Good morning everybody
and welcome to our first webinar. This is part of our webinars series for the productivity and the futures of Work GRP at the University of Warwick. Today's session will explore the links between productivity performance, and inward investment from a range of different perspectives. So it's really great to see so many of you here today and just a few housekeeping rules before we start, just to let you know that today's session will be recorded and we make a copy of the recording and a set of lides available on the global research priority Web pages at the end. We like to keep the sessions with the interactive, so please feel free to type any comments or questions into the chat box. Do that as we run through the session whilst the questions are close to your mind though what we will do is after the presentations we will have a Q&A session at the end but please do share your thoughts as you go along because that helps me as chair to collect those questions but also keeps things a little bit more interactive and some of the lower or easier questions. Actually, the speakers may beable to. Answer Actually in the chat function themselves when we come to the Q&A at the end, you can either do so by putting your hand up or putting a comment into the chat box, and then I can pose the question to your panel.

So just put the session into a little bit of context. For those of you who may have attended sessions before, you might be aware, but the University of Warwick has a range of difference. What they call global research priorities, and these are a way in which the University has created a platform for multiple multi
disciplinary research in areas of international significance, and they're quite broad, ranging in nature. Like I have a nine of them and our global research priority is about well being up. Sorry, the productivity and the future of work. But there is other topics that look at things like culture, sustainable cities and manufacturing. And what these global research priorities are about is really bringing together not just academics from different disciplines, but also to connect us to stake holders. Externally from a range of different backgrounds and from a range of different countries so that we could start to work together to actually address some of humanity's most urgent questions.
So our particular GRP is will be coming up to its first anniversary in March, and it's really all about how we harness the potential of innovation in a changing world to support the productivity and well being of the workforce. I chair the GRP in conjunction with my colleagues Giuliana Batistti from WBS and she represents the social Sciences. Stewart Hampton-Reeves who represents. The Faculty of Arts and myself I said I'm I'm Jan Godsell, and I sit within WMG, representing our Faculty of Science.

And within our GRP we have four different themes. Innovation, the futures of Work, Health and well being which have their own leads and their own streams activity. And what's great about today is that we actually bring together some perspectives that cross are different themes and across different disciplines too. So today we're going to look at three things were going to look out this shift from prosperity. Are we going to look at how supply chain productivity works in practice? And we're going to elate productivity to an organized context?

And our speakers for today, so please feel free to join in the conversation either through the chat function as I mentioned previously, or slightly more publicly. You can use Twitter and you can see are different handles here, so Nigel will be talking more about from productivity to prosperity. Myself, I. And my colleague, actually Francis, will be looking at supply chain productivity, and Clive Reynolds will be looking at the organizational dimension.

But please do feel free to either join the conversation just within our network through the chat function, or more publicly through the use of Twitter.

And so, without further ado, I'm going to hand over at Professor Nigel Driffield. He's professor within WBS Our Business School. He'll be flooring with you some of the aspects of inward FDI and productivity with some evidence from the West Midlands over to Nigel.

'From productivity to prosperity'
Professor Nigel Driffield

OK, thank you very much. With apologies for any technical issues I'm having to use my iPad because my laptop is crashed, but hopefully everybody can hear what I'm saying so.

The purpose of this project, really to some sort of put it in context, is we have a fairly large or at least large for social Sciences, kind of 1,000,000 pound projects, which really is is asking the question why is productivity of the West Midlands not better than it is, and I can see that there are at least three of my sort of collaborators on this this project, Annan, Chloe from Birmingham and Katusha, who works with me. that direction, they may be able to to offer a wider comment, but really so that the that the exam question if you like is is why is productivity for the West Midlands and for the for theavoidance of doubt, that the West Midlands that I'm talking about at the moment in the loosest sense is the the area that is covered by the West Midlands Combined Authority, which is largely the sort of three Metropolitan regions of Coventry, Birmingham. Wolverhampton in the surrounding area rather than the old government office of the West Midlands which goes as far as Stokan, Shropshire and whatever.

