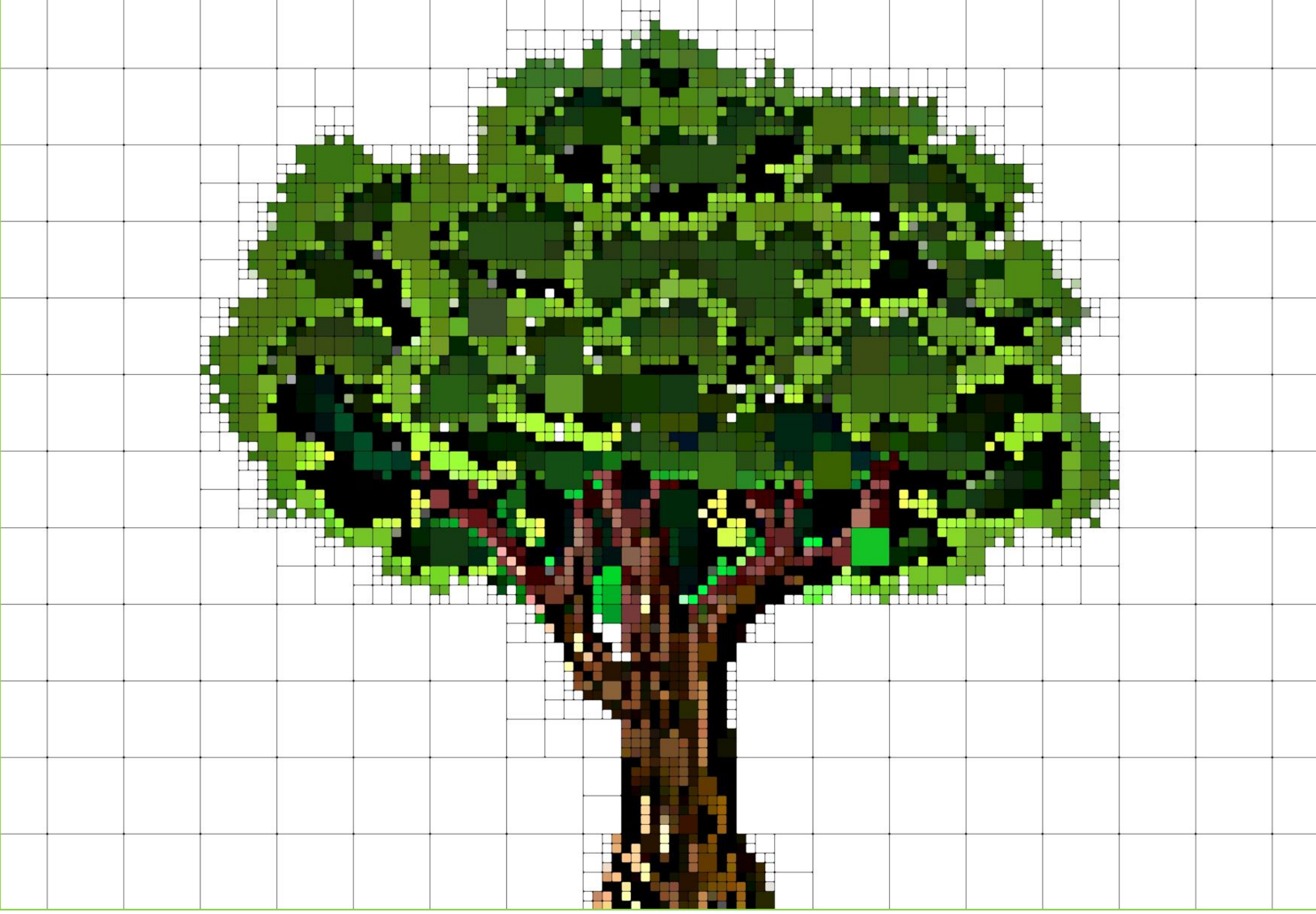


How Can Digital Help Save The Planet?

An Online DIZ Smart Place Seminar

13th May 2022

Executive Report

diz A SMARTER PLACE

CGI

Microsoft

Mobile UK

Jacobs

Foreword

John Houston - DIZ Director

The DIZ has a strong track record in asking the difficult and real world questions around the potential of digital to transform our world. This process of bringing some of the national leaders in the field together to discuss change in a place like ours, with partners from business education, health government and the voluntary sector, has been a central element of our evolution as a partnership. This latest Smart Place seminar offered up the question 'Can Digital Help Save the Planet?', to help galvanise and focus our work together in areas where joint working adds most value. This report sets out the key themes and issues that will inform the future work programme for the DIZ.

Welcome

Councillor Alan Lion - Chair, Essex + Herts Digital Innovation Zone and Digital Member Lead, Epping Forest District Council

Cllr Lion opened the conference by welcoming delegates, local, regional and international. Climate change is an issue that was at the forefront of everyone's mind. The conference represented the firsts steps in developing a collaborative digital response to challenges in this field. The DIZ had brought together a powerful panel of organisations leading this discussion, nationally and internationally, to help us frame our response and how we work together to deliver it. Councillor Lion highlighted the 'Smart Place' model of the DIZ, stressing its differences, as a place comprised of small towns, rural villages and spaces in between, from other digital projects focused around the more geographically focused and densely populated big cities and large towns. Digital solutions for climate change must be able to work in places like ours as well big cities and towns. This is our key challenge.

