Competition and Innovation: Networks and Platforms

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Opening Address

Chris Earnshaw

Chair; FREng

Good morning. My name is Chris Earnshaw and I am chairing today's session on 'Networks and Platforms'. I am also one of the four independent advisors to the Convergence Think Tank (CTT).

You will probably know that the CTT has been set up by Government to establish the implications of convergence for the UK and, in particular, any issues relating to public policy and regulatory matters. This seminar is part of the CTT process to explore those issues and gain a view of what is happening in the UK and indeed what needs to happen.

The Government has already indicated it has several important objectives that it is determined to promote in a converged world. We are working within that framework. It is a framework of open markets, empowered consumers and citizens, and universal access to high quality content. In developing these the CTT is keen to engage with a very wide range of stakeholders from across the converged value chain, covering not only today's players which are self-evidently in today's market, but also those who aspire to be part of a new converged world who are perhaps coming to the market with a very different view of how that market might operate and perhaps underpinned by a very different view of business models for those who effectively operate them today.

I think we would all agree that convergence is not something that is optional for the UK. We do not have the opportunity to ignore it. It is a global reality. The issue for the UK is how we can embrace it and ensure it brings real economic, social and cultural benefits for this country. To put it another way: what are the opportunities, challenges and threats and how might we address those? Do any of those require adjustment or changes to the frameworks in public policy and regulation?

Today's seminar is about exploring perspectives on competition and innovation specifically in the context of networks and platforms; i.e. the technical infrastructure, if you like, the hardware, software, and spectrum, that will be necessary to enable users to access and use media and communications services going forward. I stress *use* because we want to explore the full range of issues, not just those related to the last mile, which is getting a lot of air-time at the moment. There is potential for many other issues. We want to examine not only innovation in the platforms themselves, but how such platforms might enable opportunity for innovation in the wider value chain, such as the creation of new services and new applications.

In terms of today's format, we have three keynote speakers and two panels which will cover a very broad agenda. We have a lot to get through. After each panel there will be a short question and answer session. First of all, I will ask the independent advisors, Robin Foster, Tess Read and John Willis who are sitting in the audience whether there are any points of clarification before I open the floor to general question and answers.

The first keynote speaker will precede the first panel. I am very pleased that Steve Robertson from BT Openreach has agreed to talk to us today about his views of a converged world. Following that, there will be four speakers from the panel giving very short presentations. Those of you who know the players may have spotted that Mike Short is here. Vodafone were not able to put their speaker forward today so Mike has kindly stepped in from O2 to speak at short notice. Jonathan McCoy from Vodafone will not be able to join us today.

We are very pleased that John Hutton, the Secretary of State, has agreed to talk to the meeting. In fact, he asked to address you today. John will speak prior to the question and answer session and has indicated he is happy to take a couple of question and answers from the audience. He is very keen to demonstrate that BERR and he, as the Secretary of State, together with the Secretary of State for Culture, Media and Sport, want to be proactive in addressing these issues and to understand what the implications of convergence are for the UK. You will realise that the CTT is a joint venture between BERR and DCMS, with the two Secretaries of State as its co-sponsors.

We will then be taking a break for coffee, followed by a keynote presentation from Paul Berriman of PCCW to kick off some international perspectives, and then there will be further question and answers. The aim is to wrap up around 1.30pm, but please do not rush off as there is an opportunity to network and explore some of the issues informally over lunch. That is the format for today.

This is the third seminar in a series. Some of you may have been present at those earlier seminars. The first one explored the meaning of convergence and some of the bigger issues. That has been very useful in scoping out the agenda for the ongoing work. The second seminar looked at the issues of high-quality content and innovation in the content world. Then, of course, today's seminar moves on to networks and platforms that enable access to that content. The seminars are a very important part of taking the views of stakeholders, but I would like to stress they are not the only means of gathering views. I would also encourage you to submit any written evidence to the CTT, as some of you have already done, so we can reflect on those in due course.

Furthermore, the CTT is working very closely with a number of other groups that are examining particular aspects of convergence, such as Francesco Caio from the Caio Review which is looking at the issues of rolling out the next generation of broadband, with the Broadband Stakeholder Group and also with the regulator, Ofcom. We like to think we re joined up in our approach to addressing these issues.

I will say a little more about what happens after the seminar in my concluding remarks towards the end.

Since we have so much to get through, I will not be saying much about each of the speakers. You should have a biography for each speaker in your delegate pack. I am sure in their introductions they will make it clear where they come from. With no more ado, I would like to welcome Steve Robertson

Panel 1 Regulatory and Policy Approaches

Keynote Speech

Steve Robertson

Openreach

I. Introduction

First of all, I should mention something that it is quite important for us in Openreach: we are not BT Openreach; we are just Openreach. When we created our business it is something we spent about six months debating, and who we are and the way we present ourselves in the market was a critical part of forming our identity.

I feel very privileged to be here this morning at something as sexy as the CTT. From an Openreach point of view, why are we here? We are the guys at the bottom of the food chain. We are bottom feeders – the copper, the duct, the vans, the poles, the green cabinets. What does that have to do with convergence? What does it mean for Openreach and what does Openreach mean for this debate?

II. When Did the Convergence Concept Begin?

If I go back 25 years to 1983/84, I remember Chris Earnshaw and Mike Read were there with me inside BT, and something very important happened in the early 1980s. We were sitting with our lovely voice platform and the most profitable product in the BT group was telex. The telex product manager was a big guy with a big stick and I was in the room when the business case was signed off for the last telex switch. It was a switch that was never commissioned, because out in the big wide world there was a bunch of manufacturers inventing fax. We were outraged. It just was not fair! They were coming along and using our voice network for data purposes, extracting value and taking away our highest margin product and we had no control over it. I remember the debate inside BT about whether fax was a voice product or a data product. We did not know. From that seed a new market trend emerged. It was a trend that said: you may think you are a monopoly, you may act like a monopoly, but power was moving to the edge of the network and to consumers and businesses.

The regulatory structure at that time with Oftel was built around a concept of the telecoms industry. One of the great things to happen in the UK market was the invention of Ofcom. It was a far-sighted view that said we are in a world that is converging.

If we look at today and the last couple of years we see these trends coming to fulfilment. Today we stand at a point where the old world is coming to an end. The days when we could define our industry around products and platforms has gone. Although I look after the lowest value part of that value chain, even I feel I am a bona fide member of the media community, like all of you.

The very word 'convergence' was invented by people like me, Chris and Mike, and it was really an idea around platforms coming together. We viewed it through a spectrum of technological challenge. We had our debates about voice and data. We had our debates about fixed and mobile. However, behind that lies a more profound truth that says this world is one where convergence is driven by the usage to which all of this stuff is made by the user.

Do we sit in this room and feel we are in control of this world? Do we feel that somehow we can put the genie back in the bottle? I hope not, because the competitive pressures that have been unleashed through convergence are taking us to a brand new place. First of all, a critical trend is horizontal integration. Before we have horizontal integration of platforms, before we have integration of regulation, we have horizontal integration of business models. If we do not understand the implications and the reality of the horizontal integration of business models, we will fail to navigate our way successfully through the challenges that collectively we face.

Since the creation of Openreach, unbundled lines in the UK have grown from around 150,000 to 4.2 million in the space of 27 months. It has involved huge service challenges for Openreach and its customers. In fact, the creation of the LLU market is not what is important. The important issue is the uses to which the infrastructure is being put within an environment of converging market demand. It simply continues a trend. The world of convergence is not just about the world of telecoms. When I receive a *free* DVD with my Sunday Paper – and you will note the emphasis on 'free' – that is a sign of a converged market. When Carphone Warehouse announced free broadband, that was a sign of a converged market. When Sky said that in order to hold onto their broadband customers they had a fantastic new offering of *free* broadband, that was a sign of a converged market. I have seen O2's wraparounds in *The Metro,* which is a fantastic piece of advertising for their broadband offering, and likewise that is a sign of a converged market.

One of the things that is common with many of these offerings is the word 'free'. When the BBC offer access to content over the Internet, it is done on the basis of it being free. We are all very sophisticated people and we know that free is not free. It is an expression of our marketplace where horizontal integration is happening at break-neck speed. The development of the business models that allow us to participate in that market are vital. However, there is an issue at the heart of this and a set of challenges.

The first challenge comes from an observation. Openreach was created at the bottom of this value chain because it is an existing economic bottleneck. It is the final bastion of the BT legacy. It is a piece of infrastructure that would never have been built without the aid of public funds, and in return it was vital for the health of this market that it was made available on an equivalent basis. We have seen the explosion in the market and in consumer choice, plus the explosion in convergence and consolidation in that market on the back of that.

III. Keeping the Ecosystem Healthy

However, as we look at these platforms, whether it is the access platform, whether it is the investment that the BBC have made in their platforms, or the investment by ISPs in their platforms, as we see this explosion of demand there is a fundamental question about how we can keep this ecosystem healthy. Chris referred to the fact that this is a much bigger question than simply the access network, and he is right. How can we ensure that the producers of content are fairly rewarded? How can we ensure that those responsible for distributing that content are fairly rewarded? In an environment where the killer marketing phrase is ‘free’, how can we ensure investment in the underlying infrastructure and platforms? It is an environment where the relative value in the underlying platforms over the last 20 years has declined year after year, and propensity

to spend on content has increased; where there is ferocious competition at nearly every point in this value chain.

1. Regulatory Challenges

Then we come to a set of regulatory challenges. The regulatory models we grew up with were built around a set of stovepipe markets where there were monolithic businesses like BT and the purpose of regulation was to make those assets available to open up markets. The success of the last two years has brought us to a place where not only do we have to continue on that path – and as the CEO of an economic bottleneck I am the first to acknowledge that the continuing regulation of Openreach is critical – but we must also make sure that the future where in fact we are talking about the health of the entire ecosystem is also regulated appropriately.

We need to build a world where we establish sustainable investment, a sustainable ecosystem, and where every point in the value chain can flourish within an environment where the competition and structure of that competition means that adjacent markets are fundamentally clashing. I know it is an interesting world. One can look at the cries from the ISP community about the impact of iPlayer on their infrastructure. How can they justify the investment in backhaul to allow excellent delivery of service for end users who are demanding that they can download at the speeds they wish to download? How can that be monetised for them? How can a business like Openreach justify the investment in a reinvention of the access network in an environment where I can assure you the very thought of prices going up is anathema to my customers.

When we look at this wonderful world of convergence, the temptation to dive into the technology is one that I think must be resisted. The temptation to dive into regulatory solutions without fully understanding the questions we need to answer is truly dangerous because our experience tells us the clock does not always move forward. The clock can move backwards. The lessons of our industry are it is possible to have stranded investments. The lessons of the dotcom bubble are that our industry can be undermined if we do not get that right.

Therefore, the work of the CTT has to move beyond a thrust merely for quick answers. We need to take the time to explore the real underlying issues. In terms of the network points, the question I am most often asked is about delivering fibre infrastructure into the UK. It is often accompanied by questions such as 'By the way, should Openreach be part of the BT group?' These are great questions. It is great fun to chat about them down the pub. However, if we go back to the 'why?' of fibre, it is about speed. There is an obsession with speed and league tables.

2. Challenges for the Platforms

If we look at the issue of platforms we have to take three things into consideration.

The first one is storage because speed does not live in isolation. The cost of storage is plummeting and the traditional models that we assume around transmission speed have to be modified by our ability to store.

To transmission and storage, we have to add technologies around compression. Just at the network level, before we even get into the high value-added space, that triangulation between speed, storage and transmission, and the ability to compress signals and deliver high-value experience to users is something we need to build.

We need to build a regulatory environment that takes into account the technological questions, the questions around market structure, horizontal integration, and the reality that this agenda will not be set by the people in this room. It will not be set there, whether it is guys like me at the bottom of the value chain in Openreach or even the folks at the top who are producing content. It will be set by the demands of end users within this market.

3. The Challenge of Universality

One of the questions I would put to you and maybe challenge the CTT on is the issue of what we are really trying to achieve in terms of the universality of what should be available.

When BT was privatised there was a very clear requirement for a universal service obligation. This was a business that was built on public money and there was a public debate which came to the clear conclusion that in this world everyone deserves access to telecommunications services. In the broadband world, we do not have a USO, it is mandated, but if we look at the social debate, I feel anybody who does not have access to broadband that wants it feels genuinely deprived. In this new world of convergence, what is the vision and endgame we wish to participate in? Where do we want to put the high watermark within this marketplace and how do we build a sustainable economic model that allows us to collectively deliver it and exploit the technological advances which are now bearing fruit?

IV. Closing Remarks

In this keynote speech I have no intention of giving answers because, for me, one of the biggest dangers when we look at the whole plethora of activity happening now is for us to take a pre-emptive leap to the wrong answer. It has taken us many years to get back to a position where real investment is happening through this value chain. I think it is our collective responsibility to make sure the gains we have made are the platform for our future and that the path we collectively take will build a sustainable ecosystem for the world we have created.

Thank you very much.

Chair

Thank you Steve. There are some big challenges there, and we may revisit some of those as we go along. You also gave a mention to the BBC, which is a major player in this space You mentioned developments like the iPlayer and web applications and services coming on-stream globally as we speak, so that is a very good reason to have with us Ashley Highfield from the BBC, who is their the Director of Future Media and Technology.

Panel Discussion

Ashley Highfield

Director of Future Media and Technology, BBC

I. Introduction

Firstly, I think Steve has it bang on when he says this has to be a collaborative process. I do not see it so much as you being the bottom feeder and we are the public guys on top. Rather than it being a supply chain hierarchy, I see it as a virtuous circle and an opportunity for us to genuinely work together. I think part of the answer is in there, and part of it is also coming up with an agreed and compelling vision for what we are trying to achieve.

One point Steve made was about how we can invest in a world where the thought of prices going up is anathema. I think that is possibly absolutely core to this issue. One of the things for us to consider is how we can look away from price being the determining factor for broadband access in the UK and to look for value-added services, packages and quality and move away from price.

II. Broadband Access – Moving Away From Price as the Determining Factor

The iPlayer has been a success – thank God! It is amazing that the very same people who are criticising us for its success, last year were criticising us for its failure. Without the iPlayer the market would be pretty much the same. iPlayer’s impact on the broadband market is not negligible but when you look at the overall shift in the Internet from Web 1.0 to Web 2.0, it was moving from text and graphics to video, so it was going to happen with or without us. The huge video consumption around YouTube or MSM video and all the new entrants is part and parcel of where the Internet is going. However, I do think we have become well aware of our impact for good and sometimes the impact we can have on the strain we put on the Internet infrastructure.