So anyway the fundamental question then is is if you look at the underlying fundamentals of our region they're all. Essentially quite good. Firm startups are above average. Inward investment is above average, connectivity is above average. Transport links are better than most and they are the sorts of things that go together, usually to explain regional productivity. And yet our regional productivity is relatively low, so the purpose of exploring that is to ask why now leaving everything else constant? Our sort of working hypothesis, then is if all of the fundamentals are basically alright. If all the the sum of the parts, as it were, all the parts are OK. But the sum of the parts isn't. Then there's clearly something missing and usually the sorts of things that are missing are we are not combining our resources in particular ways or and this is not something I'm going to talk about here and now. We don't have the skills either in terms of work skills of workers or managed management skills to combine those things effectively now so that the purpose of this little element of the project and what I'm going to be talking about today. Is if we attract current if in, if in quotes enough inward investment to to put us at least as on a par with the UK average, then why don't we do better from it?

So our our starting point I guess is is this that if you if you look up new if anyone has an interest in this. And you kind of Google. Sort of. You know, people pontificating about productivity. They will typically start with a sort of standard kind of Bell curve and say here's the distribution of productivity affirms what we need to do is we need to move it to the right an an hour if you like. Our starting point, is that actually that is, that is an incorrect starting point that there are basically kind of three groups of firms. You've got the sort of leading technology firms in Group A. Then you've got the sort of middle range of firms, and then you've got a relatively long tail of poorly performing firms. And One of the one of the explanations, then of why some regions overall have better or worse productivity than others is they have different distributions or different amounts of those AB&C type firms, and so one suggestion is in the West Midlands. We don't really have enough Tye A firms and we have too many types, see first, that's a conversation that we can have on another occasion, but that's kind of important for the context that Follows.

OK, so the exam question then is how much does inward investment by foreign firms contribute to West Midlands productivity and is this different from the UK overall and why?

So just to put that in context, as you as you can kind of see in terms of how much we attract, we do we do well? You know we are well above the UK average and the only location that is doing basically more than us is. Quite sure who that the southeast of England. But basically you know we as a region we do well in terms of So the question is, are we maximizing the benefits of that investment?

I'm not going to go through the data in a massive amount of time 'cause they don't have. I don't have a huge amount of time, but basically what we do in the analysis that follows is we use a particular data set which is really up to date and allows us to look at. Various aspects of foreign firms who come in, including for a subset of them why they've chosen to move into the UK. We can use different definitions of ownership whether we use 50% or 10% or 20% or whatever else to see if that makes a difference. But I'm not going to go into that in any detail now because they don't have time.

OK, so looking just looking at the distribution of kind of foreign assets in the region across different. Sectors it, there's no real kind of surprises here. We do well in terms of the financial sector. We've got an awful lot of wholesale. We've got sort of logistics hubs and that sort of thing, and we do well in terms of manufacturing. And we've also got quite a lot of foreign investment in things like accommodation, hotels, etc. That is likely to increase through both the Commonwealth Games and the City of Culture.

But that contributes perhaps less to productivity than the ones with the boxes near the top. OK, so one of the things that Katusha who is on this call likes doing is she like spotting these things called kernel density functions which basically is asking the question as to whether what, what the nature of the distribution is of productivity across the West Midlands and you can kind of see that. It's a relatively. It's a relatively sort of standard shape, so we got the sort of Bell curve. You could also see we've got slightly. I can't sort of user pointer, but we've got a sort of slightly more firms in the sort of tail detail is sort of slightly fat, but but it's it's not sort of drastically bad, but we do have sort of firms moving right the way towards sort of really low end of productivity.

OK, what we've been done. This causes. There are basically only two explanations for why a region might have higher or lower productivity. Either it has a large proportion of low productivity sectors, or Alternatively the activities that it does have lower productivity than if you like the UK average or whatever. Your reference point is. So that's what really this this this figure is doing. Is we're comparing but sector by Sector West Midlands productivity with the UK average and you can kind of see where the weather if you like where the problems are. Where we've got sort of a big red basically means we are a long way before we are behind UK average blue means we're above it.

And what is what is interesting is there is some correlation? It's not massively high, but there is some correlation between the sectors that we attract inward investment in and. The sectors where we have higher productivity, which is kind of what you what you had hoped to see. If what you're interested in is using inward investment to boost productivity.