Essex+ Herts Digital Innovation Zone

Smart Places Seminar 7: How Can Digital Help Save The Planet? - 13th May 2022

Executive Report

Contents

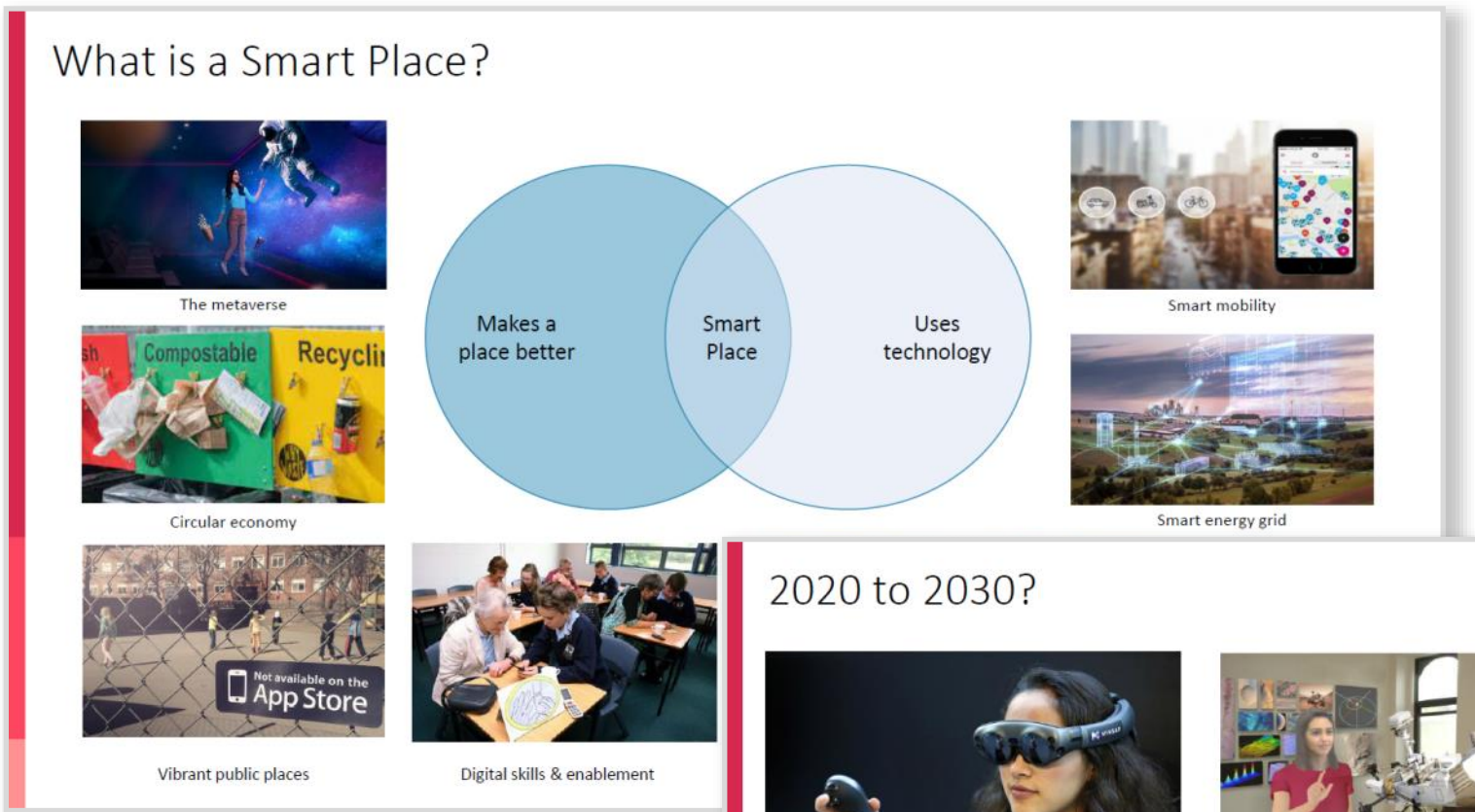
Setting The Scene

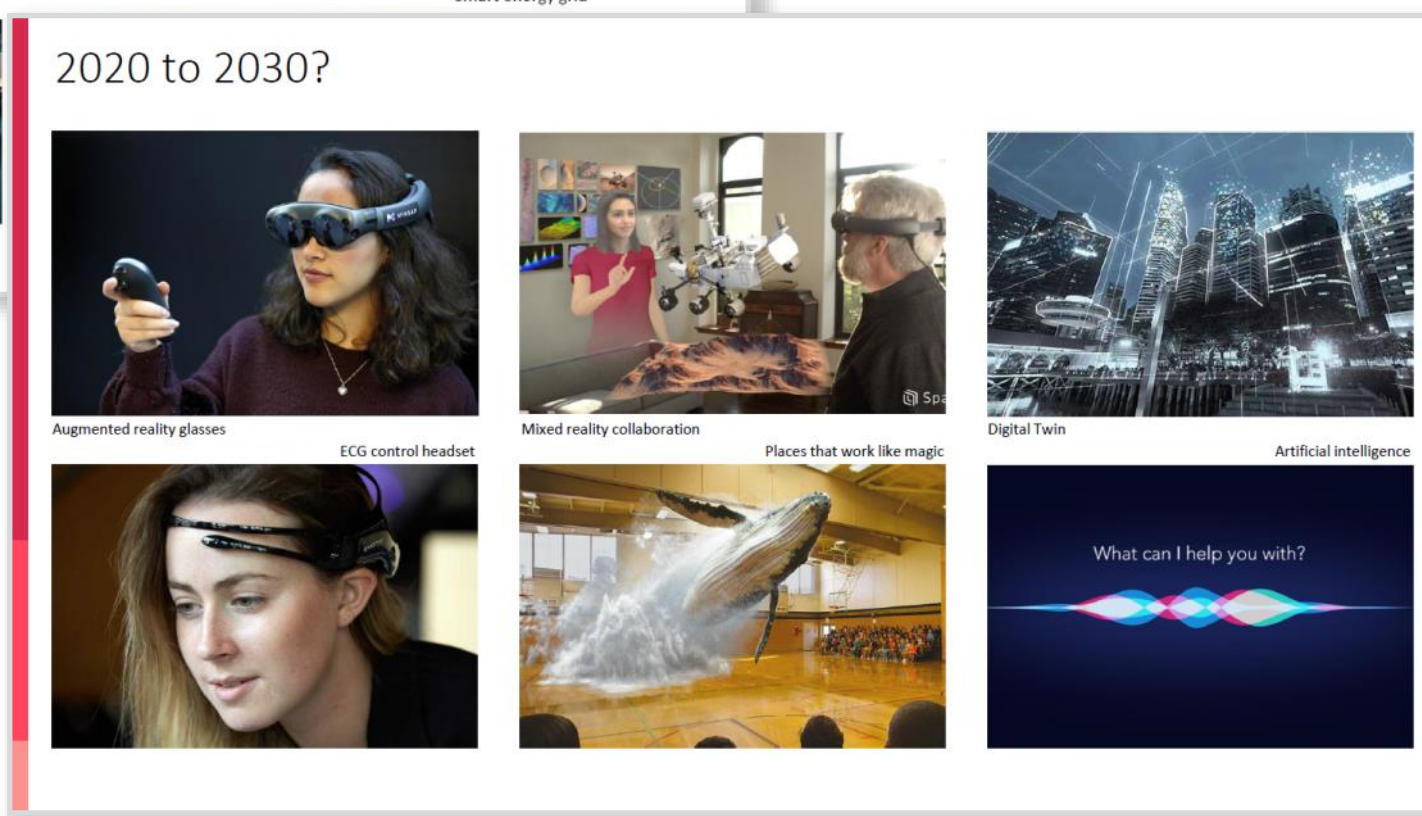
Dr. Rick Robinson: Smart Places - Creating smarter, more resilient and equitable societies

