ENTERPRISE AND LIFELONG LEARNING COMMITTEE

Wednesday 24 January 2001
(*Morning*)

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ENTERPRISE AND LIFELONG LEARNING COMMITTEE
† 3rd Meeting 2001, Session 1

CONVENER

*Alex Neil (Central Scotland) (SNP)

DEPUTY CONVENER

*Miss Annabel Goldie (West of Scotland) (Con)

COMMITTEE MEMBERS

*Bill Butler (Glasgow Anniesland) (Lab)
*Mr Duncan Hamilton (Highlands and Islands) (SNP)
*Nick Johnston (Mid Scotland and Fife) (Con)
*Marilyn Livingstone (Kirkcaldy) (Lab)
*George Lyon (Argyll and Bute) (LD)
*Mr Kenny MacAskill (Lothians) (SNP)
*Mr Kenneth Macintosh (Eastwood) (Lab)
Des McNulty (Clydebank and Milngavie) (Lab)
*Elaine Thomson (Aberdeen North) (Lab)

*attended

WITNESSES

George Adam (Communications Managers Association)
Frank Binnie (ScotlandIS)
Brendan Dick (BT)
Ernest Duff (Communications Managers Association)
Colin MacDonald (ScotlandIS)
Graham Moore (BT)
Derek Nicholas (Communications Managers Association)
Sandy Walkington (BT)

CLERK TO THE COMMITTEE

Simon Watkins

ASSISTANT CLERK

Linda Orton

LOCATION

Committee Room 2

† 1st and 2nd Meetings 2001, Session 1—held in private.

Scottish Parliament

Enterprise and Lifelong Learning Committee

Wednesday 24 January 2001

(*Morning*)

[THE CONVENER *opened the meeting at 10:04*]

The Convener (Alex Neil): Today the committee will deal primarily with the new economy inquiry. I have apologies from Duncan Hamilton MSP, who will be about 20 minutes late, and from David Mundell MSP. He had hoped to be here, but, unfortunately, his daughter has unexpectedly been taken into hospital.

I extend a welcome to Ian Ritchie, the special adviser to the committee on the new economy inquiry. Before we start formally, I remind members of the visit from the Northern Ireland Assembly's Enterprise, Trade and Investment Committee immediately after our meeting finishes, at about 1 o'clock. We expect to meet here for lunch. I remind members of that, because we would like a reasonable turnout.

Interests

The Convener: Now that those housekeeping issues are in order, we will move to item 1 on the agenda, which is declaration of interests. As this is the first public meeting for new members of the committee, I remind them to declare any relevant interests. Does any new member have any relevant interests?

Members: No.

Miss Annabel Goldie (West of Scotland) (Con): That is deeply disappointing.

The Convener: Absolutely. Perhaps they only have shares in Marks and Spencer, in which case I offer them condolences.

The New Economy

The Convener: Item 2 is the inquiry into the impact of the new economy. This morning, we will take evidence from three sets of witnesses. First, from ScotlandIS, I welcome Frank Binnie, chief executive, and Colin MacDonald, operations manager. You kindly circulated an informative paper beforehand, but it would be useful if you gave us a short introduction. After that, we will ask questions.

Frank Binnie (ScotlandIS): We have been interested in broadband in Scotland for about 18 months. Many of our companies have expressed the wish for increased bandwidth to be available to them in Scotland.

I have been overseas at several events, and in the past 12 months particularly, I have heard that broadband and its benefits for companies and individuals will spread quite dramatically. I have also heard that countries that increase their bandwidth broadband capabilities now will be in a better position to make use of provision in the future. We have studied the Swedish model particularly. The Swedish intend to introduce 2Mbps per household in about the next two years and will cover 80 per cent of houses in 2001. We have heard various stories about the models around Washington and have been told that the Irish Government has underwritten and helped to fund an international cable from north America to Dublin.

When combined, those developments suggest that other countries are getting further ahead of the UK and Scotland particularly. We feel that that is worth addressing. In the UK, most individuals can expect to dial up at about 56Kbps through their modems. We would like that figure to rise to 2Mbps, 5Mbps or even 10Mbps in the next three to four years, although that might be a wild dream.

As it is difficult for an individual company to find the resources to make that sort of investment, it is probably more appropriate to form a consortium of companies to help fund the initial investment. All members of the consortium will be in a position to recoup that investment, even if the Government saw fit to contribute.

The provision of broadband will not only affect and increase the prospects for British business, but have a dramatic effect on the education systems in Scotland and the difficulties faced by some people in society's digital divide. We hope that, if the Government does not find it appropriate to invest in the bigger picture, it could help through planning permissions, business development grants and so on. For example, planning permissions for new business parks could insist on

a minimum specification for those parks—and if that were extended to the domestic market, so much the better. Although that investment does not all have to be financial, it would be far better if it were.

The Convener: Am I right in saying that broadband is more or less available only in Glasgow, Edinburgh and Aberdeen?

Frank Binnie: That is correct. It is available in the main centres of population, and a bit of Tayside.

The Convener: Whereas broadband is available throughout Eire.

Frank Binnie: I understand that it is available all around Dublin and that there are plans to roll it out across the rest of the country. However, I have not heard personally that it currently covers the whole of southern Ireland.

The Convener: What would be the implications for Scotland's competitiveness and inward and indigenous investment of not going ahead with the extension of broadband throughout the country?

Frank Binnie: In the UK, most of the high-capacity broadband is currently centred around the south-east of England. It is being rapidly developed in Amsterdam and in a little bit of Stockholm. Those areas outside north America are becoming quite highly developed in e-commerce, e-business and inward investment terms, which is largely due to the broadband capacities available to those inward investment companies.

In the past 12 months, those companies have suffered on the NASDAQ stock exchanges; however, if Amazon.com, e-bay or e-trade wanted to set up a European base, they would look for somewhere with the broadest broadband backbone available. That is what we want to happen in as many parts of Scotland as possible.

Miss Goldie: As an information technology numpty, I found your paper extremely helpful; it has enabled me to understand some remarkably complex submissions. For others who might be as simple as I am to try to understand the essential message, am I correct in assuming that we should not enter into a possibly sterile debate about looking at internal capacity instead of external capacity? Should they both be considered as an integrated challenge?

Frank Binnie: Yes. From the evidence that we have gathered, we have found that it is better to solve both issues hand in hand. However, they are not totally dependent on each other. Any proposal for a transatlantic cable or increased cable capacity to Dublin or Scandinavia would involve a certain group of companies. I am thinking not only of BT, but of companies such as 360 Networks

and Global Crossing. That is the type of grouping that would be needed for a consortium. Within Scotland itself, and even in northern England, there would be a different consortium to handle specific issues. However, it would be rather short-sighted to increase one without the other.

10:15

Miss Goldie: You give three options for increasing our international connections, the second of which seems to be a bit of a maverick option and rather problematic. Are your costings based on the Irish experience of a direct pipeline from America? How did Ireland fund that?