OK, I'm not going to go through the econometrics in any detail 'cause there isn't time now, but basically what we do is we allow for this idea of a sort of mixed in mixed effect model, which largely means you can allow parameters to vary year by year. You can allow parameters to vary between sectors, so then explore what the relationship is between a sectors productivity in terms of the set of domestic firms that are here and the inward investment that we attract. Why would we be interested in that? Well, that is largely. Capturing this idea of are we capturing all of the the potential benefits of interaction between the inward investment sector, the foreign sector and the domestic firms that are already here, whether that's in terms of supply change, whether it's in terms of sort of spillovers of knowledge, whatever it may be. Are we capturing these things effectively?

OK, now the interesting bit here and this is. This is where the sort of more complex analysis comes in. We did a similar exercise for for Northern Ireland on this a while ago and one of the things that we were able to demonstrate here is that in terms of asking the question who benefits from us attracting inward investment in who then perhaps collaborates with that foreign investment. Well, what we get is we get. We've got three big positives we've got. Our larger firms gain more our firms with higher with already higher levels of productivity, gain more and using our sort of standard definition, our Type A firms gain more, while equally what we see at the bottom is we see such a kind of Type C firms perhaps being squeezed out or or merely acting as sort of basic suppliers and having there having their their profit margin push down through having to sort of. Become more efficient andthat sell at lower prices, whatever it is so. So what we've got here is we've got a sort of really interesting sort of first level story, which is. Our best firms gain from attracting foreign investment, so therefore what I think we need to do is we need to workout ways of attaching. Other sets of firms to the foreign investors through supply chains through the sorts of things that the next 2 speakers are going to talk about.

Perhaps in terms of generating wider benefits through the economy.

OK, So what this really tells us is absorptive capacity matters. Now we already kind of know this, but what we've got is we've got really strong evidence at the local level that our best firms are appear to be collaborating with sharing knowledge with foreign investors who come in this. It's entirely possible that some of the foreign investors have come here specifically because we are strong in certain things, and it's that then absorptive capacity that is driving. Who gains from inward investment? One interpretation of that then.

Excuse me, while interpretation of that is what we need to do is we need to work on improving the absorptive capacity in other sectors. You can also see a breakdown there across different sectors in terms of who's gaining Pharmaceuticals, chemicals, food and food and drink sectors where we are already strong rim three reinforcing them.

So to finish off, we gain from him with investment where we have good already. This is no surprise, but it does tell us about the nature of the FDI that we attract and in turn, I notice that Dan's on the call. The sorts of FDI we might want to attract in the future. Acccepting of course, that there may well be other reasons for attracting FDI. There may well be other reasons for why we want to attract. If you like low productivity FDI, which is it generates employment. OK, and I think at that point, given the time that we've got actual hand back to Jan and let her move onto her part of the presentation.

Current State of Supply Chain Productivity: A Cross Sector Study
Prof. Jan Godsell
Dr. Frances Zhang
WMG Supply Chain Research Group

Thank you very much Nigel. That was really insightful and actually what we're now going to do is actually built on Nigel's work so. Some of the great things that we see happening within the University is collaboration between different departments and it's been great for WMG to actually work with WBS on the productivity to Prosperity project, and we've been particularly interested at looking at productivity, not just at a firm level, but at a supply chain level. So it's my great pleasure to actually handover to my colleague Francis, who will give you an overview of some of the results of some work that we've been doing looking at supply chain productivity. So over to Frances. Thank you John for the introduction.

Good morning everyone. Thanks for joining the Webinar and are today in this presentation. I will share with you the recent findings from our supply chain productivity project.

So a quick overview of what is covered in the presentation. First, I will talk about the concept of supply chain productivity and then we will move on to the key findings of the study and in the end I will present three key findings for you to take away.

So what is supply chain productivity?