Rick, a long term collaborator of the DIZ, began by reflecting that the idea of digitally resilient communities has developed from early work on the role of digital in economic resilience. Smart places 'use technology to make the place better' but concepts such as 'better' and 'technology' are complex. They could be about smart mobility, circular economies or community initiatives, all supported by different tech platforms and applications. At the same time, economic shareholders are facing a need to transform the way they meet demand and develop digital skills in order to thrive in a modern economy.

In terms of environmental impact, in 2020 there was a 7% reduction in carbon impact through the COVID lockdown. By 2021 this had returned to previous levels but there is a need to repeat that reduction year on year if we are to hit net zero targets and commitments by 2050. Digital technology is sure to be an important tool in achieving that. Predicted temperature rises will lead to extensive flooding in our urban environments. This concerns investors such as pension funds and, as a result, they are making significant funding available to invest in lowering the impact of climate change.

There are arguments that we need to return to 'in-person' working environments to bring along new innovations but digital platforms have made these 'water cooler moments' increasingly achievable in remote ways and Rick highlighted the Pivot Projects as a great example www.pivotprojects.org. This will be accelerated by upcoming tech such as augmented reality, the 'metaverse', digital twins and new forms of user interface, enabling us to work in different ways. The technology enables us to think about what we want to do, why, and what our values are - do we want to work alone or be sociable or simply come together around a set of shared values? eg. Birmingham Smart City Alliance https://innovationwm.co.uk/wmip/networks-events/smart-city-alliance-working-group/. Other projects such as the Meridian Water development are also using digital tools and applications to design and plan a place based around such shared values www.meridianwater.co.uk/





Jacobs

Keynote 1

Andrew Quinn, Microsoft - Sustainability: Measuring Impact to Drive Transformation

Linda Chandler, Microsoft - Smart Places and the Future of Work

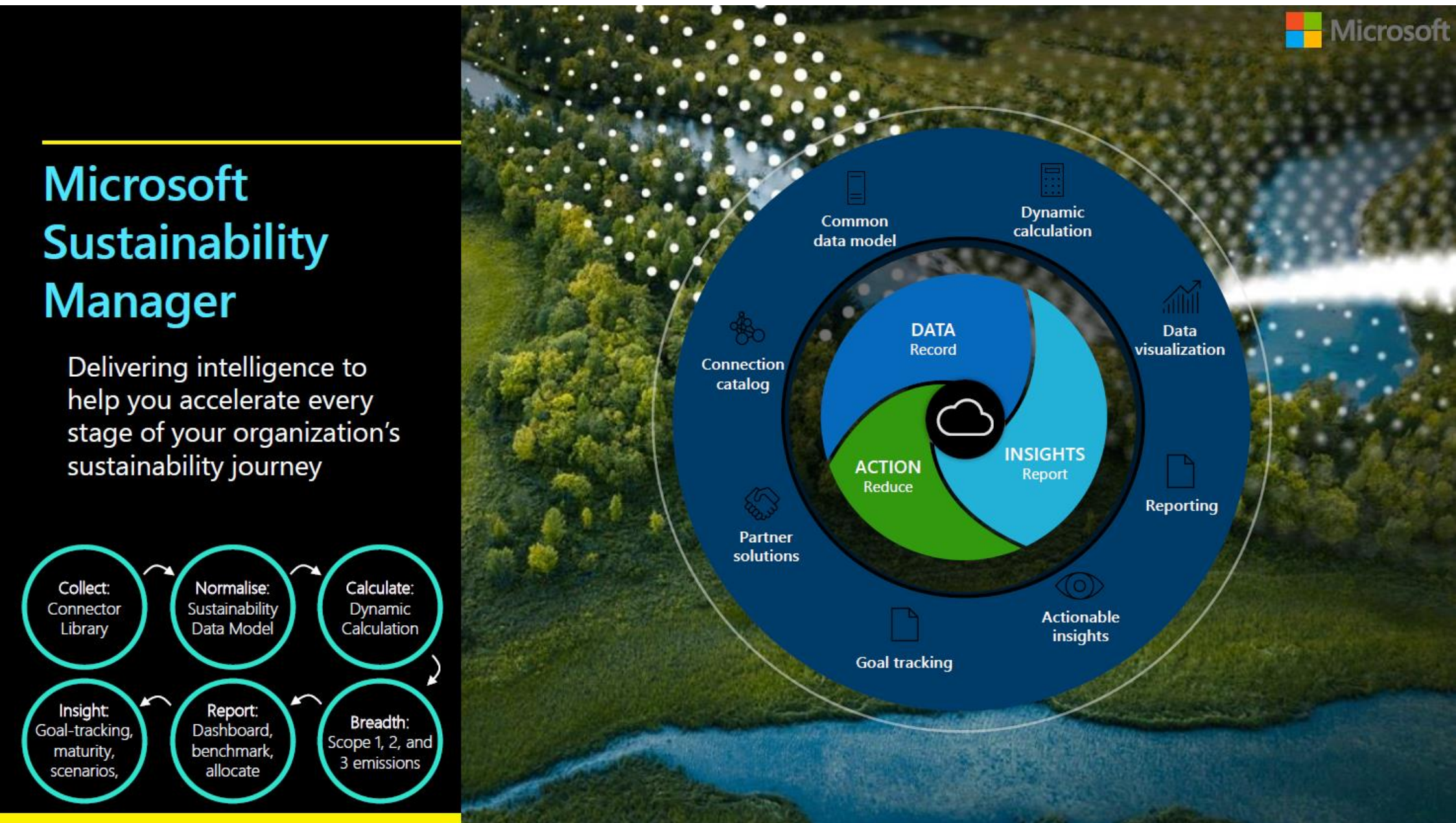
Linda, an Industry Advisor in the Local and Regional Government team at Microsoft UK, and Andrew, a Microsoft Sustainability Specialist, explored the important questions of how an organisation like Microsoft can impact the climate change agenda and how Microsoft will support the Future of Work.