Frank Binnie: I have not seen the contracts myself, but we understand from press reports and from 360 Networks, Global Crossing and various other parties that it cost a total of $1.5 billion. Those first reports came out about 12 months ago. You will see from the excellent document that Terry Shevlin has produced that the sterling equivalent is about £980 million. That is where that sort of costing has come from. That cost does not represent only the price of the fibre optic cable itself, although that is a large part of it; it includes the equipment needed for connectivity at either end.

Miss Goldie: What was the time scale for that contract?

Frank Binnie: It was first announced in 1998 and people expect to light it up in March or April.

Miss Goldie: The third option is improving our linkage with London. Have you any estimated costings for that?

Frank Binnie: That is an interesting one. I would prefer to leave it to our colleagues from BT to answer that. ScotlandIS has managed to identify many of the capacities and fibre optic cable routings of ntl Group Ltd, Telewest Communications, Thus Telecommunications and BT in the United Kingdom. However, it is commercially sensitive information and it has not been possible for us to identify all the connectivity that currently exists.

There might already be connectivity between London and, for example, Sighthill and South Gyle in Edinburgh. It might be that costings, ownership and management options could provide a cheaper solution than running a brand new fibre optic cable out from Edinburgh into the North sea and down to the Isle of Dogs in London. I can tell you all sorts of wonderful things, such as that it costs £60 per metre to lay a fibre optic cable, which does not add up to much between here and London, but that is not really the point. It is a complicated business. With a consortium to examine those options, it should be possible to identify the most

effective way of increasing capacity.

Miss Goldie: In your judgment, is there a need for a mapping exercise to explain more clearly what is currently around?

Frank Binnie: That would come quite quickly if we were able to get a consortium of organisations into the same room to disclose such information to one another. Each company knows what capacity it has. I am not sure that it would be appropriate for either ScotlandIS or the Parliament to demand that information specifically unless it was in a commercial context.

Miss Goldie: Although it is not listed, is not there an option for connection to Nordic countries such as Sweden?

Frank Binnie: Yes, there is. One could bring over a transatlantic cable from Boston or from Halifax, Nova Scotia, into Scotland and then sell on extra capacity over to Scandinavia, or vice versa, buying back any additional Scandinavian capacity for Edinburgh.

Mr Kenneth Macintosh (Eastwood) (Lab): I will pursue a similar line of questioning. I want to pick up on the answer that you just gave, then go back to some other points. You talked about three international cabling options. Is there any particular advantage in routing a cable directly into Scotland? I can see the attractiveness of the idea, as a big visionary scheme, but given that the whole point is that once you are hooked up to the cables you can get information from anywhere—physical location does not make any difference—is there a particular attraction in bringing the cable into the west of Scotland, or anywhere else in Scotland?

Frank Binnie: Not really. There is, as I understand it according to what I was told this morning, already a BT cable in Scotland from—

Mr Macintosh: America?

Frank Binnie: From somewhere further south, but I will leave it to my BT colleagues to explain that, although if the cable already exists, that will reduce costs. The point is that we still need to find the demand to light the cable up and make use of it for the rest of Scotland. The answer to your question is that location does not really matter—although it would be quite useful to have it entering a mini internet exchange at, for example, Pacific Quay, when it is completed in the next 12 to 18 months, or Sighthill or the Gyle in Edinburgh—provided that you have the overall capacity.

Mr Macintosh: Is the thinking that you provide the cable, which then makes wherever the cable goes an attractive site to locate business?

Frank Binnie: Yes; it makes it more attractive for the potential inward investment companies that we mentioned to be located as close to the cable as possible.

Under some of the current American and even Swedish models, organisations say that property prices around broadband exchanges or even around the cables themselves are rising. That is interesting if you are thinking of investing.

Mr Macintosh: Why do you propose a broadband consortium? Why would you not use BT, the biggest provider, and the existing regulatory framework? Why set up a brand new consortium?

Frank Binnie: BT is a fantastic company, BT Scotland in particular—I say that despite the audience. We have a very good working relationship with BT. Its board of directors and its shareholders have their own interests in how they manage their commercial affairs. It is difficult for any single company to come up with all the up-front investment and to judge how to get a return on it. If it can find a way for its current competitors—I am thinking, for example, of ntl, Telewest Communications, Global Crossing, 360 Networks, Cable and Wireless and others—to work together with it in a consortium, it will be possible to open up areas, in particular those that will be less financially rewarding. It is appropriate that a consortium should sit there, almost as an honest broker, managing the input of funds into particular aspects of developing broadband.

Mr Macintosh: Do you recognise that the difficulty in setting up a consortium is that, depending on how it was structured, you could set up a cartel?

Frank Binnie: Yes. It is difficult to know how to judge that. The Scottish Internet Exchange is a good example. It was set up as a not-for-profit company that is limited by guarantee. It is owned by its members, but is the honest broker part of the consortium. We could set up a broadband consortium with, perhaps, some sort of golden share from the Government, although I do not know the politics of that. That might ensure that, if the consortium found itself in a monopoly situation, it would still be seen to be dealing fairly with all the appropriate companies.

Nick Johnston (Mid Scotland and Fife) (Con): I, too, found your paper to be extremely helpful, Mr Binnie. In all that I have read on e-commerce, two words have sprung to the fore—vision and leadership. When we hear about the examples of Sweden, Virginia and Washington, it is clear that someone has taken the bull by the horns to stimulate those communities to act so beneficially. Where, if any, is the vision and leadership in Scotland? What do you want the Government of Scotland to do to assist you in creating a

broadband consortium?

Frank Binnie: The vision that is shared by most of the organisations around us—governmental, educational, telecommunications companies and so on—is that at some point, up to five years from now, Scotland should have either 5Mbps or 10Mbps capacity per household. That is a vision that may be simplistic, but it overrides all the other technical considerations. If we can achieve that, everything else will have fallen into place—business capacity, educational levels, society and all the rest.

On the inspirational leadership that might be required for such an exercise, I look to the opportunities that are presented to the Scottish Parliament and the political parties that are associated with it to work with the great swell of enthusiasm from the many relevant companies, which are almost asking for political leadership on the matter.

Perhaps I am being too sensible; the concept is emotional as well as physical and everybody must see the vision. One could spend £1 billion—or £800 million—on an awful lot of other things. We must all believe that the expenditure of the Government and the companies that are involved in the consortium will be recouped and that we will achieve great benefit for our businesses and people. We need inspirational leadership—perhaps that is your role, convener. [*Laughter.*]

What was the last part of the question?

Nick Johnston: I asked what you were looking for from the Government to enable you to set up the consortium.

