THE EY SMART INFRASTRUCTURE ROUND TABLE

EARLIER THIS YEAR EXPERT VIEW AND EY HOSTED A DEBATE ON SMART INFRASTRUCTURE, WHERE SOME OF THE INDUSTRY LEADERS DISCUSS THE ISSUES FACING THE UK’S MAJOR INFRASTRUCTURE PROGRAMMES

‘Smart infrastructure is inevitable.’ So said Malcolm Bairdow, Global Construction & Infrastructure Leader at EY, as he introduced a lively and informative debate on the state of modern smart cities. Set in EY’s state-of-the-art headquarters looking over the smart city of London, the Round Table included the UK’s leading experts on infrastructure who were brought together by Expert View, British Expertise International and EY.

The discussion was broad in scope, covering diverse topics such as how to seek funding for projects, the increasing importance of data, how infrastructure can facilitate economic growth and some of the challenges that arise from smart development initiatives.

Hosted by EY, the debate sought to challenge perceptions on how technology will alter the lives of people living in cities. Malcolm Bairdow of EY framed the discussion by relating how technology will impact the way projects and business will be conducted in the future. ‘We cannot avoid some of the changes that are on their way. There are always going to be companies that are enthusiastic to change and others less so, but it is important that we face this with an integrated effort.’

Smart cities and transport are inevitable because technology is beginning to impact every part of our lives. ‘In 2014 there were 2bn devices talking to the internet; by 2020 there will be 50bn. Also, 90% of all the data in the world was created in the last 2 years. The data explosion is spectacular.’

Chaired by Stephen Dance, Head of Infrastructure Delivery at HM Treasury, the debate focused on how this new technology can be utilised to connect citizens and deal with the challenges of transport, equality and climate change.
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MALCOLM BAIRSTOW

THE ECONOMY

As part of HM Treasury, Stephen Dance had a particular interest in the economy and infrastructure’s impact on this. Large infrastructure projects can often be costly and the debate centred on whether the benefits are often tangible enough. Stephen also reminded the panellists of the importance of power and waste in all these projects, and asked them to consider this when answering each of the questions.

What role does infrastructure play in driving economic growth?

Jo Baker Infrastructure has the potential to be an enabler of economic growth, as clearly without transport we cannot access opportunities. I recently researched the issue of rural accessibility. If it is just transport we cannot access opportunities. I recently reminded the panelists of the importance of power and where the competitiveness begins.

First there is the physical infrastructure such as the roads and water utilities. Then on top of that you have the operational technology such as the traffic lights, then the communication infrastructure that connects the devices and finally the information technology. This is where you begin to make sense of the data and where the competitiveness begins.

We have to start accommodating the next generation, who are much more used to using technology in every aspect of their lives.

The world is changing and so is the business model. Facebook, the largest content owning company in the world, does not actually produce any of its own content. We cannot afford to become disconnected. Today London is not just competing with Paris but also New York, Shanghai, Jakarta and any city across the world. Globalisation and digitisation have changed the dynamics.

Elaine Stewart Investment in infrastructure is vital for our competitiveness. We have suffered from a lack of investment until very recently and I am really happy to see it return. It is important we maintain our position in the world. There is definitely a focus on digital at the moment but investment in infrastructure is essential; people are not going to stay at home.

We need to prepare for the future.

PUBLIC AND PRIVATE SECTOR

This discussion on economics led on to a conversation around funding. With members from both the public and private sector present on the panel, there were differing opinions on how such infrastructure projects should be put together.

Is the relationship between the private and public sectors changing in regards to delivering these infrastructure projects?

Charbel Aoun There are two ways of looking at the principles of infrastructure. Energy for example is easy to finance because you see tangible outlooks. So there is an x dollar saving on a y dollar investment. However when you finance a better life there is no return on investment. How can we keep the impact. Private companies have one or two decision makers whereas in the public sector there is democracy. Decisions can take a long time, and then by the time you reach the public sector there is an election and you have to start again. The public sector is ready and has capable people, but they have less flexibility in terms of the process, procurement and policy.

The main challenge whether you are public or private is that you can no longer run a business from your balance sheet alone. Where does social-economic value come in to the work we do? How do you factor in all the benefits that you enable someone else to deliver, particularly where the return on investment may not occur in the company that delivered the capital?

Five years ago Network Rail’s purpose was delivering an asset and delivering a timetable. However our latest strategy is called ‘A Better Railway for a Better Britain’ and it is no longer about how we return on investment but how we return value. When we remove a level crossing we are not just freeing up capacity we are actually making a village a lot safer. That is paramount in terms of our strategy.

Alex Burrows In my business, if I see a case for investing our own money into a certain area of technology where I think we can make

YOU NEED TO ENSURE THAT THE TECHNOLOGY IS INCREASING PRODUCTIVITY AND EFFICIENCY.

ALEXANDER JAN

Davin Crowley-Sweet Our customers and citizens move at a pace that is faster than the level our infrastructure can operate at. Relationships are crucial to managing a complex system; you do not manage the entities themselves. The challenge for us as we increase the complexity is that it is going to force us to cooperate as individuals. We need to set up commercial frameworks to manage complex systems at the relationship level. All this is driven by data and information and it is imperative this is acknowledged.

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There is an awful long way to go in terms of defining the value that infrastructure generates.

