Beesley lecture

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Regulation and investment in telecoms: back to the future or brave new world?[1]

Introduction

Thank you. It is a great privilege to give one of these lectures, not to mention to give a second one.

They are an estimable institution for the regulatory community – a place where theory meets practice, where academics meet practitioners and where regulators meet regulated. Over the years, I've attended many of them, and invariably come away with something new to think about.

It is a particular privilege to give a Beesley lecture on telecoms, given that Michael Beesley played such an important role in the history of this sector. He was asked in the early 1980s by Keith Joseph to explore the possibility of liberalising British Telecommunications, producing a radical set of recommendations for privatisation and competition that – even if they were not followed in their entirety at the time – became a touchstone not only for the liberalisation of this sector, but many others that followed.

So, when I first talked to David Saunders about the possibility of doing this lecture, I was a little apprehensive.

What could I add to the debate about telecoms regulation… given the dynamism of the sector, the intricacies of the regulatory system, and the fact that I have only just landed in the sector (putting aside a brief sojourn at Oftel nearly 20 years ago) from water?

But as we discussed it more, I came round to thinking that maybe that was the point…

… maybe what I can offer is a perspective from someone who has been kicking around in regulation for the best part of 20 years, but who is relatively new to this sector and indeed from someone who is very new to the company side of things.

So that's what I am going to do.

And as I do that I am going to try to draw out some of what I think might resonate from my experience of regulation in other sectors in the past – suggesting where telecoms regulation might be able to learn from that – perhaps going 'back to the future'? – and where telecoms regulation might need to forge its own path – heading into a 'brave new world'.

So where are we going in the next 45 minutes or so?

[1] I am hugely grateful to Emily Clark for her help with this lecture. I am also grateful to Inge Hansen, Monica Ariño, Mark Shurmer, Mark Lidiard, Alex Towers, Brian Williamson and Piotr Jasiǹski for their comments. Any errors, omissions and infelicities remain my own.

I want to start by setting out at a fairly high level the context for telecoms regulation right now; to set out some of the challenges facing the regime, and indeed those of us who operate within it.

Then I'm going to move on to discuss four things that I think are really important to focus on if we are to meet those challenges. And I will then try to conclude by pulling it all together.

Context

One of the things that has struck me coming into telecoms from water is that – for all the very obvious differences between the sectors – there is, to my mind at least, a similar feeling. A feeling that, in regulatory terms at least, the sector is at a pivot point.

I use the word 'pivot' specifically because I don't mean to imply revolutionary change or any feeling that past approaches are somehow discredited. They have in fact been very successful – the UK is one of the leading digital economies in the world, and we have one of the most competitive telecoms sectors across the value chain.

I use the word 'pivot' because there is a sense that continuing to do what has been done in the past won't deliver against the challenges the sector faces going forward. And in particular, won't deliver the public policy objectives of providing affordable, gigabit speeds across the whole of the UK, ultimately to ensure that we remain a leading digital economy.

I should acknowledge at the start that the drivers of these pivots in water and in telecoms are very different.

At Ofwat, an important driver for change had been the realisation that diminishing marginal returns to regulation had set in – at PR99 Ofwat's efficiency challenge had been worth £39 off the average bill, but by 2009 this had fallen to £11. This was coupled with further important drivers in the shape of climate change and population change, which meant scarce resources needed to be put to better use, and more innovation was essential. If regulation was going to enable and incentivise the step change in efficiencies the sector and its customers needed, we needed to find a different regulatory tool kit to do that. This had prompted Ofwat to consider more extensive use of markets and indeed the scope for more head to head competition in the sector, alongside rethinking its approach to price controls.

This had in turn led it to propose a set of 'enabling' modifications to company licences. This raised the profile of all of these issues at board level, and with investors, in ways that nobody was prepared for, and which resulted in a crisis of confidence in the regime all round.

When I arrived at Ofwat in 2013, the regulatory model in water needed to be recast. Not only to deal with the substantive drivers for change but also to re-forge relationships between the regulator and its major stakeholders, including companies, investors, customer groups, and government. We didn't want to throw the baby out with the bathwater – how I miss the punning potential of the water sector! – but we did need to move things on pretty substantially if the sector was going to succeed into the future.

Landing in telecoms, the idea of regulation being at a pivotal point feels similar to me. Why?

The drivers are different, but still profound.

They start with a fundamental shift in what customers and society expect from the telecoms sector.

In 2000, 51% of people accessed the internet once a week or less, 98% of people accessed the internet using their home computer, and only 1% did so using a mobile phone[2]. In 2000, there were only 100,000 broadband connections in the UK, with other internet users using dial-up[3].

Compare and contrast with today!

In 2017, the people who use the internet report spending 24 hours each week online, and that has doubled in just the last 10 years[4]. And you only have to walk down the high street to realise that connectivity is increasingly built into devices that in the not too distant past were pretty 'dumb' – like washing machines or doorbells. We are re-engineering the way we live. Our sector is at the heart of this huge economic and societal shift.

But the network that this requires, isn't the network we have today. And the regulatory regime that will enable and incentivise the creation of that network won't be the one we have today either.

But there are other important drivers for change too.

In telecoms – in stark contrast I might say to water, where asset lives of more than 100 years aren't unusual – technology is changing at pace. Convergence is here today – and, while the regulatory regime is still largely focussed on 'fixed' and 'mobile' – consumers have mobile handsets that switch from cellular to wifi, and we're selling a'4G Assure' product into the business market that uses a hybrid fixed-mobile router to ensure that users avoid experiencing a lost connection. And that's before you start thinking about the internet of things. And also before you start thinking about the potential that technology, especially when coupled with customer data, brings to offer new products and services in new ways to the customer, driving convergence not only within the sector but also between telecoms and other sectors.

And all of this is wrapped up in a very much changing public policy context for regulation, which must be prompting all regulators to reflect on what they are there to achieve, and on the tool kit that they use to achieve it. While telecoms is, I understand, considerably further down Labour's renationalisation list than rail, post and water, we in the sector do need to recognise that the services we provide are increasingly seen as essential for everyday life, raising their political salience. And we also need to understand that – especially in relation to services that are seen as essential – society's tolerance for outcomes that are seen as 'unfair' is diminishing. And that outcomes may be seen as 'unfair' when some groups in society do better than others, even if everyone does better than they did before.

As I said, these are profound shifts. And I don't purport to have all the answers to where they could, should or will take us. But, reflecting on my experience elsewhere, I do want to suggest four things I think will be critical for success:

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[2] Sources: Office for National Statistics.

[3] Source: Ofcom, see Figure 1, p6: https://www.ofcom.org.uk/__data/assets/pdf_file/0021/38406/statement.pdf].