In 2004, the Philip Graf Review looked at BBC Online and commissioned some research from MORI which said at the time the BBC had probably significantly been responsible for bringing around two million people online for the first time. At the time, that was about 7-8% of all people online. The Philip Graf Review recommended that one of our roles should be to help drive take-up, and that has been baked into the purposes of the BBC and BBC Online. We have taken that quite seriously ever since. By way of example, in that year, we launched ‘People’s War’, which aimed to collect all the stories from people who were around during WWII. For the first time it brought online something like 100,000 people over 65. I think that goes to the heart of what the BBC is about. We are about creating demand, putting services into the market that try to drive take-up, consumption, and adoption and usage of broadband in Britain. It is a virtuous circle and something on which all boats can rise. The vision we would like to see is a UK where everyone not only has access to broadband but also is connected to broadband; and not just connected to broadband but actually using it perhaps for BBC services, which is great, but certainly for a wide range of services.

The current projections are that by 2012 there will still be one in five homes that are not connected to broadband. We believe that 20% is simply far too great a digital divide. Equally unacceptable,

we believe, is that a larger proportion of people will have access but at low speeds. We can argue about what low speeds mean, but something lower than 2Mbits/sec where you cannot get any form of video. I am not arguing today for next generation access, for 100Mbit roll-out, but I am saying that we should work together to ensure everyone in this country has access and uses it, and hopefully takes up a reasonable level of broadband.

It is quite easy for the BBC to go on stages like this and be so demanding. What are we throwing into the ecology? I want to be clear that I do not think it is our role to invest in the infrastructure. I simply do not think that is the best use of licence payers’ money. I do not think that is the most efficient intervention. I believe our role is to create the content and services, whether it is iPlayer or future services that drive demand. If we do that, I believe that providing we are able to move from simply competing on cost, we can create higher income for the network operators, through increased take-up and from people wanting higher levels of quality of service and higher packages.

III. Closing the Digital Divide

Beyond that, the BBC has another role, which is possibly the most significant role. In 2012 we will have a digital television nation when analogue television will be switched off. By all accounts, we will be in a position where 80% of Britain will be connected to broadband. What is the BBC's role over and above creating content to help close the digital divide and get us to 100% broadband Britain for the benefit of everyone? I believe one of our roles is to work with Government and industry to communicate the benefits of broadband. We have run a number of initiatives over the years to do that, such as WebWise, although I think we could do far more. I think we could work with the NHS, public authorities, Government departments, and the commercial sector, to promote the benefits of broadband to consumers, and not just BBC services, but online education, health monitoring and so on.

IV. Collaborative Relationships

I welcome this review. I think we do need to revisit the definition of universality and a universal service. We obviously have to look at content regulation, but I think the real challenge comes down to how we work together as a partnership. I really want to move beyond some of the alleged spats that have been reported in the press. To be honest, if you read Ian Livingston's article in the *Sunday Times* two weeks ago when he became CEO of BT, he does not see iPlayer as a problem. Virgin Media have gone on record saying that they think the BBC services doing iPlayer is a good thing, as have MSN and the other content providers who have seen their services rising, such as ITV, MSN and Channel 4. I want us to get over that divisive issue that I think has been whipped up by the media to a large extent. We speak very regularly to the ISPs and whilst we see the issues, we do have a very strong collaborative relationship. This can be something that is of benefit to all of us provided we work together.

Chair

Thank you. We will come back to the issue of collaboration and what it might look like, but I would now like to move on as we have a lot to get through. I will now ask Mike Read to put his comments forward. Mike is the Chief Executive of FREEDOM4, a new name in the market, although Mike has been around the issue for some while prior to FREEDOM4 and is now heading up a wireless broadband provider.

Mike Read

Chief Executive, FREEDOM4

I. Introduction

FREEDOM4 is six weeks old. Some of you may remember it as Pipex. For those who do not remember Pipex as a service provider, you might remember it once sponsored Fulham. That shows the way companies go when I run them! We also sponsored David Hasselhoff for a TV advert. That is my claim to fame on those two areas. However, it was originally Pipex and it is now FREEDOM4.

II. Is Full Convergence Really Achievable?

Let me start by saying that I am not fully convinced about full convergence. In my view, for an end user a full convergence is a Swiss Army Knife. You can get everything in a Swiss Army Knife, but I tried to cut down a tree with the little blade when I was Scout, and I tried to get stones out of horses' hooves with it, and it is not that good. I am also not convinced that I can use my Blackberry for everything. I find it very difficult to use as a phone because it is not very friendly to put to my ear, and I cannot ever imagine picking up anything with a bigger screen and putting it to my ear either, so I am not convinced there. The motor industry has tried to do a converged car and I think that also totally failed. I cannot think of one car that I would want to buy that can function as an off-roader, sports car and family vehicle and so forth. I am not convinced about convergence for the end user, although I am totally convinced that we need to make sure the roads and the platforms, which the debate is about, are capable of carrying the cars and there are some standards set so that we can put all our different sizes and shapes of cars onto a road network.

We are also talking about platforms, where it is equally important for me that all the systems that support them can enable us to do the billing. The two previous speakers, Ashley and Steve, were saying people are talking about giving it away free, but I recall that when we started doing bundling at Pipex the billing team went absolutely crazy trying to cope with how to bill for that. The other thing I found was that not everyone wants to buy any bundled product anyway. It was certainly good at the beginning but they soon realised it was a bit like the Swiss Army Knife because the initial broadband they had that was cheap did not completely fulfil what they wanted it do. Therefore, I think we will end up with two tiers of broadband in this fixed environment, rather than what we have today. I think that is why there is some pressure in the media on what the BBC and others are doing because that content does demand a huge amount of bandwidth which, if you are giving it away for free, someone has to pay for.

When I was at Pipex we did a lot of work on LLUs. That was the name of the game at the time. We wanted to make sure that LLU could provide all the services we wanted it to. We did decide not even to put video or anything like that on it because, again, we felt that was not at a sensible stage for us, but we did start building LLU. What did I need to do to keep my shareholders happy? What did I need to do to keep the people I go and see in the City keep my share price at a reasonable level? They wanted stability. The first question they asked was ‘If you are going to put money into LLU, do you have the right interconnect arrangements with Steve?’, so I would have a chat with Steve to look at how that would work. Then they would say ‘Is the regulation likely to change so that being an LLU provider is not a good thing to be?’, because if we were going to invest in that they would need a four year payback, for example, on LLU, so the question arose of

how much we would charge and so forth. We certainly needed to keep our shareholders happy when we were building an LLU network. That was incredibly challenging, particularly when there were multiple players in the market.

It becomes the ‘big boy game’, as I call it. If you are a big boy with a big balance sheet you can make this work. Steve talked about stranded assets and the telex system. We had a similar debate at that time. Steve may correct me, but at that time when we put in international exchanges they used to pay in roughly three or four months and we would spend millions on them because the margin on international calls was higher. They did not get stranded, although some did as a result. If you are a big company you can take that, but for a small company like mine it is very difficult and it makes you very nervous about doing it.

III. Mobile Data Convergence

However, over time I have become a passionate believer in mobile data and I believe that is where convergence in my area will start. We are seeing it today. For instance, dongles were sold at an alarming rate at Christmas-time. I am sure Mike Short will be able to give you the number when he speaks later. FREEDOM4 is now a WiMax business and we have services in the UK on WiMax, so convergence of mobile data is very important for us.

As a small company this will mean investing a huge amount of money on infrastructure, so I need some certainty. For me the certainty comes from spectrum. Spectrum is the fibre in the sky of the future. Ofcom certainly do give me that certainty to a degree on the usage of spectrum and also on spectrum auctions. It is interesting that that bit of fibre in the sky is auctioned out in quite regular intervals. We do not have such auctions of strands of copper, but it would be interesting if someone said they were going to auction off bits of copper to the highest bidder. Spectrum auctioning and trading and all those areas is a totally different model. It is the fibre in the sky.

We must understand the policies that go along with that and keep them fairly open and keep the technology neutral – which in many ways copper is in my view, so we can get all the services down it that Ashley was talking about, as hopefully we can with spectrum – and we need to have some standards that are not just UK-based because with mobility comes travelling and roaming into Europe and around the world. Therefore, there is an urgent need to make sure we do have standards across the world so people can travel.

How many of us remember going to America with phones that had to be re-programmed to the frequency? How many of us had phones that would not even work over there? Nowadays, we go there and the phone automatically finds the frequency. We need to set some of those standards and then I believe we will start to get some real convergence on what is happening right across the area.

IV. Technology-Neutral Platforms

My last point is very much focused on making sure all platforms in future are technology neutral and can be used for all services. Everything we do through the CTT and other areas must be focused on giving us freedom. I passionately believe it is the consumer who will decide what is needed and the service provider will design and develop the services and generate the innovation required, not the platform provider. It will be the small companies. If we look back over history, how many large companies have innovated anything? There are not that many because it is usually small companies that innovate things, although there are exceptions, such as Apple. In general, it is small companies that innovate and they need the flexibility on the platform.

Chair

Thank you. We will come back to many of your points later. I think I now understand the passion with which you made those points and why the company is called FREEDOM4.

I am going to suggest we make a slight change at this point. I know both Dave Happy and Mike Short have many important points to make, but we have been joined by John Hutton and since he has a short time window in which to address us I would like to welcome him at this stage. Of course, John is the Secretary of State for Business, Enterprise and Regulatory Reform and is one of the co-sponsors of the CTT along with DCMS. If there is time, I believe John is happy to take a couple of questions at the end.

John Hutton MP

Secretary of State for Business, Enterprise and Regulatory Reform

Thank you very much indeed for altering your programming. I would like to welcome you all here. I hope today will be very useful and productive for you. There are some incredibly rich and important things I have picked up from what Mike and others have been saying. With these seminars we are trying to do something which I believe is hugely important, and to some extent perhaps without precedent in terms of how governments work.

I know probably every politician who has ever occupied any elected office will always say in a speech at some point or other that we live in unprecedented times in terms of the speed of change. In particular, the onset of new technologies is changing the world around us. We have all heard such speeches before. Of course, it is also true that politicians exaggerate for a living, so you get this sort of double dose of it all the time. However, I genuinely think when it comes to the issues you are here to discuss today it would be impossible to exaggerate the significance of the changes that are taking shape and effect in our society today.

We have heard about mobile data and how that is changing the way we run our lives. We are living through unprecedented times and so I think it is hugely important that the Government takes the time and makes the effort now with the people who really understand the technology and its potential to try to ensure that the UK as a society and an economy can benefit from these unprecedented changes. When it comes either to decisions about investor confidence, regulatory frameworks, technological standards, and interoperability, whatever the challenge and the issue, the Government needs to work closely with people like you to ensure the UK can maximise its potential to gain from these changes.

It is also true to say, and I am sure you have probably heard this repeatedly, that the creative economy is one of the most dynamically growing sectors of the UK economy at the moment. However, I think we have to see this not only in terms of pounds, shillings and pence and the economy, but also in the tremendously helpful and liberating way it could change our very society. Again, when it comes to the technology haves and have-nots, that will be increasingly where the wealth divide is, or aspirational divide. I think governments, and particularly those of the centre left, are absolutely committed to the issues of fairness and inclusivity and must look at these issues not only in terms of benefits to the UK economy but also to our society.

What is my initial view in setting out this process? Firstly, I think it will be hard for all of us to predict exactly where these developments will take us. I probably do not think there will be a consensus in this room today about where all this is going. Can we predict the future with 100% accuracy? Looking back over the last four or five years on what has happened, I think probably the answer is no. Nevertheless, if we cannot all be 100% accurate today about where things are going, I think it is undeniable that convergence is already challenging business models across sectors and certainly radically changing the way people live their lives, blurring barriers between sectors and certainly transforming how content is originated and access packages are delivered.

I agree very strongly with what Mike said about the importance of what we have to focus on, which is innovation and how we can create a level playing-field for the small companies with new ideas to operate effectively in an environment often dominated by large-scale companies. We have heard about what has been said in the recent debate about the BBC iPlayer and the impact that is having on the Internet infrastructure.

All of these changes challenge certainly our existing communications infrastructure, and certainly pose real challenges for the policy framework, and in particular, and this is my real interest, they challenge the regulatory framework and system. In terms of the CTT and the dialogue we are establishing, I think we should look at how we can analyse those problems, reach a consensus if we can, and ensure the UK can maximise the benefits of convergence.

I want to stress today that the Government does recognise how important this is both to your own companies and to the overall competitiveness of the UK economy. We do have world-leading media communications and great industries that have a tremendously impressive track record of innovation and succeeding in what are now intensively competitive global markets. It is essential for all of us to take every measure we can to make sure those companies can continue to do so in the future.

I want to thank all of you who have devoted so much time and energy to the work of the CTT and these seminars. I think it is very important for us to listen to what you have to say. However, I think it is not only our willingness to listen that really counts, but it is our preparedness to act on this. I think it is on that basis that ultimately all of this process will be judged.

I want to assure you that we share your scale of ambition, and we are prepared to do whatever is needed to enable the UK to maintain a proper and even a competitive edge as the technology advances in unpredictable ways. If we can get this right, I hope we can also ensure that UK talent and creativity continues to inspire, challenge and sell across the world, taking maximum advantage of the changes that characterise your industry in the 21^{st} century.

Those are the points I wanted to make by way of my brief remarks today. Andy Burnham and I are very closely following the work you are doing. We are willing to act, and ready to legislate if that is necessary, and we are certainly willing to continue this very important dialogue. We want to make sure we do not miss a trick in working out the right position for the UK both in terms of our economy but also more widely in terms of the ability of this tremendously exciting technology to bring improvements. It is tremendously important. Thank you.

Questions and Answers

Peter Williams, Peter Williams TV

Given ITV’s declaration that they are going to unload their regional responsibilities, how important do you think it is that post 2012, local interests and programming will get some sort of space on the spectrum so that a satisfactory service can be maintained?

John Hutton

I personally think it is very important, and I am speaking essentially now as a politician. If you were to get any group of politicians into a room I think they would talk to you about the importance of that local coverage. This has to be looked at. I guess this is primarily a matter for Andrew Burnham and his department and Ofcom working together on this. I think it is an important issue. I am sure my constituents and people all over the country value and appreciate local news coverage. I do not think we should lose that. It is terribly important.