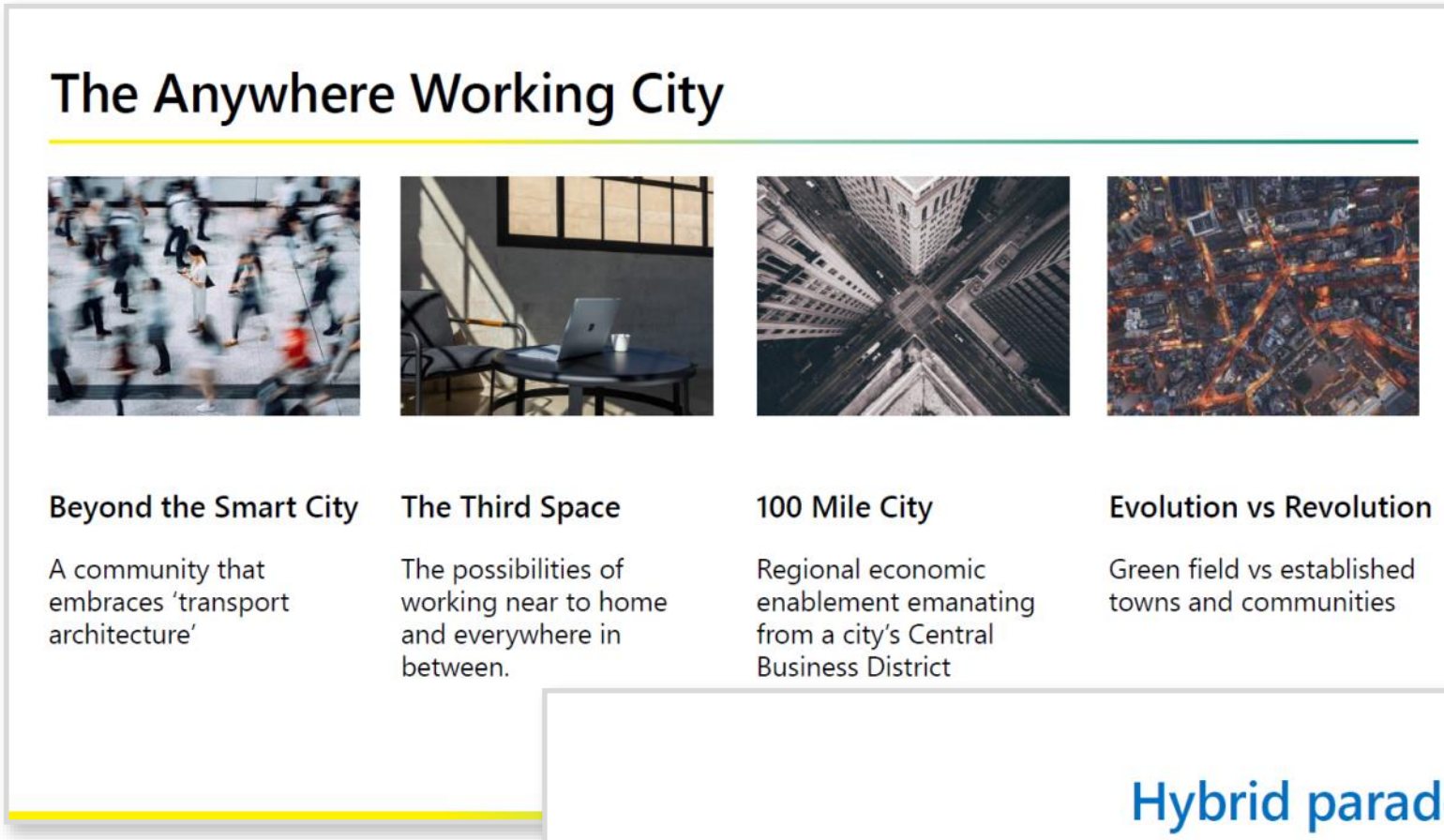
Andrew highlighted the need to look at what technology can do across multiple dimensions, not just environmental impact but also the agreed UN Sustainable Development Goals (SDG). Microsoft's responsibility extends to the way that they deliver products and services, how they work with their partners and how they are able to influence other organisations to modify their approaches.