Frank Binnie: If the Government does not seek the creation of such a consortium, it will not happen. At the very least, we would need the acceptance and willingness of the Government—and, preferably, of all the political parties—to enable the consortium to come into effect. That is the bottom line. If the Government could find some initial funding to help to set up a consortium, that would also be good. However, I know that major corporations would be willing to put funds in. The Government could come in as an equal partner; if we split the consortium into five or 10 parts, the Government could take a fifth or a tenth. That is my vision. It would be very healthy and useful, mainly because everybody from town halls to Government departments would buy and make use of the technology. It is not as though Government funds would be put into something that would be of no use politically or operationally for the Parliament and the civil service.

Nick Johnston: I gather that you would align the broadband provision—as an infrastructure that is necessary to Scotland—with ferry routes or main roads. Do you think that some initial

investment by Government bodies is the stimulus that is needed to get the whole thing moving?

Frank Binnie: Yes, exactly.

10:30

Mr Kenny MacAskill (Lothians) (SNP): I want to ask a few questions about broadband. I take it that it will not be rolled out into rural Scotland because there will be no commercial imperative unless some assistance is given by Government. Is that fair?

Frank Binnie: That is the case, as I understand the matter from talking to members of the Scottish Internet Exchange and telecommunication companies. I am told—I will mention no names—that getting 2Mbps capacity to every household in every part of Scotland will not be commercially viable for any single company or for consortiums of two or three of the companies.

Mr MacAskill: From that, I assume that we can extrapolate that rural Scotland will be deprived of much of what would be potentially liberating for it and that, just as the area is isolated in terms of transport communications, it will be isolated in terms of telecommunication.

Frank Binnie: That would be logical. I think that the area will be part of the network eventually, but not for the next 10 years.

Mr MacAskill: Two generations ago, a Labour Government took the view that the Highlands and Islands of Scotland had a civic right to power and light and that the water authority had a duty to ensure that, whether one lived in the great glens or the islands, as my grandparents did, one was linked up. Do you agree that there is an argument that a Scottish Government in the 21st century should act similarly in respect of telecommunications infrastructure?

Frank Binnie: Yes. Our American friends are going further than that. One of the inventors of the key part of the internet—transmission control protocol/internet protocol—Dr Vint Cerf, has been advocating that the Senate make it a right at birth of every American citizen to have free access to the internet.

Mr MacAskill: Is there a possibility that the emphasis that we in Scotland place on ADSL is a bit of a blind alley, given that you referred to the fact that Sweden is seeking 2Mbps for every household and is aspiring to 5Mbps? There is a danger that new and more suitable methods might arrive.

Frank Binnie: You will have to ask our colleagues from BT about that. As we understand it, ADSL can provide up to 2Mbps, but has restrictions imposed on it by distance from one of

the 1,100 telephone exchanges. However, at the moment, it is the most cost effective short-term way to deliver capacity that is close to 2Mbps.

In the paper that I gave the committee, members will have seen that some of our members have suggested that all copper cables should be replaced with fibre optic cables, which have a far higher capacity. I do not have the technical expertise to judge whether that would be appropriate.

Mr MacAskill: On the question of the international cable, is Scotland disadvantaged in terms of time and cost, given our distance from Canary Wharf?

Frank Binnie: A number of companies have thought of relocating outside Scotland because of the lack of capacity. That is the most drastic downside. A number of internet service providers have claimed that the costs of being based in Scotland are higher than the costs of being based around the Isle of Dogs. In some cases, ISPs have sought to place their servers in that area to take advantage of the increased bandwidth. One of the ScotlandIS projects is called "Scotland in London" and it acts as a mini-incubator in the centre of London to ensure that Scottish companies can achieve a higher and cheaper bandwidth than they could otherwise.

Mr MacAskill: I assume that the status quo is not an option.

Frank Binnie: Correct.

Mr MacAskill: On Ireland, figures of $1.5 billion and £900 million are being put around. I understand that the Irish Government's contribution was not £100 million, but €77 million, which is still a significant amount. Is it fair to say that the Irish Government is in the process of disposing of its share and that it is likely to do so at a profit? Accordingly, not only would Ireland obtain an international cable at no cost, but it would make a financial gain.

Frank Binnie: Yes, that is what I understand from the reports.

Mr MacAskill: Is not it the case that Ireland will not have access to only the cable that it was actively involved in, but that it will have access to three international cables within the next three years?

Frank Binnie: Yes. As I understand it, Ireland has a cable coming in from north America, through Cornwall, and up to Dublin. It has a new cable coming in from Halifax, and there is at least one other, which is the ntl link.

Mr MacAskill: Although the cost for a cable was originally $1.5 billion, there is now competition between 360 Networks, Global Crossing and so on. Much of the work in seismic imaging that is necessary for laying such cables has been done. Given those facts, will there be a reduction in the cost, because we are not going first?

Frank Binnie: That is true. The routes across the Atlantic—the various trenches that are used, of which there are not many—are well known to those organisations.

Mr MacAskill: In your experience, has the fact that Ireland has an international cable meant that it has become a technological hotspot.

Frank Binnie: Yes.

George Lyon (Argyll and Bute) (LD): Could you give us an indication of the cost? What do we need to invest to compete with the best in the world? You are talking about £1 billion for an international cable, but how much would it cost to upgrade the rest of Scotland to ensure that we get the level of connectedness that you believe is necessary?

Frank Binnie: I will give you the figures and, afterwards, the post-amble. According to the figures as we understand them—which do not have much research behind them, but which are, nevertheless, from authoritative sources—it would cost about £500 million to upgrade 80 per cent of the populated areas of Scotland, which is the bulk of the population, and a further £300 million to upgrade the balance. So we would be looking at a cost of about £800 million, over and above the £1 billion cost of the transatlantic cable. Within two to two and a half years, that £800 million could effect a 2 Mbps or 5 Mbps connection to 99 per cent of households.

Now for the post-amble. The first function of the consortium is to research and evaluate the matter very quickly. Once you have the telecommunications companies and their partners—utility companies, retail outlets and so on—in a room together, the different organisations will be able to assess the situation more accurately.

George Lyon: Is that because commercial confidentiality means that you do not know what facilities every private company has at the moment?

Frank Binnie: All such information is commercially confidential. We talked to almost every one of the companies that have been mentioned this morning, such as BT, Thus, Cable and Wireless, Telewest, ManageWeb, DIALnet, Redstone, ntl, Global Crossing and so on. If you talk to them individually, they will tell you how they see the world. Some of them have come up with figures of around £800 million. Only when we get a group of them together might that figure change dramatically, but we do not know.

George Lyon: Are you finding it difficult to bring the commercial companies together? We have heard that Ireland managed to do it. What is the key requirement in enabling commercial companies—which are usually loth to work together for the common good, as their role is to deliver value for their shareholders—to come together? Is it that they will all benefit from putting the infrastructure in place? I would have thought that this is something that the public sector cannot do alone.

