

DINNER/DISCUSSION SUMMARY

Digital Scotland – can Scotland grasp the opportunities created by the digital revolution?

Held at The Royal Society of Edinburgh on 28th October, 2010

The Foundation is grateful for the support for this meeting from
The Institute of Physics, the Financial Services Knowledge Transfer Network (FSKTN) and
The Royal Society of Edinburgh

Chair: **The Earl of Selborne KBE FRS**
Chairman, The Foundation for Science and Technology

Speakers: **Professor Michael Fourman FRSE**
Chair, Digital Scotland Working Group, The Royal Society of Edinburgh
John McClelland CBE FRSE
Chairman, Scottish Funding Council
Rashik Parmar
Chief Technology Officer, North East Europe, IBM

PROFESSOR FOURMAN outlined the conclusions and recommendations of his report. They were given added force by a recent report prepared by the Boston Consulting Group for Google. This showed very clearly the importance of access to the net for economic development, innovation, export success and social improvement. While the UK scored highly on interconnectivity, there were strong regional variations. Scotland, which had the highest level of interest in the net, would be particularly benefited through ability to build profitable companies with improved automation, better collocation and reduction of information asymmetry. The whole nature of communication had changed; it was multi-media and would increasingly depend on mobiles, not fixed lines. The 2001 Report "Connect Scotland" had led to important results - notably the Pathfinder project for schools, but it had been overtaken by new technology and increased demand, in part by those who had benefited from Pathfinder. Fibre optics was the only means by which the network could carry the volume of data needed to be accessed; to cover the country - 99% of the population - it should go to a hub in every community of more than 2,000 population. Access from the hub should be open and it was for communities to develop its use. 2,458 miles of additional fibre optic cables would provide the network necessary, at a capital cost of around £100m and annual operating costs of £10m over 15 years. These were small sums in the context of the benefit to be won, and the sources of finance - governmental, local and private available. Government support and initiative was essential, but he stressed the importance of the proposed Digital Trust as a means of pushing forward the strategy and engaging the UK government and Ofcom in ensuring appropriate regulation. Universal digital inclusion was the only way to overcome the grave consequences which arose from being on the wrong side of the digital divide.

MR MCCLELLAND stressed the importance of the use of the internet in the public service. He wanted there to be a vision of the importance for the sector both in serving the public and reducing costs through greater efficiency. The benefits of being able to relate and share information between different services - education, health, social care to have interactive capability with users; to transfer information between different layers of government, Edinburgh and local authorities, universities and policy formers, were great. For this to happen speedy transmission of large amounts of data through broadband was essential the public sector could promote the development of the network suggested in the report both by developing its own applications and persuading the public to use it. At present the sector was not making the best use of the internet; while 6,000 public sector staff were engaged with it, they operated in

departmental silos. There needed to be shared applications and use so as to allow a flow of information that all could use. There should be a commitment in the public service to make itself more effective through internet use and to link with both universities and businesses in developing method which would encourage the public to become more enthusiastic and knowledgeable users.

MR PARMAR welcomed the Report and endorsed strongly its recommendations. If the bottleneck in the trunk network can be removed by enlargening it and by using fibre optics to enable the data and information demanded to be available for local access, the opportunities for total digital inclusion were great. It was important to look to the future and understand the demand that will be created as opportunities grow and priorities change. The service industries now produced 75% of GDP; the manufacturing industry had shrunk and it was important to learn why one had grown and the other had not. The service industry was now replacing labour by software - with great reductions of cost, and the ability to offer global services and resource from suppliers globally. The use of software transforms industry, provides the opportunity to innovate and start new businesses; it is particularly valuable for SMEs. These new businesses, who would take up the labour that was leaving traditional employers, could only flourish if the data they needed was available easily and quickly; this meant fibre optics. The importance of using software to transform public services and change the citizen's life should not be underestimated.

The main theme in the following discussion was how to drive forward the recommendations in the report. There was wide support for the conclusions, in particular for the analysis of the benefits internet access would bring and the dangers of perpetuating a digital divide. The analyses and recommendations in the report were of wider significance than Scotland; they had a resonance for the whole of the UK, with its references to communities and encouraging local participation, and they should be brought to the attention of UK Ministers. But the recommendations for the strategy plan required active participation by government. Speakers queried the likelihood of such participation. There was a poor public understanding of the importance of digital connections, as was demonstrated in many areas by a poor take-up. There was little evidence that government had an adequate understanding of the changes in the mode of communication that speakers had pointed out and which required fibre optic installation. There were divergent interests in government about the priority which should be given to digital infrastructure, and how to go about it. How then could the development of the strategy be made an urgent matter for politicians, if the public demanded it, then politicians

would deliver, (although it often took some time before politicians realized what their constituents wanted) therefore it was vital to stimulate and articulate public demand (which the Google study showed existed) so that politicians would notice it and react.. In short, there needed to be a campaign. But, there was no time to be lost. If action was not taken soon, the momentum which would come from the publication of the report would be lost.