These slides actually compares
and contrasts two different types of supply chain, unproductive and productive supply chain. So first, if we look at the similarities in both supply chains and this will help us to define the concept of supply chain. So if you look at the figures, you can see both supply chains actually look at look like a network that connects the focal firms to its suppliers and customers and within each single entity there are four areas including plan, source, make, deliver which needs to be managed to support the supply chain operations. Then below the chain we can also see other two uncommon features. First we can see buffers which are common and referred two inventories and production capacities when the demand signal is stable in the supply chains buffers attend to be minimized. However, when the demand patterns become more unstable than the size of the buffers needs to be increased to support the demand. Apart from the buffers, there are also three different types of supply chain flows. What we called material flow cash flow, an information flow. Now we've discovered the similarities, and in these two and different type of supply chains. The difference between the two in this graph. So, if we look at the unproductive supply chain as you can see, the entire chain is quite fragmented as firms are operating in functional silos. These basically indicates a poor communications and connections between the companies, which means the demand signal received by everybody probably is not accurate. That's why you can see a mix of large and small buffers in the chain. If buffers are too big, it will constrain the cash flow in business that. Because they need to increase the inventory stocks. If the buffers are too small, firms may fail to deliver as they may not have enough stocks or capacity. And also, as you can see, the three and supply chain flows below the buffers are quite lumpy and slow, which potentially increase the cost and time for delivering the values to the end customers. productive supply chain, you can see firms are working in a more integrated way, which allows them to communicate better and also configure their resources to smooth the supply chain flows and also manage buffers more effectively. This enables the entire supply chain to be a better respond to the base and search demand and reduce variations in the supply chain. So, in summary I'm having a more productive supply chain means firms can deliver customer values. At the lowest possible cost as a result of maximizing flows and rightsizing buffers.

So to understand the current state of supply chain productivity in the UK, we conducted a large scale survey.

Now we can look at the findings. So in total we got 432 responses from companies across four different sectors in the UK, including manufacturing, retail, hospitality, professional services. As you can see, 67% of our responses were actually from manufacturing. There are two reasons for this, as Nigel mentioned in his presentation manufacturing sector actually is a is a very strong contributor to the national and regional, an productivity and more importantly the modern supply chain management principles were involved from the from the manufacturing context. And in WMG, we actually have been working with the UK manufacturers to help them. Understand and tackle supply chain challenges so we have a quite a stronger interest to understand the current state of supply chain productivity in manufacturing and also other three sectors.

So in terms of the respondent portfolio and most of our respondents were generally on senior management from middle and large companies in the UK, and more than 70% of them are working operations management area, so our results can truly reflect what was going on in the industry. Before we move on to the supply chain results is quite interesting to see the current level of sector productivity.

Thanks to Nigel's team for supplying the economic data. So these two figures shows the national and regional growth value added data for the four sectors over the past 10 years and figure once again indicates that manufacturing and made a strong contribution to the national productivity and also

its sector productivity has been
increasing faster than others

over the past decade,
particularly in the West Midland region. Interestingly, on a similar trend was found in the UK retail. This may be due to the training effect as manufacturers are operating as a suppliers to retailers in the same supply chain and at the bottom you can see the other two sectors have a more stable pattern.

So the current state of supply chain productivity. First, I want to introduce you about our supply chain productivity framework, which shows the key constructs we used in the in the study. So our message is quite straightforward to improve the overall supply chain productivity, the firms needs to form a more integrated supply chain with its suppliers and customers. This can be achieved through the adoption of proper supply chain planning practices and industrial digital technologies at the bottom . I will explain these concepts and connections between them as we move on to the findings.

So our first hypothesis is that a high level of supply chain integration leads to better supply chain productivity. The middle of the figure shows a typical supply chain where the three entities are connected under each of them there are three core business processes. As you can see on the our supply chain management, customer relationship management and new product development. At the bottom the internal integration was measured to understand to what extent does this occur on business processes, work jointly supplier and customer integration and assess the level of coordination between supplier and focal firm customer and focal firm respectively. On the top we also apply the same approach to the supply chain productivity, in which the productivity of each entity was measured by cost, quality, time, buffers and supply chain flows. That's how we measure supply chain productivity in the in the supply chain.

So looking at the survey data's on supply chain productivity and integration, it is quite interesting that professional services shows a different patterns to other three sectors.

OK, I think the color changed a little bit, so the professional services actually is showing as the yellow line. Here and the other three similar lines represent represents manufacturing, retail and hospitality. So, um, so the key message here is that manufacturing, retail hospitality generally score quite high in supply chain integration, while professional services scored a relatively lower and overall supply chain productivity level was found to be quite low across all sectors, but professional services hires has a slightly higher score in internal integration, as you can see in the in the figure.