Frank Binnie: Yes. It is difficult to work with all the interested parties. If the Government provided the seedcorn funding to enable some sort of honest broker organisation—which the telecommunications companies respected, trusted and would work with—to get together with the telecoms companies, they might realise that, with the Government, they were all in a win-win situation.

Colin MacDonald and I have worked through this with 10 organisations at the Scottish Internet Exchange and it is never easy. I suggest that the best solution under the circumstances is initial seedcorn funding from the Government of say, 5 per cent to 10 per cent of the total cost, on the basis that the Government would—I hope—get that money back.

George Lyon: You said 5 per cent to 10 per cent—is that roughly where you think the ball game is for public sector investment?

Frank Binnie: We referred to the Irish example earlier. I have not seen the contracts, but I understand that the Irish Government provided about 10 per cent and underwrote the operation. Some of that underwriting was gradually taken up.

George Lyon: It has been made out that all we who live in rural areas are disadvantaged. Over the past 10 years, Highlands and Islands Enterprise has taken a proactive stance and has put together a public-private sector solution for ISDN and mobile telephony. It got BT to work with it on the ISDN line and I think that BT and Vodaphone worked with it on mobile telephony. Five thousand jobs will be created in the Highlands and Islands over the next four or five years on the back of £20 million investment. Is the model you envisage for the whole of Scotland one in which the public sector gets the private sector round the table?

Frank Binnie: Yes.

Bill Butler (Glasgow Anniesland) (Lab): As a self-confessed technophobe, I have a couple of elementary questions, Mr Binnie.

You make the case in your written evidence that there is a sense of urgency to install infrastructure that can deliver multiple types of information. With the exception of high speed e-mail and internet access, what evidence is there that the public will be interested in those options?

Frank Binnie: The evidence from other countries is that when the capability is available to everything from schools and universities to domestic settings and when an individual can, on demand, download and upload a significant amount of information from internet, television, video and film, that reinvigorates people's lives. That is how this relates to individuals in their day-to-day lives.

Bill Butler: Is there a large demand?

Frank Binnie: It seems to be going that way. On the business side, for a software games producer that is trying to sell games through internet download, it is useful to provide 2, 3 or 5 Mbps for a child to download a game within about 20 seconds. I am sure that Mr Ritchie will be able to advise us about that in more detail.

To answer the other part of your question, the business angle is clear, but there is an issue about where the technology is about to take the world. Without being frivolous, I am referring to people being connected to their houses, cars—

Bill Butler: Fridges.

Frank Binnie: Yes—your fridge will tell you what you can and cannot eat. It will order food for you and so on almost automatically. The meters of utility companies that supply oil, electricity, gas or water to a house will be read at a distance and bills will be sent automatically. Voting will become automatic, as will a lot of Government functions.

10:45

The Convener: Just before I wind up, I ask for your comments on two aspects that have not been mentioned yet. First, is satellite a third option in addition to ADSL and fibre optic? Secondly, on a scale of 1 to 10, how urgent is the issue of broadband for Scotland's international competitiveness?

Frank Binnie: There are four main methods of delivering and receiving the technology. Fibre optic cable appears to be the cheapest, the fastest and the most reliable. As the director of Ericsson—which is working with the Swedish Government—said, "Once you've laid it, it's there and it's going to be there for decades". Fibre optic cable is the best investment.

The second method is mobile telephony, but the problems with that method appear to be that the capacities look as if they will be limited to about 2Mbps and that there are upload and download difficulties.

The third method is satellite technology. In

November, PricewaterhouseCoopers produced a technology forecast report that said that two sets of 40 satellites will circle the globe—one supporting the other in case of difficulty—and that that will mean the end for fibre optic cable. After I delved into that report with PWC and asked them what the truth was, I was told, "We really didn't mean that. We are aware of the upload and download difficulties and of the weather interference factors in relation to satellite systems." Although satellite can be good, as the forecast system will have a higher capacity than exists at present and download will not be a problem, there will be difficulty with uploading from televisions.

The fourth method is copper cabling, ADSL and associated technologies. There may well be some breakthrough in super-fast communications. The compression techniques from which the internet sprang are still improving—almost by the month, it seems. However, looking forward, it is not likely that those improvements will come in time—they are several years away.

On the final part of Bill Butler's question, the United Kingdom and, to a lesser extent, Scotland—mainly because of silicon glen—are among the top countries in the world as far as e-business, e-commerce and technology are concerned. I dispute some of the figures that have been produced on how good we are but, nevertheless, we are not bad. The Swedes, the south of England, the Irish, and some pockets of the States are about to go into what will be almost a super-league. We have the opportunity to get up to, say, 5Mpbs within two years and to get into that super-league if we decide to invest during the next few months. However, if we hang about for another six months, we will probably lose that little window of opportunity.

The Convener: George Lyon wishes to raise a quick point for clarification.

George Lyon: You raise a fundamental issue—which technology should we invest in? That is the $64,000 question. You must decide on that technology. That is a pretty hard call, because, by the time the cables are laid, your choice might have been superseded by the next round of technology.

Colin MacDonald (ScotlandIS): It is possible that cables will be laid and that the technology will not advance further. However, some technologies, such as the dense wavelength division multiplexer that is now being produced, allow advances in the capacity that is transmitted down the cables to the stations at their ends. The capacity that travels down the fibre-optic link could be unlimited, because the broadcasting and receiving technology at the ends of the link are continually being improved.

Elaine Thomson (Aberdeen North) (Lab): I will follow up a question that the convener asked. Would different technologies be used to provide access to all parts of Scotland, including the rural areas and the north-west? Would wireless technologies rather than fibre optics be more appropriate for the Highlands and Islands?

Frank Binnie: Yes. We should mix and match the most appropriate technologies in the most cost effective way. We know all about the four technologies. Colin MacDonald is right—if the fibre-optic cable has the greatest advantage in the long term, all the improvements in compression technology and laser speeds will mean that such a network, once laid, will continue to increase in capacity.

A few years ago, we had modems with small capacities, and then we got up to 56 Kbps, 64 Kbps and ISDN capability. As the report says, a four-fold increase in capacity may take place. Whatever technology we choose must be capable of expanding as demands grow.

Elaine Thomson: Last year and the year before that, various bodies were established, such as the digital Scotland task force and the knowledge economy task force. I should probably know the answer to my question, but do you know whether those bodies have considered any of the issues that you raised, or your proposal for a consortium?

Frank Binnie: I was a member of the digital Scotland task force and the Scottish Enterprise group on an e-commerce strategy for Scotland. Those bodies discussed such issues, but I suspect that there was a fair amount of inertia. It has taken the Swedish and Irish examples, and some of the great developments that are happening in the States, to wake me up to the fact that we must start taking quick action now.

The Convener: I thank Frank Binnie and Colin MacDonald for their helpful evidence.

