most SMEs see supply chain management as a task-driven transactional function where management is the exception and senior figures only get involved if things don't happen as planned. To grow successfully, businesses need to move along-, move to a long-term approach to supply chain management and use it as a key cog in their strategic planning process. If a robust strategy is developed and employed, you will see benefits through time and resource being allocated to material cost reductions, and subsequent improvements to risk mitigation and improved customer satisfaction.

One of the best direct ways to improve your buying power and so reduce costs is to take what is called a category management approach. This involves segmenting spend according to market sectors where values change in manufacturing and is very effective in linking your strategy for sourcing and purchasing materials with the requirements of the end user. Suppliers are chosen based on how well they can deliver the business needs of the category, where material cost is usually the primary driver.

As a result of this focus, the supplier base and product portfolio becomes optimised in line with business needs. Consolidating where it's too large and expanding where it's too small. Once categorised, suppliers can be segmented using the tail spend analysis tool. Here, we analyse spend by material and supplier so we can categorise in strategic, tactical, and tail spend. It relates to strategic suppliers of products that usually have a design feature or where you purchase by high volumes. In this case, suppliers are partners and cost savings are negotiated and regularly shared through meetings and supplier arrangement (ph 10.06) management.

Tactical spend refers to easily accessible products where your volume is significant. Price is a key factor, and there are many suppliers you can choose from. Here, you have an arms-length relationship to suppliers and choose many of them tactical. Tactical usually provides requirements. Tail spend is what is left, low volumes of mostly commodities with lots of historical suppliers. For these products and suppliers, the best approach is to consolidate, which has the double effect of increasing buying power and reducing overhead costs associated with ordering, ordering, receiving, holding stock and processing invoices.

Once you have increased supplier leverage, the next step is to ensure you negotiate well. Successful negotiation relies on knowing the information you need to gather, recognising what insights and analysis this data can give you and how this can inform which negotiating strategy you may choose. A full webinar on this topic is available on our supply chain solutions webpage, and we hold regular negotiation workshops. So if you would like more information, please get in touch.

The next tool is should-cost target pricing. When dealing with suppliers and costs, it is very important to gain an understanding of what is used or consumed when manufacturing the products. If you already know in detail how their costs are built up, for example, material spend, labour, machine hours and overheads. You will know what their target price should be, assuming at a reasonable margin, and then you can negotiate accordingly. You can also take this approach a step further and use cost trend data for the inputs to predict how suppliers' costs will look in the coming quarters and use this as another negotiation tactic.

Another area that has become very relevant in the past few years is supply chain risk management. Many companies have seen materials costs rise and efficiencies fall as a result of poor delivery performance and unexpected price rises. In many cases, this could have been avoided if they had some risk management in place. To give supply chain risk management some context, the similar approach to other audit-based risk systems you already have, such as health and safety management or financial management. As complexity of supply chain increases, either by remoteness or the number of links in the chain, so does the risk of price changes and delivery failure. Which, in turn, will impact your costs when disruption occurs. A good way of identifying risks is looking at how vulnerable a supplier is to unexpected events. The greater the vulnerability, the bigger the risk.

There are some well-established tools to help identify and predict supply chain risk. One such tool is the Kraljic model, which categorises your suppliers according to potential impact of supply chain failure on your business. Once a supplier is categorised, the model has built-in suggestion-, suggested actions for mitigation. It is a data-driven model and, once set up, is very easy to maintain. With supply chain risk, the key is to ensure any identifying risks are followed up with actions. How and when you collect your data can be fitted to your circumstances, but once risks are identified, you need to work with your supply base to mitigate them. This takes time, so it's important that it remains visible and reviewed regularly through your management systems. Once implemented, your resilience will improve, and this will help avoid negative impacts of supply chain disruption to your product availability and, most importantly, direct material costs.

The next element to consider is how you source and purchase your materials. Most companies are already working to improve this as it is the most visible way of reducing costs to other parts of the business. However, recent supply chain disruption has changed the dynamics of sourcing materials. So, moving the source of supply closer to home is now a strategic challenge for local businesses. Either way, tools you should employ are a total cost model and supplier profiling, as well as seeking advice on where to source.