So to to see the actual difference, we want to look at professional services and other three sectors separately to see if we can explain the pattern. So professional services has higher supply chain productivity, but lower supply chain integration. Why is that? This is because the nature of business allows firms to work independently in the supply chain. If you think about you know firms like accounting firms, legal firms or insurance firms, there are more operating as a third party service providers to different clients in different sectors. And also this has been confirmed by our findings on high level. Adoption of customer integrations because professional services firms are tend to have a strong motivation to work with their clients an which is quite sensible because they normally provide solutions to their clients in different business context. And also we believe that organizational structure of professional services firms are quite different from product centric firms such as manufacturing and retail, so they may not have. They may not need high internal integration to achieve better productivity.

OK, so now if we
look at these other three

sectors to findings, actually
suggest that firms in

manufacturing and retail
hospitality have recognized the

importance of supply chain
integration. As the data

indicates, the level of adoption
is is quite high. However, the

level of supply chain, overall
supply chain productivity is

relatively lower and this may because. Of the effectiveness and efficiency, wishing each single entity in the change, the focal firm, the supplier and customer need further improvement, which can be done through the implementation of proper supply chain practices.

So in our study, we've identified 2 an supply chain practices that can help the company to improve their supply chain productivity. If the firms have strong capabilities to improve their, uh, implement supply chain planning and also industrial digital technologies, they are more likely to achieve better supply chain productivity. To improve the planning and practices, firms should be able to 1st identify core customer segments and understand product requirements. This is what we call the supply chain segmentation and they should be able to also forecast the future demand as accurate as possible and more importantly, they should be able to define, implement and monitor planning process is this is what we call the demand management adherence.
On the other hand, we have identified three Ancol capabilities for adopting industrial digital technology IDT. So the first one is learning ability to its ability to acquire, transform an exploit knowledge. I'm integrating is the ability to combine individual knowledge into the business. And the last one is about coordinating, so it's firm’s ability to configure tasks, resources and also activities within the business.

Let's look at the findings on the supply chain practices. So the data actually shows that four sectors have a common strength and weakness and similar. Here the professional services did a slightly better and job than others. As you can see it's it's being represented by the Yellow lines author in author area. So overall, firms
all these firms in different sectors score quite higher in demand forecasting, but lower in demand and demand management adherence and demand segmentation. And in terms of IDT capabilities, we can see the learning capability is the
weakest across all sectors.

So what can we do to improve to help companies to improve their supply chain and practices? We have some recommendations. So if we just look at the planning bar chart, we suggest that firms should be able to prioritize their supply chain segmentation and their planning processes as they weak in the current state. The key message for this one, and before we look at IDT and capability results, we want to
give you an overview of what kind of technologies have been
used in different sectors.

So as you can see, a wide range of operational technologies have been used in a different business. If you look at the top three technologies in each sector, so knowledge
based systems are quite popular, which explains why firms generally and score quite high in the IDT capabilities because two out of three capabilities where we identified were relevant to the knowledge management within the business. And then we also look at the adoption of connectivity technologies in the business. So as as you can see the adoption of connectivity technologies have been highly used across all sectors which support our findings on high level adoption of supply chain integration. As
the firms have better connectivity and communication within the firms and also between the focal firms and their suppliers and customers.

So, as I mentioned before, these firms generally did, uh, did pretty well in the IDT adoption, but they need to improve the learning ability to acquire, transform an exploit knowledge because the score for for learning capability is relatively lower than integrating and coordinating.

OK um. So I think in this presentation I've covered quite a lot and are now I want to provide you three key insights to take away. So first of all, as the data suggests that the firms have realized that supply chain integration actually is a key to compete in today's business. And according to our results, the firms in manufacturing, retail and hospitality, and I think they did a very good job in in reality and to improve the overall supply chain productivity. Each entity in the supply chain should improve their internal efficiency and effectiveness, which links to our last point. If the company can develop strong capability of supply chain planning an also an adoption of digital technology, they will be able to build a more unproductive supply chain.

I think this is the end of my presentation. Thank you for listening. I will hand it back to Jan to introduce our next speaker. Thank you.

Thank you very much, Frances. And they are moving on to our third perspective, which is another original piece of research, and this was some research that was completed by Clive Reynolds, Ann Cullen Siddle on behalf of the Productivity Insights Network.

Interestingly, Clive shares a common background with myself in that he's he's a former member of WMG, but more recently and worked in his own organization, Strategic Capabilities, Limited, and we're very grateful to both Clive and Colin for sharing.
Taking this opportunity to share the findings of their research relates productivity to the organizational context.