I now call the representatives of the Communications Managers Association to give evidence. That organisation was known as the Telecommunications Managers Association when it sent us a submission in July 2000. While the witnesses take their seats, I will give Duncan Hamilton and Bill Butler a reminder, as they missed the start of the meeting. As today's meeting is their first public meeting as committee members, I ask them to declare any interests that they have, or to forever hold their tongues.

Mr Duncan Hamilton (Highlands and Islands) (SNP): I have no interests to declare.

The Convener: Bill?

Bill Butler: No.

The Convener: I ask members to put their

questions fairly succinctly—we have a lot to get through this morning and I am trying to let everyone who wants to ask a question do so.

I welcome Ernest Duff, leader of the Scottish forum of the Communications Managers Association, George Adam, committee member of the Scottish forum of the CMA, and Derek Nicholas, leader of the regulation, competition and markets special interests group of the CMA. I take it, Derek, that you will take the lead by giving us a short introduction.

Derek Nicholas (Communications Managers Association): No. Ernest Duff will do that; as he runs the Scottish forum, that would be appropriate.

Ernest Duff (Communications Managers Association): We thank the committee for inviting us to take part in this debate on Scotland's communications future. The CMA is a national user organisation that advocates competition as a way of delivering supplier choice. We have an extensive membership and our members are highly skilled and competent in communications.

Today we have much more of everything. We have more competition, more telecommunications companies, more capacity and more choice, but we do not have a co-ordinated infrastructure strategy for Scotland. We believe that the issue is not backbone capacity but local access. The telecommunications companies have indicated that they will supply high capacity only in those areas where there is commercial viability. That will leave a considerable number of users out of the e-commerce loop, among which will be small and medium enterprises, local authorities, education authorities and health authorities. That is the basis of our submission to the committee.

Miss Goldie: The conclusion of your submission states:

"Overall, our conclusion remains unchanged: that left to itself, industry will not invest in the universal provision of broadband communication infrastructure in the access network, the local loop."

Do you support the view of ScotlandIS that there must be a strategic body to lead the drive towards that procurement?

Ernest Duff: Yes, we do.

Miss Goldie: We have touched on some technical issues this morning. Do you have a view on what broadband provision we should be aiming at? Do we need fibre optic cables or do we need a mixture of what is available at present?

Derek Nicholas: In an ideal world, the answer would be to put fibre-optic cable everywhere, because it is robust and, as far as we can see at the moment, future-proof. Economically, however, that would be an enormous burden, and trying to achieve perfection in one region, wherever it is in

the world, has proved difficult for any operator. Starting from that ideal, we have to find a solution that gives us the best return as quickly as possible. I suggest that, in the next five to seven years, we will need a mixture of technologies. Unless there is some financial model that nobody has yet found to enable us to get the perfect solution, we have to fall short of the ideal. We are in a world of best endeavours, so the solution is likely to be a mixture of technologies.

The key issue is to have high-capacity connectivity, because the end user does not care what the technology is. That is really a supply-side and economic issue. We should have the ideal if possible and wherever possible. It is becoming technically easier to roll fibre optics further into the network, but there are limits to that. It is not easy to say which solution is most suitable for Scotland. Initially, there is likely to be a mix, but the long-term goal should be to have fibre optics—that is the best solution.

Miss Goldie: Do you think that it will be possible to procure that increased broadband capacity without some form of subsidy being made available?

Derek Nicholas: The interesting example in Sweden that is continually being quoted is a case of a national Government recognising that to have a proper, modern, forward-looking communications infrastructure was mission critical to the well-being of the gross domestic product and the development of the country.

The need for Government intervention is a given because, as we have seen in a number of papers, the commercial viability of providing 98 to 100 per cent coverage is difficult for new entrants and even for BT. There has to be some form of mixed public and private financing. We must establish how much money each sector should provide and which is the best model, as each region or country will have different models to achieve the objective.

11:00

Mr Macintosh: At the moment, the universal service obligation applies only to BT. Are you suggesting that the obligation should be extended to cover all companies engaged in this area and that the USO itself should be expanded to include digital, computer and internet access services?

Ernest Duff: The USO cannot be extended into the digital economy without incorporating the other telecommunications users. Part of the discussion will centre on the number and level of users. We certainly do not feel that BT could carry that burden alone.

Mr Macintosh: Is this one area in which we can use the regulatory framework to ensure a level

playing field?

Ernest Duff: Yes.

Mr Macintosh: Will the smaller companies be able to live up to the obligations in the USO?

Ernest Duff: A balance must be struck between network operators, information service providers and other licensed areas. We must be careful not to have an across-the-board universal service obligation that would restrict new applications and new service providers coming into the industry.

Mr Macintosh: Should the USO include an extra obligation to provide broadband digital data and internet access? If so, BT, which covers the whole country, would be obliged to provide such services in the Highlands, whereas smaller companies operating in the central belt would be obliged to provide services only in that area. Is that right?

Ernest Duff: Yes.

Derek Nicholas: This debate is running strongly within the European Union as the new package of reforms for the communications sector is developed. The European Commission drew back from applying universal access requirements on all providers of communications services, because it believed that that would be difficult to implement and that it might prove a barrier to some new entrants—it might inhibit or distort their business plans. In that light, it is difficult to create a level playing field. Although the Commission has said that every European citizen should have access to switched telephony up to 1,200Kbps, it stops short beyond that. There is a continuing debate, which needs careful analysis.

Mr Macintosh: Is 1,200Kbps available on the telephone network and with copper cabling?

Derek Nicholas: Yes, although we have gone beyond that with modern technology.

Mr Macintosh: Your comments about the public safety radio communications service were interesting. I can see why that facility is limited to emergency services, but has there been any demand for access to it from local authorities? Does it have potential for users other than local government or hospitals? Is there an opportunity to expand the service to commercial interests or individuals? We could take the Highlands as an example.

George Adam (Communications Managers Association): The framework is that the utilities will utilise connectivity only for blue-light services—for emergency functions—not for their day-to-day functions. The issue has been passed to the Department of Trade and Industry in London and is under active consideration. One of our members is taking part in that discussion.

Mr Macintosh: How much access is there? How far is the service underutilised? How much opportunity is there for others to use the service?

George Adam: The existing service is obsolete and needs to be replaced.

Mr Macintosh: I meant the new digital service.

George Adam: The new digital service has lots of capacity in its design. It is adequate for utilities to join it.

Ernest Duff: We do not know the exact amount of spare capacity, although we know from discussions with the blue-lamp services and others that there is sufficient capacity to incorporate the utilities.

Mr Duncan Hamilton (Highlands and Islands) (SNP): In the third paragraph of your conclusions, you talk about the potential of various subsidy mechanisms that you say we might have to consider. You give the example of geographical areas where no carrier wants to offer broadband services and suggest that a subsidy would be offered of £X per month per customer to any operator willing to provide the service. You are clear about the role that Government must play in facilitating that and you make it clear that the service may need some form of Government subsidy. However, that seems fairly open-ended; it is an uncosted commitment, which all politicians run from. Do you have any examples of other instances in which Government subsidy or intervention has been effective in the way that you describe?

