All-Party Parliamentary Group for assistivetechnology

Findings and Proceedings: Assistive Technology and the Industrial Strategy: Summary and Findings

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Chair Lord Chris Holmes

Panel Sarah Newton MP (Conservative, Minister for Disabled People)
Hazel Harper (Innovate UK)
Bill Esterson MP (Labour, Shadow Minister for Small Business and for International Trade)
Prof. Nigel Harris (Designability at the University of Bath)
David Frank (Microsoft)
Dr. Catherine Holloway (Global Disability Innovation Hub)
Alex Burghart MP (Conservative)

Keynote Sarah Newton MP, Minister for Disabled People, Work and Health

Background

Government's Industrial Strategy, published late last year, is an ambitious plan to support UK industry to "boost the economy, build on the country's strengths and embrace the opportunities of technological change". As part of the Strategy, Government has set out Grand Challenges including - Artificial Intelligence, Mobility, and the Ageing Society - and will support industry to meet these challenges with research grants, regulatory policy and efforts to build consumer trust in new technologies.

This symposium, held by the All-Party Parliamentary Group for Assistive Technology, looks at how the Industrial Strategy can support innovation in assistive technology (AT) and how the AT sector can further contribute to our economy and society. The UK AT sector is recognised as world leading, both in hardware manufacturing and software development, and is at the forefront of many of the innovations that will help meet the Government's Grand Challenges. This event will brings together experts, industry leaders and Parliamentarians for a discussion linking technology, disability and the Industrial Strategy.

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All-Party Parliamentary Group for assistivetechnology

Background on Panel

Lord Chris Holmes MBE

- Conservative Peer
- Co-chair of the APPG for Assistive Technology
- Chair of the Global Disability Innovation Hub

Sarah Newton MP

- Minister of State for Disabled People, Work and Health
- Conservative Member for Truro and Falmouth

Hazel Harper (Innovate UK)

- Innovate UK, Senior Innovation Lead – Healthy Ageing and Digital Technologies

Bill Esterson MP

- Shadow Minister for International Trade
- Shadow Minister for Small Business
- Labour Member for Sefton Central
- Supporter of the APPGAT

Prof. Nigel Harris

- Director of Designability at the University of Bath

David Frank

- Microsoft, UK Public Affairs Manager

Dr. Catherine Holloway

- Academic director of the Global Disability Innovation Hub
- Senior Lecturer at University College London
- Member of the UCL Commission for Mission Oriented Innovation and Industrial Strategy

Alex Burghart MP

- Conservative Member for Brentwood and Ongar
- Member of the Work and Pensions Select Committee
- Supporter of the APPGAT

Findings

Putting assistive technology at the heart of the Industrial Strategy Grand Challenges

> "We have four grand challenges of the Industrial Strategy [Aging Society, Sustainable Growth, Artificial Intelligence, Mobility], but why not put Assistive Technology either running through in the middle of all them —or alongside, as an additional challenge?" - Alex Burghart MP

> We need to "link together the Industrial Strategy with making the most of technology, and Assistive Technology" - Bill Esterson MP

> "I'd also like to look at the people theme, because the people thing runs right across every segment of the Industrial Strategy. I think that's where certainly I am working with colleagues in BEIS to really make sure we're making the most of that theme. I think Assistive Technology shouldn't be a separate theme, it should be embedded in everything we do because it has the opportunity to transform so many people's lives. 1 in 6 people in the workforce has a health condition or disability. It's not a small group of people, it's a very large group of people, so their need should be mainstreamed across what we do." - Sarah Newton MP, Minister for Disabled People

- The Ageing Society Grand Challenge is relevant to Assistive Technology; meeting the challenge will involve technology such as SmartHomes, wearable devices and tech-enabled health and care services.
- Many cutting edge assistive technologies use AI so the AI Grand Challenge should include assistive technology.
- , AI and data analysis can also be used measure the impact of assistive technology, and therefore support the market for assistive technology.

Assistive Technology and Design, Research and Innovation

"We need to develop products and services that are desirable long before they are needed. We need to move from statutory-facing products and services into consumer-facing products and services so that they are accessible to everybody." - Hazel Harper

"we start with the human centred to design process working really closely with those users right throughout their product development process, through concept design, development, validation test." - Prof. Nigel Harris

"I can't tell you how many people at UCL and across the world want to do tech for good. The next generation of engineers: that's what they want to be doing. And all we've got to do is provide the infrastructure for brilliant ideas to bubble up." - Dr. Catherine Holloway

"Assistive Technology will always drive forward innovation and then it will get transferred into the mainstream, and getting that loop right within the country is critical" - Dr Catherine Holloway

- It's important that assistive technology products be the sort of well-designed products that people *want* to use.
- Assistive technology can be developed in a user-centred way, involving end-users right the way from identifying the design need and designing the product itself.
- Design and development often works best as a collaboration between academic and commercial organisations.
- Design and development can also involve academic collaboration. We should explore the possibility of forming a network of UK assistive technology hubs (perhaps in collaboration with DWP's OpenLab project)
- A key challenge is making sure the products we develop are taken to market; funding should not drop of at this crucial stage.
- We need to support the next generation of designers and engineers who aspire to work on assistive technology; this means helping develop the skills they need and providing the business environment that will allow them to stay in the UK.
- We should consider how we can incubate assistive technology start-ups

- Challenges, around data security and IP can block design collaboration; we should help institutions navigate these challenges.
- We need to invest in interoperability standards to allow different assistive technology products to 'talk' to one another.
- UK has a heritage in technology and design that gives us a recognised strength in this area..
- We need to assess the UK's investment in assistive technology innovation in the light of the level of investment other countries are putting into assistive technology are doing.

Developing the Market for Assistive Technology

Assistive Technology "is one of our export success stories. And in a market where the World Health Organization estimates a billion people are in need of one or more assistive products, there is a huge opportunity out there. We are very, very good in this country but we can do so much more" - Bill Esterson MP

"until we can unlock the mainstream consumer market, we won't fully realize the potential of assistive and enabling technology." - Prof. Nigel Harris

"the UK has a really pivotal role to play in shaping what the market would be for Assistive Technology globally. And if we get our act together properly, we can turn what is a chronic need... into a huge market of opportunity which the UK can meet." - Dr. Catherine Holloway

"on the point of regulatory divergence, I think the UK has a very proud record of disability rights and that's something that we want to maintain as a global leadership role." - Sarah Newton MP, Minister for Disabled People

"I think the government needs to become a bit more expert on this [assistive technology]. It just needs to get up to speed on what is already out there, but then we need to help encourage the next generation of products and bring together the tech people, users and disability charities and employers and see if we can thresh out how to deal with some of the challenges" – Alex Burghart MP

- Government's own procurement can have a role in supporting the market for assistive technology, e.g. government departments could take advantage of video relay services for BSL users.

- We need to ensure that UK assistive technology exporters continue to be able access trade opportunities in EU countries.
- We should consider how to support disabled consumers to purchase assistive technology, e.g. look at reformes to PIP (Personal Independence Payments) to allow people to spread the costs over several years (as it done with the Motability scheme)
- Many assistive technology products can and have become mainstream consumer products.
- Some products can be life changing but yet lack a consumer market: because they are cutting edge, and therefore expensive, and/or are aimed at a very smail user group, and/or are aimed at users without significant purchasing power. In these cases, funding must come from donations and/or government.
- Raising awareness among potential consumers is vital to the development of the market for assistive technology in the UK.
- Awareness is also needed in government is and services, e.g. ensuring there is good advice for schools so they can pressure assistive technology.
- The UK can help meet assistive technology needs in developing countries, and this may also provide a market opportunity.
- A group of developing countries may be able to join together to get procurement deals that drive down unit costs.