Chris Marsden, University of Essex

I have just been reading about a predecessor of yours who was regulating networks, William Gladstone, who was trying to regulate the railways. He tried to introduce a universal service obligation on the railways, which unfortunately ended up being a very, very trivial obligation called Parliamentary Trains. One of the things we have heard from Ashley Highfield is that a key question from the political perspective will be what the universal service will be for broadband. That is something that the European Commission has developed so far, but which obviously I have to deal with. Maybe one of the key questions in there is whether there will be network neutrality only for the BBC and public service broadcasters, or will it be for other content providers. That is obviously of how we use the access.

John Hutton

Goodness, is that the time! I did not know about William Gladstone. Of course, I think he was President of the Board of Trade in 1844 I think. I was in the States recently and it was one of the occasions where you realise that somethings do not translate across the Atlantic terribly well. I was meeting with a lovely member of the Bush administration, Sam [inaudible], and I thought I would introduce a little ice-breaker because I am technically still the President of the Board of Trade. As my opening line I said to him 'Sam, I am the only UK politician that you have to call Mr President.' He said, 'John, I am sorry, I cannot do that.'

I really do not know the answer to that question. I think we will have to look at the issue about universal service specification in relation to broadband. I think it is inevitable and many people here have raised it. We do have extremely high levels of broadband access, without having set that universal service requirement. Do we think we need to push now and put something in place? I do not know. We should have a debate about that and I am sure there will be some comments that will come out of here and go into the pipeline.

However, I am quite attracted by the idea of the Parliamentary Trains. Were they just for MPs?

Chris Marsden

There was an obligation on the train service that they had to run a covered third-class train that would stoop at every station. As a result, there was one 6am train on every railway network right up until 1962 that crawled along, and ended up being this famously shambolic attempt at universal service which did not work.

John Hutton

Thank you for that. You have made up my mind, and I do not think we will be following that example!

Chair

John, it is that time and I know you have to be away now. Thank you very much for taking those questions. As I think you indicated in your remarks, it is very early days for the work of the CTT. Indeed, the issue of the digital divide, not only in the technical sense but also in the sense of literacy and education, is all part of this big issue that we are trying to grapple with. So watch this space. The CTT is looking to engage with those who represent communities and whether we take some of these consultations out to the regions or not we have not decided. This is not just a consultation in the basement of BERR or DCMS; we are genuinely interested in those community perspectives. Thank you very much. We look forward to seeing you again at a future event.

I would now like to come back to the panel presentations and move into the discussion. Our next speaker is Dave Happy. Dave is representing the business user perspective. We are very keen, and indeed the speakers have made this point themselves so far, that looking at this from the point of view of a network provider gives you one perspective. The other perspective we are keen to understand is that of the end users.

Panel Discussion

Business Consumers and Convergence

David Happy

Director, Communications Management Association

I. Introduction

I want to start by thanking Kip Meek, because I must say that having read through the *Pipe Dreams?* report and taken on board the nine recommendations, I think it is a good basis to build upon. I think there are some really wise comments in there.

You do not have a prayer of keeping up with 21 slides in five minutes, and in particular given some of the detail I would like to set out, so I will just give you a flavour of some of these things. All of

the slides have been provided to BERR in advance anyway. It would be great though if I could give you a good flavour of what the business user is looking for.

Today is quite a momentous day because, for those of you who have any interest these matters, it is the day that Cynthia Payne was finally sent to prison! This is also the day that "*Tommy*" the rock opera was first produced and sung live by The Who, and I am today here as, to quote from one of their famous tracks, 'The Seeker' - though what I am seeking is broadband connectivity.

II. How Must the UK's Communications Platforms Evolve If the Potential of Convergence Is To Be Fully Realised?

Basically, I think it is fair to say that business users do not really care about the underlying platform, but they *do* care about how the services work. Since there are so many slides I will not go into every bullet point because it is simply not feasible. They do care about faster speeds. They care about speed "of itself" just as a benefit. They find it valuable to speed up the things they already do, as will be seen from some of the research I will show.

There are several things that the CMA can do which will facilitate this. We hear feedback from the businesses. 25% of Steve's (Openreach's) and everybody else's revenues will come from business users, and those are CMA members.

I think capacity richness is a particularly important point, but we will come on to that when we look at some of the data.

III. Research

I will quickly run through some research (which I only saw for the first time on Friday), it gives you a flavour of what people are asking for, how they work and what they are doing. There was a spread of companies of all sizes involved in the research and they were asked what they wanted and how much they were currently spending.

In terms of the typical services they use, I suppose none of these will be great surprises. There were several common-sense things like CRM, voice telephony, Internet/Web. There is an interesting balance between those using fibre and those still using copper to receive services.

Perhaps of interest to everyone is how many of these businesses are unable to get the required level of access they would like. Somewhere in excess of 40% of people in medium to large companies cannot get what they would currently like in terms of access today. That is their perception. Interestingly, at the smaller end of the market it is much same.

I have to stress that this research comes straight from the market researchers and is unverified. The problem is all over the place geographically. It could be Scotland, it could be the South West, Teesside or almos anywhere.

What is it that they would like to be able to use via next generation access? There are no real surprises here. Maybe we are looking for rocket science in terms of some "killer app, that simply does not exist." What they would like to do is more of the same, better and faster. That is something we do know about and hopefully we can base business cases on it. Again, it is split by non-core and core. Core simply means intra-company, within their own networks. Non-core means they have interactions with the outside world.

The main benefits are pretty clear. These are increased bandwidth speed and quality. It is something that they see as a benefit just of itself, which is quite telling. They would like to have more of it and for it to be faster. Another benefit is improved applications and communications services. I would have expected to see a bigger benefit in core within the business, but that was not what they were telling us. Reduced cost is also there, but it is not top of the list.

Again, we are looking at costs. What were the benefits they saw to themselves on their internal networks? We have the external ones. (Please see me afterwards if you have an interest in the research).

Finally, they see increased bandwidth speed and quality as a big benefit of itself.

I think John Hutton said he wanted to stress the importance of innovation. If I wrote it down correctly, Steve said that the future will be set by the demand of end users in the market. I now move on to address this.

IV. The Innovation Process – How it Happens

How has innovation happened? On this slide I am trying to show the four key groups which will facilitate people when they are trying to look at how to make decisions which will impact this market we are involved in. The network element providers will be the Alcatel-Lucents, the network operators, BT, Openreach, or whoever. We can see the platform application and content providers there, the ISPs, and then the consumers. There is a relationship between all of them and the interactions between them is what drives innovation. When innovation does not work and there is a problem, that is when we need to think about how it could all work.

A little observation from me is that somebody said *en passant* that ‘The death of the “death of distance” is here.’ I am not sure I agree but I do know that it costs *per metre* to put in a fibre-based infrastructure, and I am sure that causes everyone who would like to put one in a great many headaches.

1. Drivers of Behaviour

Within each of the four circles on the slide are a range of pressures, or things which are impacting people. As an example we will pick ‘The Taxman’ and call that a network operator. If that is a fixed network, we could be talking about something Kip picked up on in point eight of his nine points (in Pipe Dreams), which is to do with whether we should be rating duct. Did they rate it elsewhere in the European Union? *We do not even rate it the same as between coax, fibre and copper, or between operators. Then we wonder why people are struggling to decide whether or not they should proceed!* No business case will proceed unless issues like that are cleared up.

2. What Did the UK Do Last Time?

What lessons can we learn from last time? Sadly, I do not think there is that much we can learn. I was involved in what was in the UK initially believed to be an airline, US West, which became TeleWest and then became NTL and Virgin Media. We paid for licences to serve individual areas because we believed that when we had dug that one hole, that expensive bit, we could make two lots of revenue. Unfortunately, that will not hold this time round for a range of reasons, which I will not go in to. I will simply say that we may have been kidding ourselves if we ever thought we had anything else other than one ubiquitous fixed network, and now we are trying to address how

to encourage multiple ubiquitious broadband networks. If I can address Chris Marsden's point from the University of Essex, how are we going to serve something without some kind of *universal broadband access* and what will be the implications of that? I also take on board point nine of Kip's recommendations, which I strongly support.

3. Potential Barriers and Opportunities for Competition, Growth and Innovation to Deliver the Required Platforms

I am going to skip talking about opportunity and barriers, because that is something the people who are assessing this can take a view on later. They are listed on the slides.

4. How Should the Regulatory Regime Evolve Over the Next 10 Years?

It was Brian Carsberg who said 'My job is to do myself out of a job.' Does anybody actually believe that? *He* might have believed it at that time, and I am sure of all the people we have had he has been one of the best in my opinion, but I am not sure that telling the regulator we are going to destroy their job security is an intelligent thing to do and maybe it leads to over complication in regulatort matters?. Maybe I am wrong. I have nothing against Ofcom. They are trying to do a really important job, so why should they constantly be faced with this big fear about what is going to happen to them next? However, I do think the need for improved EU resources within Ofcom is something important. They may be "over there," there may be following the Channel, but we are a part of the EU, so get to like it because all the businesses already have to.

One of the things I had training on as an economist was that Perfect Competition is a construct that does not exist. If it did exist, why would we need a regulator to smooth out those imperfections in the market? We simply would not. If we are going to go for Perfect Competiton, let us at least approach it with more openness because mobile is a de facto oligopoly anyway. It is difficult enough to put in a single ubiquitous fibre network. It is a problem – competion will not be perfect. I think Ofcom is placed in an impossible position in this regard.

I would like to refer to a quote from the White Paper from the DTI in December 2000, *A New Future for Communications.* In that, eight years ago, we were saying 'We want the UK to have levels of access to communications infrastructures in the new economy that match or exceed the best in the world.' Furthermore, 'Regulation underpins all of these forces, misdirecting and obstructing them at its worst, and encouraging them at its best. When it is ineffective or overbearing it can slow down change.' One of the comments earlier was to think about the clock and the clock can move backwards as well as forwards – and no, I did not buy a CT2 handset! My point is, can Ofcom really cope with such a broad role? In some areas it manifestly does not seek to – but then this may conflict with its duties! I have some sympathy with them here.

I am coming to my last four slides, and I apologise for going through 21 slides at great speed, but hopefully you will have time to reflect upon this in the break.

5. Lessons from International Comparisons

This is a slide which I acquired from BT at an OECD workshop. It shows the ICT's contribution to productivity growth in countries. In the UK, it is just beginning to dip. I think there is some merit in that slide. As an economist, I know you can invent a graph that will go any way you like, but there *does* look like there could be a problem here.

I have also noted some comments from the business users' perspective about what has been going on in Brussels. Cheaper international mobile call roaming, i.e. cheaper calls on existing bills, is good news. Another observation from Viviane Reding in the *13th Report on the Single Market for Telecommunications* is that '86.5% of fixed telephony users are still using the incumbent's network for access', and 'Europe's overall broadband penetration is 20%.'

We are honoured to have someone from the Japanese Ministry of Communications here. Their strategy and some of the documents they have put out have been amongst the best I have ever seen. As a business user, I would certainly like to see some of their ideas adopted, although some of them would not be appropriate. Their figures for ultra high-speed penetration fibre to the home show a penetration level of 83.5% in 2007. Think of what my businesses could do with that!

Another comment from the same source [Ministry of Internal Affairs and Communications, Japan] is that non-broadband areas will be eliminated by 2010. How nice that would be. 90% (or more) of Japanese households are covered by ultra high-speed broadband in the same timeframe. I cannot even imagine it! Mike made a comment about this earlier, but a solution to the problem for non-broadband areas, and we should be practical about this, because we cannot do everything, would be to use a mix of technologies and to do our best to help local Communities to help themselves. There is a policy role for Government here.

One of the things that happened in Japan was that the Government was engaged in the process actively and this slide shows how some of the ideas they adopted were implemented. I do not have a strong view on this either way. Just because something is appropriate in one country, it may not be in another. I am not looking to see that. All I am looking to see is that businesses trying to provide services who are having problems today, have those needs met.

Chair

Thank you. There were a number of interesting points made, including the new data, hot off the press, from business users themselves. I thought that was particularly striking in terms of their perception and aspirations. Perhaps we will come back to that.

Our final speaker on the panel this morning is from O2. Mike wears a number of hats as well as his O2 hat. He is still Chairman of the UK Mobile Data Association, so he has a long experience in the way the mobile industry has reacted to many of these changes.

Mike Short

Vice President of Research and Development, O2

I. Preamble

Thank you Chris. It is good to be here, and thank you for the invitation. As my son is currently going through his GCSE studies, we have been banging into him to answer the questions, so I am going to respond to the questions on page two of your delegate pack.

II. Background

I would just like to give you some background before I get into 'GCSE policy mode' if you like. Telefonica are the owners of O2 and we have roughly 230 million customers in 23 countries. O2 in the UK is clearly a mobile operator but also a broadband operator with close to 20 million customers. One of the key things we do is lots of international benchmarking, and I will bring out some references to that in my brief set of answers.

I am also the last European Chairman of the GSM Association. In case you did not know, GSM went through three billion customers last month in barely 15 years. However, you might not know that the expectation is to be close to four billion this year and five billion by 2010.

If we just stopped there, based on numbers of customers we could have a very quick exit and go and enjoy our coffee. However, I think the reality is that we are seeing a lot of innovation from all around the world that we need to think about in the UK context, so not just that Nokia is the leading camera phone vendor worldwide now, because of mobile cameras, but also innovation from many countries who are using higher speed mobile devices, the likes of which we have not yet seen here, but are coming fast. In Dave Happy's presentation, some of the Japanese figures that were shown really relate to wireless delivered broadband.

III. Do the UK Communication Platforms Need To Evolve If the Potential of Convergence Is To Be Fully Realised?

The fairly obvious answer is yes. I might not call it next generation, because that suggests that somebody else needs to be born, but I might say that we could be considering some of the key factors that are relevant to that.

- I think there is room for some horizontal integration.
- Addressing market needs would be a very logical deciding factor here, particularly thinking about the needs of e-healthcare in the future.
- Transport could be something to think about in terms of better connection. Roads, cars and lorries could always be connected so it is possible to receive the best information at anytime. There could be notifications of when you have reached the last petrol station before you run out, or even airbag alerts from every vehicle for safety reasons. In other words, a pro-safety and pro-digital agenda from an applications point of view.
- Clearly the platforms need to improve in terms of speed and also ease of use. I think the digital divide is not just about geography but also about easy of use and we need more work on that latter point.
- Interoperability is often labelled as ease of use, but in fact it does not always translate into ease of use for the citizen or the consumer.

IV. What Are the Potential Barriers To and Opportunities for Competition, Growth and Innovation?

In terms of barriers, clearly we need an investment climate where we can invest to build some of these platforms. When I look at some of the markets in Europe and across the world that we are in,

we do not always see the same investment climate in every country. If we look at some of our businesses in Latin America we certainly do not see the same regulatory conditions in some of their countries. We have to look at the barriers to investment from a regulatory and customer-facing perspective.

