

# **Digital Britain – Ericsson Ltd Response**

**March 11<sup>th</sup> 2009**

The Digital Britain Project Plan outlines eleven individual work streams:

- 1 Broadband
- 2 Digital radio
- 3 Intellectual property
- 4 Investment in content (incl. independent production)
- 5 IT training and skills
- 6 Media literacy
- 7 Nations, regions and local provision
- 8 News
- 9 Online safeguards (standards and privacy)
- 10 Public service content
- 11 Spectrum

And three cross cutting work streams:

- 1 International comparisons
- 2 Sources of value
- 3 Research

**Ericsson Ltd** would like to present views on work streams **1 Broadband** and **11 Spectrum**.

We would also be very pleased to discuss these matters face to face.

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# WORKSTREAM 1

## **Broadband: How to ensure extensive availability of high speed broadband, universal access to minimum level of connectivity/USO, and participation issues**

### **1a. Universal access to broadband**

#### **What benefits would universal access to broadband bring to the UK?**

Ericsson believes that the deployment of higher bandwidth communications networks, both fixed and mobile, have the potential to deliver very significant levels of economic and social benefit.

As with previous generations of communications advances - canals, railways, phones, motorways - this will stimulate economic growth and deliver social and economic benefits in a wide range of diverse areas such as; efficiency gains for commerce and government, workforce mobility, transport relief, business model innovation, customer reach.

An essential enabler of a successful knowledge-based economy will be the development of the necessary infrastructure to support freely available, affordable access to broadband services, delivering adequate levels of availability, resilience and dependable quality of service.

The UK's evolution towards a prosperous, knowledge-based digital economy, will be seriously threatened if a digital divide is allowed to develop.

#### **How should universal access to broadband be funded, managed and delivered?**

It is important that funding, management and delivery allow the full range of alternative access technologies to be exploited. This implies that a method of involving multiple network operators is needed.

Rural areas are in most need of funding, some suggestions:

- Public duct funding for rural areas, operators then rent or bid for capacity off the local authorities
- Allocate spectrum to local authorities in rural areas, operators then rent or bid for capacity off the local authorities

#### **What technologies should be used in delivering universal broadband?**

It is unlikely that NGAs in the UK will be homogeneous. In terms of technology there is likely to be a mix of copper, fibre, hybrid fibre coax, radio and satellite, in terms of topography there will be widely differing population distributions served with radically different implications for the level of competition that can be supported.

Also, given the rapid rate of technology innovation and the lengthy timescales involved in the deployment of fixed infrastructure, it would seem unlikely that any particular fixed network will be built entirely using a single technology, although this may not be the case for a network based on radio technology.

Where the case can be made for deploying fibre-based solutions, that is likely to be the strongest long term investment since fibre is long lasting and capable of significant further upgrades as the terminal electronics and photonics evolve. As a long term goal, we think that long-reach DWDM PON is attractive as it offers high capacity, transparency and symmetry. Its long reach allows considerable opex savings to be made by bypassing the current 5,500 locations which are in place for initial termination of copper and fibre connections.

However it is unlikely that fibre-based solutions will be universally suitable, particularly in the light of the recent Analysys Mason report which suggested that providing the last 30% of the population with fibre-based super-fast broadband will cost as much again as the first 70%. These figures suggest that wireless technologies will play a greater part in the UK next generation network than has previously been expected; however, if this is to be the case, it is essential that sufficient suitable spectrum is made available without undue delay. LTE, with its high spectral efficiency and simplified all IP approach would be our recommendation for use in this spectrum.

It is also important that regulation is derived in such a way as to be neutral towards these alternative technical solutions and, given that the “winning business models” are not yet clear, it is important that premature assumptions are not made about substitutability between these alternatives.

#### **Would 2Mbps be a sufficient level of universal service in the short term?**

In the short term, a 2Mbps universal service would be a significant improvement for those who currently have no broadband service, those who have a slower service and those who have an unreliable service.

Supplementary points:

- Contention needs to be addressed also. We sense that the target is for all users to have a “reasonable” guarantee that they will actually be able to receive a continuous 2Mbps. By this we are not suggesting a totally un-contended service.
- It would be helpful for operators to have a roadmap for how this target may rise in future as in some cases they may find it more effective to over-deliver where they can in the short term to avoid repeat investments later to achieve the longer term targets.
- It is important that the 2Mbps figure is used as a trigger for the service commitment rather than service specification, in order to avoid the regulatory artefact of an “exactly 2Mbps” service.

#### **How should the future service level for universal service be measured and set?**

No comment.

#### **What should happen to the existing USO obligations and should there be a broadband USO?**

A broadband USO is needed, the UK's evolution towards a prosperous, knowledge-based digital economy, will be seriously threatened if a digital divide is allowed to develop.

Whilst a broadband USO is being developed and implemented, it is probably better to maintain a separation from the existing USO. However, at a later stage, the case for a separate "traditional telephony USO" is questionable since voice is just one of many services that can be supported over broadband.