[4] Source: Source: Ofcom Communications Market Report 2018, p14: https://www.ofcom.org.uk/__data/assets/pdf_file/0022/117256/CMR-2018-narrative-report.pdf

- A focus on **outcomes**
- Ensuring outcomes are based on **customer engagement**
- Re-evaluating the **balance between competition and regulation**
- Rethinking **relationships** and in particular, the development of a **co-creation mode** and collective problem solving.

A focus on outcomes

I've said before (including in my previous Beesley lecture[5]) there is no unique answer to the question 'what constitutes good regulation?' Economic regulation is about creating a framework that aligns the interests of companies, their investors and their managers, with those of customers and society, today and over the long term. This might be done through direct regulatory incentives, such as minimum standards or price control incentives. Or it might be done indirectly through the promotion of competition, and a reliance on that process of rivalry between firms for customers to create that alignment.

However it is done, the success of any regulatory regime is measured by how well it achieves this alignment. Or to put it another way, how well the regulated sector does in delivering the outcomes that matter to customers and society.

Which is one reason – perhaps the most obvious reason – why it is critically important for the regulatory regime to focus on those things – on outcomes, rather than outputs or inputs. Because outcomes are what really matters.

While I was at Ofwat, the shift to incentivising companies to deliver outcomes, rather than outputs was one of the biggest changes we made to the regulatory regime. We shifted from monitoring and holding companies to account for the number of miles of mains they had replaced, or treatment works they had upgraded, to holding them to account for reliable, resilient water supplies and affordable bills. In some respects it was tougher for those we regulated. Outcomes often can't be delivered by a single company, so we were asking companies to take responsibility and a measure of risk in relation to things that were not wholly within their control… but for things we considered they could reasonably be expected to influence.

Why did we make that shift at Ofwat?

Go back to what I was saying earlier about a key driver for change in water regulation being the need to find new efficiency frontiers.

In this context, one reason for the shift to outcomes was a desire to improve allocative efficiency – to ensure that scarce resources were deployed on the things that mattered most to customers and society. Another was the potential it created for dynamic efficiency. Coupled with greater use of markets in the water sector and tougher incentives for efficiency, the shift to an outcomes focus created both the ability and incentive for companies to find new and better ways of doing things.

What relevance does this have for telecoms?

[5] Ross, C. (2015), The evolution of the regulatory model in water, is available at: https://www.ofwat.gov.uk/wp-content/uploads/2015/10/prs_pre20151015beesley1.pdf

On the one hand, the whole regulatory tool kit in telecoms has a different balance. It relies much more heavily on competition to generate that alignment of interests between customers and those who provide services. The primary focus of regulation has been on promoting competition rather than on regulating the price and service package for the end user. And it is certainly true that the proportion of the value chain in telecoms that is directly regulated is much less than it is in water, which almost certainly made it easier for Ofwat to adopt an outcomes-focussed regime.

So maybe there isn't a parallel?

Maybe not an exact parallel. But I do think there's a read across.

Perhaps the most important is that point about innovation and efficiency. If you focus on what really matters to customers and society you free up scope for innovation and efficiency in how those things are achieved. I know that the prevalence of competition, especially downstream, means that the chain of causality between what the regulator does and what the consumer gets is less linear and less direct than in water. But Ofcom is hugely influential in setting the agenda and still plays an important role in holding the sector to account. So what it chooses to focus on does matter.

In drawing comparisons, I should acknowledge that Ofcom is way further down the outcomes road than we were at Ofwat when we shifted to this approach. Indeed, Ofcom was a pioneer. In 2011 when Ofcom moved to a multi-year 'strategic framework' to prioritise its work, it also introduced the idea of measuring success against outcomes. It was developing what was at that time a ground-breaking approach, while we at Ofwat were producing a price review still based on specifying tens of thousands of capex schemes (i.e. outputs) that companies would be held to account for delivering. It took Ofwat until its 2014 price review to shift away from this and towards outcomes.

And I should also acknowledge that Ofcom is still clearly very concerned with outcomes. To give only one example, its conclusions of the Digital Competition Review are clearly set out in the context of the outcomes Ofcom considered customers and society want to see, albeit very much in the context of fixed line telecoms services.

But maybe that is why I've been surprised – stepping into telecoms from water – that the debate feels so dominated not by outcomes but by outputs and even inputs. In particular, by the debate about fibre and the amount of investment in it.

The number of miles of fibre in the network is an output, the number of homes passed with fibre is an output.

If we were talking about outcomes, we'd be talking about the sort of things customers could do – the number of people who could stream Netflix simultaneously, how long it takes to download a 4k movie. And we'd be talking about how reliably they can do it – how many hours do speeds dip below what they expect, how long it takes to get a new connection. And we'd be talking about how much people have to pay for all that.

And we are talking about that in telecoms. But it feels as though we are talking a lot more about fibre.

That isn't to say that having more fibre in the network doesn't matter – it is a critical enabler of a lot of those outcomes. And – to be completely clear – BT is committed to fibre. Openreach has been very clear in its commitment to deliver 3mn FTTP premises by 2020.

And it has been very clear about its ambition to get to 10mn premises by the mid-2020s, if the conditions are right. And these aren't just warm words. Openreach, under its Fibre First programme is rolling out fibre at a pace of 13,000 premises per week. By the end of this financial year they will have passed over 700,000 homes – that's more homes in a single year than they have done over the past 7 years. They are well on the way to delivering against our 3mn premises commitment, and if they continue like this they could deliver that ambition of 10mn premises by the mid-2020s.

So nobody should doubt our commitment to fibre.

And that isn't to say regulators have no business in looking at outputs or even inputs. These can be important leading indicators of the delivery of outcomes.

But what we as a sector are held to account for matters.

If you measure how the sector is doing against the outcomes people want and are willing to pay for, you focus on a different set of challenges than if you focus on measuring and comparing outputs.

Looking at the extent of FTTP shows the UK lagging behind some other economies, such as Spain and Portugal or South Korea and Japan. But looking at outcomes[6], we see that 93% of premises in the UK can access superfast broadband, i.e. get speeds of at least 30Mbps – speeds that are sufficient for streaming of 4k video, for example. And thinking about the outcomes that people want and are willing to pay for, we see that 40% of those premises have taken up this capability, but 60% have not. Perhaps with an outcomes-focus one might see the more immediate challenge for the sector as one of addressing the availability of superfast broadband speeds for that 7% of the country, rather than rolling out ultra-fast?

A question now rather above my paygrade, but my point is about the different conclusion you get by looking through a different lens.

Crucially in our fast-paced sector, with a focus on outcomes brings in a wider set of options for how you solve those challenges. I note that on Monday this week the first 5G customer service in the world went live in the US, and its initial focus is on providing fixed broadband access[7]. More modestly, in our recent response to Ofcom's consultation on USO[8], for example, we have raised the possibility that more extensive use of fixed wireless access might be a quicker, more cost effective way of bringing decent broadband to some people than a conventional fixed solution.