The opportunities for competition will grow anyway because that is what convergence is about, but the reality is we need to think about it from a capital intensive, or a current cost intensive point of view. From a capital intensive point of view, I think there is a much longer term framework for that. Investment stability is needed or the investment will not occur.

Some of the services and certainly those innovated by small companies can come and go as and where they wish to innovate, but in the opportunity for competition I think we need to distinguish between the capital intensive areas and the less capital intensive areas for the services competition.

V. What Lessons Can Be Learnt From the International Comparisons?

I think we particularly need to look to Japan and Korea where we see five-year strategic plans and a more robust top-down approach from the Government. You might say that there is a different style of economy in Japan and Korea, but I think we need to take some lessons from their plans. Japan has been quoted already and certainly there have been five-year plans in Korea for some time, the latest being the IT839 Plan, which addresses research, innovation and investment, and also gives some longer term priorities to the industry as a whole and the country as a whole. It is being done from the basis of national competitiveness for Korea.

I do not think the element of competitiveness, apart from the brief words by John Hutton, has really been addressed today. We need to be thinking more about UK competitiveness against a global context, therefore adopting an international standard but not letting the UK lag behind in some of these application events.

VI. What Are the Implications for Future Regulatory Policy? Are There Particular Regulatory Obstacles to a Thriving Economy in a Converged World?

By its very nature I am really describing applications rather than platforms. I am describing ways in which these platforms are going to be used. That takes me into thinking about the digital economy, not just the broadband economy, and certainly not, with due respect to Ashley, to the digital switchover for television alone. Why are we not switching over health from analogue to digital? Why are we not switching over transport from analogue to digital? Why are we not switching over education from analogue to digital? In other words, a far more comprehensive digital switchover programme that facilitates both existing platforms and creates new businesses, and capitalises on both the creative industries and also many of the SMEs that are in the other factors I referred to.

There are bound to be regulatory obstacles. Let us knock some of them out. I think we have heard about some of those today.

VII. Summary

I think we need to connect applications to these platforms in a more advanced digital world for businesses and consumers, and particularly for government. That requires a broader and more strategic thrust than Ofcom for communications alone. It is much more about applications ahead of the content.

I think the payment side has not been addressed. Frankly, the investment climate relates to how people pay for things. When we think about the Web world and payments on the

Web we do need to think a little about whether the FSA is ready for new ways of payment.

I also think we need to ensure that we consider whether it is really a convergence think tank or more of an applications think tank which gives the UK 21st century communications that are sustainable for this century. It might be interesting in some quarters to use this label of convergence continuously, but I think what people want is applications that give them benefits. Customers do not come into shops and say ‘I would like convergence please.’ Customers often come into a shop and say ‘I would like that phone, and incidentally it could be on that tariff or it could be on that network’, even if they are in an O2 shop. The joke used to be ‘Can I have a Vodafone on Cellnet?’ We need to move beyond that.

Chair

Thank you. You are right that we do often fall into the trap of describing the world as we see it from inside the industry and maybe those words do not mean much to the end user. As people have said, they are interested in the benefits to them in their lives or their business.

I would like to open the floor for general questions. You might want to challenge some of the things you have heard; indeed some of the panellists may want to challenge each other. Before we do that, do any of the CTT panel have any particular points?

Questions and Answers

Robin Foster, CTT

First of all, we have had a hugely interestingly range of issues raised this morning, which it seems to me fall into two broad areas. One is how we can make the market work more effectively to encourage investment in new platforms and networks, and the second is about what we should do if the market does not deliver enough if there are wider economic and social benefits that we value.

I would like to ask a question for clarification on the first of those which is about getting the market to work. Mike Short mentioned knocking down the regulatory barriers. I wonder if Mike or any of the other speakers would like to say any more about what those regulatory barriers are that the CTT should perhaps be focusing on, not the answer to them, but just in terms of the areas of focus for the CTT to think about.

Mike Read

When I was talking about investment my focus was that if I put this money in I have to go to our shareholders to raise the money and they are pretty critical of any business plan. One investor wanted to do a 10-year business plan, which is something I have never written since I left BT. 10 weeks is usually my limit. From a regulatory point of view and from where I sit today in FREEDOM4 on the spectrum side, there needs to be some better understanding of how spectrum will be auctioned and the date of that. I understand that the date moves, but we were given one date that was going to impact me considerably which I think was going to be in 2007 and is now likely to be some time in 2008, although I am not crystal clear about that. That gives everybody some sort of nervous energy about when that is going to happen.

There will be other spectrum sitting out there to be auctioned at some future date. With each one of these my investors will say ‘Is that going to compete?’, and if I talk through having technology neutrality on it and everything else then yes it could. I need more certainty if possible. The problem is that I guess being in the industry for so long I can understand why it is not certain, but it is one area where I would like some focus and also on trading of spectrum and things like that. However, I am not complaining about spectrum. I think the people running it are doing a good job. I would just like some more certainty.

Chair

Would anyone else like to pick up any regulatory barriers that the CTT should focus on?

Mike Short

In terms of the investment, I have already said that I agree with Mike. With the Web evolution as it stands today, we do not currently have a Communications Act that addresses the Web and how it evolves. I do not want the Web to be heavily regulated, but I think there needs to be an understanding of the things the Web does and does not bring and how it may be examined or touched upon. That is part of the regulatory certainty I need. I am very pleased to see the results in the Byron Review, for example, which was about child protection. I thought that was a very balanced approach. I would like to see more of that in terms of understanding what is acceptable from a Web evolution point of view.

On the payments side that I briefly mentioned, I think it must be made clearer what is acceptable within areas such as payment and maybe areas such as data protection and privacy. We need more certainty there that is not but allows investment to flow in a pro-innovation, pro-investment way.

Dave Happy

I did do a slide on this but perhaps I whizzed through it with more speed than I would have liked. I have a couple of observations on specific things. I mentioned the rating issue. Kip mentioned it in *Pipe Dreams?* The sheer volume of regulation can be an issue. For example, the CMA is a charity and people tend to work with us pro bono, so just getting the business consumers and that information is a huge burden on us. Keeping up with it is a problem. I would rather see action and discussion about how interconnect at the 21CN level will work. I have yet to see some of those debates, although there are good reasons for that which I accept. Then there is the debate about whether we should have sectoral regulation or competition regulation or both. All I can say is that if anyone here is a lawyer, I am sure they are very happy with the existing system. If you are an entrepreneur I am sure perhaps you are less enthusiastic.

I think section 3.1 of the Communications Act indicates that the principal duty of Ofcom is to consumers. Of course, I would say that because I am representing business consumers, but I would like to see that taking a priority and precedence over the others, but I do think it always does. At least that is the experience people are telling me.

Finally, I think there is a problem with Ofcom's EU resourcing. It may be a different world, it may not be how we have done things in the UK, but we are in it and we have to work with it and we trade with it, and my businesses have to. Anything that would help in that regard would be good news.

Chair

Thank you very much. Let us move on to some other issues. A couple of speakers talked about the opportunities to create new services. Ashley talked about a virtuous circle rather than thinking of this as a linear supply chain with people at the top and bottom. What do you have in mind when you talk about collaboration? Is that just the natural market forces, the incremental collaboration, or do you have in mind something other than that, and if so, do you see a role in public policy terms to incentivise that collaboration?

Ashley Highfield

It is part of the process. I think the Broadband Stakeholder Group which is part of the process needs to be given more oomph to it. I think it is about moving beyond the rhetoric towards working together. The BBC with other content providers meets regularly with the ISPs. Perhaps we should try to set some objectives as the BSG has moved towards, around things that are causing some of the bottlenecks in the market. One of the comments I have had in the past is around clarity to the consumer on what they are paying for. We could all work together to come up with some clear benchmarks for what unregulated broadband means, for example, and what different broadband speeds mean. I do not think it is something that lobbing grenades at each other will achieve. We should find forums such as this where we can sit down and work out whether we can come up with an answer.

Steve Robertson

We can have quite a high-falutin view of collaboration, but one of the issues for us today is that there is massive customer dissatisfaction with the experience we collectively deliver and we need to face up to that. A proving ground for collaboration for me, whether we describe it as a value chain or a virtuous circle, is how we can work together to make sure the customers get the experience they want, because these are the people at the end of the day who will be feeding their cash into the top of this value chain or virtuous circle. Whether they are business users or consumers, one of the first tests for us is how we collaborate today. This is not something we need to make theoretical. It is for today and about how we can work together and meet the challenge of delivering a fantastic end user experience.

I believe we have to *do* rather than just talk, and start to provide the foundations for answering some of these questions around collaboration. How do we make sure that the investment environment is right for all points in the value chain so we can stay healthy? It is fantastic that

Mike is in a business where he has to be thinking in terms of 10 weeks. When I speak to my investors in Openreach I have to convince them that we can get a return on investments that will take 10, 15 or 20 years.

The reality is that we need to accommodate multiple economic models. The basis of collaboration is that we need to understand how the economics fit together. Let us understand how customer experience can be delivered through a system and processes, and let us understand how the different legitimate perspectives on this can work in harmony. It is a challenge though. Collaboration is a great word, but we must understand that the environment within which we are attempting to collaborate is very competitive where there are potential winners and losers in this market. To be naïve about that is a danger in its own right.

Mike Read

I just have one point, which is we must be very careful. If I go back to fax 20 years ago, I remember sitting in Geneva beavering away and setting standards. We worked on the X standards and how to put data networks together. For my sins I developed the data numbering plan. There were rumours that around that time there was a lot going in the US, but we all simply pooh-poohed it. Sure enough there was, because development was going on in the US with the Government and also the universities that we now know as the Internet. We were trying to get all the X standards done. We had a four-year process and we all had to go back to our homes and work out the standards and then put contributions in. We thought we were doing a great job, but we were completely rolled over.

My view is that if we are not very careful we will try to regulate things that are wrong. We have to make sure we focus on the right things to regulate. If I want to collaborate with anybody on the panel I will talk to them afterwards. I do not need a great group of people to say ‘You guys ought to collaborate.’ In my view, the businesses will drive it. We need a framework in order for it to work, but in general we need to be very careful. Maybe I am getting a bit old in the tooth, and having sat through numerous meetings in Geneva I feel it is creeping in again and I want to give you an early warning. It is great fun, but you do not achieve a lot.

Becky Hogge, The Open Rights Group

Ashley Highfield made a very convincing case for why the BBC should not be investing in the next generation of broadband in terms of the virtuous circle. Can I redirect Chris Marsden’s question at you? Do you think that network neutrality should only extend to public service broadcasters or should it be something all the content providers can enjoy?

Do the panel agree with Mike Short that there was potentially room for top-down investment from Government in delivering the next generation of broadband?

Ashley Highfield

With network neutrality I start from the position of the consumer. I do not think the consumer will understand or appreciate it if different content over their chosen ISP comes through at different speeds because the content provider has brokered different deals with their ISP. I think the confusion that will put into the market should mitigate against anyone going down that route. That is a consumer-centric point of view.

Clearly, the ISPs will want to create tiers of services and packages hopefully to create higher revenue quality of service packages. I would start from the point of view that if I am a punter and I have a particular ISP, I want to know that all content over that ISP is treated equally so I do not have to start ferreting around the different ISPs to find one that is not throttling YouTube because YouTube did not pay a levy to that particular ISP.

Chair

The other question was about whether anybody subscribes to a top-down investment approach from Government?

Mike Short

Can I stress that I did not say ‘top-down investment from Government’. I said top-down policy direction, and I was specifically bringing out examples of why we might use transport in a digital economy and get all the transport better connected, but also education and health. Furthermore, how having that connected driver with the Government’s spending power could be an incentive to move towards a more advanced digital economy.

Chair

It is about leadership in the public sector then.

Mike Short

It is leadership from a policy and spend point of view, and not investing in networks unnecessarily.

David Lewin, Plum Consulting

I think it was Steve Robertson who said that investment in next generation access is a 10-year or possibly rather longer project plan. How do you square that with the European regulatory framework which demands a review of markets every two to three years and requires that the regulator does not commit to a 10-year period but only to a two to three year period?

Steve Robertson

It is a very good point. I believe that is one of the regulatory challenges that we have. At the end of the day, creating an environment where investment can be made involves a number of questions to answer. One of them is whether the regulator is going to come and take away that certainty at a later point. I think there are potential ways around that. The traditional regulatory environment which was about regulating the existing infrastructure was obsessed with the IPR regulatory regimes and all that stuff. I believe we should move to a regulatory policy which embeds fair return. You also have to be realistic, because I think it is absolutely legitimate for a regulator to have an interest in efficiency. All my customers expect the regulator to hold me to account to make sure I am absolutely running as fast as I can to be as efficient as possible, just as they have to do for other market reasons. I think we need to build a regulatory framework that balances these two things. There are potential ways to do that in terms of embedding a fair return on investment.

However, beyond that, if we want to create an environment of certainty, I also believe we need to answer some of the questions. Some of those questions are around public policy, and I do think without getting into a debate about Government and subsidies and so on, that there is a real sense in which public policy can give us a broader environment which helps to develop that certainty. I also think it is on our shoulders too. We need to be able to build the business cases. We need to be able to have a compelling view of the nature of this market that also brings investor confidence. Going back to the issue of collaboration, maybe this is the ‘daddy’ of them all, in the sense that unless we can come to that joint view and answer that set of questions around the technology, about the market structure, about the political and social environment and the regulatory framework, we will find it very difficult to make the business case for the type of investment that is sought.

Chair

I suggest we take two further questions and keep the questions and answers short and then break for coffee.

Laura Davison, National Union of Journalists

Coming back to the point about spectrum, how can auctioning the analogue spectrum to the highest bidder be squared with the point about ensuring citizens reap the benefits of the advances in technology? This was the point that John Hutton made.

Chair

I am not sure we have the right person here to answer that in terms of justifying current policy.

Mike Read

From where I sit – and maybe some of you now realise that maybe I do not sit square with the rest of this panel – my view is that what I pay for spectrum is what I can make out of it. I will bid for spectrum and work out how much money as a business I can make from that spectrum to enable me to sell something reasonable to customers.

Chair

Or, you will not bid.

Mike Read

Yes, or I will pull out. Some people do bid far more money than I do and indeed history tells us that some people will pay a huge amount of money for spectrum and maybe never get the right returns. That is where I sit.

Mike Short

Very briefly, one of the things we do like about auctions is the openness of the processes that we do not see in every country. In other words, if there is a very clear set of rules and a clear spectrum that may be available we can then assess that from a business development point of view to service customers.