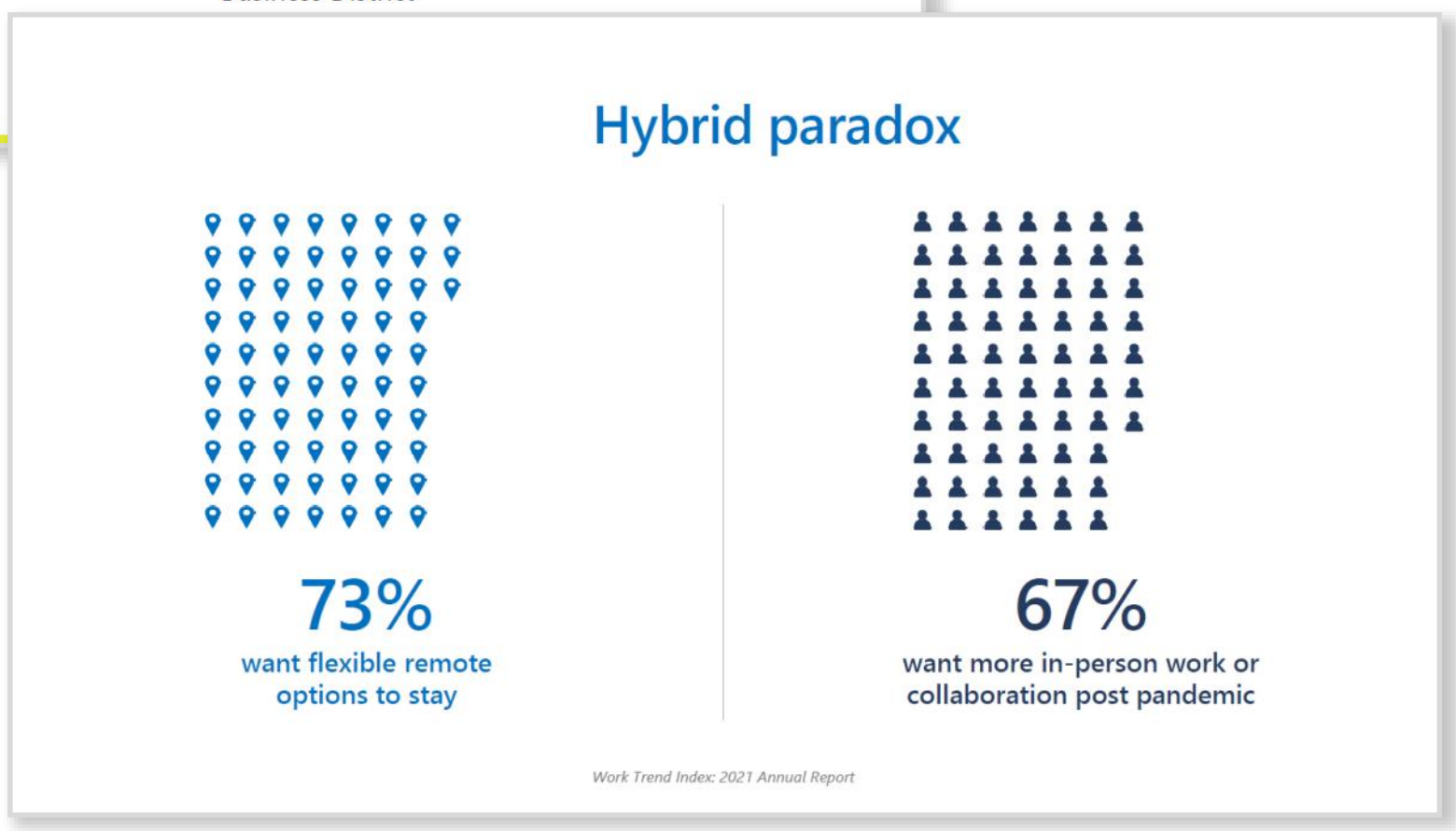
How do we get to a carbon negative position? Looking at the level of direct carbon emissions is one way but it is also important to understand how the products created are then used by the consumers. Looking beyond what emissions might yet be created they are also looking to retrospectively cancel out the historical carbon emissions created since the organisation was formed.

The obvious challenge when attempting to achieve this is that we are living in an increasingly digital word where applications, platforms and services, many of which are critical to how we live and work, need to be powered and often have significant data requirements which also need power. Microsoft will be building new data centres to cope with this and are committed to ensuring that each of these facilities is net zero powered at all times, 100% of the time.

And devices also need to be considered to ensure their materials are sourced responsibly, that the software is designed to consume less power at the point of use and that they are recyclable at their end of life. Using cloud technology is accelerating sustainable progress and business growth and creating sustainable value chains. It is also





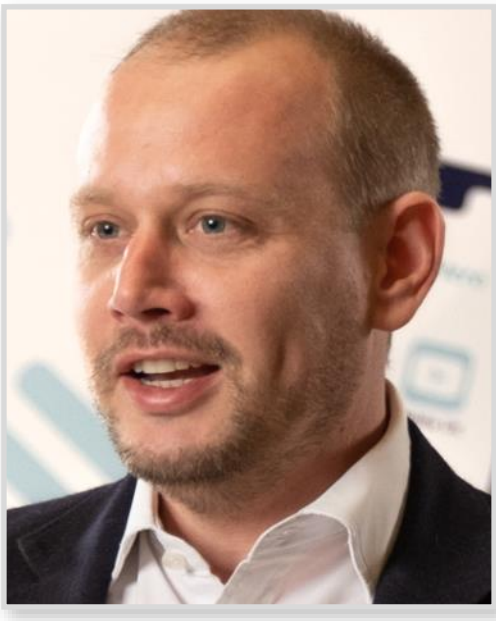


helping organisations and people to collect, analyse and act on their own data on emissions, generating insight to support them on their own journey towards carbon neutrality. Find our more at https://www.microsoft.com/en-gb/sustainability

Linda then reflected on how Microsoft is powering the future of work. Microsoft has been on a journey to this point since realising that the world was changing. Technology is changing the way we collaborate and 'The Anywhere Working City' has emerged from what has been the world's biggest working from home experiment throughout the COVID lockdown. We have seen high levels of individual productivity but witnessed this being accompanied by employee burnout; people have enjoyed the flexibility it has given them but at the same time are craving face-to-face engagement. Effectively, digital has now become a mode of transport that reduces the need to physically travel.

Research around this working from home experience has thrown up what has become known as the 'Hybrid Paradox', with 73% of people wanting flexibility yet 67% also wanting 'in-person' collaboration - ie. the best of both worlds. So we are now seeing digital and physical worlds coming together to give us the quality of life we are looking for. We are able now to work near to home, in or near to the office or, effectively, anywhere in between the two. This has been paralleled by the emerging concept of the 15 minute city focussing on establishing positive economical, ecological and sociological impacts on a place, by exploring the existence of key functions for a place - work, school, shopping etc. - all within a 15 minute from journey from home.