And if you think that by encouraging a focus on outcomes now that I am sitting in a regulated company, I'm looking for an easy ride I should be clear that I don't think being held to account for outcomes is an easier ride at all. In fact, in the water sector, companies found an outcome-focused regime tougher in some ways that an output-focussed one.

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[6] Source: Ofcom (2018) Connected Nations

[7] https://www.theverge.com/2018/10/1/17923072/verizon-5g-network-home-internet-service

[8] Ofcom (2018), Implementing the Broadband Universal Service Obligation, request for expressions of interest is available at: https://www.ofcom.org.uk/__data/assets/pdf_file/0013/115042/implementing-broadband-uso.pdf
BT (2018) response to the Ofcom request for expressions of interest is available at: https://www.btplc.com/Thegroup/Policyandregulation/KeepingtheUKconnected/Consultationresponses/Ofcom/2018/Documents/UniversalServiceObligation/BroadbandUSOBTResponse.pdf

Because – as I mentioned earlier – companies had to work differently, and work with others to achieve those outcomes. I suspect that would be true in telecoms too – the outcomes that customers want would depend on both network providers and downstream communications providers (CPs). Achieving some of those outcomes might also require CPs to work with NGOs and civil society groups.

It is also a tougher regime because the outcomes that customers and society expect aren't set in stone – they shift over time. So a true outcomes-focus requires constant vigilance and agility. As far as water companies today are concerned they can't just say 'we've laid x miles of new distribution mains, we've delivered what we were supposed to, we're fine' – they've committed to keeping their customers happy, which means that if people these days expect Citymapper to tell them where the water company is digging up the road – regardless of whether they expected that when the price control was set 5 years ago – the companies need to understand that and do it.

I should also note that an outcomes-focus isn't easy for regulators either. Like regulated companies, the outcomes that regulators are held to account for, are not things that the regulator itself can deliver. And – as I mentioned earlier – there's maybe a greater challenge here for Ofcom than Ofwat given the relatively small proportion of the overall value chain that is directly regulated in comparison with water.

As for regulated companies, an outcomes-focussed approach requires an agility and willingness to change and adapt on the part of the regulator. But I'd argue that is just life these days. As a regulator acknowledging that it is outcome people really care about, and outcomes that you will be held to account for achieving is really just to reflect reality.

So… keeping a clear focus on outcomes feels to me important. Not easy, but important if the sector is going to focus its efforts on the right challenges, if it is going to meet them in the most efficient and effective way, and if it is going to be responsive, agile and innovative – rather than baking in sub-optimal choices and unnecessary risk.

Customer engagement

Let's talk now about another element of the regulatory zeitgeist, and another area in which we moved a long way while I was at Ofwat – customer engagement.

Customer engagement is clearly a complement to a more outcomes-focussed approach. Moving from a focus on inputs and outputs to a focus on outcomes will only increase allocative efficiency, or indeed any other sort of efficiency, if those outcomes really are what matter most to customers.

And – intuitively – the best way to know what matters most to customers is to engage with them.

In principle, it would be possible for the regulator to do this – itself to take on the mantle of mediator between companies and customers, sucking in ever-more information in order to create an ever-more perfect blueprint for customer desires. But in practice, no regulator is ever going to know customers better than the companies that serve them. And indeed that's how it should be.

And so at Ofwat – and indeed Ofgem did the same thing – we tied company incentives in price reviews to the quality of the evidence and process they used to understand customer preferences. And the extent to which they reflected those preferences in what they

delivered. Not only did we see this as the only really practical approach – we only had 200 people in Ofwat and I could quite easily have had them all working on customer preferences all the time and not cracked it! – but we also saw that direct re-connection between companies and the customers they serve as critically important for the legitimacy of the sector.

A very different context in telecoms. Again, you might argue that in telecoms competition is the prevalent means by which companies become aware of customer preferences and are incentivised to respond to them, so nothing here for regulation beyond the promotion of competition.

Well, yes. Up to a point. I'd argue that both of those drivers for greater customer engagement in water regulation – improvements in allocative efficiency and legitimacy – do read across to telecoms.

Perhaps most obviously they read across into the regulation of Openreach. There is increasing competition upstream and I will talk more about that later. But today, Openreach remains very much regulated and that regulation includes a set of 'minimum service levels' set by Ofcom.

Obviously, if you are controlling prices, it is important to set some standards for service levels – if you don't do that you risk that compliance with the charge control will be achieved while service standards drift downwards. From a regulated company perspective too, it is actually helpful to have those standards explicit in the control.

Plus, I can understand Ofcom's desire a few years ago to get Openreach's service up to an acceptable standard – minimum service levels with tough penalties for falling below them work well in that context. Ofwat followed a standard-setting approach after privatisation for the same reason.

But what Ofwat found was that, while it achieved that aim, it didn't work well to incentivise excellence – the standards quickly shifted from being 'minimums' to being 'norms'. And linked to this, it created a sense that the companies were there to do what their regulator told them to do rather than what their customers wanted.

Plus in telecoms, with the extent of competition, there is the risk that, by regulating service standards too directly, the prospect of using service standards as a differentiator is removed, which would dampen competition.

It would be a shame if either of these things were to happen. And they needn't.

Ofcom could adopt an approach in its price controls on Openreach that rewarded Openreach for the quality of its engagement with its customers – all downstream CPs, including BT's own – and the extent to which Openreach delivered what its customers wanted and were willing to pay for.

Indeed, it could go further and adopt an approach based on 'negotiated settlements' as the CAA did with regulated airports and airlines. We looked at this in water and rejected it because it seemed an approach more appropriate in the context of wholesale markets, where customers are well-informed and well-resourced, compared to more atomistic consumer markets. This style of regulation would remove the regulator from the position of mediating between company and customers. And, other things being equal, should also result in better outcomes for downstream CPs.

Maybe Ofcom is open to this? It noted in its July document that under the DCR Commitments 'Openreach must consult formally with customers such as Sky, TalkTalk and Vodafone on large scale investments.' And it went on to say that, 'The new model is designed to ensure that Openreach is more responsive to the demands of all its customers – not just BT – and increases its fibre investment.'[9] Openreach is doing just that. And so by encouraging more and deeper customer engagement through its regulatory approach, Ofcom would be very much going with the grain.

Having said this, I should note that, if passive access is increasingly taken up and infrastructure competition increases as a result, Openreach will need to tread carefully as more of its customers become its competitors. It will also need to ensure that its engagement is effective not only with the 3 or 4 largest of its customers but also with the long tail of 300-400 smaller customers, who may have quite different business models. And it will need to work out what to do when it faces demands for quite specific, bespoke, solutions from customers when it still needs to comply with strict equivalence obligations.