Ken Macintosh asked about universal coverage. What do you say to the suggestion that, if the subsidy is customer led as you describe, the split between rural and urban areas could be exacerbated? If people who live in the central belt and have access to the services are aware of the possibilities, what we have seen in tourism might be replicated. A cultural change is needed; people need to change their mentality to adopt the new technologies, which happens more in one area than in another. In other words, if there is already greater provision in urban areas, and therefore greater customer demand, the divide would be widened, not bridged.

The Convener: Was that a succinct question?

Mr Hamilton: That is as succinct as it gets.

Ernest Duff: You must question your philosophy for Scotland. The demand is there, but we must take corrective action to create increased demand. We do not seem to be mentioning the fact that there is demand from local authorities and health authorities, for example, all over the country and not just in urban areas. Those authorities need the services if they are to continue to be a part of the overall move forward in, for example, dynamic

surgery or educational libraries, which will be open to children in Orkney as well as in Glasgow. At the moment, such services are available in urban areas, but we need to expand them and offer them to other people.

Mr Hamilton: I totally accept that—everyone would agree that we need to do that—but I question whether your proposal would achieve it, given that it is based on existing demand. Would that not exacerbate the problem, as the problem in rural areas is that there is not the same demand?

George Adam: To a certain extent, that might be the case. However, there is evidence from the Highlands of demand being generated in call centres. The Federation of Small Businesses report projects that management skills and e-commerce knowledge will gain ground; that it in itself will create demand in such areas. We cannot deny companies and individuals in those areas access to global e-commerce. It is unrealistic to expect them to move to a different location just because they do not have internet access.

Mr Hamilton: Are there any examples of where Government intervention has been successful?

George Adam: Our proposal is similar to that of ScotlandIS. The first priority should be to bring all parties together to identify the problems and the costs accurately and to get the bandwagon up and running immediately. Final decisions will emerge from that.

Nick Johnston: My question follows on from Duncan Hamilton's. We have heard evidence that only one licence was issued for broadband wireless in Scotland. We have heard other evidence that no licences at all were offered. Is it on the basis that there has been no take-up that you wish to offer a subsidy?

George Adam: At the new auction at 28Gbps, one licence was adopted in Scotland. Three companies are already using licences that were allocated by the DTI a few years ago to develop broadband fixed radio access in Scotland.

Elaine Thomson: You said that, in an ideal world, we would install fibre optics everywhere, but we have to work from where we are right now. In terms of the current strategy, regulatory regimes and financial models, what incentive is there for people who are putting in new cables or other infrastructure to use fibre optics?

Derek Nicholas: I am sure that BT will be able to answer that, as it has a network development plan, which is to ensure that its UK market share is continually enhanced. Therefore, it will optimise the technology build and determine what technology is used to reach the end user, whether that is a large corporate customer or an individual household. Those decisions are made in the business plan of whoever is providing telecommunications connectivity.

The idea of fibre to the kerb or home has been long debated. The cable television operators started with a clean sheet of paper—they had to build a completely new network infrastructure. They chose for economic and technical reasons to build hybrid networks, which were fibre as much as possible in the primary part of the distribution network and reverted to copper coaxial in the secondary part of the network. The answer lies in the business plan and the return on investment. That is the starting point for any operator who is determining the optimum technology.

In an ideal world, according to operators and technologists, if fibre were low cost, it would be the answer. However, the situation is not that simple. In some places, cable operators had the opportunity to fibre immediately. BT has to mix and match with a legacy network while it overlays and builds new networks, and so it is in a different position from that of other companies.

Why did cable television operators choose to do what they did? Why did they not bite the bullet and go all the way with fibre optics? That would have given them a serious competitive advantage over BT. The reason was economics and, perhaps, technology availability when they started the build programme. I am not sure whether that answers the question, but it is some of the background to the decision-making process.

As Scotland is an identifiable region, with a finite number of homes, people and businesses, there is an opportunity, if we prioritise and focus on the real objective—modern connectivity to as many people as possible as quickly as possible—to do something significant.

11:15

I would not get hung up on the technology. I would be more interested in focusing on why we are doing what we are doing, what it achieves and whether it positions the region in the future. I would then work back towards a technical solution.

There are strong signs that the interaction in the health care and education sectors needs to be modernised. There are efficiency gains to be made in the health care sector in particular. General practitioners, hospitals and the people who want to interact with those services would benefit from electronic communication. Many telemedicine forums are already making use of the technology.

Scotland has some very fine universities. Those universities must bring people into the country. Moves are under way to enable the universities to export knowledge through connectivity. That is

another driver. Money in the education system and in the health care sector might be diverted to stimulate that connectivity, which will have to be done in any case. Those areas have current needs that must be met.

SMEs will also eventually need to be part of a bigger world. A modern infrastructure will lead to inward investment. There is a bigger picture, which needs to be opened out. I apologise for horizontalising my answer, but it is important that we focus on what is at stake.

Mr MacAskill: Would it be fair to say that not only rural Scotland but many deprived urban areas, where there is no commercial imperative, might miss out?

Ernest Duff: Even in urban areas there are grey areas of connectivity. Several recent reports refer to the fact that there are 10 telecommunications companies offering services in Glasgow and Edinburgh. However, the reports do not say that those companies do not offer the complete suite of services across the board and in all areas. If Glasgow City Council were to try to implement an overall strategy, it would discover grey areas that would impair the progress of that strategy.

Mr MacAskill: You have said what we should aspire to, but could you say what you believe will be the problem if we do not roll out broadband to rural Scotland, whatever system we choose?

Ernest Duff: First, I would expect social migration. Secondly, I would expect that within five years, many SMEs would be unable to compete in rural areas. We may find that, once again, everyone is drawn into the main cities of Dundee, Aberdeen, Glasgow and Edinburgh. That cannot be good for a forward-looking Scotland.

Mr MacAskill: I understand why, in some areas, satellite is the only sensible and pragmatic solution. However, is it true that satellite has limitations because, for example, although downloading is relatively easy, retransmitting—or whatever the technical term is—is not so simple? Is it fair to say that, all things being equal, fibre optic is better than satellite?

Ernest Duff: I do not think that there is any question about that. As Derek Nicholas said, fibre optic is the ideal solution. On a one to 10 rating, we would rate satellite at around two or three.

Mr MacAskill: Satellite might be perceived as the only sensible option for somebody in a croft in an isolated area, but in urban areas—even small towns or villages, whether larger conurbations such as Stornoway or Kirkwall or smaller ones such as Ullapool—should we try to ensure that communications are provided not by satellite, but by fibre optics?

Ernest Duff: I do not think that there is a hard-and-fast rule on that. We must consider the specific problems and requirements of each area. We must bear in mind the range of services that are available and pick the technology that will allow us to make progress as the demand grows in each area.