Alex Burrows

DATA

Data is a topic that is growing in importance in almost all sectors. As technology comes to influence every aspect of life, the challenge will be to bring together the tangible infrastructure with the technology that goes around it. This in itself throws up a whole raft of problems that did not have to be considered to the same degree in previous infrastructure projects. The panelists were all in agreement about the importance of data, and were equally keen for data to be used to help improve the efficiency and flexibility of systems.

How do we bring together the tangible infrastructure with the technology that goes around that?

Chris Perry

One of the main challenges we have is data ownership, which is key to bringing together the data and the infrastructure. Infrastructure is going to provide data that needs to be made open and available. If people think that their data has some value they tend to want to keep that closed or sell that data on, but actually what we need is the data to be made available so innovators can utilise the information. It is quite a challenge. We have got to turn the data into usable information to drive forward the value of that infrastructure.

What is data and why should we let you have it?

Davin Crowley-Sweet

Data is no different to any other asset. It has value, can generate value and helps you manage risk by informing decisions. The value of data means it is clear it needs to be shared, which I do not mind doing as long as I am informed. If you were contacted about sharing your data would you feel differently? The systems will be more manageable if we think about data as business rather than merely technology.

Chris Perry

It is difficult to contain data once it is made available, and I believe it should be made as open as possible. There are three layers of data. Non-personal data such as a car going over a sensor on a road, “anonymised” data such as how many people have been moving from A to B, and personal data. Data is an issue people have more and more concerns around, particularly in terms of regulation and ownership.

Jo Baker

We are trying to utilise non-intrusive types of data. Data companies are concerned about the media perception that their data is not safe. We have agreed with these companies that the data will be “anonymised” to an acceptable level. We can derive an enormous amount of practical value from this data but privacy is paramount.

Alexander Jan

People tend to be more relaxed about sharing the data with the private sector than the public sector. Data creates an interesting power shift, from the engineers to the people doing the analysis. The irony is the infrastructure is not that sophisticated at all. The way the railway is built today is the same way it has been built for a hundred years. You need to ensure that the technology is increasing productivity and efficiency. Charbel Aoun

Anonymous data can be used to deliver substantial value. Everything in infrastructure is about demand, supply and reaching the peak. Data enables you to rebalance your usability across the time, which improves efficiency. We have used data for the last 30 years; it is an inevitable part of the industry. People’s transport habits are changing and data can allow us to be aware of this through an Oyster card or mobile phone. If data is delivering value then why not use it? We all agree that the data has to be secure, but I do not mind people knowing where I am as long as they do not know who I am. The data can be made anonymous before it is given to any commercial entity and the government could create a non-commercial agency to ensure...
the data is being used properly. Infrastructure is not the only industry that is going through this life cycle; online banking and online shopping went through similar transformations.

Elaine Stewart We need to make sure we draw meaning out of data so the consumer can feel their lives are being enhanced. In return for that they will trust the company, and indeed share prices will be damaged or wiped out for a company if they misuse that trust. We cannot hold back progress but we need to make sure it is safe for consumers both in a business and personal sense.

Alex Burrows Data can release the future to be developed. I have no problem with information being used as long as it is useful and has a tangible positive impact. There has got to be a point where this data is encouraging innovators to create new services and business models. A regulatory scheme around data may inhibit this potential and limit the innovative space to develop.

THE FUTURE

Stephen Dance brought the proceedings to a close with a glimpse into the future. The hope was that these innovations and new way of doing things will bring great benefits to everyone, and each panellist had a different vision on what the greatest impact will be.

What do you think will be the biggest change to infrastructure in 30 years’ time?

Davin Crowley-Sweet Technology will enable us to have less unnatural and rigid buildings, and as such cities will be much more organic and fluid in design. The biggest change will be how we experience infrastructure. I do not think the word ‘commute’ will exist in 30 years’ time, as what we call a commute today will be part of the work.

Elaine Stewart I would like to connect to people quicker and move around the UK in a more seamless way. I would like to get to Sydney in less than three hours. I would like to drive my Tesla car round the city, which by then will be populated by places where you can charge it effectively and efficiently.

Jo Baker At the moment there is a tendency to look towards the glamorous aspects of smart cities, which can distract us from the essentials of food, energy and water. Other cities around the world cannot match the quality of life that we have in London. One of the ways we should utilise technology is to ensure clean water, fresh food and energy supplies are maintained and increased around the world.

Alexander Jan I hope the infrastructure will be less intrusive and reflect the way people function around the city. The patterns will most likely be similar, we are creatures of habit and like to crowd and migrate and as such the commute may not be completely removed. Two big transformations will be pricing (hopefully we have a standard pricing system) and the levels of death and serious injuries will be greatly reduced.

Alex Burrows I believe in equity and ensuring transport infrastructure plays a role in supporting our daily lives. By equity I mean the equality of opportunity and the idea that the cost of travel is not a barrier to success.

Chris Perry In 25 years there will be an increased efficiency in sustainable travel. When there are problems within the transport system, my wearable technology will receive a message, wake me up early, get me in my driverless pod that will get me earlier to the station and take me to where I need to be. I will then have a bike booked to take me to my destination. I will not need to think about it; it will be seamless and all billed at the end of the month. It will be that natural to travel around.

With this vision into the future of smart innovations, the debate came to a conclusion. However, if the discussion has taught us anything it is that smart technology is an ever-changing field and that any definitive predictions can seem outdated within a matter of years. Although, with these sector leaders thinking collaboratively about a smart vision for the benefit of all, we can allow ourselves a degree of optimism. You cannot predict the future but you can certainly be excited by it.