Not easy. But still, I think, very much better than a one-size fits all regulator-driven approach.

I think the legitimacy point that was a big driver of our emphasis on customer engagement in water is also important in the retail part of the value chain.

The end customer interface in telecoms is undoubtedly highly competitive. But we also know that it is complex. That's not necessarily a bad thing in itself – part of that complexity comes from bundled products and services that offer genuine value to the customer. Indeed, BT sees greater potential for that in a converged world, as we said when we launched our refreshed strategy in May this year. But the more complex the offering, the more important it is for all CPs – and let's be clear that this isn't just an incumbent issue, it's an everyone issue – to provide useful information to customers, in a timely and accessible way, to enable them to make the right choice for themselves.

I would also note that at Ofwat we came to see support for vulnerable customers very much as one element of great customer engagement. The key insight from the FCA's seminal work[10] on this a few years ago was that vulnerability isn't static, but transient – depending for many of us on circumstances that may come and go. Which means that the better companies know and communicate with all our customers the better we will be able to provide the support they need when they need it. I think telecoms is maybe a little behind other sectors on this – maybe because historically the services we provide have been seen as less 'essential' than water or energy or with fewer long term implications than financial services. But we need to catch up.

Having spoken about the importance of customer engagement – both in terms of driving delivery of the right outcomes and maintaining legitimacy – it is really important to recognise that it has its limits. And this is, I think, where the whole question gets tricky for

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[9] See: https://www.ofcom.org.uk/__data/assets/pdf_file/0025/116539/investment-full-fibre-broadband.pdf para 1.1

[10] FCA (2015), Consumer Vulnerability, Occasional Paper No. 8, February 2015. This is included a definition of vulnerability now widely adopted among regulators: A vulnerable consumer is someone who, due to their personal circumstances, is especially susceptible to detriment, particularly when a firm is not acting with appropriate levels of care. The paper is available at: https://www.fca.org.uk/publication/occasional-papers/occasional-paper-8.pdf

regulators, at least in my experience. And where I think it gets particularly difficult for a pro-competition regulator like Ofcom in a largely competitive sector like telecoms. Because, while competition is pretty good at delivering what customers want and are willing to pay for, it isn't great at delivering for society, at least not unaided.

Let's think about a couple of examples that figure large in today's debate.

The first is 'fairness'.

No matter how great your customer engagement, not all customers will engage with the market all the time. If we believe in competition – and I don't take that for granted, in the water sector retail competition was deeply controversial, but I think in telecoms we do believe in retail competition – we believe that those who do engage should get a better deal than those who don't. Otherwise, nobody would engage and there wouldn't be competition. Everyone should benefit from competition – which drives efficiency and innovation – but marginal customers should and will benefit most. In other words, in competitive markets, no matter how good customer engagement is, it will not deliver the same outcomes for everyone. To the extent that society wishes to see fairness not only in terms of equal opportunity to engage but equal outcomes, customer engagement in competitive markets won't deliver.

And to the extent that government and regulators intervene to create more equal outcomes, that in itself will have the effect of dampening customer engagement and reducing competition. There's a valid trade off to be made there – but there is a trade-off and the relative costs and benefits need to be carefully considered.

The second example of where customer engagement doesn't always deliver is societally-driven investment.

I have said many times in the water context that it is perfectly possible to have a sensible conversation with a customer about what they are willing to pay for today to benefit their grandchildren tomorrow, or what more they are willing to pay to help those in hardship. Easier in a regulated monopoly context, but even in competitive markets there are products and services – like Good Energy's 100% renewable energy offer – that differentiate themselves on the basis of broader social benefits and find customers who value those. However, I do think it is important to be honest that in competitive markets, that approach is unlikely to deliver everything that society wants and needs. There are likely to be things that society wants and that citizens vote for, that customers are not willing to pay for. More and better customer engagement – indeed more and deeper competition as we will discuss in a minute – cannot be a total substitute for the involvement of government and civil society groups.

Where society, expressing its wishes through democratically elected government, wants something that customers don't want and/or are not willing to pay for, I do think it is important to be explicit about this and for government to play an active role, conferring a democratic legitimacy on the intervention.

And of course this is exactly what government has done – through its recent Future Telecoms Infrastructure Review[11], which sets out very clearly a vision for a UK that enjoys gigabit connectivity. The National Infrastructure Commission's recently published infrastructure assessment[12] – to which government is required to respond – has a similar emphasis. These documents see immense benefits for individual consumers in having first class connectivity to access all the joys of the internet. But they also emphasise the benefits for our economy and society of that connectivity through enhanced productivity and innovation, better connected communities, and regenerated regions.

And this brings me neatly to the third element that the regulatory regime in telecoms will need to grapple as it moves into a new phase.

Revisiting the role of markets and competition… and therefore the role of regulation

This is another theme that – at a high level – strikes me as similar between telecoms today and water during my times at Ofwat.

In water, as we started to think about how best to enable and incentivise new frontiers in efficiency – creating greater scope for use of markets (by which I simply mean places where buyers meet sellers and where transactions take place) seemed an obvious step. Even where head to head competition was not feasible or desirable, even in parts of the value chain where market power and regulation would persist, exposing companies' make or buy decisions and enabling and incentivising them to use markets to choose the most efficient way of delivering outcomes, was a sensible move. And indeed, in some parts of the value chain, in line with government policy, we did drive head to head competition – notably in opening up the business customer retail market to competition in April 2017.

In telecoms, this rethinking of the role of markets, competition and regulation is obviously starting in a very different place.

It is worth remembering that it was Stephen Littlechild's famous 1983 report on British Telecommunications that contained one of the most quoted passages in regulatory history: "Competition is indisputably the most effective – perhaps the only effective means – of protecting consumers against monopoly power. Regulation is essentially the means of preventing the worst excesses of monopoly; it is not a substitute for competition. It is a means of 'holding the fort' until competition comes."[13]

Competition at the customer level is pretty fierce. Indeed, I'd argue that we'll see this competition intensify over the next few years – driven by convergence and customers' desire for 'anytime, anyplace, anywhere' connectivity that blurs the boundaries between traditional fixed and mobile services – we're seeing this today. The latest research in the US

[11] DCMS (2018), Future Telecoms Infrastructure Review, available at: https://www.gov.uk/government/publications/future-telecoms-infrastructure-review

[12] NIC (2018), National Infrastructure Assessment, available at: https://www.nic.org.uk/wp-content/uploads/CCS001_CCS0618917350-001_NIC-NIA_Accessible.pdf

[13] Littlechild, S. (1983) Regulating British Telecommunications' Profitability, at para 4.11. The paper was usefully discussed by Jon Stern in 'What the Littlechild Report Actually Said', see: http://facultyresearch.london.edu/docs/1_LittlechildJSFINMay03.pdf

for example shows that the number of 'smartphone only' internet users has grown from 12% in 2016 to 20% this year[14]. Traditional telecoms services – such as 'voice calls' are increasingly provided using IP, for example using apps. This is today's technology. It potentially explodes the universe of telecoms service providers beyond the traditional fixed or mobile telcos, into the likes of Amazon, Google and other tech companies who provide over the top services[15]. It also potentially changes the whole competitive dynamic, as these 'telecoms' services are increasingly integrated into wider competing eco-systems based around platforms. In this world the end customer might not have a relationship with the connectivity, but have a relationship instead with say, Apple or Google or Amazon, who would provide connectivity as part of a wider bundle[16].