So over to you, Clive.

Relating Productivity to Organisational Context
A Productivity Insights Network project
Clive Reynolds

Thank you Jan

I'm going to start by just running through a few thoughts about productivity. Five year ago, with Colin, we carried out a large R&D project which trial principles and practices of high performance working HPW in the premium automotive supply chain. It was a big project. There were plenty of worthwhile outcomes and some valuable learning which we were able to take forward. But there were also disappointments, and this might ring bells with a lot of you. They seem to be pivotal aspects of proven best practice in short supply. Things like total quality management. Lessons learned. A little progress on customer intimacy. And above all of conspicuous lack of clarity and purpose regarding productivity, despite the massive emphasis placed on it over the last few years. So what does it actually mean to employees to teams and to the business? Was it just an internal issue with no heat to the customers and how they should value them as suppliers? How is it related to value creation? And these concerns have also been expressed in a number of recent publications, including papers by Nigel and Jan Jump McBride from Strathclyde and Costa, Carol Stanfield in her work with Enterprise Search Center. We do see a lot of bling quit linkages between these issues and the need to resolve them. To nurture strong and sustained growth. So we decided to start in a small way. To see if we could help individual firms to open their eyes to the true features of their own unique, productive environment. Monitor potential was to spread high performance throughout the business. And this became the Applied research project. We ran through the Productivity Insights Network earlier this year. We had revelatory results, which I'm going to describe to you in a moment. We do have a proposition that this applied research approach should be scaled up as a compliment to the many existing productivity studies and models such as the ones we've been seeing earlier today. Perhaps we could even create a virtual triangle between academics, policymakers, and practitioners. Real hope of reversing the persistent decline you case experience perhaps? We look forward to your questions and challenges and of course would welcome any ongoing debate.

Just a little bit about the high performance working project. It depends of course on working practices and we split these into three elements in and get those that engage those that enabled and those that are energized and the outcome we want to see is discretionary contribution as well as the working practices. We also had a good look at the organizational enablers such as innovation, organizational, personal learning. Beliefs and values. And customer relationships. Who approached it through self assessment audit and internal appraisal to provide projects which gave some positive outcomes? As I've said before, productivity did not appear to be a concern.

Just a very quick overview of the actual project before we can. Also what it meant to us. First of all product. If he does become a concern. If you approach it properly.
On the left, the complicated Venn diagram. Talks about is represents a questionnaire that we put together. To address these questions, what language of productivity does company use? What's it really mean by value creation? Customer intimacy? What systems and ITP situs with measurements? And what is the future situation today message? We had six case studies, very wide ranging covering engineering, manufacture and logistics and service. First of all, of course we engaged with the companies. And then we sent this questionnaire within about 15 or 16 questions. In line with that diagram. To the individuals that the company is nominated to take part in our workshops. These responses were individual. And they went. They didn't confirm, so we received responses and we put consolidated them into a single. Excel spreadsheet for each of the companies and then we had a consensus workshop with each company with four or five participants. Taking part And we drove through the questions again and this time they had to come up with a consensus. Which we recorded as they spoke and they validated. Most when we finished all of that, we asked him to give their interviewer reflections and commitment to the future, and then we consolidated those results in sentence. The companies for further review and a follow up process. So that was a over what we did. It's all about the project which we've come this week, March and June this year.

So to the results. Not going to read through that there's. There's some feedback. We went back to the company's after three months in between 3 months and six months. We got these four. Inputs from from 4 different companies. If you'd like to just have a quick read through those. And let me get to the bottom. You can see that for every case study Co.We can now say what products did productivity and value creation really means to them in their own terms, and each company now has a self generated strategy. And the continuing action plan. So we did find that with a very short. Process we were able to move companies on Are significantly. So what to be making a difference? Well, we took the Thinking that we used in high performance, working and carry that forward. So we started with self assessment. And we got them to use their own. Interpretation to get the results they wanted. Well, they needed. We only used their own context in their own language. So all of the outcomes were entirely theirs. They created that spaced out there. They created their own magic answers. In other words, we didn't say to them this is what you need to do. This is how you need to improve your productivity. They generated their own and they again entirely in their own terms. Impact every single companies, answers and context were different and quite different in each other. The questionnaire that we put together and the structure and flow of it seems to work very well. Because of the because we were running it in March, we had to go to. Video conference for the for the actual workshops, which we thought was not going to work very well, but in fact it worked amazingly well and enable us to ensure that every single person had a chance to. Not only reflect on their own work, as they say advocated what they thought, but have their voice heard by everybody else. We also sent a questionnaire to a much wider community and So we got a different reference points for what people thought and and that helped us develop and evolve the process as we took it through. They said unexpected benefits of lock down. The zoom approach really seemed to work, and unbelievably. Every every workshop was completed in about an hour and a half with four or five participants on each one. To help with the process. We create something. We called the value creation framework. And this really help people. This really seemed to move things forward.