Supporting innovation through Access to Work and other employment programs

"There's no kind of list which restricts how Access to Work can be used, there's a lot of technology that can be used already,... but I'll be very happy if people contact me saying, "Why haven't you put this on the list? Why is that not on the list?" I do not see it as a list with an end, because innovation is happening every day, we embrace that and we want to include that in Access to Work." - Sarah Newton MP, Minister for Disabled People

Assistive and accessible technology has "increased so fast that many of us, many people working in government, many people working in charities, many users themselves, are not quite aware of what's out there" – Alex Burghart MP

- It's vital that access to work assessor have up-to-date knowledge of assistive technology; this helps users get the equipment they need and helps new and innovative products enter the access to work market.
- Alongside access to work, we should consider how we can improve and extend the Jobcentre Plus Flexible Support Fund, which is can be used to deliver assistive technology.
- We should work on diversifying the customer base of access to work, to include more people who are not yet in employment.
- The new AtW rules on the the funding cap may allow people to gain access to expensive equipment, since the funding of such equipment can now be averaged out over there years.
- The Industrial Strategy challenge funds could fund research to help improve employment programs make better use of technology.

Proceedings

This record of proceedings is based on a transcript generously provided by Notetalker with their Note Taking Express service.

Lord Holmes: Okay, ladies and gentlemen. Thank you all for coming, there's nothing better than a crowded room for meetings such as this, so I'm glad so many of you are here. I'm Chris Holmes, Co-Chair of APPGAT, the All-Party Group on Assistive Technology. What we're going to kick-in to today is what Assistive Technology can do, interacting with the Industrial Strategy. The role of the All-Party Group is to look at all possible applications of Assistive Technology to drive inclusion across society. I think the key with the Industrial Strategy, in terms of what we're going to look at today, is that sense of its approach to just build a better future. And the reality is, whatever Industrial Strategy does, that future will only be better if it includes each and every person across Britain and rolls out and speaks to a global world. Anything which falls short of that isn't worth the salt, because for too long people had been excluded, kept out, not being enabled and empowered to fulfill that potential. So that's what we're about today, Assistive Technology and the interaction with the Industrial Strategy. More than enough from me, I want to hand to our first speaker, Hazel Harper.

Hazel Harper: Thank you. So the Industrial Strategy, £725M of funding, £300M allocated to the aging society. Sitting under the aging society is the program that I'm responsible for which is healthy aging. We have a £98M pot to really transform the way that we age. That's "we", all sectors how we age. What does this mean for the UK industry? Innovation in age-related products and services can make a significant difference to UK productivity and an individual's well-being. Those products and services will find a growing, global market. And if we succeed, we will create an economy which works for everyone regardless of their age. We have a new generation of British businesses that will thrive in this growing global market and older people will be able to lead fuller, more independent lives, increasingly supported by smarthome technologies, wearable devices and tech-enabled health and care services. If I may, I'd like to say a few things that are really important to me in this challenge. One is language. We use very paternalistic language in this sector. We need to move from that into everyday language. We need to develop products and services that are desirable long before they are needed. We need to move from statutory-facing products and services into consumer-facing products and services so that they are accessible to everybody. We need iterative, intuitive, design and life-course thinking. When will this grant challenge start? It's starting soon for Healthy Aging, our current best thinking is we are going to be out to competition just after the start of new financial year, and looking to award contracts in September. For the suppliers amongst us here: please make sure you're linked in to the Knowledge Transfer Network and government website Innovate UK and the UK Research and Innovation website to receive more information. Thank you.

Lord Holmes: Thank you very much Hazel. Now let's welcome Bill Esterson MP

Bill Esterson MP: Thank you very much, Chris. Good afternoon, brilliant to see so many people here for the event. Well, I'm the Shadow Minister for Business and International Trade. I'm going to talk about both. Before I do that, it's struck me to look just at what the manifestos from last year all said. And I'll just concentrate on Labour: what Labour said in our manifesto is that we've got to expand access to the access to work scheme. But we also said we have grand plans for Industrial Strategy of our own. That, and tech as a whole, plays a crucial part in that strategy, and if we link together the Industrial Strategy with making the most of technology, and Assistive Technology - let's look at marrying up what government does with what's needed, as well, because I get feedback that government services aren't quite there yet in making these services available to people with disabilities. Remember that 68% of working aged people have disabilities, 6% are children, 45% are people who are over pension age. So is the government doing enough yet? Well, that's the question for others to answer. But it seems to me that if the government is serious in extending its digitals strategy in increasing access to its services through the use of technology then there's a great deal more to do. And an example that's been brought to my attention by SignCode, a constituent of mine, and I'm glad they could make here today, is that the reality is not quite there yet and that for BSL uses, to be able to access government services, it really needs to be made a priority for all government departments to use things like video relay service and that apples right across technology.

Now, what we want to do, what we want to see with the Industrial Strategy is much greater investment, and that's where we proposed the creation of a National Investment Bank with £25 Billion of government money match funded by a similar amount each year by the private sector for investment in technology. And of course that applies very much to this sector because, with my international trade hat, this is one of our export success stories. And in a market where the World Health Organization estimates a billion people are in need of one or more assistive products, there is a huge opportunity out there. We are very, very good in this country but we can do so much more. And we don't actually have to look that far afield, because the developing world is where there is great need and great demand, we also have on our doorstep the main markets in the European Union were, according to the United States International Trade Administration, it's Germany followed by Japan followed by Netherlands, by Canada, by Belgium, Switzerland then United Kingdom, China, France, Australia, Mexico, Austria, Norway, Sweden, Italy, Korea, Denmark, Singapore, Ireland and Israel: these are top 20 countries for United States firms to export Assistive Technology. They are nearly all, either, in the European Union or subject to trade agreements with the European Union. Even as we leave the EU, we have to be in a position where we can maximize access for all those firms who are specialists in the assistive technology sector. So that's got to be the priority for an Industrial Strategy point of view as well as from an International Trade viewpoint, and one certainly links to the other. Absolutely, on the investment point, that is our commitment to investing in success stories in this country; absolutely from the point of view of supporting success stories to trade more internationally. And in order to do that, to get a negotiations right with the EU as we leave, we've got to recognize that, as with any successful business, so with any successful country in international trade, you look after your existing business relationships, you look after your existing markets, while at the same time looking for new ones. You don't look for the new ones at the expense of the existing ones. That's one of the reasons why Labor is pushing for a close continuing relationship with the EU, it's why we've come up with the policy of creating a bespoke new customs union with EU and the closest possible relationship with a single market, as well. Because we think we need to minimize the imposition of tariffs and the tariff barriers, as well. We've got to minimize the impact of regulatory divergence and maximize the existing benefits that we have. We think, for those of you who export - there are businesses in the room who export - that's the best way forward and that benefits the domestic economy, as well.

Lord Holmes: Thank you very much, Bill. Professor Nigel Harris.

Prof. Nigel Harris: Thanks very much, Chris. Thank you very much the invitation, it's great to be here. Although I have academic appointments at the University of Bath and the University of West of England, I'm actually Chief Executive of Designability, which is probably the largest and the longest formed UK independent design and development group. We were founded in 1968 as the Bath Institute of Medical Engineering and so it's a special year for us this year as this year we have our 50th Anniversary. I want to share some learnings from our track record of successful development of assistive enabling technology. We have four work streams that we do: applied research, product development and manufacture, consultancy and we also run a national loan scheme for early years powered mobility. So I've got four key messages that I want to share with your around successful development.