In infrastructure, competition has long been present in the mobile market. And competition is becoming more prevalent upstream in fixed infrastructure. There are several providers of fixed broadband final miles in the UK. Openreach faces competition from providers like Hyperoptic, Gigaclear, CityFibre, B4RN. In addition to which, Virgin's footprint covers 45% of premises in the UK, and its Project Lightning would take it to 60%, the original aim, by 2020.

Ofcom is keen to see more access to Openreach's passive products, and has argued that unrestricted duct and pole access could bring the costs of entry into the infrastructure market in some cases by up to 50%[17] – increasing the amount of premises that are contestable.

Plus, it is important to understand – as Ofcom has found for cable services but not (yet) other forms of connectivity – that the substitutability of different modes of connectivity at the retail level provides indirect competitive constraints at the wholesale level. And so, as convergence drives greater competition at the retail level, so the wholesale market will become more competitive still[18].

And all this competition has been good for consumers. Data used over fixed connections, for example, increased by 44% in the year to June 2017, and over mobile connections by 46%. But average monthly household spending on phone and broadband services has fallen in the last decade, despite this higher take up.[19]

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[14] See: http://www.pewresearch.org/fact-tank/2018/09/28/internet-social-media-use-and-device-ownership-in-u-s-have-plateaued-after-years-of-growth/

[15] Apple's FaceTime, Google Hangouts, Skype, Tencent QQ or Tencent's WeChat, and WhatsApp for example all compete with voice, messaging and video calling services offered by telcos with innovative, easy-to-use, messaging and communication services.

[16] A good example is carrier-neutral connectivity (for example, e-SIM), eliminating the hassle of changing telecom providers. Apple released its own SIM card—the Apple SIM in 2014.It is installed in iPad tablets in the US and UK. It allows customers to select a network operator dynamically, directly from the device.

[17] Ofcom says 'Our own estimates suggest that reusing existing infrastructure enables significant cost savings, reducing the average cost per home passed in some cases by up to 50%, from around £500 to £250 (excluding lead-ins)' [NB. assumes PIA used for 75% of build and excludes costs of final drop] https://www.ofcom.org.uk/__data/assets/pdf_file/0023/112469/wla-statement-vol-3.pdf

[18] In January 2018, 87% of the UK's geographic area is covered by 4G, and 93% by both 3G and 4G. [Source: Ofcom Connected Nations Update Spring 2018, p10 https://www.ofcom.org.uk/__data/assets/pdf_file/0017/113543/Connected-Nations-update-Spring-2018.pdf]

[19] See: https://www.ofcom.org.uk/__data/assets/pdf_file/0030/113898/pricing-report-2018.pdf

So far so good.

So why the need to re-evaluate?

It goes back to that shift in the outcomes that customers and society want to see from our sector. And in particular the need to deliver on the investment in gigabit connectivity, and investment in fibre, that the government has been so clear is a priority for the UK's economy and society.

There are three issues here that I want to draw out.

The first is that – as I've made clear – investment in gigabit connectivity today is investment ahead of need. Right now, as I have said, more than 93% of premises in the UK can access superfast broadband with speeds of at least 30Mbps[20], but only 40% take up superfast. Faster speeds – with any price premium – are proving a tough sell. And it isn't as simple as just assuming that more and more data-hungry applications will drive demand for increased speeds and bandwidth. Developments in compression[21] or the creation of less bandwidth hungry devices[22] mean that isn't a slam dunk – it isn't just a matter of timing, the demand risk is real[23].

Now of course, it is true that competitive markets can deliver investment ahead of need and deal with demand risk. Steve Jobs didn't need a RAB to develop the iPad. And the fear of losing in a competitive marketplace can certainly act as a powerful spur to investment and

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[20] In the Spring 2018 update of its Connected Nations report, Ofcom said 'Coverage has continued to improve and superfast broadband is now available to 93% of UK premises (27.2 million).' https://www.ofcom.org.uk/__data/assets/pdf_file/0017/113543/Connected-Nations-update-Spring-2018.pdf

[21] Most commentators focus on the drivers of greater demand for bandwidth – e.g. higher video quality; augmented reality applications. But these will also drive improvements in compression. For video this is because high quality video will be distributed to a global market, on demand (to reach the largest possible pool of demand); for AR, this will need to work on mobile to be useful. Both will create pressures to economise on bandwidth. Previous advances in compressions were held back by IP and licensing issues. These are likely to be overcome by the new open licence royalty free standards (initially by Google, now a consortium). So now about bringing standard to market, rather than developing new compression techniques.
Sources: https://medium.com/netflix-techblog/the-end-of-video-coding-40cf10e711a2 ; https://www.bbc.co.uk/rd/projects/video-coding

[22] The new Apple iPhone, for example, uses so called 7 nanometre processing technology which enables faster processing (for less power) on the phone and, therefore, less shuttling of data back and forth to data centres - so less use of bandwidth. More generally, edge computing means there is less need to send a video or image (using bandwidth) because it can be recognised locally. See https://www.blog.google/products/google-cloud/bringing-intelligence-to-the-edge-with-cloud-iot/ https://uk.pcmag.com/google-photos-for-web/94303/feature/when-the-cloud-is-swamped-its-edge-computing-ai-to-the-rescue

[23] There is little consensus on how far ahead of need investment in fibre actually is. The National Infrastructure Commission (in its July 2018 Infrastructure Assessment, at page 22, said: 'It is not clear when, or if, bandwidth demand will outstrip existing copper capacity.' And it included a graph illustrating the degree of difference in modelling projected demand against existing copper capacity – one line showing Frontier Economics' modelling, which suggested existing copper capacity should be sufficient until 2025 and possibly many years longer and another line showing modelling from WIK (for Ofcom), which suggested existing copper capacity might already be exhausted or could last only until 2021. See: https://www.nic.org.uk/wp-content/uploads/CCS001_CCS0618917350-001_NIC-NIA_Accessible.pdf#page=19

innovation – indeed I remember Steve Unger's Beesley lecture last year being a tour de force on exactly this point.