Microsoft



Keynote 2

Gareth Elliott, Mobile UK - Climate Change & Connectivity: Transport

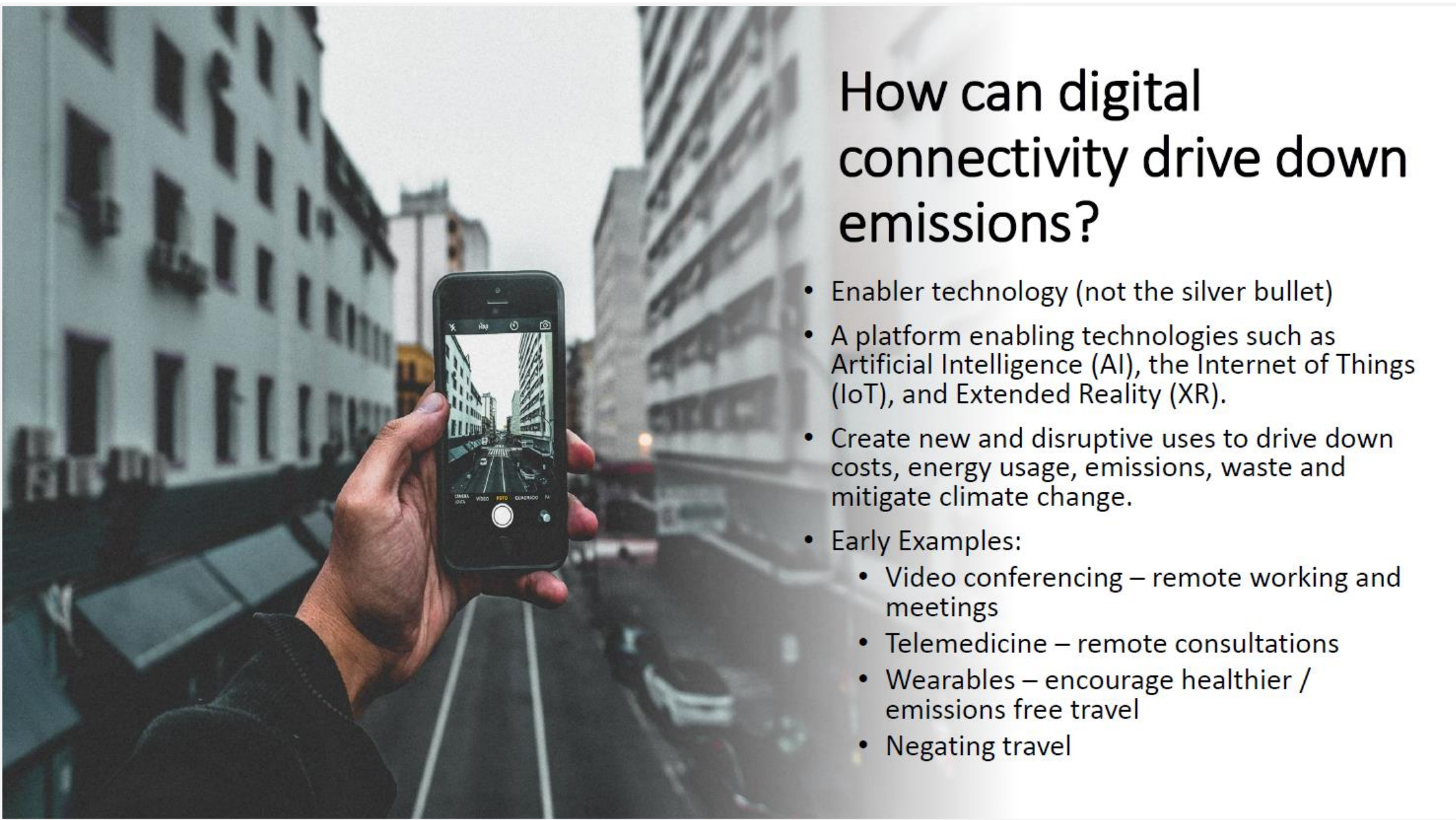
Gareth, Director of Policy and Communications at Mobile UK, the trade body for the UK Mobile Network Operators (MNOs), explored the role of mobile connectivity in mitigating the impacts of climate change and, specifically, considered its role in supporting sustainable transport. He began with a quote from an Ericsson report 'Digitalization with 5G enables further acceleration of climate action' https://www.ericsson.com/en/blog/2021/1/digitalization-5g-climate-action: "Digital technology may be the most powerful, scalable tool the world has to tackle climate change. As an accelerator, it has the potential to reduce global emissions by up to 15% by 2030."

5G is a technology that enables other technologies to reduce their own carbon impacts, a facilitator. It supports insight to understand the problems and this enables the connection of devices to help mitigate climate change. This does not ignore the fact that development and adoption of 5G technology could very well increase the MNOs energy usage initially and so they are also working hard on their own targets to achieve net zero by 2050 and by 2040 in the UK.

Looking at transport, the key is to understand the issue of its emission levels which amounts to 27% of total UK greenhouse emissions, mostly contributed by cars, HGVs and vans. The opportunity to reduce those emissions through digital connectivity is therefore really powerful, primarily through the enabling of tech innovations such as AI, (Artificial Intelligence), IoT (Internet of things) and XR (Extended Reality). Also, video conferencing, telemedicine and remote treatment through wearables are all, supported by digital connectivity, negating the need for travel.

Another key example is real-time kerbside parking availability, so that even where transport is unavoidable, the time spent looking for a parking space can be avoided. Around 520,000 UK van drivers typically spend over 20 minutes looking for a parking space for each delivery they make, and the average delivery driver spends a total of 1 hour and 40 minutes searching for parking every day. Also, intelligent transport systems with connectivity supporting live monitoring of traffic, managing congestion and idling to mitigate carbon impact. This also enables truck platooning via 5G-connected lorries, reducing air resistance and potentially reducing fuel use by 7 –16%. 5G could reduce emissions from surface transport by 6.6m to 9.3m tonnes of CO_2 per year.