Speakers supported the recommendation for the establishment of the Digital Trust. It would be a focus for efforts to implement the strategy and monitor government activity to ensure it is concordance with it. It would be able to negotiate with regulators both in Scotland and the UK an appropriate regulatory framework. It would be able to coordinate interests at different governmental levels, and bring bodies such as the BBC into the implementation. It would be the body which would be able to attract funding from outside sources. But, others counselled caution. The Trust might be perceived as yet another body in competition with others for funding; as yet another quango; as another body which got in the way of the market operating to the private sector's advantage. Before setting up any new structure, we should consider whether existing bodies and interests, such as BT, could develop the market and meet demand.

But whether the Trust was established or, the most important objective should be to get someone, in whatever institutional role, to be the leader and driver of the project there will be inevitable bureaucratic delays and difficulties in getting different authorities to work together.

Speakers elaborated on the benefits that implementation of the strategy could bring, and of the problems if the bottleneck in the backhaul was not alleviated. Young, creative, innovative and entrepreneurial people relied on software connections, which sourced and made available bulk data quickly; if they were not provided, with such tools, they would go elsewhere. Scotland could not afford the emigration of this talent. Pathfinder had been a success. But it was limited to its field and function. It had enabled students to see the benefits of interconnectivity and now they would wish to apply them in their own fields, be it business or public service or academia. If the resource was there, they would use it, which would help meet ongoing costs. The more applications, or sources of information, which were available through the net, the more the demand for it and the use, would grow. In business it would make available the ability to source and sell globally, but perhaps its greater value lay in improving the life of many people through better access to social services, more control over their own lives, and greater community cohesion. For example, health checks could be done online, with no visit to hospital. The results could not be foreseen and there could be many unexpected benefits.

The use of public data was raised. Why was there not open access to it? There were security, privacy and resource constraints on many data sources, but even so, improvements were possible, particularly if it were recognized that, with any network, there were occasions when there was spare capacity when the public resources were not being used for public purposes and access could be given - for example accessing data at schools at night.

Speakers agreed that the costs of funding and finance should be manageable, given the number of funding sources apart from government, including the EU and the BBC; costs could be reduced if it were clear what infrastructure already existed. Ofcom, in fact, required companies to provide such information, but it had not been followed up. The UK government should create a register of such information. But, it might be unnecessary to create more bureaucracy. BT would be prepared to share knowledge of its infrastructure.

The central concern of the participants was the follow up to the report and how could it be rapidly implemented. The Trust might be helpful, but the crucial task was getting politicians at all levels, but particularly in the Scottish administration, to understand that a fibre optics network with hubs in all

communities was the key to Scotland's success. Such understanding depended on public demand. This existed, but it needed to be, articulated and enhanced before politicians understood that it was an electoral issue which they must address. This would require a sustained campaign and the task was to find a leader for it. Without full time commitment of such a leader, the campaign might falter, politicians fail to react, and the report's recommendations run into the sand.

Sir Geoffrey Chipperfield KCB

The speaker's presentations can be found on the Foundation website at www.foundation.org.uk .

Useful web links:

Financial Services Knowledge Transfer Network (KTN)
www.ktn.innovateuk.org/web/financialservicesktn

The Foundation for Science and Technology
www.foundation.org.uk

The Institute of Physics
www.iop.org

IBM
www.ibm.com/uk

Ofcom
www.ofcom.org.uk

The Royal Society of Edinburgh
www.rse.org.uk

The Royal Society of Edinburgh Digital Scotland Report
www.royalsoced.org.uk/enquiries/Digital_Scotland/index.htm

Scottish Funding Council for Further and Higher Education
www.sfc.ac.uk

A round-table discussion was held the afternoon on the same theme – the report is on the next page.

ROUND-TABLE DISCUSSION SUMMARY

Digital Scotland – can Scotland grasp the opportunities created by the digital revolution?

Held at The Royal Society of Edinburgh on 28th October, 2010

The Foundation is grateful for the support for this meeting from
The Institute of Physics, the Financial Services Knowledge Transfer Network (KTN) and
The Royal Society of Edinburgh

Chair: **The Earl of Selborne KBE FRS**
Chairman, The Foundation for Science and Technology

Speakers: **Professor Michael Fourman FRSE**
Chair, Digital Scotland Working Group, The Royal Society of Edinburgh
Rashik Parmar
Chief Technology Officer, North East Europe, IBM

PROFESSOR FOURMAN said that Scotland differs from the UK in population, geography and social structure. The Carter report did not deal with these differences, but now with the Scottish Government in place, action could be taken to take account of them. His report aimed to show the effect of these differences; the way the internet was used; and what needed to be done to enable Scotland to take full advantage of it. It addressed the problems of uptake and implementation; how the network should relate to community hubs, open access and cost - £100m. It considered the problems of funding, the structure needed to promote and monitor the project and the timescale for investment.