However, we do not see a very healthy debate in Europe which says 'What are the right processes for better consistency?' There is no single European market for spectrum today. You can go to many countries and find very different processes and conditions. I think we like the openness, but we are not necessarily always happy about the price. The 3G auction went to a very high level. Let us see what happens with other spectrum. I think the openness has to be a characteristic in a spectrum-based economy, otherwise you cannot innovate and deliver services.

Dave Happy

I think your point is well made, and I agree with it. Spectrum pricing does end up pricing smaller players out of the market who might have an innovative idea, and that is a problem. I do not think it is easily possible to reconcile the principal duty to consumers with all these issues on spectrum. That is the summary, because we always end up paying with the business users.

Jaqui Devereux, Community Media Association

My comment is that I would like to encourage the CTT to think more about the regions and the smaller communities, as Mike talked about. I think that is a really important thing to do. On one level lots of questions are about something that should be called the 'digital divide think tank' and how we are going to reduce that. Within that, remember that part of that 20% are not refusing it, but it is about poverty. People cannot afford it. They cannot afford a computer, let alone the broadband. I think we must keep that on the agenda.

Chair

I know you made a similar point at the first seminar and that was well and truly registered. I think we should probably draw a line at this point and take a coffee break.

Panel 2 International Context

Chair

In my haste to get us all off to coffee, I did not formally thank the panellists on the first panel. They made some excellent contributions. Thank you to all those panellists who are still with us for the second part.

This second part will follow a similar format and we will focus on the international context and what is happening around the world. We will want to ask questions in terms of the implications and the lessons and what the read-across to the UK might be.

We will kick off with a keynote presentation from Paul Berriman of PCCW. PCCW is an operator in Hong Kong and they are widely respected for their progress in bringing so-called quad-play services to their customers. Paul has been very involved in that. He is currently PCCW's Chief Technology Officer and we are very pleased to have him here in the UK.

Keynote Speech

Telecom and Media Convergence for PCCW and Hong Kong

Paul Berriman

Chief Technology Officer, PCCW

I. Preamble

Thank you. I am very pleased to be here. It is a bit of a rushed job for me because I am flying back out again this afternoon. In the next 15 minutes I hope to tell you a little bit about what we have been doing in Hong Kong over the last 10 years in terms of the regulatory development and network development, and in particular what we have been doing in the business with content and convergence of the platforms and convergence of the content and media.

II. Hong Kong – A Leader in Technology and Competition

Hong Kong is a very dense environment and considers itself very high-tech and full of competition. I think it is the competition which has caused us to be highly innovative in how we have managed our business.

The population of Hong Kong is seven million in about 1,000sq km. We have four pay-TV operators, five fixed operators, and five mobile operators. These are all facilities based, apart from the backhaul for the mobile operators.

There has been competition in the fixed network since 1995. I believe the regulator did a good job in the mid-1990s in making sure that whoever took out a licence fulfilled their obligations for facilities build. They committed to a certain number of buildings that they would build to their facilities. Whilst a few of them missed the mark in terms of timescale, the Government did not give them any waivers but simply gave them extensions to allow them to build, otherwise they would lose all their performance bonds. As a result, if you include the cable company in this equation, who have been around for about 14 years now, then 75% of the households are served by two fixed operators and there are about 55% by three fixed operators. This has meant that PCCW, the original incumbent telco, has managed to avoid any unbundling of broadband services. We also provide a pretty competitive wholesale broadband service.

There are two free-to-air broadcasters with a couple of channels each, and as of January some digital terrestrial TV channels. We are not altogether happy with the regulator and the way they have issued some of the DTT spectrum. The 2G and 3G licences were competitiviley bid. It was a process inconsistent with this tradition for the Regulator to gift DTT spectrum to the Free to Air providers. In other words, the 2G operators did not get free spectrum gifted to change to 3G, so why should the FTA broadcasters.

Hong Kong has very high mobile penetration and a very well developed broadband market with about 150% penetration.

In terms of the converging media index, if anybody tracks that with Informa we had a score of about 47.6% in the third quarter of last year, which is even before the DTT services were around.

III. Government Regulation

In terms of regulation, we have the Government of the Hong Kong Special Administrative Region and under that is the Commerce and Economic Development Bureau. Beneath that there is a Telecoms Regulator, which is a Government-owned regulator, and the broadcasting regulators which are the Television and Licensing Authority and the Broadcasting Authority. The Broadcasting Authority is more a lay body that just monitors and takes complaints from customers regarding obscene items and that type of thing. The Government plans to converge the two regulators, but there is no timing for that to happen yet.

The Government also produces some of its own content, which is largely public service broadcasts which are carried by most of the TV providers.

IV. PCCW – A Leader in Technology Innovation in Asia

PCCW was formerly known as the Hong Kong Telecom Company and we are the largest provider of fixed mobile, broadband and pay-TV in Hong Kong.

Until last year, when France Telecom tipped the high score line with the number of installed customers, we were the worlds largest commercial deployment of IPTV. We are still largest in terms of being in 35% of homes. This significant figure means we have very high penetration of our pay-TV service.

V. PCCW Has a Leading Market Position in Hong Kong

Of the four different services we have, there are about 2.7 million fixed lines, 1.2 million broadband lines, 900,000 pay-TV customers and one million mobile customers. Our goal in life at the moment is to try to enlarge the suite as we go forward.

We have recognised for some time as we have watched our margin and ARPU going down because of competition in Hong Kong that the only way to bring that back up again is not through how much we rent a broadband line for, but it is to do with introducing content, applications and transactions. We have really focused on that for the last five years. The TV content is the biggest driver and the best example of getting into content that we could start.

We have used this diagram as our roadmap. When we first launched, the centre portion just said ‘content and transactions’ and the outside just said WiFi, 3G, broadband lines, and all the devices. It is good for us now in that we consider we truly have a core network and an IP core, and we have applications and transactions in the middle, whether it is music streaming, the TV services, or *Yellow Pages* on all the platforms.

Our so-called quadruple play is not the fact that we sell mobile phones or an IPTV service or a broadband service, but the fact that we deliver the same content simultaneously to all of them wherever possible and practical. You can be watching the English Premier League on your mobile phone, TV or PC, and on a sort of desk phone that also has those same facilities. For us this represents convergence of both media and the new platforms and that is where our new revenue growth has been coming from.

VI. A Full Range of Service Platforms Now and Going Forward

To do that we have to develop all our different platforms. I think we were one of, if not the first, all digital network in the world in 1991. Of course, now we are the world’s oldest digital network. Consequently, our telephone exchanges are about 20 years old on average and therefore we do have to upgrade them to NGN. Our NGN programme is really the replacement of the PSTN. We do not think of NGN beyond that at this point in time. We are focusing on the replacement of our telephone exchanges, which should complete by about 2016 on a just-in-time basis.

We have been cranking up our broadband as we move forward. In November we launched a FTTH product wherever possible that reaches about two-thirds of the buildings in Hong Kong.

On the TV side, we started with a basic pay-TV product and then we pushed it up to include high definition as of August 2007.

On our mobile side we have 2G and 3G and we introduced the higher broadband services on 3G to support our mobile TV strategy.

Interactive content transactions have been the focus across all the platforms, and so was home networking. This year is going to be the year of home networking for PCCW. I will say more about that as we go through. Ultimately, we will be doing all the services on one big platform.

VII. Broadband Access Coverage

Looking at broadband, 1.5Mbits is in about 97% of homes, and it is roughly 93% for 6Mbits, while 8Mbits is 82%. The next one is where the real hurdle comes in. Hong Kong is certainly very dense and has short lines, with an average of 1.8km line lengths, so we have a bit of an advantage over many markets, but that only goes as far as 6-8Mbits. Beyond that we have to lay fibre to buildings, and we do have to put DSLAMs in the buildings. In that respect it is the same as any other country where you are building into a street cabinet. Most of the buildings in Hong Kong happen to be multiple units and the building is the street cabinet for us.

We have fibre to about two-thirds of the homes. The reason why the ADSL2+ is less than fibre is that some of the buildings are not getting equipped with ADSL2+ at this time.

Roughly speaking, that gives you both the capability and the challenge when you see that only 6% of our higher speed broadband can come from the telephone exchange.

VIII. Television Broadcasting

In terms of the TV market in Hong Kong, we have the free-to-air broadcasters TVB and ATV. TVB has the Jade and Pearl channels, and there are Home and World for ATV which is English and Chinese. On top of that starting this year there will be additional channels for digital terrestrial broadcasting including a high definition channel for each.

There are also some DTH channels that have come down to the buildings, but DTH has never really succeeded in Hong Kong because the building owner management situation did not really find a model where they could collect the revenues from the customers in terms of the subscriptions.

In terms of licensed pay-TV services there is ourselves (Now TV), the cable company HK Cable TV, and TVB Pay Vision. The cable company has been around for about 14 years and last year we exceeded their subscriber numbers. They also offer telephone and broadband. TVB Pay Vision is a separate company from TVB, the free-to-air broadcaster, and they are entitled to use content which is greater than one year old from their parent broadcaster but nothing newer than that. The interesting point is that we now carry them on our pay-TV service as well because they were having a difficult job moving from being a broadcaster to a pay-TV operator because they have no means of billing, customer care or installation. In fact, anything outside of being a broadcaster they did not have. We now carry them under a carriage deal as a PCCW service rather than a Now TV service, so they have a separate programme guide for their services and we just charge them so much per customer for the carriage of those channels.

Another thorn in our side is the unlicensed pay TV operator, BBTV, claiming an Internet exemption. Once again, we have a bit of an issue with this with the regulators because we think that if it smells like a pay-TV service and looks like a pay-TV service then it is a pay-TV service and should be treated as one. They do not have any obligations for compliance or keeping records, or the 60 days recording of the content which we have to do. On the flipside, they cannot get decent content because nobody trusts them.

IX. Now TV – Content and Services Drives Growth and ARPU

The growth has been spectacular. I think that is partly because Hong Kong was starved of choice. We have managed to bring in some new propositions beyond ordinary cable TV in terms of a-la-carte choice of content rather than packaging, and the fact that we brought in new channels that we have done ourselves. We have novel ways of dealing with the content providers. For instance, we have zero piracy. We have network-based conditional access, so if you are watching you are paying, which has gone down very well with the content providers.

With the number of set-boxes we have installed, even those people have about 17 free channels. As long as they subscribe to broadband for more than a one-year subscription contract, we give them a free set-top box, and they pay for the other channels.

In terms of ARPU, as we have broadened the content and gone from 23 channels to some 150 channels, we have slowly built up our paying base of customers and they have brought in the new revenues. This has created stickiness for broadband, but it has also given us new sources of revenues to top up what we were losing having lost our incumbent monopoly status a few years ago. Furthermore, since we have so many channels it has enabled us to do a lot more in terms of advertising revenues and selling advertising onto those self-produced channels.

X. Market Growth Strategies – Development History of the TV Service

The first strategy was to enrich content. We started with 23 channels and we have now reached 155 channels. Amongst our biggest gains was the English Premier League soccer in the middle of last year and that has made a big difference.

The second part of the strategy was to go for a low barrier to entry: the idea that if you subscribe to broadband you get the free set-top box and you only pay for the channels you want to watch. We then found there was a lot of inertia beyond that because people do not subscribe to more than one or two channels if they are given the remote control to subscribe with. As a result, we called them up and sold them the idea of a mini-pack, which is a high-volume discount. Someone who takes 50 channels for two years will get a bigger discount per channel than somebody who takes one channel for one month.

We then focused on packaging the whole Chinese content for the mass market, including the TVB Pay Vision package. Following that, we started to have enough critical mass to negotiate more with the content providers and gained ourselves a few exclusive deals. We also produced self-produced content because there were some holes in the market. For instance, the only people who produced business news in Cantonese for the Hong Kong Stock Market were our competitors, so we had to produce our own for those types of channels.

The next step was the interactivity and advertising type services. You can now buy your cinema tickets on TV and have them delivered as a barcode to your mobile phone. We introduced video-on-demand on the interactive side, and we have other things like *Yellow Pages* across all our platforms. I do not understand why some operators around the world sell off their *Yellow Pages* because it is a fantastic merchant database to build on when you start to sell advertising and other content across the platforms.

We then introduced content to our now.com.hk platform which is our media portal on our Internet business, and we also introduced the mobile services. Last year, the introduction of high definition was mainly driven by the English Premier League soccer, which is the single biggest item in Hong

Kong for content. It is probably ten times anything else we issue in terms of viewership. 30% of the games are coming to us in high definition. It was a considerable driver for the high definition service.

Finally, this year we are embarking on both a set-top box where we have incorporated the digital terrestrial receiver and also forging ahead in the areas of what we call PCCW Home and all the support for home networking.

XI. Convergence in the Home

We have a significant presence in the home. We have the ADSL modem, the set-top box, and the connections around the home because invariably the set-top box is in the living room and the modem is in the bedroom. We already have a position there and we see people now starting to put their content onto media servers and trying to connect devices which are supposed to be universal plug-and-play but we all know are not. Therefore, if we can provide a service as we install the set-top boxes and everything else, and as we network manage the set-top boxes and the DSL modems, if we can do the same with digital photo frames and other devices around the home we can provide a service which will give us additional revenue as an operator. Similarly, content will be coming into the home and we want to help the customer do that. We also need to support the customer sending out content from their homes so they can watch home movies or family photographs on their PC or their 3G phone, as well as around the home where they want to put their photographs on the digital photo frames.

Another benefit for us is that if we are the providers of the DSL modems and so forth, we can also be the gatekeeper to help prevent unauthorised access to the home. These are all areas where we see we can play a major role for the customer going forward.

XII. Emerging Competition and Convergence Issues

In terms of some of the issues that arise from this, we often have running battles with our regulator over where the innovation, differentiation and competition stop and where open access and non-exclusive content and standards start. That comes into all aspects of our investment policy and everything else.

We are starting to look at what we do in terms of universal service. We do not have a universal service obligation on broadband, but we do have customers in outlying islands. If we want to try to provide a TV service to those people we have offered that with an STM microwave but it is has meant we can only offer 40 channels. We cannot viably justify putting a fibre to an island. We think there should be a better way of doing that. There is a power station on the island and they have cables and fibres, but under their scheme of control they cannot make it available to the telcos. We are not talking about exclusivity here; we are just suggesting there might be a better way of providing services to the customer. By the way, this island in particular is a very bohemian place were many journalists live, so it is in our interests to keep them happy as well.

How do we deal with key content? Do customers need multiple set-top boxes, one for terrestrial TV, one from the cable company and one from us? I will explain a little bit more why that is relevant when you look at what has been happening with things like Premier League soccer in Hong Kong.