Mobile UK



The Digital Led University

Academia

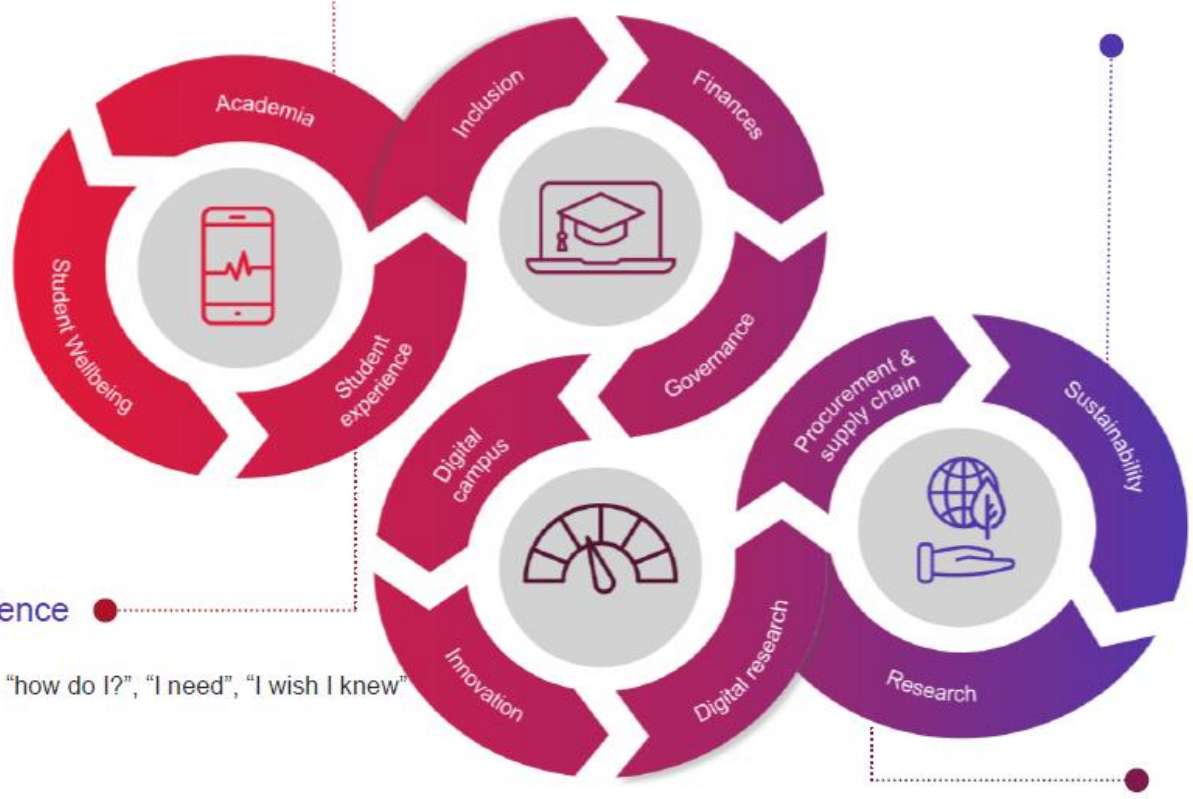
- Personalised learning experience
- Proactive lecturer support

On campus

- Resources & support systems
- Flexible learning methods,
- Zero touch IT
- Secure environments and information

Off campus

- Seamless remote learning
- Virtual reality lectures & interactions
- Unified communications



Sustainability

- Intelligent control of heat/light/energy requirements
- Smart monitoring to detect resource leakage & waste
- Effective use of learning environments & movement between learning resources
- Efficient procurement & supply chain systems delivery
- Environmental management
- Resources proactively managed with insightful data
- EV optimisation

Student wellbeing & experience

- Enrolment & onboarding
- Exciting, convenient experience – "how do I?", "I need", "I wish I knew"
- Accommodation
- Travel assistance
- Accessibility & inclusion
- Mental health support
- Social groups & media
- Clubs, sports & entertainment
- Emergency support (family, financial, etc.)

Research

- Attracting & retaining high calibre academics
- Providing advanced technologies to aid research projects
- Raising the profile of the university
- Open collaboration within industry & business
- Adding clear value to the locality

Keynote 2 - Howard Gray, CGI - Digital Delivering Sustainable Outcomes

Howard, Director of Business Consulting at CGI & responsible for client facing Sustainability and Climate Change, leads a team focused on helping organisations develop pathways to net zero. They do this through three key strands - sustainability consulting (sustainability strategy, carbon accounting, net zero strategy roadmaps), CGI/partner sustainability technology solutions (IoT, energy management) and the final strand being focused on 'digital delivering sustainable outcomes'.

CGI are exploring and delivering the Smart Operations Centre concept with clients across the public sector, creating the opportunity with technology to gather information and insight to drive decision making that supports net zero delivery. Connecting services such as waste collection, street lighting, parking, housing and air quality. Howard cited the example of a digitally led university that is enabled, in this way, to holistically manage its student experience, wellbeing, resources and environment.

The idea of 'digital delivering sustainable outcomes' is about working within a wider ambition of delivering net zero, digital driving forward work that enables the organisation to deliver specific projects that contribute to that ambition e.g. more efficient front-line operations that reduce costs but also reduce fleet and business travel and, in doing so, also reduce carbon emissions. Technology offers a huge opportunity to improve the health and wellbeing of people and places, at the same time as accelerating our net zero aspirations but it needs to be developed and delivered responsibly.

Howard highlighted that 90% of the worlds data has been created in the last two years and 68% of the data that is gathered is never used or touched again once collected. The ever-increasing hunger for global data demands energy usage that needs to be provided yet we should ask ourselves if this additional demand and the carbon in creates is always necessary. 5G technology provides the opportunity of future connectivity but also enables an increase in personal consumption of data, for example viewing 4k video on personal devices. Digital is a key enabler for a low carbon future but is has to be done in a responsible way

Technology needs to be sustainable and properly understood by the organisations using it. We should be challenging ourselves and service providers to demonstrate how they are helping to drive sustainable outcomes and reduce the carbon impact of services. Conversations on sustainability and carbon need to be embedded in decision making at all levels across our future organisations.

For further info see CGI managed IT services contract with Scottish Borders Council extended to 2040 | CGI UK and Edinburgh – Scotland's Smart Capital City | CGI UK

The Q& A Panel

Opening the Q&A Session, each of the panellists was asked, in turn, what 'magic wand' intervention they would introduce, remove or invest in in order to innovate in a place like the DIZ and to generate the greatest value.

Rick suggested we should look at how we achieve the necessary scale of investment into low carbon infrastructure and meet the challenge of creating investable projects. The answer to providing the return on investment required is aggregation of multiple demands such as EV charging, renewable energy, domestic heating etc. that do not do this on their own. There is a need to share a set of values across all of these propositions and work together to develop the solutions to invest in.

Linda commented that 'vision and commitment' are key - a shared vision for the region that all stakeholders are committed to drive through for the greater good of the place. This then needs there to be a follow-through programme of benefits realisation to track and attribute these achievements.

Gareth considered there not to be a single 'silver bullet' solution but also stressed that the telecoms industry needs local authorities and leaders to promote the benefits of connectivity, whether for climate change or the many other benefits in order to achieve country-wide coverage. Reverting to a subject he covered at the end of his presentation Gareth reinforced Mobile UK's call for investment in local authority Digital Champions to drive this forward and saw this as critical to future success.

Howard argued that it was really important for organisations to establish a baseline of their energy use and develop an understanding of where in their systems and services carbon is being emitted. Beyond that, he believed that it was also important to raise sustainability further up the agenda of decision-making, coupling that with improved carbon literacy throughout each organisation so that it becomes embedded and a part of everyone's role.