We start first of all with understanding unmet need, so we like difficult problems and we like to engage with users who need assistance to independentlymaximize the opportunities in life, and we start with the human centered to design process working really closely with those users right throughout their product development process, through concept design, development, validation test. Now this is best as a multi-disciplinary team, so we have engineers, therapists, designers, business specialists — all working together. The model we use a Designability is actually to work with a commercial partner who would do the manufacturing and have a root to market. So sometimes, it's better for the designer and development to be done separately and to work with a commercial partner who is better placed to exploit that technology.

The second message is that we couldn't do what we do without access to donated funds or research income. There is not, at the moment, a mainstream product at the market for assisted-living products, very often. There may be no immediate return in investment. I want to give you two examples. The first is a dynamic seating where the system would work for children with the most severe forms of cerebral palsy. There are probably around a hundred children in the UK that might benefit from that, but that product would be life changing and revolutionary, allowing them better opportunities for development. So clearly, there is no big commercial market for that product. So without donated or research funds, we wouldn't be able to do that. Sometimes there is no statutory provision of enabling technology, so this is our Wizzybug that we make around from our early disability program, through donated funds we support 320 children and families with Wizzy around the UK. So again, there's no set NHS funding for that product, which is transforming the lives of the young children and so we have to use our donated funds to support that innovation effectively until the evidence base is there.

The third message is around the importance of academic collaboration. So we have joint programs of work with our two main academic partners, University of Bath and the University of West of England. We have a formal development program in place, particularly around the development of robotic and autonomous systems which have massive potential going forward. There's a lot of talk about robots and losing jobs, the fact is we don't have enough people to care for us in the next 20 years or so, and so we're going to need to look at other ways of providing that care. We just finished CHIRON, an assisted living project from Innovate UK. But it wouldn't be possible to do this, cutting edge work, without those academic collaborations. So those sorts of partnerships will be essential.

The final message really is that the biggest barrier we're facing in development is around the general public, so it's the level of the awareness of the benefits of assistive and enabling technology. Very many people aren't certain about the benefit, they are reluctant to self-fund and their perceptions of assistive technology are often poor. And as Hazel said, we really need, and Designability aspires, to develop products that really look good and people enjoy and like to use them. So I think until we can unlock the mainstream consumer market, we won't fully realize the potential of assistive and enabling technology.

Lord Holmes: Thank you very much. Our next speaker, from Microsoft, David Frank.

David Frank: Lord Holmes, thank you, I'm pleased to be here today. I'm David Frank, I'm UK Government Affairs Manager at Microsoft. As many of you already know, our corporate mission is to empower every person and every organization on the planet to achieve more, and so I'm pleased to see this as a theme, in many ways, reflected in the Industrial Strategy and its focus on four grand challenges. Of course one of these is, as we've already heard and discussed, is the aging society. For us at Microsoft the issue of accessible technology and artificial intelligence go together. So, to the point about the need to develop products that are desirable and attractive for everybody, we see that as part of our response to that challenge. As commented previously, we are the first generation growing up in this world where technology is ubiquitous, and to expect that to continue through our lives.

The other thing to note about our approach is that we see accessibility requirements as in response to either permanent, temporary, or situational disability, and the role technology can play in responding to those environments is key. So today I wanted to make a few comments about artificial intelligence and accessible technology in relation to the Industrial Strategy. As my colleague, Hector Minto mentioned in his evidence to the **work and pensions select committee**, earlier in the year, accessible technology is at its best, in many ways, when powered by artificial intelligence. And several of the products that we - and others obviously - are offering are benefitting from those new technologies. And we were very pleased that that's one of the golden threads in the Industrial Strategy that the government published and has been recognized by others in the room and elsewhere for just how important it is.

Coming back to that point around products that are easy to use and attractive, any of us that currently use a smartphone may use the voice assistance on it and that's great if you want to check your travel or do your grocery ordering, but that's also an accessible product and an accessible technology. Something that 10 years ago might have been considered niche, or 20 years ago, as just a future possibility, is now live, and many of us are benefitting from that. I think the point I'd like to leave, related to the Industrial Strategy, is how can we see that assistive technology is not just for people who have accessibility requirements, it's also a wider use of technology to empower all of us to be more productive in the workplace or in our our private lives, and I think that's sort of a thread that the Industrial Strategy gets at, and the UK also has a strong heritage in businesses who develop products that answer that challenge.

Lord Holmes: Thank you very much. Catherine Holloway.

Dr Catherine Holloway: Thank you, Chris. I am the Academic Director of the Global Disability Innovation Hub and my role here today is not too much to speak about the GDI Hub per se, but hopefully to enthuse you all to think about, coming together as a community and bring others into this community so that we can perhaps put forward the challenge of our own into the Industrial Strategy Challenge Fund Wave 3 which starts now, and the closing date for us to get back together is the 18th of April.

So to help maybe enthuse you all, because it's going to be a bit of work before we manage to do that, when we kicked off the GDI Hub, it was just an idea and I don't think it would have been half as successful as it has been if it wasn't for the fact that it was a great partnership. So we had local government involved, with the London Legacy Development Corporation, with University College London, with the London College of Fashion, and others, all the people moving to the cultural and educational district for the Olympic Park. And the reason that it's important is that the Paralympic Legacy, is part of the mission. There was a mission: we were going to deliver this Olympics and come what may, we really had to do it. And so you clearly get behind it or you could leave for a couple of weeks while the rest are scot behind it. But that kind of challenge, I think, we need to lay down in this phase, and so at GDI Hub, we aim to accelerate movement for Disability Innovation for a better world. When we say to accelerate the movement, joining forces with others who have already been spending years and years doing this. I think it's notable, if not mentioned yet, the role of disabled persons organizations, which are pivotal in this society and also these charities and the social enterprise and spaces that are now working in this area, so we have Designability, we also have Motivation Wheelchairs. We do a lot of work with Motivation Wheelchairs where we take technology that's been funded by the UK government and then we put those sensors on wheelchair in say, India, and we begin to map a very dynamic city like Delhi, can we begin to produce wheelchair successful maps using internet-of-things and using AI?

So suppose we think about what the Industrial Structure would mean for us, it seems quite obvious, as Hazel has mentioned, that we would come under the aging society. But I think we could also look to the future of mobility and the AI challenges. So rather than just going to Motivation, who will obviously be involved, or people who make specific Assistive Technology, we begin to open up to Microsoft, maybe, or Ford or Land Rover Jaguar. We take the technology that's been put into a self-parking car and we apply it to an electric wheelchair. I just want to mention two examples of things we have done recently, that could be 'starters for ten' in terms of conversation. So one was, we've run this Enable Makeathon with the International Committee of the Red Cross and through that, we got there brilliant young entrepreneurs. I can't tell you how many people at UCL and across the world want to do tech for good, so the next generation of engineers, that's what they want to be doing. And all we've got to do is provide the infrastructure for brilliant ideas to bubble up. And so in east London that's what we're trying to create. Now we've created it, the competition's all gone really well and one of the winning teams will instead probably return to Germany to build that company. Now that's because we don't have follow-on funding to create this infrastructure, whereas we could create the infrastructure between say Bristol Robotics Laboratory, Designability in Bath and others. We could set up a national network where we would be able to incubate and house the very best Assistive Technology and companies.

