

IET Response to the DCMS consultation Digital Communications Infrastructure Strategy

Introduction

The key question addressed in this consultation is ‘what is the role (or roles) for government in the evolution of the UK’s broadband fixed and wireless infrastructures over the next 10-15 years?’

We would clearly agree that the government has a role in this vital, fast-growing and increasingly pervasive part of the economy, and would argue that this role is primarily that of ‘facilitator’ – encouraging and bringing forward changes that are hard to predict but will be in the interests of citizens and the wider economy. There will also be a balance to be struck between communications performance, security/privacy and economic benefit where it is the role of engineers to inform and government to manage. The IET is intending to address this issue at our next House of Lords meeting on the 27th November .

In general predictions about the future have proved highly unreliable, especially about technology and the medium-term time horizon, where the potential for fast and dramatic shifts has been amply demonstrated. Examples include the rise of streaming music and video, the smartphone and many more. On the whole we favour higher projections for future demand but we recognise that engineers’ experience has led us to a certain humility about the reliability of our future visions and the most vital characteristic we should build into future plans is therefore adaptability. We need the flexibility to cope with the unexpected, which we certainly expect to encounter. Government plans should be similarly designed for adaptability. In this context we note that the correct response to data is as important as the data itself; for example is the 88% of people who still watch ‘linear TV’ an indication that traditional broadcasting is ‘safe’ or is the 12% who do not an indication that we are perilously close to a cliff edge of opportunity?

In this context our ‘Demand Attentive Network’ (DAN) initiative, which is already under discussion with DCMS (see <http://www.theiet.org/dan>) and whose central tenets are about adaptability in the face of rapidly-changing and unpredictable user demand. Supporting the demand will require an effectively unlimited service capability (as mentioned in the report)– not just for an access rate. Latency and other characteristics are also important and government targets should reflect this. A smarter, user-facing network is the only way to achieve this.

Questions and responses

Section 1

Q1a) Is this an appropriate role for Government?

Broadly yes – though government needs to stand back from undue interventionism. In particular, regulation must not inhibit progress. It is difficult to define what market failure would look like.

Spreading services widely through the community is helpful. Telecoms is a vital resource for many businesses and residents, and government has a role in creating an environment conducive to innovation in telecoms services.

Q1b) What other high level principles the Government might adopt?

Design and procurement for adaptability following the DAN vision, as mentioned above.

Access should be freely available. Bearing mind the infrastructure is not zero-cost (a concern of the industry) there will likely be capacity limits and the convergent universality of the internet might change. There is also a balance to be struck between freedom and privacy as mentioned by us elsewhere.

A longer-term vision, perhaps for a fully fibre-wireless future with universal mobility, might be a useful framework for debate. It falls to the government to up-skill its policy makers so that they are able to work effectively in a partnership with industry and others to evolve a common strategy that ensures the UK infrastructure is continuously being up-graded ahead of rising demand.

Although this has not been asked specifically there will be a change in the nature of the communications system engendered by its increasing centrality to the economy. The priority should be for a unified 'converged' infrastructure that connects a wide variety of players and service offerings. This is some convergence partially present now, dictated mostly by engineering considerations, but it is important for government to monitor the system to prevent it from fracturing.

The increasingly diverse range of 'players' who will be involved needs to be recognised

Q2) What potential opportunities are there for Government to leverage its combined buying power to support policy objectives?

The government should aim to be a leader through procurement, rather than a follower.

Q3) If migration to IPV6 is required, are there any barriers to that migration and if so how might these be addressed?

IPv6 is already being rolled out and no government action is needed except for intelligent acquisition on its own behalf.

Section 2 - What might future demand look like?

Q4) Is an ongoing disparity of provision of broadband services inevitable? If so should this be addressed and how might this be done most effectively?

This should be addressed and DAN is part of the solution. See also the answer to Q9

Q5) How symmetrical will digital communications networks have to be in the future? Will this differ across user types? What implications does this have for fixed and wireless broadband provision?

Hard to predict but greater symmetry is likely especially as DAN becomes established.

Q6) Which countries should be our benchmarks on communications infrastructure to ensure that businesses remain in the UK and continue to invest?

Benchmarks should be global – with wireless systems becoming ever-shorter-range, terrestrial broadcasting is a growing outlier here. Thus common global standards are key considerations rather than regional cross-border standards. This is vital for the considerable amount of UK industry related to and using communications.

Q7 What metrics do you think should or will become relevant in comparing network performance in different countries? What metrics should most appropriately be used as the basis to set objectives for government policy?

We should increasingly be looking at the overall experience at the user level, not just the performance of individual network elements. In effect this is what the DAN initiative proposes.

Section 3, Scenario 1

Q9 What are your views on the technology commentary underpinning this scenario? To what extent might the infrastructure/technology discussed evolve irrespective of demand and how far will it be a direct consequence of the level of demand?

We note the rapid rise of UHD (4k) and the imminence of 8k video distribution, which will have huge implications for all distribution channels including ‘the internet’.

The deep underlying UK infrastructure should, and will increasingly be seen by users, as an ubiquitous ‘fourth’ [digital] utility, after gas, electricity and water. This has considerable implications for meeting users’ expectations – and this should be a concern for government.

Q11) Are there wider environmental issues not reflected in the scenario e.g. the price or availability of energy that will affect any of the scenarios and in what way?

We note that the increasing use of mobile technology and thus battery-powered devices will be a key driver for reduced energy consumption. The UK is very strong in this space through ARM.

Q12) How likely is any unforeseen disruption to this scenario and what area might it occur?

Very likely – and difficult to predict, thus DAN-style design for adaptability. We note that Darwinian evolution-for-adaptability is a major force in the natural world and may be the principal driver for the intelligence that enables us to do engineering...

Scenario 2

Nothing to add

Scenario 3

Nothing to add

Section 4 Competition and regulation

Q27) How might efficient investment in communications infrastructure be supported, for example by changes in the regulatory framework?

Regulation must not inhibit innovation and the evolution of new technologies and service offerings.

Q33) In what ways can you see competition driving technological change in the UK in the future?

We expect that there will be a greater range of players including those not traditionally seen as 'communications' including content generators. There is then a role for government in bringing these new groupings together.

Section 4 Competition and regulation

Nothing to add

Section 5 – Facilitating and Encouraging Investment

Q41) In which future communications technologies do you consider the UK has, or could achieve, an international leadership position?

In several – DAN is another opportunity.

End of response