It follows then that you should have a good understanding of what is driving you to look for new suppliers or outsource if you're currently producing the products. Make sure you know whether cost is driving change or are there other considerations. Like the need for additional capacity, improvement of service or reduction in lead time, you know, for better (ph 14.44) competitive knowledge. If you are not-, if you are clear on what you need to achieve, this will lead to better (mw 14.49) decision-making.

One way to ensure to have a realistic view is to adopt a total cost approach. As well as the purchase cost, you should consider what other direct and indirect costs there will be associated with the sourcing or new supplier activity. This takes some time, but when executed well, it leads to better decision-making and results meeting expectations.

Once you have considered the risks and costs of changing suppliers or outsourcing and decided what-, that it is necessary, it is important that you are thorough in your approach. The steps you should include are clear-, clearly identify your requirements. Define and document the scope of your requirements. Carry out the search for new suppliers. Create a request for quotation document and finally carry out audits and evaluate potential new partners. In conclusion, if carried out well, sourcing can be a very effective way of-, to reduce your cost in materials. Finally, sustainability is an area that continues to be overlooked, but due to impending regulation will become a significant cost factor in the short and medium term. As with other parts of the sourcing process, a defined approach can be used to ensure you're embedding appropriate levels of sustainability in how you select new suppliers.

The next area to focus on is your labour and overhead costs. How you manage your supply chain can have both direct and indirect impact in this area. Supplier relationship management is something all companies should consider. It's probably the hardest supply chain element to quantify in terms of cost impact, but it is likely the most important to ensure a successful delivery of all your other key success factors. For example, poor and unpredictable delivery of quality performance from the supplier will definitely impact how well your factory, warehouse and customer service support teams can do their jobs. For strategic suppliers, supplier management is about moving to a collaborative approach, treating them as partners rather than transactional vendors. This means when problems occur or delivery and cost challenges need to be met, a strong, trust-based relationship already exists. So, issues can be worked through as both parties are invested in the longer-term goal. For tactical suppliers, it is still important to have good, accurate performance data ensuring-, and regular communication so expectations are understood and problems quickly addressed.

As with all business relationships, there needs to be a clear understanding on both sides of what is required. This can be achieved through the use of scorecards and supplier reviews. A scorecard is a data-based approach which provides clear visibility of what standards are expected and how both sides are performing. Then, through regular reviews, a-, good working relationships can be developed so challenges can be discussed and a shared solution met. When implemented, a supplier relations management approach can contribute to cost reduction and improved material delivery and quality. Scorecards can be catered to what you require. Some businesses use very simple basic scorecards showing what is most important to them. Whereas others prefer to have in-depth analysis and lots of KPIs. You can choose what suits your business and make it work. The main point is to make sure you have some supplier performance visibility in place so efficiency in your business can be improved.

Warehousing and logistics is the main area in supply chain management that has a direct impact to labour and overhead cost. There are varying opinions on how much this function costs the business, but is expected to be somewhere between 5% and 10% of the cost of sales. This is often-, also often seen as a necessary cost of service, but these costs can be minimised while still returning excellent service levels. As with negotiation, this is a very wide subject area, and there are many tools to minimise costs. As such, we have an upcoming webinar and face-to-face workshops are planned to cover these topics. Please contact us if you're interested in attending these or need more help with this subject.

The final area to consider is around how much or little inventory you should hold and the impact this has on your cash flow. So, how much does holding inventory cost? This is not widely understood, and a range of studies have shown it to be somewhere between 15% and 30% of the value of the inventory per annum, depending on the type of business. High levels of inventory can be caused by over-simplistic re-order systems and policies employed in a complex environment.

The benefits optimised-, the benefits of optimising your inventory holding are therefore easy to see and understand. They are reduction of costs, storage costs, borrowing costs, obsolescence, handling, transport, and optimising inventory improves the service and reduces your cash burden. Finally, excess inventory has got a direct, direct relation to excess carbon.