But the key difference between the market for iPads and the market for gigabit connectivity is that the market for iPads isn't regulated. So when Apple was spurred to get ahead of the market by investing in the iPad, it did so in the knowledge that it could charge what the market would bear for the product, should it be successful. It was taking a commercial risk, in the expectation of a commercial return. It bet that, if customers didn't want the iPad today, they would sure as hell want it tomorrow, and this gave them a good enough chance of earning a return that would remunerate that risk.

But the final mile in fixed telecoms – where most of that investment in gigabit connectivity is needed – is regulated. As from the 2018 WLA, fibre access prices have been regulated by means of a charge control on the 40/10 product (whether delivered by FTTC or FTTP)[24]. While prices for higher bandwidth products are not directly regulated the 40/10 product effectively acts as an 'anchor product' constraining prices across the range and these higher bandwidth products remain subject to a 'fair and reasonable' obligation. In addition to which, we don't have certainty over when and how fibre access might be regulated in future.

We do have some useful indications from government in the FTIR about what it wants to see in terms of a favourable climate for investment. And we have some useful statements in Ofcom's July document about principles of the 'fair bet', i.e. that Openreach should be permitted to make a return that would reasonably remunerate the risk expected at the time the investment decision was made. And we have positive indications in the same document that Ofcom might consider that the 40/10 anchor price regulation we have today might be sufficient for now, and there being potentially some scope for a small price premium for fibre in future.

But, in the face of considerable underlying demand risk, not having all this tied down makes it harder to justify the investment.

Plus, I'd also suggest that the regulatory position today is further undermining the ability of the competitive market to deliver investment ahead of need, by making it less likely that downstream CPs will engage in commercial risk sharing arranging with Openreach. Such vertical risk sharing arrangements would be logical given that the primary risk here is demand risk, and downstream CPs have the relationship with the end customers. But why enter into commercial risk sharing if you think you could wait for Openreach to invest and take the risk and then secure favourable regulated wholesale access prices?

And let's be clear, that isn't only a problem for BT and Openreach. The regulated WLA price and the uncertainty about how our fibre access may or may not be regulated in future doesn't make it easier for alt-nets to invest in fibre either[25]. And, for that matter, it has an impact on Virgin too, as it affects the price they can charge for their network – even though

[24] The 40/10 FTTP access product is not regulated in areas where the FTTC product is available.

[25] CityFibre (2017), response to Wholesale Local Access Market Review and Duct and Pole Access, June 2017, paragraph 2.1.3: "CityFibre is, however, very disappointed by the specific proposals in the WLAMR, in particular by the charge control proposals which, if implemented, would result in setting the price level for the 40/10 VULA product at a level that could harm the prospects in FTTP network roll-out in the UK." https://www.ofcom.org.uk/__data/assets/pdf_file/0010/105013/Cityfibre.pdf

they have a closed, vertically integrated network they are still affected by what their competitors are charging end customers.

So, while I completely accept that in some areas competition can act – and has acted as a spur to investment[26] – we need a further evolution in regulation to create the conditions for that to happen.

I said I had three issues I wanted to draw out in considering the role of competition and regulation. The second is the fact that, in the presence of significant social costs and benefits beyond private costs and benefits, competitive markets on their own don't usually produce the optimal outcome.

A wide variety of social benefits are widely acknowledged in respect of digital inclusion, from social inclusion to environmental benefits, labour market benefits.

BT has published research on the value of being 'digitally included', and it showed that the value is estimated at £1k for a new user and £3.5k for a professional user – which includes the work benefits of being able to access the world digitally – per annum[27]. Research for Ofcom that was published earlier this year found a positive relationship between broadband investment and economic growth. Specifically for the UK, it showed an average increase in GDP of 0.37% per annum over the past 15 years as a result of broadband investment[28].

The National Infrastructure Commission puts it very eloquently, saying: 'Digital connectivity will increasingly drive the country's economic growth, competitiveness and quality of life. Digital communications makes it easier for customers and suppliers to find each other and exchange goods and services. In future, innovations such as artificial intelligence and the internet of things will bring new applications that rely on digital connectivity, from driverless cars to increased use of virtual reality….Enhanced digital connectivity will also facilitate the development of smart infrastructure: infrastructure with digital connections, enabling more efficient management and maintenance.'[29]

The existence of social benefits from good broadband is why we have funds like BDUK, R100 and the Local Full Fibre Network funds. They are also why we now have legislation that creates the basis for a broadband universal service, which aims to give everyone the right to request decent broadband – currently set at 10Mbps – and to have it provided by a designated universal service provider or providers where the costs of doing so are less than £3,400.

It is a statement of the economically obvious, but it is worth being clear that if society wants outcomes beyond those that customers want and are willing to pay for, there will need to be some intervention from government and regulator to address this. And, somebody will need to pay for the delivery of those societal outcomes.

The fact that in telecoms a RAB-based model that would smooth the costs of delivering these outcomes over time is difficult to operationalise because the prevalence of

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[26] Competition between Openreach and Virgin Media, for example, has driven upgrades by both.

[27] See: https://www.btplc.com/Purposefulbusiness/Connectivity/Beingonlineisgoodforsociety/Valuing-Digital-Inclusion.pdf

[28] This research analysed 35 OECD countries over a 15-year period (2002-2016). See: https://www.ofcom.org.uk/research-and-data/telecoms-research/broadband-research/economic-impact-broadband

[29] See: https://www.nic.org.uk/assessment/national-infrastructure-assessment/building-a-digital-society

competition. So the issue is that much more acute. And it is important because – as we have seen from energy – when customers are faced with costs that benefit them as citizens, there is still a limit on how much they can bear.

The most immediate example of this in telecoms is in relation to the USO. But it is a broader point that will need to be grappled with if the legitimacy of the sector is to be maintained.

The third and final issue I wanted to draw out as we think about the relationship between competition and regulation in telecoms is that not all parts of the market are equally contestable.

This is the point on which there is probably most similarly between telecoms and water – albeit in opposite directions. In water we were realising that not every element of the value chain was a natural monopoly. In telecoms we are realising that not every part of the country[30] can be effectively competitive. And if that sounds obvious, it is important to remember that it is a relatively recent issue, coming with the extension of competition upstream into infrastructure, where geography and demographics matter enormously – rather than competition that is more services-based and susceptible to analysis at the national level.