Acknowledging that the DIZ is a place made up of many small towns and villages and rural spaces in between, the panel was then asked how such a 'place' might go about funding, at scale, digital interventions that were more commonly directed at more financially attractive cities and large towns.

Rick agreed that this is a central challenge. A key factor is finding the capacity and skills required to deliver investable propositions and a large investment can be necessary in order to create that capacity and pool of talent. One alternative is to focus on projects that do not require huge pots of resource eg. the local authority / DIZ taking on a facilitating role and collaborating with private investors to support their proposals such as through the provision of access to public sector owned land and assets, or access to waste heat from service operations. Also, there are a number of private sector organisations who are prepared to undertake all the necessary work to deliver specific

projects in an area but the key is for the regional partners to set out their agreed set of values, establish what they have to offer in return eg. assets and then engage with the investment community to explore how this might be done. Similarly, there are governmental organisations that can also help and support eg. UK Cities Climate Investment Commission, Department for Transport.

The next question posed the challenge of, when you consider the future of transport and connectivity, how do we get to a point of ubiquity where there is sufficient, suitable infrastructure to support the mass application and adoption of new technology for transport.

Gareth responded to this on behalf of 5G network providers and explained that the networks are being rolled out as quickly as possible, albeit he acknowledged that this is currently focused predominantly on city centres. Existing 4G networks can also enhance and support some of this new technology. Making local authority assets available for mobile network operators (MNOs) to use is important but, more importantly, it is about building on the relationship between the MNOs and local authorities and raising the awareness of the need to build leadership and bring the public along on the journey.

The panel was then asked, in the light of there being so many opportunities and potential ways to innovate, whether they could provide guidance on what local planning policies need to be introduced to support this and, also, where to start the journey?

Rick commented that property developers were very aware of the need for, and value of, enhanced connectivity and digital services but remarked that very few local plans have standards for connectivity requirements built into them. Putting such aspirations into policies gives the developers a framework for something that they already want to put in place. Also, local authorities need to be focused on 5G and other innovations in order to attract investors e.g as previously mentioned, engaging with MNOs or EV charging companies to understand and explore opportunities and, where possible, to support them in achieving their ambitions.

Linda believed it is also key to ensure that the right combination of skill sets, including digital perspectives, are involved in design and planning considerations, with appropriate opportunities for these skills to be introduced to challenge more commonly applied views and approaches.

Rick further added that there is no 'best practice' one-size-fits-all solution and that, critically, local differences should inform the best approach to preparing policies for individual places so that local policies are a best fit for that place.

Gareth added that there are significant variations in local plan policies and in the approach to digital right across the country. A common set of attributes needs to be reflected in a senior Digital Champion role in every local authority that can coordinate across all departments, a role that is outcome, not output, focused.

The Q&A session closed with thanks from the DIZ to the panellists for their insightful contributions, not only in the main presentation session, but also in the Q&A session.

Dr Rick Robinson, Director of Smart Places, Digital Infrastructure and Telecommunications, Jacobs

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Gareth Elliott, Director of Policy and Communications, Mobile UK

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Howard Gray, Director, Business Consulting | Sustainability & Climate Change, CGI

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Workshop Summary / DIZ Green Digital Charter

The workshop session that followed the Q&A allowed delegates the opportunity to explore a number of key issues for digital and its impact on climate change, each one looking at the same questions but through the lens of a different topic area. The four topic areas were:

1. The future of work; 2. The future of service delivery; 3. The future of transport; 4. The future of planning & building

The participants within each workshop were asked to consider how their particular sector or organisation has been sustainably adopting digital practices, applications or approaches, including any examples of best practice. They also considered the key opportunities to '#domoregood', collectively, individually or organisationally, to positively impact on climate change with digital. They were asked to consider the main barriers to delivering this that might potentially reduce the impact of any digital innovation. Finally, they were asked to review whether collaboration, across sectors and across geographies, is critical to addressing climate change. In what new ways might the DIZ collaborate, both inside and outside its current geographical area, to achieve this?

The DIZ plans to use the presentations and the outcomes from the workshops to inform its future work programme. The key priorities, themes and suggestions will be discussed at future DIZ Advisory and Executive Board meetings in order to determine the areas of focus for the DIZ. This could include a new 'Green Digital Charter'. Key outputs fro the workshops and a Sli.Do poll that was running throughout the event, identified a number of opportunities, challenges, suggestions and issues, a selection of which are highlighted below.

Thank you to everyone that took part in the workshops and submitted suggestions to the Sli.Do poll.

Closing Remarks

Cllr Linda Haysey - DIZ Vice-Chair, Leader of East Herts District Council & Chairman of the East of England LGA

Cllr Haysey closed the event. It had been an absolutely fascinating session, delivering a huge amount of 'mind-blowing' information on the direction of travel our lives - at work, at home and at play - will be following in the next few decades.

Cllr Haysey highlighted the importance of funding, in a place like ours, enabling so much of this critical work to be delivered and supporting teams to provide the capacity for such innovation. Throughout the day, the need for partners and stakeholders to work collaboratively across the DIZ and beyond, had been stressed, to see what can be done jointly and achieved together, going further than specific individual organisational requirements and ambitions.

Finally, Cllr Haysey reflected upon the importance of undertaking digital innovation in the right way, in a responsible way, that also encourages those sparks of innovation that emerge from our natural inclinations to build relationships 'in person' and 'face to face', so that we are able to get the best of both worlds and enable digital to support a healthy, well, digitally empowered workforce.

About the DIZ

The Essex & Hertfordshire Digital Innovation Zone (DIZ) has been created jointly by organisations from business, health, education, local authorities and the voluntary and community sector, each with a key role in making sure that our place, west Essex and eastern Hertfordshire, is ready to respond to the challenges and opportunities ahead.

This geography crosses many borders and the partnership crosses a number of sectors but it has in many ways a common business and health economy.

We want our place to be a beacon for the application of new technology, to use it to grow our economic prosperity and provide the best services to our local communities in the most efficient way.

The DIZ has previously run a number of Smart Place Seminar events on key digital challenges including digital health and social care, infrastructure, digital skills, planning for garden towns and digital inclusion. You can access reports and resources for all of these at diz.org.uk/diz-resources/.

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DIGITAL LEADERS WINNER 100

To find out more about the DIZ and to view the recording of the speaker sessions from 'How Can Digital Help Save The Planet?' visit:

https://diz.org.uk/

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