A good first step is to have an inventory strategy that suits your business, and one to consider is a usage variability matrix. It takes historical usage data and categorised materials to provide a re-order policy that will ensure supply while minimising inventory. This approach will include pushing the responsibility for inventory, back on your supply base for products with constant demand. Employing the most suitable inventory strategy will have a positive impact on cash and cost.

Inventory management techniques can be separated into an approach where you either commit to whole stock but optimise it and those where you work to hold none or the minimum stock. For the purpose of this webinar, we will look at re-order point, safety stock and Kanaban or Vendor Management Inventory. The simplest, most effective approach to inventory management is to employ a re-order point for each material you choose to hold in stock. It's based on a-, on a calculation using historical demand, current demand, inventory levels, supplier lead times and a buffer of safety stock. This is suitable where demand or, and, or supply are unpredictable which in reality applies to most businesses right at this time. One important point is that you must review these reorder points regularly and change when necessary, so they remain representative of recent demand. Otherwise you will end up with too much or too little stock. Safety of buffer stock (ph 21.51) is an important part of reorder point approach. This is it based on maximum and average daily usage and supplier lead time. Product life cycles are important to consider when setting safety stock as historical sales will give the wrong picture when heading for end of life. In this case, it would be best to change your inventory monitoring approach for these parts (ph 22.10) and move to (mw 22.11). Product obsolescence is a risk area for any business that holds inventory. Writing off or downgrading stock has to come from the bottom line. This means for every one pound of product written off, if your closed (ph 22.24) margin is 20%, you need to sell five to make up for that loss. It is vital therefore that you have a process to regularly analyse, make visible and deal with ageing stock and obsolete stock. Once the risk elements are visible you can take action to minimise the cost of obsolescence through the design changes, supplier returns or going to auction.

Many businesses work to reducing their inventory of certain materials to zero through vendor management inventory. If you have a lot of leverage over particular suppliers or there are new suppliers trying to give you business, you can reduce your exposure to inventory by introducing systems where you only buy at point (ph 23.03) of use. These are usually in the form of Kanban pull systems that the supplier maintains on your premises. These are very useful for low-cost, high-usage parts with the cost of transacting purchase orders and invoices is higher than the value of the products themselves. If implemented well, they'll free up cash for your businesses and improve overhead efficiency. Finally, you should always consider negotiating, negotiating payment on lead time terms with your supplier. From a very basic financial point of view, with the cost of borrowing (ph 23.37) currently at around 12% (ph 23.39), for every month of lead time, you reduce, or payment time you increase, you will save the equivalent of 1% margin for that part (ph 23.46). This, of course, needs to be approached sensibly as, if you push your suppliers take on too much cash responsibility, it could put them at risk of (mw 23.55). I hand back to Stevie.

Stephen Drummond: Thanks, Jimmy. In the final section, we discuss the process around supply chain cost management. All supply chain cost reduction initiatives start with an idea. It's good practice to have a formal process to record and then filter projects, as shown on this slide. The intent here is to focus on projects that give the best returns in the shortest time with the least effort. This slide is a bit busy, but it shows some of the areas you might want to consider when assessing a complex project. The intent is to compare risk and reward, then decide on launching the project. There are numerous assessment models and you are probably familiar with the SMART one (ph 24.48). Pick a process that works for you in this situation. If a price is agreed with a supplier, it should represent poor (ph 25.00) value for both parties. There may be an additional opportunity to work with the supplier to lower their cost and create additional value that can potentially be shared. Opportunities such as specific (mw 25.14), design for manufacture, access to material pricing from your suppliers, are all examples of this. For effective supply chain cost reduction it's worth considering creating metrics and coordinating efforts, especially if different functions are involved in the process. It's also important to keep your senior management team up to date and draw on their support. Responsibility for supply chain cost reduction should be clear to all individuals involved. It should form part of their roles and responsibilities.