Exactly how much of the fixed infrastructure market in the UK has the potential to support competitive investment in full fibre is a matter for debate. DCMS in its recent review suggested that up to 80% of UK premises could be viable for commercial investment. Ofcom's initial view – set out in its July document[31] – suggests that 60% of premises could be attractive to alt-net build, and we are not far off that estimate. But whatever the percentage is, that matters less than the fact that, going forward, a 'mixed economy' regulatory approach seems likely. As Ofcom says: 'Over time, variability between geographies is likely to become increasingly important. We will need to consider how competitive intensity and network deployment differ in different geographic areas, with our regulatory approach varying depending on these factors.'[32]

In the same way as Ofwat has started to regulate the actually competitive business retail market in England, differently from the contestable market for sewage sludge treatment and disposal, differently from the monopolistic provision of distribution mains, so Ofcom will need to regulate those markets where there are multiple – Ofcom says three[33] – providers (and so potentially competitive), differently from those markets that are economic for only one provider.

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[30] It is also clear that not every part of the value chain in telecoms is equally contestable. Ofcom seems to be seeing ducts and poles as a persistent monopoly and appears keen to focus regulation there, encouraging competition downstream as far as possible. But to fully reap the benefits of this in terms of efficient competition, it will require a stripping back of some of the complexity of downstream regulation, in order to give the market chance to work and send the right signals to actual and potential entrants about which products to build and which to buy. This will also be important if efficient technology choices are to be made.

[31] https://www.ofcom.org.uk/phones-telecoms-and-internet/information-for-industry/telecoms-competition-regulation/regulatory-certainty-investment-full-fibre

[32] See: https://www.ofcom.org.uk/__data/assets/pdf_file/0025/116539/investment-full-fibre-broadband.pdf, para 4.2

[33] Ofcom (2018) Investment in full fibre broadband, July 2018, paragraph 4.5: 'If there are three competing fixed networks available to the majority of premises within a defined geographic area, the area may be classified as competitive.' https://www.ofcom.org.uk/__data/assets/pdf_file/0025/116539/investment-full-fibre-broadband.pdf

Again, we await more detail from Ofcom – which I think is due before Christmas. I do acknowledge that operationalising this isn't easy.

I think it is certainly going to be harder for Ofcom than it was for Ofwat. At Ofwat we had a reasonably clear idea of what constituted the different activities at different stages of the value chain. Whereas for Ofcom, while it is going to be pretty clear which areas *have* extant competitors in them, the judgement on which areas are *potentially* competitive and which are areas where market power is likely to be persistent is harder. But nevertheless crucial. Because one thing we know for sure – and we found this at Ofwat over many years – is that if you regulate a market like a persistent monopoly you create a self-fulfilling prophesy. You remove the signals and the incentive for entry and competition just doesn't emerge. Which of course means you are never proved wrong… your intervention will always appear to be justified… but you won't get all those benefits of competition, including incentives for investment ahead of need and the sort of commercial risk sharing arrangements that would help underpin it.

Once you set the bar at 'roughly right' rather than 'utterly perfect' it should be possible to get a practicable approach to all this, though, by picking decent sized areas, looking at demographics and density.

The other thing that will matter a lot in designating areas as contestable or not is to have a trigger for redesignation, based on tests that are easily observable and which can be applied between reviews. This is especially important if, as Ofcom has suggested – and we would support – we move from review cycles of 3 years to 5 years or longer. 5 years is a long time, and setting regulation in stone risks ossifying the market.

Another difficulty in operationalising this 'mixed economy' approach is of course what regulation looks like in the three different areas.

Again, in those areas where competition exists today it should be relatively easy – why would you have ex ante regulation there at all? Competition law would still apply, as would consumer protection law. But no need for more.

Similarly, *fairly* easy – once you've identified them! – in those areas of persistent market power, where you will need some form of access regulation to preserve services-based competition. Although, having said this is fairly easy – because it is important that regulated access prices recover costs (including the costs of copper stranded by the roll out of fibre) – there's an interesting geographic cost allocation exercise to be done…

Much harder, though, to decide what approach to take in those potentially competitive areas.

In theory, the right thing to do is to deregulate. Potential competition is as much of a threat as actual competition when you are dealing with networks where costs are largely both fixed and sunk. And where it is possible to lock the benefits of competitive pressure into access contracts. If you regulate too tightly then you remove the potential for competition. You'd do that pretty effectively, for example, if you were to simultaneously try to promote competing infrastructure build using duct and pole access, but then introduce a regulated dark fibre product.

But, pragmatically, I wouldn't want to be the regulator who stood back to let competition in, and instead presided over persistent market power. So, some form of backstop is probably,

pragmatically, needed. Although care must be taken not to undermine the incentives to invest.

It has been done elsewhere.

Rather than regulating every rung of the FTTH ladder, regulators in Spain and Portugal focused in the initial stage only on regulating access to ducts, poles and in-building wiring. Both countries applied full forbearance (no access regulation) on FTTH or ultrafast broadband initially.

This strategy lasted in Spain for a period of 7 years – later on Spain regulated access to speeds above 30Mbps in some geographies. When regulation on FTTH was finally introduced in Spain in 2016 after seven years, it was restricted to geographic areas where the regulator considered – through a forward-looking analysis – that there was no prospect of effective competition. Due to the prior period of forbearance, the Spanish regulator was able to take into account actual and planned competitive developments in FTTH (alongside the presence of cable) when segmenting remedies. The regulator also provided flexibility for competition to continue to develop, by maintaining forbearance in municipalities in which at least two competitors to the incumbent had 20% coverage.

In Portugal, the full forbearance strategy is still in place.

So… some challenges for government, Ofcom and the sector in facing into a further phase of regulatory evolution…

… which takes me on to the home straight…

Having started at the 37,000 foot level by talking about context and outcomes, and then got into a bit more detail through consumer engagement and the respective roles of competition and regulation, I'm going back up to 37,000 feet with my final theme, which is about culture. Or more specifically – the need to develop a co-creation muscle.

Changing the conversation – getting to co-creation

As I said at the start, one of the features of the water sector when I took up the chief executive role at Ofwat was that relationships between the regulator and many of its key stakeholders were not great. That includes relationships with the regulated companies, but also with other sector regulatory bodies, with government and with NGOs.

Adversarial would be too polite a word. Our Chairman at Ofwat has referred to that time as one in which everyone 'stared into the abyss'…

Why did that matter?

Well, don't get me wrong. Regulation is not a job for people who like to be liked… and a regulator who is too popular with the sector they regulate is probably getting something wrong…

But one of the things that was clear in water was that if we at Ofwat were going to help the sector to navigate the challenges it faced, so that it could deliver effectively for customers and society in quite a changing context, we were not going to be able to do that alone.