Finally, just to talk about the global aspect in terms of the Summit that would come up in July and the work that might be out there, I think the UK has a really pivotal role to play in shaping what the market would be for Assistive Technology globally. And if we get our act together properly, we can turn what is a chronic need, as WHO had demonstrated and 80% people don't have eyeglasses and wheelchairs or walking sticks, we can turn that need into a

huge market of opportunity which the UK can meet. I suppose the challenge for us all is to galvanize that thinking and also to add to that partnership that's in this room by the 18th of April, so we have a large share of the Industrial Strategy to make the world a fairer place. Thank you.

Lord Holmes: Thank you very much, Cathy. Our final panel speaker, Alex Burghart MP

Alex Burghart MP: Thank you very much. I'm here representing the Work and Pensions Select Committee on which I sit. We've been doing some work into Assistive Technology for the past few months, in the context of helping people get into work and helping people in work realize their full potential. And it's something that, I was very keen for the committee to do when I joined it in the middle of last year; it's a subject that I've been thinking about for a number of years. About 10 or 12 years ago there was a very powerful documentary on Second Life, you may remember, it's a long obsolete digital community that was once the future. At one time it had tens and millions of members and a film crew went into Second Life and they met a number of people doing different tasks in the world. They met everyone from the warrior who was actually living in his brother's basement having become addicted to online gaming and lost everything, to the chap who was running the nightclub, who when they found him in the real world, was almost entirely paralyzed but could move one finger, and had managed to build himself the most extraordinary life and business and community that would be utterly impossible in any other age of the world. Now in the past 12 years, the technological capability we all carry around has increased exponentially. Indeed, I think it has increased so fast that many of us, many people working in government, many people working in charities, many users themselves, are not quite aware of what's out there and that's certainly something that's been reflected in the work that might be doing. We've seen that there's fantastic features on Microsoft and Apple, that many users don't know about. These are things that are already embedded in the software and we see that there are many cheap apps and bits of software that are on the market that again, people would be using if they knew about. The way we've thought about it is that, it's been the long aspiration of governments of all hues and colors to try and build a welfare system which takes advantage of people's potential rather than deciding what they can't do. I think Assistive Technology is a particularly powerful lens through which to view this idea. I certainly think if we had a system in which work coaches and job centers were fully apprised of all technologies that would be coming online, it would help us put the horse before the cart because at the moment we have Access to Work, which is a good program, could be improved, but it's good a program, and has cross party support, but it helps people once they're in work. We've met a lot of people who could really do with that help before they back into work, before they even start looking for job: help to identify the software that's out there, a hardware that's out there, to get trained to use it. So, when they apply for work, they can go to the employer and say I have this disability but I have the following software or hardware in place that can mitigate it so I can start work tomorrow. We've met people who will say: It's a struggle to get a job and when you get a job it takes weeks until - even with Access to Work suport - weeks for everything to be set up. And this is a frustration. Also for a lot of employers it nags in the back of their minds, perhaps influences who they employ and who they don't. And I think for some people, it influences what jobs they're applying for and what jobs they don't. And that's something that we really need to change. There is potential for things like the flexible support fund**,** how that could be improved and extended. And this isn't just

about physical disabilities we come across some very good apps that help people with mental health conditions manage those conditions in work, gives them confidence not only for work but to apply for jobs themselves.

So, what can government do? Well, first I think the government needs to become a bit more expert on this. It just needs to get up to speed on what is already out there, but then we need to help encourage the next generation of products and bring together the tech people, users and disability charities and employers and see if we can thresh out how to deal with some of the challenges that people in business expose. To incubate and to accelerate, I think, the Industrial Strategy is a very good way of looking at this. We have four grand challenges of the Industrial Strategy, but why not put Assistive Technology either running through in the middle of all the—or alongside, as an additional challenge? I'll just leave you with one thought on the importance of the next generation of technology that we are increasingly close to, and that's one of the gentleman who came to give evidence, he had a car crash years ago and was almost entirely paralyzed. I asked him what is the one thing that you feel is plausible that would take you to the next level, professionally. And he said, "That's easy. It's a driverless car." That is the sort of technological innovation that can really start transforming lives of millions of people.

Lord Holmes: Thank you so much, Alex. Thank you to all panelists. I'm delighted now to have a keynote presentation, we're delighted to have the Minister for Disabled people, Health and Work. Please welcome Sarah Newton.

Sarah Newton MP: Thank you. Well, first of all, Lord Holmes, thank you very much indeed for including me this afternoon. And I rather see myself as part of the panel and I'm really happy to be answering any questions along with the panelists after my few words with you. It's absolutely a fantastic event that you put on today to bring such expertise and passion and interest into the room and I'm only sorry that I missed the panelists' presentations, I'm sure I could have learned a lot, but I had to be in the Chamber for the Ugent and Statement that the Prime Minister made, so I'm really sorry about that. But there are other colleagues here I know and I've read about their work if I've not met them in person. And I think this is a wonderful event to pull together a huge amount of what the government is doing, the All-Party Parliamentary Group, I think that is fantastic, and the Select Committee, both doing these inquiries, it's showing that at both ends of the building, there's a huge amount of interest and enthusiasm and desire to upskill ourselves, to make the most of these opportunities. When I first came into Parliament, I was on the Science and Technology Select Committee, and that was a brilliant opportunity to make sure that members of Parliament are properly informing themselves on the latest advances on science and technology so that we can do our job at scrutinizing policy, advancing policy, representing our constituents, and the Office of Science and Technology in Parliament is really very, very good at enabling us to have briefings and keeping us up to date. But this work today, I think, is a really significant contribution.

So let me tell you a bit about the scale of our ambition that we have as a government. Clearly we want to make sure that everybody in our society has the opportunity to reach their full potential, and that very much includes disabled people or people living with health conditions. It's absolutely essential that everyone, to the extent to which they can, has those opportunities to fulfill their potential. And now we've been making a lot of progress, there is about 600,000 more disabled people in work today than there were just four years ago. We want to go much further than

that and have set an ambition to increase the number of people with disabilities in work from 3.5M to 4.5M. Now, we set ourselves a ten year timeframe but, frankly, I think targets are set to be beaten, and nobody would be happier than I would be if we were to exceed that target within a year, but we are also very realistic about what it's going to take to enable us to fulfill our ambition. Many governments have had this stated aim and many governments have tried, but we still have this very stubborn disability employment gap. And not only do we have this very stubborn disability employment gap, but we know that when people with disabilities or health conditions are at work, they're more likely to fall out of work, than other people, and again that is totally unacceptable in the 21st century. So we set out a command paper in November, I'm sure a lot of people in this room were involved in the consultations that led up to that command paper, which set out a very ambitious plan for work, really underpinned by a lot of research and evaluation so that when we learn what really works, we can be sure that what we're doing would be scaled out rapidly. Now it has three things because we're not going to tackle this problem unless we have a holistic approach that is a partnership approach between employers, of course what government can do, but also disabled people themselves. So I see this very much as disabled people themselves in the driving seat, shaping our policies working across government and with employers to make this big culture change that we all want to see.

Some of the things we're tackling are some of the sorts of more nerdy sorts of things that government have to do, but we need to look at some of the incentives in the system at the moment. So we're very committed to changes in statutory sick pay, following on the work that Matthew Taylor did on improving working lives for everyone in the country, I think statutory sick pay is long overdue for reform. There are too many cliff edges in the system, it's not enabling people, particularly those people who acquire their disability while they're at work, which is the vast majority of people, to be able to make transitions from periods where they need to be out of work and to deal with their health conditions or, as they adapt to their acquired disability, but enabling them to have a good flight path into work, maybe sometimes a different work, but into work, keeping them much closer to the workplace. Also looking at what more we can do to financially incentivize people to think about employing people with disabilities. We had some success with holidays and national insurance contributions to encourage people to take on apprentices. So that's one of the things we're looking at. In our health program, we're very clear that while there is a huge amount of good work that's done in occupational medicine and occupational health, there's so much more we need to do. Some people are very fortunate and they're working in a workplace where if they were to acquire a disability, or they enter into work with a disability or health condition, there would be extremely good support for them, including Assistive Technology, but that experience is not shared by enough people, particularly people working in small and medium sized companies. Actually, looking at a wholesale reform, an extension of occupational health services, again, is a key part of our work.