### **What form should a broadband USO take and what legislative changes would be required?**

No comment.

## **1b. Participation**

### **Who is not taking up broadband services and why?**

There are probably three main reasons for not taking up broadband services.

Current adoption rates closely mirror PC ownership curves which suggests that those who either do not want to use a PC or believe that they are not capable of using a PC, are effectively barred from broadband services. This may be about to change as mobile broadband offers an alternative terminal platform which may be seen as less intimidating by those who are not "tech savvy".

Experience with mobile voice suggests that there is a significant sector who are attracted by pay as you go services which do not require the commitment of contracts and credit checks. Again, the recent introduction of pay as you go mobile broadband services may throw some light on the relative importance of this factor.

There will always be a proportion of very late adopters and "refuseniks" who do not see any relevance or value in broadband services.

### **What are the public and consumer benefits/disbenefits of maximising/not maximising take-up of broadband?**

There are scale benefits that result from maximising take-up that would not otherwise be available particularly for those service which need to have a very wide reach, if take-up is not maximised then these services would need a two track delivery system – broadband and conventional.

The 2008 Broadband Stakeholder Group report "A Framework for Evaluating the Value of Next Generation Broadband" has an in-depth analysis of public and consumer benefits.

### **What beneficial private and public services might be offered/delivered to make take-up more attractive to non-users?**

### **What action is required to increase take-up and who should take it?**

### **Are there existing useful take-up measures that could be replicated efficiently?**

The key issue here would seem to be further insight as to whether more beneficial services are an incentive to take up or if other factors such as PC ownership or payment plans or lack of awareness are more important.

### **How should the cost of taking action to address take-up be met?**

No comment.

### **What is the role of public sector service providers (National Government, Regional and Local Authorities)?**

Rural areas are in most need of funding, some suggestions for how Local Authorities could play a part:

- Public duct funding for rural areas, operators then rent or bid for capacity off the local authorities
- Allocate spectrum to local authorities in rural areas, operators then rent or bid for capacity off the local authorities

#### **1c. Availability of high speed broadband**

### **What further action is required beyond the Caio recommendations?**

One of the Caio recommendations that tends to get little coverage is that a “vision for fast broadband in the UK” should be defined. It is notable that Singapore’s ambitious broadband plans were preceded by the definition of a vision shared by a wide range of stakeholders. Whilst not suggesting that the Singapore solution is necessarily applicable to the UK, those involved in the Singapore exercise are adamant that the existence of a detailed shared vision has greatly eased subsequent steps.

Since the Caio review was carried out, the consensus view of the severity and probable length of the current economic downturn has deepened. There is now discussion in many parts of the world of the potential for programmes of public works as a partial remedy. If this should turn out to be the case in the UK, it is essential that investment in broadband infrastructure is given consideration in keeping with its potential to deliver long lasting future value.

### **How can the pace of investment in high speed broadband be increased and coverage be maximised?**

The pace of investment in high speed broadband can be increased and coverage maximised by a combination of a “Vision for Broadband”, a broadband USO, regulatory certainty and equitable regulatory treatment of alternative delivery technologies, availability of suitable spectrum for wireless solutions and inclusion of broadband infrastructure in any public works programme that might result from the current economic conditions.

## **How far will the market deliver high speed broadband and in what timeframe?**

It is difficult to predict how far the market will deliver high speed broadband. However, some factors are known and understood:

We have previous experience of a market based roll out of new infrastructure in the form of cable TV networks. In that case the outcome was a network which passed about 50% of the homes in the UK.

The recent Analysys Mason report showed that providing the last 30% of the population with fibre-base super-fast broadband will cost as much again as the first 70%.

In terms of timescale, a physical network is likely to take 5 – 10 years to deploy, simply because of the scale of the civil works, although this could be significantly shorter in areas where wireless is the most appropriate solution.

## **How do we deal with the areas the market doesn't reach?**

It seems to be very doubtful that the market alone will result in the deployment of NGAs that give full UK coverage. Also, market forces will result in deployment to the most attractive areas in advance of those offering lower returns. So without some form of intervention, there will be some people who get access to NGA later, possibly very much later, than others, and there will be those who never get access to NGA.

The issue then is one of inclusion and the extent to which a digital divide, temporary or long term, is acceptable. This is really a policy rather than regulatory matter.

However it seems reasonable to conclude that, if a digital divide is not accepted, then some level of intervention will be needed at some point.

## **What role should the public sector play?**

One of the inhibiting factors in the roll out of NGAs is demand uncertainty. Here the public sector could play a role. In aggregate, the public sector is likely to be a significant user of high speed broadband. The Government has stated an intention to achieve efficiencies by moving towards "e-government" where appropriate. These plans now need to be developed to a level of detail and cohesiveness which are needed to translate into service demand.

## **What is the appropriate mix of technologies to deliver high speed broadband?**

It is unlikely that NGAs in the UK will be homogeneous. In terms of technology there is likely to be a mix of copper, fibre, co-ax, radio and satellite, in terms of topography there will be widely differing population distributions served with radically different implications for the level of competition that can be supported.