I just got it. The stage one that we we put up for them after they've done their first questionnaire responses but before they started, debate them together. Was this? And in the top, what we asked him to do. Was to think about their value creating attributes. So before they talked about productivity that we took them to the position of value creation. And they'd already in their answers given us some ideas on brand value USP. And value creation. And so we we show them some of these Nelson to position them to either. It was something that customers really valued or they expect it to happen. But otherwise they wouldn't do business with you, and this was really an extension of the Cano thinking. This works very well and it drove the rest of the conversation very thoroughly when we got the very end.

Consolidation, we ask them in their review to actually extend it and I'll show you a picture of how it was extended. You don't have to read this in any detail, but this is an actual example where these in black of the attributes. In Red we asked him to put KP eyes. These are the ones that they thought was strengths. These the ones they thought were company weaknesses and they would need to have projects to move to the right.

So our outcomes, fascinating outcomes. The concerns became a strength. What rich red in the literature? Was quite right. The lack of understanding awareness of value added. But the very fact we started from position of saying, well, what does it mean to you and get them to explain it themselves. It actually became a strong strength. Very high productivity. An hour and a half or so over the workshop, each participant only put in about less than half a day for the whole process, so it was very, very productive needed to run. The engagement by middle managers was amazing. Two companies. Just use senior managers. Two companies had a mixture and two companies just have middle managers after one. Of the of the latter, we wrote down the contribution of middle managers was raw, realistic, and highly charged and committed to the next phase. So that engagement is amazing. You probably started on that value creation framework. Would you put the words customer intimacy which we saw his way of understanding the company? The company's own views? They didn't seem to have much idea to start with, but by the end most of the companies began to understand that customer intimacy was more than important. It was vital on the downside. Almost every company had no real coherence about their digital strategies, which ties in a lot with what the presentation you saw before mine. It was very poor. Pick, pick some people said it's going to be the same. Some people said it is going to be completely different and they had no idea really how they were going to take it forward. This was a big surprise.

So that's just a whistle. Stop tour of the whole process. Where we would like to see it moving forward. More case studies and. A feed into the policy making. How could the measures we've got actually be related to national indicators? We thought we might be able to do it, but we haven't got the time in the in the project with the lock down to actually approach this, but we do. We did get to KPI's that individual companies should choose. We see it as being a prelude to further high performance working programs. That company can start by understanding their productivity and value creation. Then they can actually under they can give themselves a model for their own high performance working. Would like to see it as being a contributor to the future regional local industrial strategies, because every single one asks for higher productivity and this will be a tremendous way of helping individual companies contribute to that. Funny, as I've said, create a delivery community of practitioners to support the academic findings and the policy makers. Bending up by saying wake up call is it. Who is it for? We found it to be surprisingly effective. Who else needs to take note and the bottom of that slide? You'll see the. Being referenced URL for the final report that Sheffield published, and an evidence report we put with it with all of the verbatim outcomes. Thank you very much.

Back to you, Jan

Thank you very, very much Clive. It's at this point that we can move on. Any questions? Should there be any? I see that Nigel's been engaged in quieter. Detailed conversation around initially absorptive capacity and Then some discussion. I can see that bans had some questions around geographic proximity in supporting supply chain integration and planning.