Let's look about more specifically on Assistive Technology. I do believe it has the potential to really improve the lives of so many people in our country, particularly people with health conditions and disabilities, and as colleagues have said here very helpfully, some people with, you know, the less visible impairments or in fact invisible impairments as well. So we heard, I think, a lot from people around this table this afternoon about work that we're doing across government in the Industrial Strategy. And I heard from the conversations I've joined, picking up particular themes within their challenges, but I'd also like to look at the people theme, because the people thing runs right across every segment of the Industrial Strategy. I think that's where certainly I am working with colleagues in BEIS to really make

sure we're making the most of that theme. I think Assistive Technology shouldn't be a separate theme, it should be embedded in everything we do because it has the opportunity to transform so many people's lives. 1 in 6 people in the workforce has a health condition or disability. It's not a small group of people, it's a very large group of people, so their need should be mainstreamed across what we do.

Now I'm not going to reiterate what I think has already been said about all the various funding streams that are promoting innovation within the Industrial Strategy but maybe just touch on a couple that haven't been mentioned. One is in the Office for Disability Issues, we've got the OpenLab program that started last year, which is very much has disabled people themselves, disabled innovators, coming forward with ways in which we can improve access across all parts of society including work. We've just announced quite a significant package of reforms to Access to Work, some of the things which have been touched on already today. For example, if you are getting close to the workplace and you've got to a job offer lined up, you can start now getting all the support you need 12 weeks ahead so that people can turn up on day one, with everything in place to enable them to work. That's a much longer period than in the past. We're enabling the annual rewards to be averaged out, so people who have a particularly expensive piece of kit, maybe a super adapted wheelchair, and they also have a personal assistant, at the moment that cost may well take you over the cap, but if you can average that over three years, then you'll be able to pay both for that kit and the personal assistant.

Access to work is already available for people on supported work experience and supported internships, but I'm not sure enough if you know about that. So we're working hard to expand that availability, as well. But I think we've just announced quite a lot of improvements to access to work but clearly we want to always be innovating, thinking what more we can do. There's no kind of a list which restricts how Access to Work can be used, there's a lot of technology that can be used already, but we published a list just recently to help employers understand the huge variety of things that are available but I'll be very happy if people contact me saying, "Why haven't you put this on the list? Why is that not on the list?" I do not see it as a list with an end, because innovation is happening every day, we embrace that and we want to include that in Access to Work. And then finally, I know quite a few people in the room will have benefited from programs that were funded through the European Structural Funds and some people are quite concerned about what's going to happen to the funding of those innovative support programs that have enabled people with health conditions and disability into work, staying at work, and making progress at work. The government has committed to the shared prosperity fund which is absolutely there to support those parts of the UK, those communities in the UK, that need additional support to make sure that they can play their full part in the workplace. So we're working closely with treasury in scoping and shaping the replacement funding to the ESF Programs, because we can shape those programs in the UK, we don't have to jump through so many of the bureaucratic obstacles that can get in the way with dealing with European programs. But that commitment is there and I'm sure that a lot of the testing and learning that we're already doing in our Health and Work Program which we've only let these contracts in the last 3 months, and all the innovation and the challenge funding could help the work program, we'll be able to learn a great deal that would inform the future-shaping of those programs. So I hope that is a bit of a canter through, and gives you a taste of the work that we're doing across government and also the scale of our passion and enthusiasm and commitment to embrace everything that Assistive Technology has to offer to make sure everyone has the potential, the opportunity to realize their potential in work. So, thank you.

Lord Holmes: Thank you very much, Minister. I hand over to you Robert to ask the question, indicate in what way you'd like, Robert will point you out. You say who you are and where you're from and then ask your question and I'll ask the members of the panel to address it, who would like to go in the position otherwise known as first?

Andy Shipley: I'm Andy Shipley from the Spinal injury charity Aspire. We provide Assistive Technology training to people who have recently acquired spinal injuries. My primary question picks up on the point that Alex [Burghart MP] made about the evidence that came up on select committee inquiry in terms of access to work and the extent to which procurement can militate against people getting the widest possible choice of tech. My question related to the health service and is those supply models, also potentially militating against people getting that choice of Assistive Technology that may benefit them, and the limited supply of appropriate tech that might be available on those lists. And I'm going to sneak in another cheeky question. What you think about the European Accessibility Act particularly in relation to Bill [Esterson MP]'s points about regulatory and divergence?

Lord Holmes: Thank you very much. As you were referred to Alex, you can now have the first dibbs at that.

Alex Burghart MP: Thank you very much. You're asking about people getting support through the health service as well as through Access to Work?

Andy Shipley: It's the point of transitioning towards having the technology you need and it's our experience is that people need it as early as possible but access to work is one area but, actually, the technology that our service users use comes through afterwards through health budgets; it's a similar problem, there's a limited list of approved supplies. So it's this same challenge: how can we get people to budgets or the resources we need to just access the technology at that point of need.

Alex Burghart MP: As I was saying, it's very important that people have the broadest menu of options and that that menu is refreshed as regularly as possible. That means firstly that the procurement routes that you describe need to be fit for purpose. You also need the people who are advising the users to have the latest information about what's out there, and certainly our inquiry found that that was not always the case. So I do think that's key. And in terms of how you find it —if your uses are as well-informed as they can be, then you might look at to modifying something like PIP [Personal Independence Payments], which could then—a lot of these technologies are helpful not only in work but also in day-to-day living. I think there are many ways which you can skin the cat one of the ones I'd look at personally.

Lord Holmes: Minister, would you like to pick up and also take the regulatory divergence point?

Sarah Newton MP: Okay so the first question was about Access to Work. there isn't a limit to the list. I mean, it's constantly refreshed, there's constant innovation and we're doing a lot to improve people's awareness of the different technologies that are available, so in the Office for Disability Issues, we have Sector Champions. People who are working in all different industries where they will have a huge amount of knowledge but also huge advocacy skills to make sure that people in their industries are as aware as they can possibly be of the range of opportunities available. I will take that very important point that you make about health services, so people who have had a traumatic event happened to them, to make sure that the health service, the people supporting that person, are as up to date as they possibly can be, and I will take that back to the Department of Health, that's really, really a good point. Now on the point of regulatory divergence, I think the UK has a very proud record of disability rights and that's something that we want to maintain as a global leadership role. The Prime Minister's made it very clear that leaving the European Union will not mean a reduction or watering down or reduction in any way of the rights that people enjoy in our country. And given our long and proud tradition, I have every confidence that the whole Parliament will hold us all to account for doing that.

Lord Holmes: Thank you very much. Next question please.