So, final thoughts on supply chain cost reduction. Get people involved. The more people involved, the more activity (mw 26.09) will happen. Get a pipeline operating. Think cash first, easy wins. You can't do everything at once, so you need to prioritise which projects are going to give you the best returns in the shortest possible time. Set aside time to work on this. It can't be something that you always (ph 26.29) do tomorrow, it needs to be, it needs to be worked on at, at, at, you know, in a serious manner. Have targets and metrics. Publicise success, early wins build momentum. When people see these things are succeeding, they will want to be involved. Get senior level support. It's critical to show that it's important to the senior members of the organisation. Don't forget to manage risk. So, what are the next steps? If you feel this is an area where you need help, a good starting point is to follow the supply chain checklist. It covers many of the areas we discussed today and provides a framework for an, an initial conversation with one of our team. So, what are the next steps? If you want to get in touch with us, visit the Invest Northern Ireland website and look for Supply Chain Solutions and we'll get back to you. Thank you, that concludes the presentation part of our webinar today.

So, we've got a few questions in. We'll start off with this one. Where's a good place to start to look for cost reductions? Do you want to have a shot at that one?

Jimmy Moore: I'll start it anyway, Stevie. I think as the, the webinar just stated, what you need to do first is really understand what's driving your costs. As you said, not everybody needs to be qualified or trained as an accountant to do this, but it might be an idea to start with them. They might have an insight and understanding, whoever does the accounts in your business, of where they think the costs are, are too high or what's driving too much costs. I would always suggest that you would try and do a bit of analysis of your own systems, you know, if you've got an ERP or an MRP system or even just an ordinary system that, where you do your purchasing, do a bit of analysis of where your spend is. Which suppliers, what products, how often, how much stock you're holding on, these types of things. So, do a bit of the digging, first of all. I mean, that's something that we can help companies with if they don't feel comfortable doing it themselves and once you've got the analysis and you've got a few opinions from other people from the business who, who, those stakeholders who know what they talk about then it's down to the areas we identified. It's about looking first of all at your drag (ph 28.58) material spend. It's always, kind of, the place you'd be expected to start within the business. Certainly your business owners or the shareholders or the finance people would definitely expect you to be looking at that first, because it's always a good place to start. And that's, that's (mw 29.12) , as we said in the webinar, but you'll find that all the costs that you're paying or the prices that you're paying, are they reasonable? If they're not, then are there other people out there that you can potentially get lower costs for that, (mw 29.26) by sourcing or benchmarking or using the-, there are providers out there that can help you out with, you know, what, what costs should be in the market at this moment in time. Our priority (ph 29.39) is one that I know of, but there are others that you could use as well and there is the matter of looking, once you've got your drag (ph 29.46) costs and you're happy, it will ease your supplier (mw 29.52) too much margin to what they're doing. You're working out what are the costs for them, what's reasonable margin for them. You're having those discussions with them, by having a good relationship with them. Once you've got your drag costs, let that then-, you can give it to your ASR (ph 30.06) inventory and your indirect costs or your overheads and I think as well one thing to consider is that it'll depend on what side the company-, what type of company that you are. SMAs won't necessarily have an awful lot of band power with a lot of their suppliers. There might be one or two where they can go and have a good discussion about it, but it might well be that they've got a factory that is suffering because of supplier performance. So, again, go and do a bit of analysis, go and do a bit of watching to see, well, how much inefficiency is in their factors (mw 30.39) supply chain issues and if you're down to five of those areas, then you can work with your partners within your business and you can get help from ourselves to try and look at the ways that indirect (ph 30.52) costs through better supply chain management. through better supplier performance, can improve your efficiency. And in the (mw 31.00) , most people nowadays hold at least some inventory. As we highlighted earlier on, there's significant cost in it, because of the cost of borrowing to every pound of inventory that you have. So, it's a case of again working on the methodologies we mentioned to try and get your inventory, and not necessarily used, but certainly optimised, it means you've got enough to do what you need to do within your factory or for your customers, but at the same time make sure you're not holding too much. So, that's my view, Stevie.