Derek Nicholas: Let us return to the issue of rural areas and people who do not have as much discretionary spend to become part of the electronic future. I have tried to avoid playing the technology card, as that can blow smoke around and confuse everybody. However, I will point out that almost every home, irrespective of the inhabitants' social status, has a television set. Interesting possibilities are emerging whereby, with a bit of technology added—a plug-in module and a telephone line—people can engage with the electronic future through the television set. Some people may choose not to engage in that process; others may say that there is a simple entry point.

We must prioritise. Where do the social issues begin to merge and become as important as the big GDP picture? The equation is not easy to solve. However, there are different ways of achieving our objectives and we should not discount any of them at this stage. It is unlikely that even the poorest person living in Glasgow does not have a television set. There are solutions to the problems.

The Convener: Thank you. I have a final question, which is not related to broadband but arises from the evidence that you gave us in July last year. I would like an update. You said that telephony tariffs are a major issue in Scotland. Your submission states:

"In areas of Scotland where no competition to BT exists, their over-35km call charge is penalising business communities."

Is that still the case, or has the situation changed? Is that something that we should be addressing?

George Adam: The situation is still the same.

The Convener: So what you said in your submission last July still stands.

Ernest Duff: BT may return with some improved answers on that, but the issue is more to do with competition than with a flat price structure.

The Convener: I thank our three witnesses very much—your evidence has been extremely helpful.

Ernest Duff: May I make a closing statement?

The Convener: Of course.

Ernest Duff: Mr Johnston talked about vision. To move this debate forward, we need co-operation. The entire industry must sit down at the same table to discuss these issues, as private finance alone will not deliver the capacity that is

needed for Scotland. We will not only define the problems and possible solutions in that debate; we may also define costs and come up with some innovative cost solutions to those problems. That would be the first step in moving forward. At that meeting, we would be happy to identify organisations that we feel could offer something to the debate. It is you who can make the change happen.

The Convener: Thank you. Before we move on to our next witnesses, we will have a five-minute comfort break.

11:27

Meeting adjourned.

11:33

On resuming—

The Convener: I welcome our next witnesses, who are from BT: Graham Moore is the director of BT Scotland; Sandy Walkington is director of public affairs, who has come at short notice—we appreciate that; and Brendan Dick is the general manager for strategic partnerships.

The witnesses from BT are in a slightly different position from the two previous sets of witnesses, in that it is a commercial company. The committee recognises that the answers to some questions might involve commercially confidential information. When that occurs, the witnesses might want to give us follow-up evidence in writing in confidence. We will accommodate that, as we understand the requirements of commercial confidentiality.

I ask Graham Moore to make a short introduction.

Graham Moore (BT): BT is pleased that we were invited to give evidence—I sincerely hope that I can say that in an hour's time. We are encouraged by the fact that we are being involved. For historical and other reasons, we have a unique part to play in the delivery of a broadband Scotland. The strategic intent of BT Scotland—to put it into a simple sentence—is to take the lead in the delivery of an electronic Scotland. We see ourselves as being fully engaged in the delivery of broadband.

There has been a theme so far of working together, and BT has worked successfully with the enterprise agencies. That work will continue.

A point that will be obvious to the committee is that, despite the efforts of the players in the telecommunications environment to roll out broadband throughout Scotland, we all have to operate in a commercial framework, although that does not mean that we will sit back with our arms

folded and announce that we will do nothing that will not make us money.

What needs to be done to close the digital gap is not obvious, although I am sure that the committee has heard a number of suggestions. We are actively involved in considering ways in which to close that gap and have identified three. One way is to push technology. Within the next two or three years, technology that might not even exist at the moment could provide a low-cost solution to the challenge of providing ubiquitous broadband. We are pursuing that ourselves and in partnership. Another way is to examine commercial models and ways of sharing funding between the public and the private sector. The Highlands and Islands Enterprise commercial model that we used for digitising north-west Scotland, a £20 million project, was successful.

A third way relates to the fact that broadband delivery must be demand led, although it is possible to be intelligent about preparing the supply against anticipated demand. We must remember that the broadband networks are the basic building blocks and that it is what is done with them that counts. Various examples have been quoted this morning, including Sweden and Ireland, but—if we look just under the surface—the fact is that, with a commitment from the Irish Government, it would be possible for Ireland to deliver X number of multinationals to the telecommunications companies to get the process started. When I came back to Scotland 15 months ago, I had just finished running a joint venture for BT in Singapore, which is one of the most wired islands in the world. Through one of our partners, we were a member of Singapore One, which is similar to the broadband initiative that we are pursuing in Scotland. It was underused for quite a while because the supply did not match the demand. Demand is key.

Miss Goldie: You said that you think that BT's strategic role is to take the lead in an electronic Scotland. However, your submission says that the Executive must take a lead in helping to develop a broader e-culture. What does BT expect from the Executive?

Graham Moore: To make our position clear, we want BT to take the lead among communication companies in delivering an electronic Scotland. We expect the Executive to help bring together the disparate players—users, communication companies, software companies and so on—and get the conversation going, although we do a fair bit of that ourselves. Over the past 12 months, we have been relatively consistent in saying that the role that the Government can play is that of being the biggest customer. For example, it could encourage SMEs that do business with the Executive and the local authorities to do so

electronically, thereby creating the demand for internet usage.

The Government requirement throughout Scotland must be enormous. The Government must be the biggest single customer for broadband in the country. As the single biggest customer, its initial large demand, bringing in my company and a number of competitors, could act as a catalyst.

Miss Goldie: If the expansion of broadband is ever to happen, does BT anticipate requiring subsidy?

Graham Moore: If there was demand, there would be a response on a commercial basis. Customers would outline their demands and companies such as mine would bid. In geographically difficult areas, however, it is hard to envisage a commercial framework within which there could be a successful return for organisations such as mine. There are some examples of situations in which we have worked with the enterprise agencies to deliver ISDN lines into an area that would otherwise not have been used. In that case, there was a partnership with co-funding.

Miss Goldie: Earlier witnesses focused on fibre optic cables, whereas you are focusing on ADSL. There might not necessarily be any commercial basis on which to quantify your demand element. Is it reasonable to anticipate that that quantum leap could be made without the use of public moneys?

Graham Moore: It depends on the speed at which you want to move. Fibre is available throughout the UK where there is demand. By and large, if an American software company or a large manufacturer of PCs wants to set up business somewhere in Scotland and there is a large requirement for fibre, those companies will get fibre. Large corporations throughout Scotland have fibre, and private circuits with dedicated lines for various companies will invariably be fibre, so there is a lot of fibre available at the moment. To extend fibre throughout Scotland is extremely expensive for anyone, whether it be a private company or a Government.