Helen Simon: I'm Helen Simon, I'm a researcher and advisory teacher going into mainstream and special schools. Putting in Assistive Technology: there's two things that come to mind with this. About the word innovation, because that's certainly not happening with the education of these children with using of Assistive Technology, in that the teachers are not being taught how to use Assistive Technology and therefore it's about the children's learning in class. There is no training that comes with the packages that schools are buying for Assistive Technology, apart from what we get from the advisory teachers. Which then leads me on to a specific, with you wanting to employ children and young people with using their Assistive Technology, put their skills into work. And the biggest barrier there is they're not allowed to use their Assistive Technology in exams to prove the knowledge and understanding that they've learned in school. I have a child with a visible impairment at the moment who wants to use speech recognition in her French exam to prove knowledge and understanding of the subject so that she can then go forward to University and obviously into the world of work. But she is at the moment not allowed to use Assistive Technology in her exam because the JCQ have not written the rules appropatly and the exam boards are preventing that from happening. So if you want children to come into the world to work, to use Assistive Technology in the workplace, we've got to break down those barriers and allow them to show knowledge and understanding and what they worked with so hard over the years. And innovation, I think, this is the way forward.

Lord Holmes: Thank you so much, very clear. Minister?

Sarah Newton MP: Yes, I think you've made a really good point there, and I'd very much take that up with my colleagues in the Department for Education because it's quite clear under the Equalities Act there should be responsibility to make reasonable adjustments, so I'm not sure what's going on there. I mean if you want to follow up with more detail, I'd very gratefully receive it, but I've heard the very good point that you've made and I would definitely take it up with my colleagues in the Department for Education. What we are doing now is particularly for young people with learning difficulties, but actually any SEND young person, is we have a "try work" pilot scheme that we're running at the moment, and it's with three local educational authority areas and it's taking a partnership approach between local employers, the local authority, and young disabled people themselves to make sure that we would get a really good concept for work experience, including using Assistive Technology. So we want to really make sure that this program works, take the learning from that so we can scale it up. We already have supported internships but we want to start with younger people, you know, year 10, year 11. Because I do think every child at school should have the same opportunities and everyone should be going off to have work experience and the support to do that. It should be the aspiration that every child is going to make a meaningful contribution to our society, including the opportunity to work, with support. So we are pressing on with our colleagues in the Department for Education to enable that and test these concepts. But I will come back to you with the details about what more reason to do in an exam system.

Lord Holmes: Thank you very much, next question, please.

Martin Littler : Martin Littler, Inclusive Technology. Back in the past, schools were supported in what Assistive Technology did, and what to buy, by LEA [Local Education Authority] Structures. And behind them were regional structures and behind them there were actually national structures. So there was advice. Now, pretty well, the system's atomised: every school doesn't know what it doesn't know. And I can't see large multi-academy trust overtaking up the strait, what is the plan for schools getting decent advice?

Sarah Newton MP: I'm sure my colleagues are going to have lots of really valuable contributions to make. I'm not here for the Department of Education so I can't answer that in a great deal of detail but I would be very, very, very surprised if they haven't got a plan for tackling that, because there is such a commitment for enabling young people, particularly young disabled people or any people with any sort of special needs to have supportive work experience, the same opportunities as all young people. They've extended and made it much easier for young people with disabilities to participate in apprenticeships, for example. We've made real progress this year with the amount of young people taking up apprenticeships. And within Access to Work, I know the fastest growing group of people who we're funding are young people under 25. So I've got plenty of evidence to see that things are going in the right direction and, of course, until every person, every disabled person, who wants to work has a job I'm not at all satisfied, but I can see things moving in the right direction. I think this is probably, like the previous question, something we can come back with more detail as to what exactly the Department for Education is doing.

Lord Holmes: Thank you very much, Minister. David: Microsoft do a lot with education, any experience with this and how things are even changing, including the changing structures and the how you're interacting with the education system?

David Frank: Good question. Yes, you're right, Microsoft has a long history of engaging with schools and teachers and the Department for Education in the UK, something we're proud of and will continue. I'd need to come back on specific detail, which I'm happy to do. I think it speaks, also, to a slightly wider point about schools and employers, I think this was mentioned earlier, understanding technology that are buying and the tools that we build in by default. So, our latest operating system and software have accessibility tools built-in, so, for example, Powerpoint can provide live subtitling which is a huge boon, no matter the environments, whether you have visual impairment or you're presenting to a room such as this where the acoustics might not be so great for people at the back. So, I think there's a point about how we as a provider and enabler of that technology make that more known and empower people through that. But on the specific point, I'd be happy to come back.

Lord Holmes: Excellent. Thank you very much. Next question?

Ali Rogan: Ali Rogan, representing Tunstall today. Quick clarification question for Hazel [Harper]: The 98M, is that allocated just to small-medium enterprises? And my second question is, we welcome the Government's ambition to be the most innovative by 2030, but I wonder if it could go further? For example, Japan have announced that by 2020, they will have four out of every five care recipients will be supported by robotic technology. So if we have some sort of an ambition, we drive forward, so that a certain percentage of people who need this technology would be able to get it.

Lord Holmes: Thank you very much. Hazel first.

Hazel Harper: Thank you. We're currently working up the brief on the allocation of the funds since it's very recent. I'm sorry, Ali, I can't give any detail at the moment.

Lord Holmes: Thank you. Bill on the level of aspiration, where do you see that for Briton, in comparison with the Japan there, what's your view on the level of aspiration as a nation or across this area?

Bill Esterson MP: Well, I'm not familiar with the detail of the government's aspirations; what I would say is that it's absolutely right that we set out to be world leaders and I made the point that Assistive Technology is something

we're very good at in this country and we need to do everything we can to support it. What I didn't dwell on, which thankfully other people did, is the point that it's making sure that those people who need the technology have access to it as much as possible. I think the whole area of how robots and AI and automation come into play is a very much wider debate than in this field. The key thing is, how we move from where we are now, moving away from the analog age into the digital age and make sure that people benefit from it, both those who need the products but also those in work and in business and the economy. I think marrying those up is the very real challeng of the Industrial Strategy and the current industrial revolution.

Dr Catherine Holloway: I just want to add, to try to give you some idea of other things that are happening in the space in trying to formulate challenges: one of the things that I sit on is the UCL Commission for Mission Oriented Policy and the Industrial Strategy and what we're looking to do is look at the challenges, the four grand challenges, and then define missions, and then how can we get everybody to hock on their bit of policy or their bit of research or their bit of innovation to help us get there. And Greg Clark is involved in that. Behind the scenes, there's a lot of work going on, I'm sure we're not the only people doing that. So I think people are trying to help formulate these challenges into more robust statements but it does take a lot of people to come forward and to iterate them. And so I go back to what I'm saying about the Industrial Strategy Wave 3 call for the challenge fund: What is the challenge? It's up to us. The Industrial Strategy is a document we can all engage in, a process that we can engage with.

Lord Holmes: Thank you very much.

Prof. Nigel Harris: I think there are barriers around the way contracts are set up, and procurement that prohibits the adoption of some of the new technologies. So (I don't want to mention the name) but we wanted to do a trial of some other next generation smart technologies to support reablement in the area where we're working in, the geographical area, and the provider, although having good feedback on the ground from the practitioners and the locals people delivering the service, that was actually blocked at a national level by that provider around issues around data security and IP etc. and so we were frustrated and unable to take that trial forward. So very much on the ground, we need to be enabling care providers, weather it's health or social care and actually giving practitioners and people on the ground experience of some of these new technologies. And it's actually quite difficult when they are locked into quiet ridged procurement regimes and ways of doing things. So there are some statutory blocks there, I'm afraid.

Lord Homes: Yeah, and on that point, Minister, in your time in the department, how much have you come across, silos, procurement issues which you say has potential frustrations for the aspiration which is clear?