In terms of convergence, what will the future market look like in this area with things like pay-TV on the Internet and substitution for fixed lines for mobile? I think the same thing applies to us in Hong Kong as other people are finding in other parts of the world.

I mentioned earlier about digital terrestrial TV. In fact, it is now competing with pay-TV. We are really concerned that at some point in time the DTT providers will be allowed to provide pay-TV services when they have not had to build or construct them but they have been granted or gifted spectrum to do this. That is something they (the Regulator and Governement) have to consider.

I mentioned about the public Internet. Why should it have any exclusions from pay-TV licensing if it is operating a pay-TV service using the Internet? How do we maintain a level playing field going forward?

In terms of our exclusive rights, back in the days before our pay-TV service, the cable company was the main carrier of soccer content. They did it through an aggregate of

ESPN Star Sports, a joint venture between Disney and NewsCorp, and it carried both the Champions League and the Barclays Premier League. We came along and then the cable company for some reason unknown to us bid directly for the Premier League soccer and took it on directly and created their own channel for Premier League. As a result, the aggregator came to us for all the other content such as Formula One and Champions League. That was the start of it.

The next step was that when it came up for renewal in 2007 we put in a successful bid for the Premier League and now basically the cable company does not have either of those contents at the moment. Of course, paying large for the Premier League soccer and winning it off the cable company has meant that the cable company has plenty of money in its pockets. This year the cable company has now taken the Champions League and the aggregator has disappeared. As you can see, the model keeps changing all the time.

XIII. Content Integration

We have done something to try to integrate the set-top boxes. I mentioned that we carry the TVB Pay Vision. Our competitor comes in on a carrier wholesale deal, and we also have our service on the set-top box as well as the digital terrestrial receiver, so that has greatly reduced the amount of set-top box requirements. However, what it has not done yet, and maybe in future it could do, is integrate with the cable and the broadband TV providers.

We have always been confident about this and have seen the fixed broadband network as something that will win in the end. On the basis that for any type of wireless service the smaller the cells get the bigger the broadband fixed network gets. You can have a 3G Base Station or WiFi AP and you always need a broadband line connecting it. We see ourselves in a good position.

When you look at what is happening in Japan with super high definition and ultra high definition, there is only one way you will ever be able to deliver that and that will be over fibre, so the fixed networks have to concentrate on that. It is the same for the backhaul. I think any mobile operator in Hong Kong who does not have his own backhaul is going to find it expensive when we start to have the broadband wireless and 4G mobile networks. We also have the billing systems for taking care of that as well as how we do the transactions in a two-way world. We have very good micro-payment systems.

In doing a quadruple play we must derive a lot of knowledge about what the customer is doing at any time and in any place. Therefore, we can re-focus the content and do many of the things that

the over-the-top providers, like Google and YouTube, cannot do so easily and we can maybe use that to our advantage. The point I am making there is that as we go forward, when we look at what people like Google are doing trying to get closer to the customer because they recognise that quality of service of delivery requires local loop last mile guaranteed bandwidth, they are now trying to build some of their own fibre cables across the Pacific. One day they will come knocking at our door and want a better quality of delivery to the customer and more information that will help them deliver targeted advertising. We are trying to position ourselves as a company that does not just have a 'dumb pipe' but has a lot of other information and features we can offer to these people rather than just what is carried over the top.

The challenge for us is to take control and own the device portals. On a mobile phone you can download Yahoo! "Go", which basically hijacks your mobile phone and has its own photo sharing service called Flickr. We have a similar service called Snaap! which is also a photo sharing service, but getting access to our service once you have this "Go" front end on the phone makes it difficult. The same is maybe happening in set-top boxes going forward as well.

We have done very well in the last year or so with mobile content. We have three major items of content for mobile: a normal TV service (shown in the middle of slide), a high definition TV on mobile service, which is predominantly our sports channels, and thirdly a music streaming product called Moov. In terms of take-up rates, the high definition on mobile sports content gets over 400 minutes per user of the customers subscribing and watching English Premier League soccer. Typically on a Saturday evening they will have been out to dinner and cannot return home in time to watch it on TV, so they will watch 20 minutes' worth on their mobile phone on their way home.

The reason for (calling it) high definition on mobile is that we use 212Kbits and H.264 coding and that makes it quite watch-able. You can even see the ball in a soccer game. Unfortunately, it uses up a lot of bandwidth and we see these huge peaks in demand The big question for us is whether we build to cover those peaks, and if we do, what will we do for the spare capacity for the rest of the week? I will explain more about our strategy on that next.

90% of the people who take our 3G service take the normal (news-type content) TV service, which is half the bandwidth of the high definition. We have seen the usage of that grew 45% in the last six months.

On the music side (Moov) it is like having an iPod without a hard disk. You can pre-set your playlists using the Internet with you PC and then you can stream them on your mobile phone. We are now getting close to six million streams in the last six months, which is up 100% from last time (previous 6 months).

In terms of TV distribution, of course you probably know this already, but for the 3G in the Unicast mode you can only have between six and 10 users in a cell, even though you can have access to quite a lot of content. With upcoming MBMS services we expect we can have a lot of users in a cell but only a few channels. So we have two ends of the spectrum.

We have now linked our HLR to the authentication platform of WiFi and we have 5000 (5000) hotspots. Wherever we can, we use the client in the handset to look for a WiFi hotspot first to deliver the TV before it goes off to use the 3G network. It uses the SIM card to do the authentication on the WiFi. It is nothing fancy or sophisticated; we just make it easy for it to log onto a WiFi hotspot and get content.

XIV. Quadruple Play

The fixed line terminal device I told you about earlier is basically a telephone with a screen. It has video calling and TV services, *Yellow Pages*, and even a Smartcard Reader, for our Octopus card which is similar to the Oyster card in London, so parents can check on their kids' spending and that sort of thing. So now, including this device, you can watch (for example) the Premier League at the same time on all four platforms. It is now possible for people to watch trailers for films and then buy cinema tickets on TV or Fixed Line device and have them delivered as MMS Bar Codes on a mobile Phone.

The TV channels themselves are becoming portals for different types of services. We have a movie trailer channel and a business news channel. The business news enables you to look at stock reports and buy and sell stock. In our view, why would you bother to go on the worldwide Web when you can buy something that is around the corner? That is where we see the TV interactivity going.

XV. Advertising and Interactive Services

We are now putting advertisements across all the platforms, including the old print *Yellow Pages.* This demonstrates the real convergence of media across all the different converged platforms.

Chair

Thank you very much Paul. It is a very impressive story, particularly when you consider the timelines involved. I think you have brought out the point of just how fast the market can move and people can come and go. There were also a few points about the importance of the device and so on. Hopefully, we will come back to that when we have the full panel together.

Let us swiftly move on to our first speaker, John Cunliffe from Ericsson. Ericsson is a global player in telecoms.

Panel Discussion

John Cunliffe

Chief Technology Officer, Ericsson Ltd

I. Introduction

We have 65,000 people in 144 countries, which hopefully makes us qualified to talk about the international context.

I would like to start by talking about what we are seeing in terms of people trying to assess business cases for convergence and next generation access around the world. Generally, we see people are struggling. It is a very difficult equation to solve and probably something has to be changed in that equation. Nevertheless, we do know that 'build and they will come' is true. Where networks have been built, people do use the capacity.

We recognise there is a huge amount of growth in the internet: 57% in 2006-2007. In that period AT&T saw consumer traffic grow by 145% and business traffic was up by 60%. If the capacity is there, people will use it.

On the mobile side, AT&T saw their data traffic grow by 400% in one year, probably from a low base, but nevertheless it is significant growth. Worldwide, where we see operators offering sensible data tariffs for mobile data, take-up is almost exponential.

II. Video Dominates Bandwidth

I would like to say a few words about video because it dominates bandwidth usage. We might not think we are taking video at home other than through iPlayer maybe, but there is a huge amount of streamed video out there.There are video on-demand services and web-based advertising which includes video content and peer-to-peer whether it is legal or illegal. In 2006, Cache Logic measured something like 60% of traffic on the internet was already video. It is very bandwidth hungry. We are talking about a megabit per second for standard TV. It also has the characteristic that it is not very good at tolerating errors. If you have an error on a phone call you might just hear a click on the line, but if you see an error on a video production the picture tends to break up and there will be a big consumer reaction as a result. It is one thing to say you are going to deliver so many megabits per second, but it needs to be good quality without interruptions and errors.

The other thing about video is that it is continuous. It is not like browsing the web. It is continuous. People will watch movies continuously. This means everybody has the same thing at the same time. The contention ratios we see at the moment simply will not support the video demand of the future, which means we will need a huge amount of bandwidth in the backhaul as well as in the access network.

We have done studies in Sweden and monitored people's video usage. When people finish watching a movie they will make a cup of tea and leave the thing on. You do not just need to dimension for the fact that people are going to watch a movie, but also that the things are left on all the time.

III. IPTV Usage Worldwide

In terms of predictions about IPTV usage around the world, ABI say that there are currently 13 million IPTV customers and that will rise to 90 million in 2013. Another source says it will be 40 million by 2010. We also think that when we get more networked TVs into the living room there will be a further burst in demand.

A point that came up in the last session in this series is that people were trying to attach value created from putting out content into the network via the Internet and how people are struggling with that. I thought it would be worth mentioning that people generally think about video as a broadcast service or multi-cast service, although a lot of the content will move to a unicast service. I think that means there is a possibility to monetise more easily, as we have seen with some of the things Paul has talked about. For instance, if you reach the end of watching a movie, you might be able to download the soundtrack, or to buy the car that was advertised. There could be more affinity based advertising to the demographic of those watching – 'You liked this, you might also like this…'. When we try to do those business cases we should at least try to be creative about the way in which we think we can attach value.

As an aside, I do wonder in these hallowed surroundings whether we should turn to the UK Government for advice on how to create value and increase revenues. It is interesting that there is a debate on the 10p tax rate at the moment, but in my observation, headline tax rates have not changed for some time, yet somehow I feel as though I am paying more tax! Maybe we all need to get more creative.

IV. Mobile Broadband

In May 2007 we reached an interesting point in the sense that the actual amount of data carried on the mobile networks as opposed to voice crossed over. We now carry far more data on mobile networks than just voice alone.

ABI predicts that by 2012 there will be 460 million customers taking mobile TV on their handsets. You can contrast that with 90 million IPTV fixed line customers by 2013. Of those 460 million, 260 million will be in Asia-Pacific. Another source, Strategy Analytics, says it will be 160 million by 2010. The point is that many of these people do not have a fixed line service and their mobile device is the only way they will be able to see TV. Therefore, the content producers need to think about creating content suitable for those people who are going to be watching mobile TV, and not in the way we think about TV normally, but in other parts of the world where there is a market.

In Sweden, where we are seeing people take mobile data, 20% of people have dropped their fixed line service and have decided to do everything on their mobile devices. Of course, some of them like to take their mobile devices to their summer houses for the summer so they can be connected.

Morgan Stanley is predicting that almost one-third of US households will drop their fixed lines by 2012. In Austria, we are seeing that all new broadband subscriptions are now mobile. The majority of them are mobile, although there is still some fixed broadband access the tariffs are so viable for mobile, that people are subscribing to mobile broadband instead.

We have recently conducted a worldwide survey of consumer views on mobile broadband. We found that mobile broadband is mostly being used in the home for internet access. 96% of users use their mobile broadband devices in their home, and 52% in schools. The take-up is from users who cannot get dial-up or where the DSL is slow. I can think of places in this country where you may be able to get a 7Mbit HSDPA service, but you might not be able to get more than 512k on the DSL line.

Consumers are telling us that they love mobile broadband because it is simple. They take their laptop, attach a dongle, and it works. They do not have to fiddle with DSL and set up a WiFi network in their home. We find that our professional users like it as well, they also say they would like the HSPA devices to be fitted inside their laptop. Overall, the message I would like to leave you with is that for content providers in a converged market, there is a huge opportunity to sell content on mobile devices.

V. Comparisons with the UK Market

I would like to compare what is happening in Japan with the UK. We recently heard from the Japanese Government that in 1994 they set out their ambitions for broadband. One of their ambitions was to put fibre to the pole. This means they can then connect that fibre at some later stage to the consumers. They now have 85% of their poles fibred. It is a simple strategic investment to make, not massively expensive, very safe, and it does mean they can extend that

service very easily. They have 10 million FTTH home users and 13 million for DSL. DSL users are decreasing, while FTTH users are increasing. I like that they had set out a vision and plan. It was not a plan to do something in the next two or three years, but it was more long term, and they are achieving it. I would like to see the UK have a long-term plan or framework which we can all work to.

Chair

Thank you John. There was a lot of interesting data in that in terms of the forward projections that illustrate how fast the scene may change.

Let us move on swiftly to another global supplier of telecoms technology, Alcatel-Lucent and welcome Houston Spencer.

Transforming the Communications Business Model

Houston Spencer

Vice President, Strategy and Marketing, Alcatel-Lucent

I. Introduction

It is an honour and a pleasure to be here. I had to ask myself when I was invited, how I could possibly add value to this panel and how I could possibly add value to the room. I thought I should base my comments around counter intuitiveness. First of all, it is a personally important frame for me, because as you can tell from my accent, I am an Australian who has recently arrived from France! However, more broadly and more relevantly to today, what on earth is a vendor? I think some people consider it a mutual term, that a vendor is a vendor in the value chain. It seems a bit pejorative to me. What value is a vendor going to add to this debate?

I think I probably should not talk about technology leadership, although of course Alcatel-Lucent has it. I should also probably not talk about market leadership, although it hurts me. I do not even think it adds a whole lot of value for someone who sells technology for a living to come to this debate with a view that says we should roll out faster, buy more stuff, and it should be really high value and therefore produce good margins. It is a bit painful to come to these kinds of events and hear Cisco talk about the brilliance of things that mean they get to sell more routers, or Ericsson talk about things that mean we should be convinced that mobile is going to rule the world, or even Alcatel-Lucent talk about things such as ADSL having a lot more life in it and you should start buying MPTX as fast as possible. That is not a particularly large value-add to a debate like this.

II. Vendor Assumptions

I think the only useful thing I can do, hopefully bringing a global perspective, is to provoke the traditionalists in the room, including myself and anybody who buys our equipment and services, to poke at some of the assumptions that you might expect a vendor to reinforce.