Stephen Drummond: Yes, I would agree with all of that. Yes, I think it, inventory is usually the easiest place to start, because it's there and you're looking at it, you know, and, and as you said, optimising it is, is the key word. It's not-, it's not reducing it to zero. It's having the right amount of inventory and having the right stuff, so I agree with that. A couple of questions (ph 31.52) by the way, you can still add questions on. It's still open to questions, so there's a couple more up on here so the next one is 'How do you deal with price increases from suppliers'? So, it's a very, very relevant question in the, the current, sort of, environment that we find ourselves in with high end cases. So, companies are coming in with price increases, and we hear this a lot from companies, with price increases on a regular basis.

Really, I think what companies try to do is, is stem those and just try to pass those price increases onto their customers but they're trying to, to push back on suppliers which is, is exactly what they should be doing. So, they're, they're difficult to deal with and, and I think that, that the best way to approach it is, is to say, 'Look, tell me why that price is increasing. You know, what is driving that increase?' We can, sort of, break it down into a granular level, then you can see if it's a justified price increase or not, and if the level of increase is, is, is right for the increased cost the supplier is, is incurring. As well, by having that conversation with your supplier you're able to say, okay well, say for example they're heavily dependent on energy and energy costs have gone up and they want to pass that increase on, that's fair enough. We think that, kind of, we don't really have a lot-, we don't really have a huge amount of push back but, when energy prices start coming down again then that puts you in a position to say to the supplier, 'Well look, the price went up because energy increased. It's gone down, so we need to have a talk about the price again.'

So, from that point of view it's worth having that conversation for at least the future of, of, of your relationship with them. If, if it's a smaller, you know-, if it's not a strategic supplier that, that you're depending on and it's stuff that you can get from more suppliers, it's worth having a look at the market again and going out and seeing is that the market price that they're asking for, or are they-, are they particularly (mw 34.09) with a price increase that isn't justified. With your strategic suppliers hopefully you'll have a contract or, or a surface level agreement in place. If you don't have those in place with your suppliers then that's something for you to think about because you're leaving yourself open to, you know, the price increases or changes in terms and conditions. you know, so, it's worth having a look at who your strategic suppliers are, and do you have a contract in place. That's probably the, the advice I would give on, on random price increases from suppliers.

Stephen Drummond: There's a question there on-, somebody's asked about if you've got a bespoke type business-, product type business, how do you sell or promote strategic procurements to the board members? Maybe if I take that one, Stevie, to go, I think that's, that's one that I've, I've been involved in with myself. The old Cork (mw 35.10) community project (mw 35.12) did make bespoke products and it's about-, it's really getting into understanding what, what, what's going to make the board members tick. You know, what's going to change their mind on the decision that they've already made in the past and that's about getting into, well, what, what do you want to do. You want to increase your sales and you want to increase your profit. That's basically the two things that, that a company wants. There are all of the other strategic things that they want to do to support that but that's, that's the bottom line, right? That's what they want to go after, and if, if you look at what we were talking about from, from a cost saving point of view and the impact of indirect cost to procurement, what we said in the webinar, those are the things that you go after. But, I think from a promoting and the changing of mindset within a board level it's about getting the data. You know, going in, saying, 'Okay, this is how much extra we are spending because we don't have the time or we don't have the resource to go in and, and try and improve on our costs. Or, this is how much we're losing now.' If it's stuff that's going to a site or stuff that's going to a factory, 'This is the inefficiency we have as a result of a poorly managed supply chain, and that's why we need to make sure the supply chain, as part of the overall strategy, as part of the overall co-strategy and the cost reduction strategy, needs to be in there.' And, from that then, you know, they will naturally ask the question, 'Well how do you do that?' Then, it's about saying, 'We can get the systems, we need the processes and most importantly we need the people in place to be able to improve these things.' So, that's all I have to say about that (ph 36.36).