And I don't just say that in recognition of the fact that regulators don't actually deliver the stuff that customers care about. I say it because what we needed to succeed in the face of

some potentially existential challenges in water was an exercise in collective problem solving, of co-creation. A recognition of the fact that if we were really going to understand the complex challenges we all faced, and create a framework that enabled everyone to succeed, we needed the best ideas on the table, the most creative thinking, the greatest insight. And we also realised that – ultimately – we needed buy-in from the wide variety of stakeholders who were going to have to play a part in operationalising this new model and delivering within it.

So we changed the conversation.

It took a little while to do.

I distinctly remember asking one water company regulation director – many, many years ago now when we first embarked on all this – how we should change a particular part of the regime and getting the answer 'I don't know – normally you tell us what you want to do and we tell you we don't like it'.

We had to demonstrate that we meant what we said – that we would listen and that – while we were ultimately going to make the decisions, we couldn't outsource our statutory duties – there was real scope to influence if you had good ideas and behaved constructively.

To demonstrate our credibility, we institutionalised this approach to some degree.

When Ofwat acquired a new statutory duty to 'promote the resilience objective' we set up a task and finish group to tell us what they thought this should mean and what our priorities should be. We appointed a chair who was someone from an NGO, well-known and well-respected as an independent thinker. And we chose those on the group not to 'represent' various different interests – we'd be consulting formally on what we were going to do in policy terms afterwards – but because of the quality of their ideas and willingness to put them on the table and discuss them. And that group worked together to come up with a very thoughtful, very challenging set of recommendations.

Great for Ofwat. We got great quality thinking and – with some trepidation because they were quite tough – we adopted all their recommendations. But even better, it demonstrated the ability of people from across the sector in very different organisations, to work together and solve problems collectively. So that, when we as the regulator consulted on what we were going to do, we didn't get the hithertofore-usual barrage of not-so-constructive criticism, but a much more supportive set of responses.

Another example was in the development of the methodology for the current price review – PR19. We started out with a very open consultation on the policy framework – the things the review needed to tackle. There was a fairly strong consensus on those. And as we began to think about how we would tackle them we set up what we called a 'marketplace for ideas'. We encouraged anyone – from companies or more broadly – to pick a challenge and share their thinking on how it could be tackled. It was – deliberately – very different to the usual 'regulator lays an egg' consultations. There were many roundtable discussions, where other people from the sector – companies, consumer bodies, NGOs, academics, presented their thinking and discussed it in the round. Rather than the regulator presenting its thinking. And many of those ideas made it into the methodology – people could see the influence they had had.

Again, I'm not saying telecoms is in the same place as water circa 2013. I'm certainly not seeing any abyss…

But there are parallels in the fact that – like water – the telecoms sector and its regulator is facing quite a different set of challenges in the future from those the regime has been successful in dealing with in the past.

Not only the need to deliver different outcomes, and massive new investment, but also the challenges of some fundamental shifts in the economics of the sector brought about by technological changes and the emergence of new business models.

So the final thought I want to plant with you – my final learning from water – before I wrap up is about how the importance of developing our co-creation muscle as a sector.

We certainly aren't starting from a zero-base here. I know the OTA does a lot of good work, for example. And from what I can see from a few months in, there are a lot of hugely bright, really passionate people in the sector and some really strong relationships that should stand us all in good stead. The work that Openreach is doing in consulting and working with CPs should help too.

But I do wonder if there isn't more to do on this front.

Because the challenge in rethinking the regulatory regime is much more than one about squishing together residential and business markets and moving from 3 year to 5 year review cycles. It is a much more fundamental rethinking that needs to align incentives across the sector so it can deliver against changing expectations, with changing technology and changing economics. I very much doubt, in that context, that whatever Ofcom comes up with for its more holistic review, kicking in in 2021, will be more than the first stage in an ongoing evolution of regulation in the sector. Which means that our ability – collectively – to shape and manage change will only become more important.

It strikes me – again coming from experience in other sectors – that the way the market governance model in telecoms is set up is not very helpful on this point. The model essentially seems to be of bilateral contacts, where the parties have the ability to bring disputes to Ofcom if they can't agree. This sets up a particular dynamic in which the conversation between the parties in question is partly a conversation between them but is to some extent aimed at the regulator – given the possible endgame. And it also contributes to positioning the regulator in the middle of – somewhat fractious – relationships across market participants. In other sectors, such as energy and water, there is perhaps more recognition that the market is an institution that all participants are part of, and that it is important for market participants to own and take responsibility for the market rules. That sense of co-ownership of the issues and responsibility for co-creating solutions feels stronger[34].

I'm not close to the content regulation part of Ofcom's remit, but I wonder if there might be scope to read across from some of the approaches that have been used in that space to discuss the interpretation and implementation of new rules and consider appropriate ways

[34] There is some read across into telecoms market governance from issues identified in relation to platforms in this thoughtful paper by Mark Bunting and Brian Williamson on how to reconcile private market governance and public policy in the context of digital platforms, on the basis that digital platforms are one – specific – form of marketplace but not the only one: http://www.commcham.com/pubs/2018/5/15/reconciling-private-market-governance-and-law-a-policy-prime.html

of measuring outcomes? I know Ofcom has had success in convening collective problem solving conversations in areas where perhaps they have enjoyed less formal power, such as in relation to media literacy or online piracy.

And I also have a lot of sympathy for there being limited time and energy to engage in co-creation in the context of three year market review cycles in which every decision seems to end up in litigation.

But, like in water, it feels very much as though the time has come for change in the dynamic.

Conclusion

I've talked for long enough.

After having rambled on for so long, I probably ought to answer the question I set for myself at the start: is telecoms regulation going back to the future on into a brave new world?

I think inevitably, given what I said at the start about all regulation being context-specific, telecoms regulation needs to forge its own path. The challenges it faces may have echoes of those in other sectors – the challenges of investment ahead of need and of the need to maintain legitimacy, particularly. But the nature of markets, and in particular the prevalence of competition mean that the usual RAB-based regulatory tool kit is difficult to apply. No easy answers from the regulatory playbook, I'm afraid.

But, as I hope I've shown, that doesn't mean past experience from other sectors is irrelevant. I'd hope that I've shown in the last 40 minutes or so, that there is quite a lot of read across from regulation past into telecoms future. Not in the finer detail of the regulatory methodology perhaps. But certainly in terms of some of the key success factors.

In particular: the need to keep a clear focus on outcomes and to distinguish very clearly those outcomes that competition can deliver, and those that it can't; the need to find more sophisticated ways of enabling competition to deliver its benefits; and the need to find ways of delivering those societal benefits that competition won't deliver in ways that maintain and build legitimacy.

And perhaps most importantly – because my experience tells me that this will absolutely define our sector's capability in navigating the changes to come – the need to pivot the conversation in the sector towards one of collective problem solving and co-creation.

In which spirit, I look forward to the discussion.