My point of departure for that spiritually is Leonardo da Vinci. Nobody was expecting that from the panel today! Can I deliver on the counter intuitiveness? There is a spiritual point of departure for this because I genuinely believe that the ecosystem that has already been created has generated the greatest flowering of human output, expression and creativity in any time in history since the Renaissance. That is great and a mark of success for all of us in the room that have anything to do with this industry, regardless of where you are in the value chain or the virtuous circle, or whatever you want to call it.

If Leonardo da Vinci is my spiritual point of departure for today, then my literal point of departure for today is Ed Richards. I do not know if that is more humble or more arrogant. I will even try to get extremely current by taking as a point of departure something that Ed Richards said in a speech last week to the Institution of Engineering and Technology. The other panellists today already made half this statement as well, but he said ‘Broadband is one of those rare things where it seems to be true that if you build it they will come.’ Of course, economists have a term for that. They call it a ‘supply-led market’. Ed went on to say ‘The big issue of course is not will they come, but will they pay the toll.’ Circling our entire debate today has been the question of who will pay for what. We can be either polite or provocative in our questions about the regulation, the technology and the value chain, but it really comes to who will pay for what and what will drive that permission or that demand to pay, whether your perspective is that of a network owner and you are wondering who is going to spend the £15 billion to fibre-up Britain, or your perspective is entirely different like the BBC.

III. Service and Applications – Where Will the ARPU Come From?

I thought I would put up just one slide only. I will not be providing any answers because I think that would be slightly arrogant coming from a vendor. I just want to pose a question. I define the industry as the communication industry having anything to do with something that travels over a network, conventionally the telecoms industry. This is where we live. This is our home and it is all about what we can charge a network user for. Normally it is a subscription. Many of you in the room are familiar with this debate about where ARPU is going. Whenever any of us report to the market, especially my customers, they are always talking about where their ARPU is going. What is begged by convergence is the question of how else networks can make money. I am not going to say today who is going to make the money. How else can networks make money?

Increasingly, my company and others in the industry have been talking for a little while about turning what has conventionally been a one-sided market where consumers and those all-important business users as Dave Happy referred to, consumers and enterprises, pay for everything that comes downstream. It is normally not much more exciting than connectivity. You hope to get connectivity, fast connectivity, ubiquitous connectivity, and hopefully high quality connectivity, but it is somebody downstream paying for connectivity. This has been a boring business for 100 years with some occasional bright flashes of excitement, but as a business model it is dead simple: I pay you so I can use your network.

The question for us is becoming: As ARPU goes down, and as consumers and enterprises are willing to pay less and less for what is seen as a commodity, as you heard this morning – a world in which a price rise is seen as anathema – who else starts paying? We are all talking about a huge investment and we all know it. As I heard this morning, I think everyone in this room has ruled out the notion that the Government is going to pay for the equivalent of the copper network again. If it is not them who will pay, who will it be? Increasingly we are talking about advertising. If you go upstream from there you may be talking about other kinds of services that make use of the

subscribers that used to pay the whole bill for ARPU. Advertising gets us those subscribers, and some other upstream services, for example identity and content management, are also things that people may be willing to pay for. However, it is not the subscribers who are paying at this point, but somebody else upstream. It is brands, advertisers, content providers, and maybe even government. This means that our entire industry model is broke because we are going from a one-sided business model, a one-sided market, to a two-sided market. That is where we are today. Everybody kind of acknowledges on some level that this switch from a one-sided market to a two-sided market is happening.

The question we have not answered yet, and this is the pregnant question for a debate on convergence from our point of view, is what the value chain will be where the payers and the providers meet up. That has not happened yet. I warned you in advance that I was not going to give you any answers. I do not have the answer to how that value chain is going to shake out, but it will.

IV. The Paradoxes of a Two-Sided Market

As soon as you put up a picture of a two-sided market, you introduce a number of paradoxes that our industry and adjacent industries in media, content and so on, are not used to. None of us are used to these paradoxes. Let me start by pointing out a few examples.

Mike Short said something in the earlier panel that it was all about applications and not about platforms. I make a habit of agreeing with Mike, mostly because he is a smarter person than I am and it makes me look good to say 'Did you hear what Mike said?' However, I have to disagree with him in this case. It is all about applications and, depending on where you are in the value chain, sadly or happily – in my case happily – it is also all about platforms, because none of what happens on that slide in going from a one-sided market to a two-sided market can happen without the creation and deployment of very sophisticated new kinds of platforms. I am not talking in a physical way now, and I am not talking about layer two, or about the fibre or the spectrum. I am talking about the platforms that deliver those services and integrate those together above the network.

Let me give you a couple of other paradoxes. In areas of radical value chain discontinuity in our industry and the 360-degree wrap around networks, regardless of whether you are media or you deliver content, these are four other paradoxes that we are going to pay attention to in the convergence debate.

- The service roadmap paradox. What service do you roll out now? What service do you roll out later? What service do you plan for in the future? The paradox there is we all know that usage and scale and therefore costs, are all driven by killer applications. The paradox is there are no killer applications if you buy into the theory of a long tail.

- The investment paradox. The business case for rolling out an investment as massive as that required to fibre up Britain has to be at least predictable o deliver fair returns in the business case, as we heard earlier. However, none of us in this room actually know what is going to drive the business case for fibre. If anybody in the room tells you they do, they are lying, or they are selling something, either way, and I am selling stuff.

- The balance sheet paradox. This is one that we have been wrestling with in this room, although not by this name. In a converged world, we are putting it in different terms of a world where the value chain is changing rapidly amongst network owners, consumers, enterprise users, media and content players. The network becomes irrelevant because, as we have just heard, the consumer does not care which network they are connected to at what time; they just want to be connected and they want to get to their content. The network they are connected to should become increasingly irrelevant. However, we know that the network is the single most important asset and the single most economic bottleneck in many investment equations.

• The saleable unit paradox. This is one that is right at the heart of convergence. As the importance of users increases, the power of the user in the value chain is increasing dramatically. We used to be able to tell the user how much they were going to pay for how much access and when, but we no longer have that power. The users have that power. As the importance and power of users increases, the irrelevance of subscribers decreases, because as Paul Berriman said he does not have a number of subscribers, he has huge numbers of different saleable units of different propositions, often many to the same individual subscriber.

Those are at least four paradoxes that we will continue to wrestle with as we have this debate about convergence. They are not just about who spends, what, when. Ultimately, for companies like mine and John’s and maybe for some of yours in the audience, it is all good news in the end because we do have to keep delivering better capacity and better capability in order to keep Britain competitive. I guess the question well worth wrestling is: How, and how soon?

Chair

Thank you very much for giving us a very different way of looking at some of the issues. Let us move on because we have three speakers to go. I do not want to deny them their moment of fame, but we will have to speed up and squeeze the presentations down a little.

Pierre-Antoine Badoz is from France Telecom. We have heard a lot about France Telecom today. They are widely respected for its moves in a converged world.

Sustainable Competition through Fibre Deployment

Pierre-Antoine Badoz

Director, Corporate Public Affairs Department, France Telecom

I. Competition in the Fibre Access Loop is Desirable

I will try to give you a new version of the French paradox. At Orange/France Telecom, we believe that the successful implementation of the current regulatory framework is about to lead to real infrastructure competition in fixed telecoms through the deployment of competing optical fibre access loops. Competition is desirable, and all the more in the optical fibre access loop.

As the Secretary of State mentioned, we are at a unique point in the history of the development of networks. Optical fibres in the access loop provide a unique opportunity to overcome the monopolistic nature of copper infrastructure that we inherited from the "wired legacy".

We have all witnessed the benefits of infrastructure competition in the "explosive" development of mobile networks and services, evolving from analogue to GSM, to 3G and now to 3G Plus. On the

other hand, if the regulation aims to have just one optical fibre network serving all ISPs and all customers, this monopoly will require permanent access regulation. Access regulation will kill the incentive for a fast deployment of fibre in the access loop : it will destroy the 'first mover' advantage that drove the fast development of mobile networks and of the industry. It will remove planning flexibility and innovation. Above all, it will remove the commercial flexibility to allow dynamic management, or "yield management" of the customer base, that is the ability to provide tailored offerings at prices that will exactly match the customers' willingness to pay, therefore rendering economically viable a fast and extremely large fober deployment. On the opposite, access regulation will have fixed wholesale prices that will pre-determined retail prices. In France, full unbundling whole sale prices determined the "€29.9" retail price for broadband access (with speed now exceeding 20 Mb/sec). It favored, in the short term, the fast development of broadband, but appears to be a problem now because there is a large fraction of the population for whom €29.9 monthly payment is too expensive.

II. Competition in the Fibre Access Loop Is Possible

Competition in the access loop is not only desirable, but is also possible. It is possible if we use a widely available resource, which is vacuum. There is ample vacuum in ducts "over the poles". Even partially filled ducts can be can be used for fibre cabling. It is important to note that horizontal fibre, the laying out of fibre in the streets, is only around one-sixth of the total cost of fibre local loop deployment, while more than half of the cost comes from the civil works (ducts), which can be re-used for fibre deployment. The second largest cost comes from customer connection and terminal equipment.

Civil works and in-building cabling, can be and will be mutualized between the various operators, while customer connection and equipment will obviously be spent only once per customer : the extra cost of having two or three optical fiber networks instead of only one is therefore reasonable, allowing for viable business models for several fibre networks deployment. Of course, this requires an active involvement from the regulatory authority in order to remove the two remaining bottlenecks: first the ducts belonging to the incumbent, but also those belonging to cable, sewer and/or electricity companie, then the in-building cabling, which should be made available to all operators through mutualisation agreements.

III. Competition in the Access Loop Is Becoming a Reality in France through FTTH/FTTB

Competition in the access loop is therefore not only desirable and possible, but it is becoming a reality in France through FTTx infrastructure deployment by at least four operators :

- the cable company "Numericable" expects to exceed two million household passed by the end of this year through FTTB deployment with a reasonable capex expenditure of €200 million a year.

- Free, which is the ISP of Iliad, has announced a €1 billion investment over five years, of which €300 million will be made this year and the next: Free announced more than one million households passed by the end of next year.

- Neuf Cegetel, which is currently being bought by SFR, a subsidiary of Vodafone, has announced similar commitments, and also expects more than one million household passed by the end of next year. These targets could be exceeded as one of the advertised rationale behind the merger with SFR was the availability of capital for fibre deployment.

- Orange/France Telecom has announced a 270 M€ investment over the 2007-2008 period and we and plan to exceed one million households passed by the end of this year.

IV. The Roadmap to Competition and Investment

The key elements for investment and competition are:

- To promote competitive roll-out whenever possible. It is economically viable for the vast majority of the population. This can be done by addressing the two key bottlenecks, ducts and vertical in-house cabling.
- Then, but only at a second stage, to allow voluntary sharing agreements to accelerate complete coverage.
- Once and only once the market coverage is exhausted, to consider access regulation in the remaining "white areas" to help finalize the deployment of fibre.

V. Functional Separation is the Surest Way to Slow Down the Roll-Out of NGANs

We believe functional separation is the surest way to slow down the roll-out of next generation access networks. Indeed, if you recreate a monopoly of the access network, which is what functional separation leads to, you will create a "wait-wait" situation. You will go from the 'first mover' advantage to the 'last mover' advantage because vertically-integrated operators will not be willing to bear the regulatory risk in addition to the technical and commercial market risk, and potential competitors will wait for the incumbent to invest and know that they are protected against any 'first mover' roll out.

It would also recreate the classical hold-up problem because in the absence of vertical agreements between the network company and the services companies, the network company is at risk that the other will not buy its product.

Finally an efficient deployment will require coordination between the network company and the services company over geography, timing, technical products and innovation. This poses serious problems in terms of competition law.

Chair

Thank you very much. There are a few points there and it is a pity Steve Robertson has left otherwise we could have had a great debate about whether functional separation is good or bad. We do not have time for that just now.

Our next speaker is Kip Meek. I am sure that Kip is known to many of you. He is actually on the board of Ingenious Media, but I think he will be speaking from the perspective of his other job as Chairman of the UK Broadband Stakeholder Group.

Kip Meek

Chair, Broadband Stakeholder Group

I. Introduction

Firstly, I should thank Dave for referring to me earlier on as the author of the *Pipe Dreams?* report. I have to say I take full credit for that report, but the real author is sitting in the front row.

I would like to start by giving you some facts and figures about what is going on elsewhere around the world. You just heard a very interesting view from France, so I will not duplicate that. In Asia, in terms of household connections, although I think it is a roughly similar story for business connections, fibre into households in Japan has 10.5 million customers, South Korea 4.5 million, and Honk Kong two million. In all those Asian instances, I think there is a combination of very high density, plus a degree of industrial policy which perhaps sits more uneasily here in the UK.

In the US there are two million connections, and as you know those are primarily delivered by Verizon and AT&T, two different models: fibre to the home in the case of Verizon; fibre to the cabinet in the case of AT&T. Behind that again there is a very different model from what we have in the UK and a much higher prevalence of, as it is known in the regulatory circle, inter-modal competition, i.e. cable versus fixed line, plus a regulatory decision by the FCC to roll back regulation on local unbundling, which has driven the deployment of fibre.

In terms of Europe, we just heard a very interesting story about what is happening in France. To mention a few other countries, Sweden has 360,000 connections, Norway 109,000 and The Netherlands 165,000; all of those being small countries in population terms, which contrasts with the tens of thousands we have here in the UK. The model in the Scandinavian and North European examples is more about communal city initiatives, which again is slightly different from what we have seen elsewhere around the world.

II. Broadband and Next Generation Access Deployment

What does all this mean? One of the things that the BSG is concerned about, and is perhaps at the heart of the question about broadband deployment and next generation access deployment, is whether we should worry. I think the *Pipe Dreams?* report much referred to today makes the point that we have a window during which we do not need to panic. We do not believe that the competitiveness of the UK or UK consumers will be fundamentally disadvantaged if we are a little bit behind other people around the world. Nevertheless, if that was extended indefinitely or for too long it might have consequences for the UK economy and how it would grow relative to others.

We should use this period when we are lagging behind but we do not have a crisis to try to understand what is going on, and that is what the BSG is trying to do. I will not go through the entire BSG programme, but I will just mention two reports we are doing. One is looking at public sector initiatives around the world and whether the models implicit within those are relevant to us here. That work is being done by Analysys. There is another piece of work which is looking at the economic and social value of next generation access specifically relative to conventional broadband and what drives that. We hope that will inform some of the policy decisions that need to be taken later.