Jimmy Moore: Okay, another one here, what are hidden factory costs? So, to be questioned (ph 36.46), hidden factory costs are generally associate with operations, you know, it's, it's stuff where operations have to do work that isn't planned, or, you know, basically it's, sort of, applies to the seven waste-, you know, the lean seven waste. Where people are having to move about looking for tools or looking for parts or, or doing work that's unnecessary really, or probably spending time that isn't adding value to the product if you want to boil it all down (ph 37.14). And, I think that the availability and quality of parts that, that are supplied to productions often have a big impact on that. You know, if the parts aren't there when they're needed or aren't in the right place then, you know, it directly affects the, the, the effectiveness and, and, and the smooth running of, of a production operation. And, all that basically comes down to just managing the supply base properly, making sure that stuff is coming in on time and, and through, making sure that the right stuff is coming in when it's needed, and making sure it's to the correct quality. So, it's, it's really supply management and being successful at that and taking away that, that noise from operations so that they have the ability to be efficient in what they're doing. And, it works both ways as well, you know. If operations are, are moving schedules about and pushing things in, in and out of schedule then, you know, it doesn't give the supply chain much of a chance to, to be efficient at what they're doing. You know, so the two things have to work in, in parallel and have to support each other you know, so I think that's, that's more the hidden factory costs coming into this. And, again, it's, it's only planned spending, you know, it's stuff that gets spent and because it's not recorded nobody sees it so it's hard to do something about. So, it's a case of bringing all that stuff to the surfaced and letting people see that it's there so they can get the records and start having an effect on it.

Stephen Drummond: Okay, thanks Jimmy, another question here is about somebody who's on saying (ph 39.04) their, their, their customers are not happy but they're struggling to keep them on board because the supplier price increases keep, keep on coming, you know, and more and more of them. And, dropping margins, and any advice-, again, for that one I'd point back to what we talked about with the shared (ph 39.21) costs first of all. There are two sides of it, first of all, understanding if you do your shared cost and you find that the materials cost have gone up because they're commodities and that's just among the cost, transport has gone up. You know, the price of labour, where ever your suppliers are, are operating has gone up, and you find out that they're actually up and at a decent margin or their margin is reducing too, then that's something at the very least you can share with your customers, 'Listen, we've done this analysis, we can show you this, this is how the cost has jumped up. Nobody's, nobody's facing (ph 39.52) the market. Like, you're wondering (ph 39.53) if anybody is getting lower prices than ourselves then the chances are they're doing that, you know, less than cost and that's really dangerous to be dealing with a supplier like that.' And, then on the other side if you find that, well, actually costs have reduced a wee bit and there is room for your suppliers maybe to reduce the margins a bit or they are, you know, taking advantage of, of you not doing your research then you go back in. If they are transient about that type of thing then it's a matter of again sourcing. There will be somebody out there who supplies that type of product who, who will do it for a slightly tighter margin who wants the business that you're currently giving to the current suppliers. And, if then it's a case of if they're small volume, high value parts-, design type parts then it's the type of thing you need to analyse. Is there a redesign needed for a slightly lower cost. Maybe if your supply or your supply chain is the thing that you're going to lose business then you maybe need to look at, well, do we need those particular parts in our products, or are we going to compete better with maybe something else. So, is that how we would answer that Jimmy?

Jimmy Moore: Yeah, sounds good, yes. There was one here, 'Can you tell us the link you mentioned where (mw 41.07) find supply chain?' So, the link I talked about was if you want to get in touch with the Invest Northern Ireland supply chain team. So, the best way to go about that is to go to invest Northern Ireland website and, and, and look for supply chain solutions or periodically what we'll do is we'll put out a call for companies to engage with the team. So, invite companies that do it or if, if you're a client of Invest Northern Ireland, then speak to your client executive or client manager and they can get in touch with us directly as well. And, and we'll come-, we'll have them come and have a chat with you to see how we can support you. I think that's, that's, that's about it as far as the questions go. Got anything to add, Jimmy, just before I close it up?

Stephen Drummond: Again, just to reiterate, you know, if you are struggling it is a very broad subject and this is very diluted first look at it. So, if you've had any issues we, we're very happy to have a chat with you and take it through more detail and maybe, you know, narrow it down into areas where you're after a bit of analysis, help you with the analysis. Narrow it down to the areas where, where maybe we can help you best or we can get the best bang for your buck. But, just thank you very much for attending and hopefully it's been of some help.

Jimmy Moore: Thank you.