So I think I'm going to start by just asking Nigel. Do you want to expand on some of the comments that you've made in response to Dan's question around, Is physical geographic proximity in sports being better supply chain integration apply running an important consideration. And then once I don't know whether you want to reflect on that too. And I think my my point essentially was that in. Probably in social Sciences, but certainly in Economics and Business more generally, distance always matters way more than it ought to. You know you would have you I. I've been working in this area now for distance was supposed to stop mattering when we got the telephone. Distance was supposed to stop mattering when we got the fax. Machine. Distance was supposed to stop being important. We got email or now we can. Do you know sharing live or whatever and I I regularly have people you know who say oh but you know this technology or doesn't matter or whatever and the fact is that distance always does. So that was that was kind of one point In terms of in, in terms of what I was talking about, I've course distances relatively contained in terms of this piece of analysis was looking at the distinction was looking at the the local economy. So distance is kind of this is smaller in that sense, but there's any number as any any amount of work which talks about you know the importance of distance for knowledge transfer and so on and so on and. Contrasting national effects with with regional effects, I think it's I think I think that makes a good point that when, when and if we're all allowed back into work so that we can access the data to look at supply chain productivity in the way that we were planning to do for the benefit of everybody else on the call, we actually need proving distance matters.

We actually need to be physically in the building to use a particular data set. We can't use it remotely is to look at. Weather things like distance matters for collaboration in supply chains. In the same way as it matters for work on, forexample, innovation spillovers or whatever the bottom line is we we have an apriori assumption that it probably doesn't matter but at the moment, you know we don't know for definite, so that probably answers dance question. It's something we'd like to have done, maybe nine months ago, but we need to be back in the building to do it.

Yeah, maybe if I can just build on that before I see whether Francis has got any points. We were looking at productivity within the UK and the UK is actually a relatively small country. Supply chains are global in their design and we see the flow and they and they typically tend to have a structure where something like an an active ingredient or some of the raw materials tend to have a global manufacturing footprint. So we tend to still see, for instance active ingredient for Pharmaceuticals or for agrochemicals. Being managed as a global resource. Whereas quite often our manufacturing is done on a regional basis, so we tend to read and it produced food. So if you look at or, you regionally produced cars and we tend to get more towards the finish. Good states we might do some really late minute customization actually within market and within a particular country. It therefore makes it quite interesting when you're talking about place. Because what does that place mean? If you add the final assembly of a a call, then quite often there may be a sequencing center, but that's a logistic sequencing center that helps with the just in time delivery of those parts to the line side, but it doesn't necessarily mean that all of the components have been produced in very, very close proximity to that factory That does final assembly.

So, um. I think when it comes to supply chains and the idea of place, it's a slightly different and I think you're quite right, Nigel in there. Some of the more quantitative analysis we may be able to do. I don't think it's quite so. It's not quite so straightforward, particularly when you look at a country like the UK. That's relatively small, and I suppose within supply chains were actually arguing is that it's not just that it's the flow of information that enables the flow of material.

And if you pull the integrated and don't have good understanding of the flow of information you're bad demand signals then regardless of where you're located, it's not necessarily going to lead to a more productive supply chain.

Francis, I don't know whether you've got any views. Yeah, I think Jan already touched upon the points. I want to raise. I just want to emphasize here so the core of our supply chain research, we want to focus on end to end supply chain. You know, from the raw materials that coming out of ground than to do the other customers so we may not have the entire end to end supply chains in the UK.

That's why we are. We are. We are looking at a more broader overviews rather than constrained by the, you know, geographical considerations at the moment. But that's that's the time we can go in the future. Yeah, and I think it Is a really interesting debate when it comes to supply chain design around that proximity and the extent to which better supply chain visibility or dataflow can be a substitute for sort of location or physical location Clive. I don't know whether you've got any views on that.

Um, nothing to write about. You said I don't think Jan. We didn't find we didn't find as it happens, and anything particular about place. In the work that we were doing, but I think that was because we were concentrating very much on. How the individual employees, whether they senior managers or middle managers? Viewed productivity and how they could take that forward. As as a topic in its own right.

Yeah, I. I think the place question and it's interesting 'cause we weren't specifically asking about place for some of the reasons that Frances just mentioned, but I think as we go forward, particularly through the productivity prosperity project, it is an element that we we we can build in more now

I'm afraid. We are now out of time. It's midday. I would just like to take this opportunity to thank speakers to thank Nigel Francis and Clive and thank you. As participants fpr joining us. . As I said, this is he first of our webinars in our series for this year and we have two further webinars hope that you're able to attend. So thanks all very much. Have a lovely day.

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