Sarah Newton MP: I do think that this is a very important issue and of course the devil is always in the details so, I can understand why you don't, in a public forum want to share, but if you want to write to me, than I can look into those particular issues. In order to help us overcome these barriers and these issues, as part of the Health and Work program, there's quite a huge part of that program which is devolved and this is to enable our services to be joined up around individuals, so to put the individual's health condition or disability at the center and then joined up the service, weather it's from the council through adult special care, whether it's through the DWP, through some of the benefits, whether it's support from an educator or from an employer. And also from those organizations which are there to support people into work and to make progress at work. And so we've enabled, different parts of the country to do things very differently: there isn't nationally procured program. And through that innovation, by letting different communities across the UK come up with the solutions that they think are going to work best for their communities, we would learn a lot. And all that is being properly evaluated, we even have randomized control trials so that we can really properly understand what works and what doesn't work so we can scale that up nationally. But I think decentralization and enabling people to do things differently is important. The data protection issues, I think, are often, more in the minds of people than they are in reality and a lot of times people will come up with reason "Ooh, we'd love to do that; ooh we'd love to work in partnership but we can't because of data protection" but actually when people look and delve into it, where there's a will, there is usually a way of getting the necessary agreements to enable data sharing. I think that is a lot to do with guidance and giving people the confidence and reassurance about how to do that and to look at best practice and again what government can do is share best practice so people are more confident to take those decisions.

Lord Holmes: Thank you very much. Next question please.

Aldo Fizal: I'm Aldo Faisal, I'm from Imperial College but I also sit in the World Economic Forum's Global Counsel for Neurotechnology. When we part-drafted the 4th Industrial Revolution paper, we also specifically included the opportunities for IA, robotics in Assistive Technology and aging society. And at the moment, the two main challenges that I see, and the opportunities that we have in the UK are to me first, the development of interoperability standards, so that technology that allows me to drive a wheelchair can seamlessly interact with our ability to control, for example, my computer. That's a decision to invest in that. And now the separate industry that we have here to work together and leverage our mutual individual strengths. And the second thing that we're finding is that for a lot of the robotic technologies that were are developing, we have not seen the ability for end-users to purchase them, except beyond the scope of the PIP [personal independence payments]. So a Robotic exoskeleton currently costs around £60,000-£80,000 and there's no real way for distributing the cost over years, although it would very quickly pay off itself. This is in contrast to the Netherlands, for example, which is a very productive Robotics Assistive Technology strategy that funds this industry in their local country.

Lord Holmes: Thank you very much. Nigel? Bill?

Bill Esterson MP: Just briefly, it's absolutely essential, and I'll build on points about the youth, that our Universities and research departments are continuing our access to grant funding that's been important for research projects, whatever the shape and size of our future international relationships are. And secondly that our very great success in many years, attracting foreign investments continues. Because without those two elements, it is very, very hard to achieve this sort of success that you've set out, so I think at the very minimum is about looking after what we are already doing well at.

Lord Holmes: Nigel?

Prof. Nigel Harris: No that's fine. I think this is really a good point. So for example the CHIRON system that we're just developing, it'll probably be a 40-50k purchase cost, so clearly that's got to be spread over the five year cost, but that will release significant cost savings for the individual and means that they'll be independent of carers. So yes we have to look at different ways around funding this, absolutely.

Dr Catherine Holloway: I'm going to agree with you, my colleague from Imperial College. I do agree with you, at the high end, I think there's two interesting points in that, we see exactly the same problem in low to middle income countries, which are just getting eyeglasses or wheelchairs to people. That's exactly the same problem in that there's a huge need, everyone can see the need, but there's no actual market to purchase it. The individual can't afford it, the government doesn't think it's necessary and therefore we have a huge problem. So I think that there's a huge amount of learning that we can learn both internationally, not just in the UK. And the second point is to think about value. One of the things we have been absolutely horrendous at is capturing the value of assistive technology. So I grew up in a nursing home, my parents ran nursing homes, and people would fight and fight and fight to get patients something or other, and it's a constant fight, and the only thing that's a guarantee is the cost. So the balance sheet is always loaded and the wrong direction is very difficult to unlock that, and I think that one of the things that AI and sensing and things like this can actually begin to provide us, is the evidence. So how do we capture what was the actual impact on that person? So you're saying you've got a joined-up policy, which is amazing, with all these departments joined up together but how does each department know that their investment was very valuable. And I think that's one of the things we're very keen to develop, is the strategy around that. But I think that the other point that's not been picked on is the idea of interoperability, the standards, and I think that's very key and with the capturing value, one of the things we're very keen to do is get manufacturers together to say can we agree what metrics we want to measure and than can we all measure them. And then we would be able to have data sets that are comparable as well. So I think getting that embedded at this stage is critical to us being successful in 10-20 years out.

David Frank: I think you're right, how you judge value, of how you calculate value is really important matter. And, certainly, for us one of the exciting things about AI powered technology that might well have an accessibility application, but also it could be a general economic productivity piece or just enhance one's life at home, whether

it's voice assistive technology. So I think that value pice is important but I think as this business model of mainstream technology develops more of those solutions it will become easier to answer.

Catherine Holloway: Yeah, and I think there's a huge, brilliance in that there'll always be a room for Assistive Technology. Assistive Technology would always drive forward innovation and then it will get transferred into the mainstream, and getting that loop right within the country is critical, I think.

Lord Holmes: On your part David, what do you think Microsoft are currently doing in terms of that balancing cost value while maintaining a margin with product development?

David Frank: Whew, that's a big question and I'm not at product developer. We have a global accessibility officer who sits on our global board, Jenny Lay-Flurrie. And I think the interesting thing is she and her team have a view across our entire product portfolio, both existing products and new products development. So the challenge that they pose to our product team consistently is what's the accessibility angle to this. But it actually becomes what's the productivity gain from this product. It's a sort of a wider challenge to us or my colleagues on the productivity side, and I think that's the lens that we are more and more seeing it through.

Lord Holmes: Thank you very much.

Mack Mclaughlin: My name is Mack Mclaughlin and I'm here on behalf of the World Health Organization and I coordinate their research on innovation and global collaboration on Assistive Technology. I'd really like to pick up some of the points that Cathy [Holloway] has made and, in a sense, to the question, in a constructive way, what is the role of Britain on the global stage because, clearly there is some fantastic and hit-tech innovation and development going on. There's also something that perhaps some of you haven't heard of which is the Priority Assistive Products list. We have many statistics, I guess one of which is that only 3% of people who could benefit from hearing aids actually have access to them. So what this means for british industry is that there's huge opportunities, huge markets. But to pick up on this issue of affordability and cost element, this is really crucial and the new word is 'China' and if this isn't something that industry isn't able to address effectively, then I think other people will be addressing that, and quite effectively. So I think there's an opportunity and the challenge to british industry in terms of how do we respond to the expanding market and how do we engage with a different sort of cost base and a different level of procurement and supply.

Lord Holmes: Thank you very much. Cathy you were referenced.

Catherine Holloway: So Mack I agree with you and we're working with Mack and the World Health Organization on this. I mean all I can do is really echo what Mack is saying, is that I think this is a global problem which Britain has the chance to play a role in. You've got to be very careful that Germany and China are aligning very closely in the moment and how they want to deliver Assistive products and China will go ahead. And so, when Mack and I - in September - when we were at the GREAT Summit tow thing came up. Open standards, how do we get standards? And how do we drive down the cost? Before you know it, China is announcing "We're going to do exoskeletons at a 10th the price. That's what we're going to do and we're just going to do it." And they can do it, and they'll get on with it. And they've released their own substands. And so if we don't move quickly and as a community, I think we are all in risk of losing a great opportunity.