Also, given the rapid rate of technology innovation and the lengthy timescales involved in the deployment of fixed infrastructure, it would seem unlikely that any particular fixed network will be built entirely using a single technology, although this may not be the case for a network based on radio technology.

As is suggested in the Caio report, the future broadband networks will not be monolithic, either in terms of technology or operator, and that the most likely outcome is a patchwork of local and national networks deploying differing technologies. Within this context, the Ofcom consultation, although paying passing reference to other technologies, seems to be overly focused on national deployments of fibre based solutions. In particular, technologies such as mobile broadband, satellite, long reach DWDM PON and point to point fibre, deserve equal consideration alongside current generation PON, fibre to the cabinet and cable systems.

As part of considering these alternative technologies in an equitable manner, it is essential that sufficient suitable spectrum is made available for the wireless technologies and that this spectrum is made available without undue delay. This is particularly important in the light of the recent Analysys Mason report showing that providing the last 30% of the population with fibre-base super-fast broadband will cost as much again as the first 70%. These figures suggest that wireless technologies will play a greater part in the UK next generation network than has previously been expected.

### **Is the regulatory framework conducive to delivering high speed broadband and what changes might be necessary?**

If the full range of alternative access technologies is to be fully exploited, it is important that they are treated equably by the regulatory framework. At present, fixed networks, mobile networks and satellite networks are each covered by rather different regulatory regimes. As we move forward we will need to ensure that these differences do not inadvertently distort the market.

It is important that regulation is derived in such a way as to be neutral towards these alternative technical solutions and, given that the “winning business models” are not yet clear, it is also important that premature assumptions are not made about substitutability between these alternatives.

#### **1d. Quality of service**

### **What implications will increased internet usage have on reliability and quality of service for internet users?**

Increased internet usage need not have negative implications for reliability and quality of service as long as business models can be developed which extract sufficient value from the increased usage to allow the necessary additional investment in infrastructure.

### **How can quality of service and reliability be improved and maintained?**

Quality of service and reliability can be improved and maintained by a combination of competition and informed consumers. This implies transparent access to quality of service and reliability statistics that can be understood by consumers.

The reliability of fibre over copper is significant, anecdotally in excess of 10:1 offering significant operating cost savings as well as increased consumer satisfaction.

In radio systems, LTE offers improved performance at the cell edges and self optimisation of the network providing more reliable service to consumers.

**What are the benefits and limitations of current business models and what alternatives could help deliver consistent, reliable quality of service for users?**

The benefits of current business models for broadband derive mainly from simplicity with most users paying a straightforward flat fee, ensuring predictability in their costs. However the current business models, for the most part, fail to link increased usage in terms of bandwidth and the benefit derived from this by content providers, with the inevitable resulting pressure on network infrastructure and investment. In addition the current business models allow the “greedy few” to impact the service levels of others at no cost to themselves.

This is to some extent the result of a “payment for the right to receive” model rather than a “pay to send” model which exists for example postal services.

**What would be required to deliver new models of business?**

No comment.

## WORKSTREAM 11

**Spectrum: How to ensure a fully functioning spectrum market, with the aim of stimulating additional economic activity, and delivering new infrastructure, applications and services supporting Digital Britain**

**11a. How do we resolve the short-term spectrum issues that face us?**

**How can we facilitate the successful refarming of 2G spectrum, the release of 2.6GHz spectrum and provide certainty in other spectrum bands, such as 3G, that will aid the development of a successful spectrum market?**

No comment.

**How best can the UK support the Commission in achieving an early agreement on the revised GSM Directive?**

No comment.

**On DDR, is it in the best interests of a Digital Britain to amend the current channel plan to release channels 61 – 69 as cleared spectrum?**

It is in the best interests of the UK to amend the current channel plan to release channels 61 – 69 as cleared spectrum in order to take maximum benefit from the economies of scale resulting from network and terminal equipment, and also to avoid potential restrictions in use in the south of England as a result of adopting a different band plan to that used in France.

**Should Government be allocating or bidding for DDR or other available spectrum to achieve public policy goals?**

Wireless technologies have considerable potential to extend the reach of super fast broadband beyond that which would be economically viable for fixed networks. However, if this potential is to be realised, there must be sufficient “long reach” spectrum available, such as that released by the Digital Dividend.

By relying entirely on market mechanisms, the Government risks losing this opportunity to achieve extended coverage at reasonable cost.

**11.b Are there more fundamental long-term changes required to the process of spectrum release?**

**Is a market led approach delivering our policy objectives? Is it too early to come to a conclusion?**

It is widely understood that the particular values of the GSM and IMT-2000 “Core” bands can be referred to the fact that they are internationally harmonised. Harmonisation of the spectrum will lead to optimal allocation of spectrum for service providers and consumers.

**What other alternatives may there be to spectrum allocation?**

No comment.