III. Business Model Innovation

Our view, very crudely, is that if you look at the three drivers of decision-making in this, which could be seen as the industry, the regulator and the Government, the industry has a big responsibility to innovate around the business models. I think that very much echoes what these two had to say on that. Earlier on, Steve Robertson said that the big marketing watchword at the moment is ‘free’. I think we should think about ‘expensive’. I am not sure I agree with Ashley Highfield who was looking at it from the consumers’ perspective. I am very worried about price differentials. I completely understand where he is coming from and the rationale for what he said, but we do need to start innovating around the business model otherwise we will not get anywhere. There is evidence in the US that people are prepared to pay for higher bandwidths, and there is the two-sided model that Houston referred to, both of which seem to offer some hope for the industry, providing the incentives to Openreach, Virgin and many others to lay down the investment.

To be honest, it seems to me that the mistakes made in business model innovation are much less expensive than mistakes made on the regulatory side or on the Government side. Therefore, if we are interested in progressiveness, I think there is a big responsibility to focus on that side of the question.

The regulatory questions and the Government questions I will not talk about now because we are running out of time. There are some incredibly complicated and difficult issues and difficult trade-offs, but my message to the industry would be that we should get on and try to innovate on the business model side.

Chair

Thank you very much. There were recurring themes that resonated with quite a few of the speakers today.

Let us move on to our next speaker, Jim Beveridge. Microsoft would not describe itself as a telecoms company, and maybe not a media company, but I guess they think of themselves as very much a player in a converged world.

Jim Beveridge

Director of International Policy and Standards, Microsoft

I. Introduction

We have heard in great detail from Paul in terms of what has been happening in Hong Kong.
Today I'll cover some of the international aspects of converged regulation -I've been asked to ignore Europe (we have enough experts on Europe) so for examples I'll look west across the pond to the US and East to the countries of the pacific rim. .I'll highlight that when considering the winners and losers in the converged regulation stakes its important to acknowledge the influence of the UK and US in shaping future international regulation I'll touch on the cultural sensitivities

of converged international regulation and finally consider one possible technological aid to the growing international Information society, digital divide.

II. International Regulatory Benchmarking

When considering the winners and losers in international regulation its worth highlighting the special position of the US and UK, they are generally recognised as providing benchmarks for effectiveness.
In the US the 1996 telecommunications act had a significant impact on industry investment and growth by removing all regulations on retail and wholesale pay tv rates and providing a level paying field between cable and telecom carriers
For example since 1996 cable operators have invested more than 110 billion dollars to build networks to support an expanding range of digital and broadband services at the

same time media owners, broadcasters and cable and satellite operators have invested more than 170 billion in programming content since 1996

The propagation of international TV services relies on the pace of investment, content availability and level playing fields encouraging competition in the region. A clear and consistant regulatory framework which encouragres competition growth and investment assumes enormous significance in this context.

A recent study in Asia pacific looked at the regulatory practises and economic data in a sample of 14 Asian countries

Japan, Australia Hong Kong New Zealand and Singapore were mentioned as having a positive index whilst India, Taiwan south Korea, the Philippines and Thailand are noted as having a negative regulatory environment impacting industry growth and reducing the momentum towards digitisation

India in particular was called out as being paradoxical –it benefits from one of the largest tv industries in the world – the result of entrepreneurial investment during a period when the industry was not over regulated –in the last two years the study notes that the regulatory reflex has been triggered and unclear policies have resulted. Competing modes of tv delivery are regulated in totally divergent ways with different frameworks in place for CABLE, DTH and IPTV With no signs to unify the practise.

In contrast investment and digitisation trends in Japan are on the upswing, benefiting from an encouraging approach to foreign ownership, rate regulation and network convergence.

III. Cultural Issues

Internationally there is great interest in learning from others good regulatory practises. Indeed, as I travel widely it is encouraging to note that the UK is internationally recognised as a quality net exporter of regulation and this engenders great interest in how our regulation is shaped. It's

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important to bear I mind that it's not simply a case of boiler plating successful legislation and applying it into local language.

I'm minded of a presentation I saw a couple of years ago a t the London Business School on the best mechanism to regulate new converged services. The importance of taking culture into account was explained as follows: Regulation of TV was not invented to divvy up the finite physical resource of spectrum in reality it was put in place to protect cultural moirés.

Each society has its concerns, problems, issues, traditions, priorities. Americans worry about sex. Europeans worry about violence. Germans worry about racist speech. Canada worries about its national identity. China worries about party control. Italy about Berlusconi control. Saudi Arabia about women driving cars on TV.

IV. White Spaces

New technology isn't universally welcomed by all cultures. New technologies allow new forms of control or decentralisation encouraging some forms of social interaction at the expense of others and promoting certain values at the expense of others.

For instance the ipod can be seen as a device for urban indifference- the mobile phone for promoting addiction to social contact and the web as subverting traditional forms of governmental and media authority. Pakistan tried to block YouTube for political sensitive video clips (which accidently caused a global outage on YouTube). Malaysia's ruling party blamed the internet and new media for its recent electoral loss in several major states and thr Philipine opposition used SMS to organize mass political gatherings and demonstrations
Finally to technology and its potential to reducing the digital divide: Spectrum is regulated on an international basis and a deal of thought is going into the digital divide especially in the poorer countries. We are part of a consortia with Philips and HP we are proposing that some of the broadcast spectrum (interleaved or white spaces spectrum can be used for low cost license exempt software controlled technologies which will lead to lower cost broadband access)

Chair

Thank you Jim. Again, there was a tremendous amount in that. We are running tight on time so I will open it up for questions. The advisors will have their own chance on another occasion to drill down.

Questions and Answers

Damian Tambini, London School of Economics

I would like to make a comment really, which may be a question to the advisors to the CTT, and links together some of the issues about network neutrality and who pays for the next generation access and universal service. In terms of the question of who pays, for example I might pay for a service which is ultra high-speed, symmetrical, reliable and, crucially, content neutral. I wonder if the advisors would consider it to be a problem in 10 years' time if we have a situation where

50-60% of people have paid for such a network but there is a raft of other people who have not paid for such a network. Maybe they have high-speed access, but they do not have content neutrality.

I would just like to venture a couple of areas in which there may be potential problems. One of them would be access to public services. We have heard mention of health and education services. Obviously these should be universally available. We can also think about public service communications services such as the BBC. How can we have a regulatory framework which effectively guarantees access by all people to those services which are provided universally?

We might also consider some other potential problems with that kind of division between the communications access, one of which relates to plurality. Does that rump of subscribers/users have access to sufficient plurality, or what we used to think of in terms of the old ownership rules framework, of services, content, viewpoints, which would be considered healthy for democracy?

When we think about this package of issues, I would like to urge the advisors to think about the broader framework in which we need to reconsider older issues of universal access, plurality and access to public services.

Chair

Thank you. We will register those points.

Emma Ascroft, Yahoo!

We heard from the first panel that people were looking for greater certainty in order to make their investment. In the second panel we heard about the need to develop two-sided business models and to innovate with the business model.

The former pleas for certainty seemed to conflict a little with innovation and two-sided business models, which are necessarily quite risky things. The market that the telcos are potentially looking to enter is very fast-moving and highly competitive and the one thing that characterises it is a very high degree of uncertainty. How will network operators adapt to that environment to pitch their two-sided business models to the rest of the value chain?

Chair

That is a question for the network operators, so perhaps we should start with Paul and Pierre. Do you have any thoughts on that?

Paul Berriman

One of my last slides was on the advertising and interactive services. With our newly formed division last year we have broadened our advertising revenues by bringing in *Yellow Pages*, all of our directory services and selling advertising onto the content channel we produce. That has been a huge growth area in itself. We are one of the biggest sellers of the ARPU advertising space in Hong Kong with the Yahoo! portals for instance through that same division. We are seeing new sources of revenue from that side.

Chair

You have diversified the range of applications and content.

Pierre-Antoine Badoz

Firstly, I think one of the drivers is competition. When there is competition in the network side, it is a strong driver for improving the quality of service you provide your customers. In terms of how we adapt, this has to be done by providing new services to our customers. Our customers want to have access to content services on any of their handsets, be they mobile or fixed, at work or at home, and also to “live services” such as e-health. Our societies will have to cope with an ageing population. We need to help communities and people to stay healthy longer. There is a whole set of e-services for things like education, there are viable business models. People are ready to pay a price for services that can help them. It is all about going from a “pipe company” to a “service company”.

Kip Meek

I want to comment on Damien’s point as well in a second. On the certainty issue, I do not believe certainty is an aspiration in a business environment. I think risk, and rewards for risk, is relevant there. Certainty it does apply as an aspiration in a regulatory environment, but as with any or most principles in a regulatory environment it has to be traded off against other aspirations. It is perfectly possible to provide certainty on regulation which is wrong-headed, and I think that is the thing Ofcom is grappling with at the moment in its recent pronouncements on next generation access. At what point does it provide certainty? I think it has been broadly correct not to provide certainty so far, although I think it could discuss a broader range of issues than was present in the last consultation document on next generation access.

With regard to the issue of universal service and plurality and so on, my view is that we are in an environment where plurality is less of an issue now than it has been in some other periods in our history by virtue of the fact that we can obtain the information from so many sources. I also think that what broadband delivers is an improvement in services relative to the public services available before. Going back to the wonderful example of universal service in the Parliamentary Trains, I doubt very much that at the beginning of the railways there was much concern about the provision of a universal low level of service.

I completely accept, Damien, that there are big, big issues, but in due course we have to address the universal service obligation as it applies to broadband and how that should be defined. If we focus too much on that at this point in the process, I think that will be an enemy of investment and I am sure that this is congruent in the long term with providing the best possible service to the largest number of people.

Grant Swilling[?], Department for Innovation, Universities and Skills

There was a discussion about how Government can play a role in innovation. Given that we also discussed there was no longer the expectation of large-scale funding of technology, and on the other hand a desire for minimal intervention from Government, I would be interested in the panel’s comments on the earlier view that Government should have a role.

Chair

If the Government is not going to provide capital for the networks, is there something it can do to incentivise innovation and help create the environment?

John Cunliffe

I think the Government could do something aspirational which leads the market. Perhaps they could formulate some carbon targets for the amount of carbon needed in the delivery of broadband service and try some other things and be more double-headed in its benefit.

Pierre-Antoine Badoz

We believe the Government has a very important role to play in developing new services, both in e-health and services for communities.

Houston Spencer

Firstly, the Government is one of the largest consumers of capacity and service of various kinds in the country, so it can throw its weight around pretty easily without having to do direct funding. Secondly, the very first day I met Kip Meek was at a BSG meeting where the regulator and BERR sat on one side and the industry sat on the other and both yelled at each other that what they wanted was certainty. The Government and the regulator said they wanted certainty from industry about when they were going to invest, how much and at what speed, and the industry said they would give them that when they were given certainty around a regulatory framework in which they could invest.

One of the things the Government can provide is clear direction in quality of the regulatory manner that says 'This is how we are going to govern the notion of competition around the set of assets', so that the industry can understand what the playing field for innovation is and know what the risk scenario is. Without it, nobody will invest or do a business model.

I believe it is definitely necessary to take off the table the question of the digital gap in the UK as a sticking point in this debate, especially in the under-served areas of the world. I think the Government has a role to play in saying that beyond this threshold they will entertain furthering investment because universal service may not be economically rationale if you call it for 100%.

Paul Berriman

There was something Dave mentioned earlier on when he talked about managing bottlenecks. One of the things that worked well in Hong Kong in the 1990s when we first had competition was the initiative the Government did between the Highways Department and the Building Authority in terms of forming two committees that all the utility companies were members of. The first was the Road Openings Committee. If anybody had the opportunity to open a road they would be the project leader and then everyone could join in and open the road and do the cabling. The Government would not sign off to the Highways Department to have the excavation permit unless we had gone through that process. That worked particularly well and most of the construction of three new operators plus the incumbent involved laying ducts at the same time along a road.

The second one was the In-building of Services Inquiry. If you intended to put services inside a building, there was an agreed set of guidelines on what type of cable would be installed, how it was installed, and how many pairs, to make sure most of the operators could have access to it, and we agreed the charge inside the building of HK$14 per month. Whoever owned the cable would provide it to everyone else. It was the Government that took the initiative to make that happen.

Chair

That might apply not necessarily in just the telecoms but also in the underlying issues.

Jim Beveridge

I agree about the cooperation. I would like to see cooperation in terms of the roll-out and the broadband and fibre. The best way to innovate is once you have the structures in place. My second point would be about the spectrum allocation. If there was some move towards using unlicensed spectrum as an innovation generator then effectively I think that would help people. Part of the problem at the moment is that in order to run your business model perspective you have to pony up lots of money upfront and then effectively you have to put in and run a business model that you think is going to work. It would be useful to have something you could utilise for unlicensed spectrum in order to try out different technologies.

Kip Meek

There are some instances when you go to events like this where you hear something that is really interesting like what Paul has said. It absolutely epitomises the role of Government, which I think is to provide leadership and coordination in an incredibly complicated environment.

Chair

Often there is cross-cutting as well because it is not necessarily about the most obvious area.

Dave Happy

I mentioned that roughly four out of 10 businesses cannot get what they want in terms of connectivity. If someone were to ask me ‘Will they come?’ in my view part of the answer comes from research which indicates the answer is yes.

The second thing that I was surprised no-one asked me was about how much they were prepared to pay. We have some ideas on that. I think they would be prepared to pay, and that as yet, certainly from the data I have seen, it is not about the killer applications, but about wanting more of the same, faster and better, to improve productivity. Let us not make something more complicated than it already is.

Closing Remarks

Chris Earnshaw

Chair; Deputy President of the Institute of Engineering and Technology

I would like to thank all the speakers, and particularly the panel that has just spoken. There were some great presentations and a lot of content. Thanks also to those who spoke earlier. I am not going to attempt to summarise. I think we have had a very rich set of inputs, all the more so because we have had players coming at us from a wide range of perspectives. Thank you also for being a very engaged audience.

Let me briefly say something about where we go from here. This is the third seminar in the series. We skated over the top of the issue and scoped it out in terms of the networks and issues around content. We looked at some of the social aspects in the first seminar. We are now going to move into a second phase of work which takes a slightly different form.

We will be moving to a mode of inviting particular people to present what you might call evidence. For those of you who may have been involved in the Burns Review of the BBC Charter, it will be somewhat like that. We are going to make them open events and invite you and others to participate, starting as the audience in the back row, if you like, but then encouraging your engagement so we can drill down on some of these particular topics that have been highlighted in the first three seminars. We will announce more about that in the next couple of weeks. You can expect those events to be spread through June and July and probably beyond into the latter part of 2008 because we do not expect that the CTT will be able to produce a report in a few weeks' time because this is a very complex issue and we are determined to take all inputs before reaching a view. Thank you very much.