Prof. Nigel Harris: Yeah, so I want to echo Cathy's point. I think with China we might have missed the boat, there's a really good book called *The Rise of Innovation in China* with you should just read. And basically on the Chinese will just get on with it. They're innovating. They've got everything they need in China and I think it's rather a gloomy picture. I think on the plus side, for us, British innovation and design is very well respected so there may be some opportunities there, but we may have missed the boat on China. In terms of the GATE and driving the cost down, I'm completely with you, and I think, we do have to think about the consumer market. Now, obviously, there is not much funding in developing countries. I was in Uganda two weeks ago: I'm very well aware of that. However, there are massive opportunities around the scale, so, as you know, if you increase manufacturing volumes, the costs come down. And I do believe, and I said this at the GDI conference, that if you can put together procurement deals, involving a number of developing countries, where your procurement volumes are massive, then you will be able to drive the price down and get the designs from the manufacturers to supply those products - rather than having this very massively fragmented market at the moment.

Hazel Harper: I just wanted to say that on the standard front, BSI our own standard institute, are leading the international standards piece of work. So that's great for us because it's actually based here and also we're working very closely with them on healthy aging, so we're hoping to inform work both in the UK and globally.

Lord Holmes: Minister, what's the role of Britain in the global interconnected world? China: Huge. Are we just a speck off the cost of continental Europe?

Sarah Newton MP: I think the government is its very ambition in its mission to global briton. And of course we will always have a special relationship with our neighbors and close friends in Europe. I mean, they will always be a massive part of our relationship for our national security, our trading partnerships, but obviously being outside of the European Union, we are free, then, to -- and, we've already got, a good transition arrangement, where we are able to not only negotiate deals but sign deals in countries all around the world. So, a huge amount of effort is

going, for all parts of the government, to reach out to countries all around the world and invest in innovation, invest in our futures, invest in research. We have fantastic universities as Bill [Esterson MP] says, a wonderful tradition of Science and innovation. So I think we are really well placed to make the most of those opportunities.

Lord Holmes: Thank you. David: Microsoft: a global business. How does Microsoft view Britain? Do you take us seriously?

David Frank: Yes. Longer answer is, the UK - Assistive Technology, but also the wider technology piece - the UK's incredibly advanced and digitally competent as consumers. The stats show we're more comfortable and more confident transacting online and we're comfortable as a society with the benefits and opportunities arising from digital technology. So that fact makes UK a very attractive place for us. And just to note, outside the United States, obviously where we were born as a business, the UK is one of, I think, only three markets where we offer, end to end, our entire product range, say from the Xbox at the gaming end right through our top end commercial enterprise and I think that shows our commitment.

Lord Holmes: And why is that?

David Frank: By the breadth and depth of the businesses in UK and all levels, the academic heritage in the UK; one of the global research centres into AI based in Cambridge, so there is a strong heritage here and that keeps the UK an attractive place.

Lord Holmes: Thank you very much. Final question, who'd like to have it?

David Constantine: David Constantine, Motivation. there are two things actually. One is just to echo Mack's point, and Cathy's one about Britain can be so well placed to help grow low and middle income countries, with the technology that we can produce. and we talked a lot about very high tech stuff this afternoon; it doesn't have to be super high tech. You can do an awful lot for an awful lot of people with some very basic technology that's well designed. I went to a thing from the RCA about ten years ago, with some very well-known industrial designers in the UK, and somebody asked the question, 'should the Britain design world be afraid of China?' and one of the answers was 'yes be very very afraid'. And our design colleges are full of students from the Far East, which is great, and the colleges are making lots of money. But they will get on with it and they'll beat us to it if we're not getting there. The other thing that I just to say, how brilliant access to work can be, but I think over the 25 years that I've been in

employment and see it through various strategies, it isn't what it used to be. It is not quite a good as it used to be, i don't think. While I applaud the extra support you've given it, there are situations where it's quite muddled as two where they draw the line between the support to the actual individual and the small or middle income business because, if an organization is trying to do the right thing, but can't afford to do certain things, then they just get the answer 'that's a statutory requirement'. And if they can't afford it than the employee suffers or has to ask other colleagues, therefore productivity goes down, and so that grey area between the assessment for the individual and the employer trying to do the right thing, needs looking at.

Lord Holmes: Just on that point Minister?

Sarah Newton MP: I've heard that very clearly. Under the Equality Act, employers do have a responsibility to make reasonable adjustments. But the access to work scheme should be very sensitive to the issue that you raise, particularly around small and medium sized companies; we certainly don't want to put any barriers up or dis-incentivise for them or make the person receiving the grant feel uncomfortable in the conversation they have to have with their employer. So I've taken that on board. We are going to be doing some customer research with our customers - there's over 20,000 people receiving support through access to work - to see what people like about it, how it's working for them, how we can improve things, just like any other normal customer group we want to make sure that access to work customers are receiving a really good service so I've asked the team to scope that up so we can make any further improvements. We've just set in place a whole series, that people have come to me with, which I've implemented, but I absolutely believe in continuing this improvement based on customer feedback so I've heard that and will take that away.

Lord Homes: Thank you very much. I'm going to ask the panel for one final comment; one hope you have for the future or one change that would make a material difference in this area. Alex:

Alex Burghart MP: I take it back to my final comment in my presentation. I mentioned driverless cars because I think some of the things that can be most helpful are technologies that have a very broad application. I was speaking to the UK head of Tesla the other day and I said 'how do we make driverless cars come close to reality in the uk'? and he said 'very simple, just draw on line on every road'. and it's those sorts of conversations that enable big changes

Catherine Holloway: I'm going to reiterate the point about getting technologies to those who need them so that they can maximise their potential, whatever they decide that potential might be. I think that we will only do that if we listen to and work with disabled people, not just in the design of products but the design of he policy and the services that are around them, and I would hope that everybody in this room would get behind the initiatives by the

WHO and the GATE community and others, including the work around the industrial strategy, to try and make that happen.

David Frank: Whilst there will always be a need for really specialist technology, that we build in a huge amount of technology that's accessible today, and that it's about us all working together to make sure that people are aware of what's available.

Hazel Harper: I'd like everybody to match the ambition of the industrial strategy .

Bill Esterson MP: There are huge opportunities in new technology, both to deliver for those who benefit from the technology and for the economy, and those who benefit from the economic growth and prosperity that can come from it - I think we have to maximise both. I do want to say one thing about China. Nigel, I understand your pessimism, I may even share some of it, but if Germany can do 4.7x the trade with China, then we can, we don't need to wait for a trade deal to maximise this.

Prof. Nigel Harris: I think we need to drive a mainstream market; we've got to have a mainstream market. So I think probably more product placement on *Eastenders* and *Neighbours* etc. - good product placement

Sarah Newton MP: Thank you, and actually it relates to what Nigel has just said: I think it's about a culture change, for everyone in society to be focused far more on what people can do than they can't do.

Lord Holmes: Thank you very much. This is the beginning of the conversation. It's clear what the mission is: to ensure everybody, irrespective of background, irrespective of disability or none is able to fully glean all the benefits from the industrial strategy - and what an impact that would have on every individual, on cities, on communities, and quite frankly for our nation. Because the kind of society that we should have been able to have for decades, through the industrial strategy, through 4IR [fourth industrial revolution], I really believe we are on the brink of the potential of bringing that about, where enablement and empowerment have the potential for people to have the opportunities to fulfill their potential, that they should always have had. So thanks to the panel, thank you partiality to the Minister, and thank you all for coming, it's the beginning of the conversation, we're going to keep in touch. Collaboration is the key to this; collaboration is the key to everything that we do going forward. Thank you all very much indeed.

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-End of Meeting-

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