MR. PARMAR said it was crucial to understand the changes in society, and the different ways people sought and used information. The economy had moved from manufacturing to services, and now software was taken the place of labour in the services. It was essential, therefore, to take the lead in providing the infrastructure for the software and enabling people to use it. Essentially it was the capability to access, process and use large amounts of data. The benefits of taking advantage of the knowledge in healthcare from Dundee, or renewable energy from Aberdeen were enormous. The game was to jump ahead, not just catch up, to leverage opportunities at the edge of the network with open platforms.

The following points were made in discussion:-

- The market place will provide software to cover most use, but it will not, without government drive and pump priming, provide sufficient to give total coverage. Public investment was necessary - but it need not all be from the government.
- Do not underestimate the public demand for broadband. The public know that it is the essential tool for communication and for developing social and economic opportunities; the world expects them to have it.
- If joined up public services are to be delivered effectively, be user friendly and responsive, and meet the economic stringency of today, a high speed fibre optic network with open access to each community was essential.
- The North Wales (Anglesey to Manchester) open access network was a useful precedent. It was proving of great value to local companies. The lessons from it were that public and private financing were necessary, and that

local communities must be persuaded that it was for their benefit.

- £100m. is not a large sum put in the context of public expenditure, given the possibility of accessing local and central government funds, as well as private finance. It must be set against the large amount of money and time that it would save and the positive economic and social benefits. The real problem was government inertia, failure to understand the need for the network and so seize opportunities.
- We must be more specific about what the demand for connectivity is, for what purposes it would be used for, and where it exists. If we knew that, we would find it easier to access the market place.
- There is a danger that the Scottish administration concentrates too closely on the successful use of broadband in Edinburgh and growing economic areas, and is not sufficiently concerned about the one third of the country which does not have connectivity, and so is effectively deprived of opportunities for growth and good social services. BT cannot deal with this issue on its own.
- There are real problems about the regulatory framework; it could well operate to inhibit innovation and the ability to extend coverage to all areas with open access.
- The government must accept that we cannot deliver the necessary coverage with old technology. We must have fibre optics; it is only this technology which can handle the data base and usage that will result. But it is doubtful if there are sufficient incentives in place to move from the existing industry structure to the necessary new one. In particular we must motivate communities to demand the new network and deliver open access.
- The proposal for the Digital Scotland Trust was valuable - but do not let it be dominated by BT. Competition was essential, which was why was why BT was restricted to 50% ownership of no more than of a mobile network when it was privatised.
- The benefit for economic growth in communities was the ability to use large quantities of data for any purpose their inhabitants wished; it could not be provided without the trunk network and local open access. Scotland was fortunate in having communities which were often stable

and able to work for a common community purpose; but many will need help and encouragement.

- Ofcom regulation was too narrowly focussed on consumer charges. It needed to understand that communities needed connectivity, even if there were additional costs, because of the benefits it offered.
- If the Report's recommendations were to be implemented, strong leadership was necessary. Politicians would only provide it if interconnectivity became an electoral issue. It would only become so if electors made the case that it was as important, or more important to them, than, say, roads and hospitals. They would not be mobilized to do this without a sustained campaign. Remember that politicians are generally take many years before they catch up with the real interests of their constituents. Some of them still think of the internet as being a plaything for adolescents. Their timescale is four years, whereas the implementation of the Report will be long-term. Possibly the answer was the appointment of a Minister for Technology who would focus on digital development. He could require the civil service to prioritise the issues. As a start it would be desirable if the new Permanent Secretary of the Scottish administration was digitally knowledgeable.
- Boston Consulting had recently done a study for Google which demonstrated the digital divide, and the problems of those who were on the wrong side. It demonstrated how important digital access was for employment, and how it led to innovation and export success.
- Both structures and people were vital if the report was to be implemented. It was necessary to have someone who understood the industry, how government worked, and was committed. He need not be from government, but to have the resources and the institutional structure to carry out his task.
- Local government was a key to success. There must be effort to get it to understand the Report's importance. To lobby for its implementation and to be prepared to put money up front Glasgow, for example, should see its benefits for helping its social problems; Dundee for benefiting by spreading its health expertise.
- The EU might be able to help on funding. It will be putting out a paper on competition, and referring to the convergence of modes. This could be of value to Scotland.
- The value of the Digital Trust would be in acting as a focus for requiring and monitoring regulatory changes and attracting funding.

Sir Geoffrey Chipperfield KCB

Useful web links:

Financial Services Knowledge Transfer Network (KTN)
www.ktn.innovateuk.org/web/financialservicesktn

The Foundation for Science and Technology
www.foundation.org.uk

The Institute of Physics
www.iop.org

IBM
www.ibm.com/uk

Ofcom
www.ofcom.org.uk

The Royal Society of Edinburgh
www.rse.org.uk

The Royal Society of Edinburgh Digital Scotland Report
www.royalsoced.org.uk/enquiries/Digital_Scotland/index.htm

Scottish Funding Council for Further and Higher Education
www.sfc.ac.uk

The Foundation for Science and Technology
A Company Limited by Guarantee
Registered in England No: 1327814
Registered Charity No: 274727