The reason why BT is pursuing ADSL is to sweat its assets. We have copper cable that runs into people's homes and offices, and we cannot afford to rip up copper cable throughout the UK and lay fibre in its place. If we could, we would be embarking on that work right now. We are rolling out the expansion incrementally, using fibre where there is a demand and utilising our copper network to convert it into broadband for homes and offices.

Satellite was mentioned earlier. That might have a short-term life; nevertheless it will have a useful role to play over the next few years. Second-generation mobile technology is being enhanced by what is known as two-and-a-half generation or general packet radio service, which gives a bit more broadband capacity to mobile instruments. By 2002 or early in 2003, there will be five third-generation mobile players throughout the UK. A combination of fixed and mobile technologies will deliver, for the foreseeable future, quite a large percentage of the demand for broadband.

Miss Goldie: Given the commercial constraints under which BT has to operate, would it be unfair or unrealistic to expect BT to be an innovative and strategic influence in expanding broadband?

Graham Moore: Absolutely not. If we can be innovative in what we do in Scotland and can build a workable model, our companies and customers throughout the world could benefit from that. We are constantly looking for ways in which we can get broadband into Scotland, because we realise that that is the way to go for the future. There is no question about that.

How do we achieve that? We are the ones with the biggest task because, for historical reasons, we have the biggest network in Scotland, and we take that task seriously. If we can find a workable model, we will pursue it aggressively. We are open to all ideas—sharing base sites, as we did with Vodafone and as was mentioned earlier; working with Highlands and Islands Enterprise; and working with technology companies to examine how we can push the boundaries of current technologies. In the pipeline is the go-fast version of ADSL, called VDSL—very high data digital subscriber line—which gets fibre closer to the home. That is a few years away, but we are working on it now. We are continually looking for ways in which we can roll out broadband. We cannot afford to sit around: in most areas—and certainly in urban areas—it is a very competitive market.

Miss Goldie: Do you support a consortium-led approach to move things forward?

11:45

Graham Moore: I support co-operation, but I am not sure about a consortium. Despite what you may read in the newspapers, people in the market talk to their competitors and exchange ideas. If we do not do that, we are prospectless. We are open to coming up with a solution in co-operation with our competitors. In shaping itself in the UK, BT now has a retail operation, which deals with customers, and a wholesale operation. That wholesale company, which is very much at arm's length from the retail operation, is constantly looking for ways to work with other companies. Some of BT's biggest competitors are actually our wholesale division's biggest customers.

We encourage co-operation, but I am not so sure about a consortium. If we got a strong consortium together, as I think we could, people would say, "Wait a minute—they are just ganging up. They have left us with no choice." When people talk about a consortium or a cartel, we are aware of potential accusations.

Marilyn Livingstone (Kirkcaldy) (Lab): We have heard a lot about rapid changes because of the introduction of new technology. I think that it was Duncan Hamilton who asked about social inclusion and whether new technology would exacerbate the feeling that some people have of being excluded. I appreciate that public policy has a great role to play, but what role does your company have in ensuring that technology is accessible and user-friendly? Can you give us some examples of what you are doing so that technology is accessible to people in remote areas, or in deepest Glasgow?

Graham Moore: Schemes such as our light-user scheme or in contact plus recognise that some customers have difficulties with payments. We can arrange pre-payments or agreements so that those people do not get themselves into difficulties with telephone bills.

It would be unfair to pick any particular area, but if we consider broadband for an area in Glasgow, Edinburgh or Aberdeen, or any inner-city area, and if we are moving ahead with ADSL in a commercial framework, it is hard to imagine that demand will come from certain housing estates. We would have to ask ourselves why we were doing it. That point was made earlier, and it is true. However, that is an example of where we can work together—for example with the council in Glasgow, Edinburgh or Aberdeen—to consider a joint approach to provide broadband in those areas.

We have to be careful about demand and, as I say, we have to create it. These figures are about three months out of date, but around 7 per cent of public housing has access to a personal computer. That is not enormous usage. The barrier to getting on to broadband—and remember, that is only the building block—and on to the internet is probably not the telecommunications costs but the £700 or £1,000 that people have to find for a PC.

As we heard earlier, the increasing use of televisions for internet access is one way of offering internet access to public housing. There is a case for joint funding and a case for stepping up the use of the common access point, which is TV.

Sandy Walkington (BT): I had the privilege of acting on the Department of Trade and Industry's policy action team 15. When the Government in London launched the social inclusion exercise, 18 policy action teams examined various aspects of the economy and Government services, thinking in particular of how to tackle social inclusion issues. PAT15, as the policy action team was called, was a working group that consisted of not-for-profit organisations. I represented the commercial sector. The team involved various Government departments examining the issues of the digital divide, social exclusion and information and communications technologies. We did an awful lot of field trips. We came up here to Scotland and also visited some of the worst parts of London, Liverpool and other places like that.

It came across that internet access via TV is an immensely powerful technology for engaging people, including those who may have slipped through the education net and who find that interacting with computers and the internet teaches them skills. They got gripped by it, and found that they were able to engage with it. Some projects are immensely exciting in many ways.

Connectivity is one of the least of the issues. We now deliver virtually the cheapest internet access costs for ordinary consumers anywhere in the Organisation for Economic Co-operation and Development countries. We are proud of that, and that price is benchmarked as equal cheapest with that in the United States of America. Very few products and services are sold at the same price nationwide in the UK—from the Shetland Islands to the Scillies to central London—but they are still cheaper in the UK than anywhere else in the OECD. That is quite an achievement—and is a measured fact.

Aside from connectivity, the issue is partly one of buying a personal computer, which could cost £700 or £1,000. It is then one of giving people the appropriate capability. We are involved in teaching people the skills, in various community partnership and schools projects. We also contribute to the content. We found it important to get the content and sites that inspired people to engage in the technology. Asian women, for example, were suddenly fired up by embroidery content, and wanted to be part of it.

Government has a role to play: Government content is probably one of the most important areas of content for attracting people who, almost by definition, interact with Government more than the average citizen: people who deal with Government for benefits, welfare, health and advice. Good, accessible Government content on the internet will provide another way for the Government to help drive interest and engagement in the knowledge economy and in the knowledge society.

Marilyn Livingstone: Obviously, part of the committee's remit is lifelong learning. We have been examining how to roll out lifelong learning to socially disadvantaged groups of people. I am

therefore interested in what you have been saying but, to return to your answer to Annabel Goldie's question, would not it be advantageous to have the sort of consortium that has been discussed this morning in order to discuss that issue? There is the commercial side, but wider matters could be tackled.

In your written submission, you state:

"BT would be a willing partner with any public agency".

You mention enterprise companies, but what about the wider scale? Could the broadband consortium be used to examine other issues?

Graham Moore: With regard to our engagement in debate, we willingly engage in and participate fully in the knowledge economy task force, the digital Scotland task force and several other task forces. Action plans have been drawn up as a result of those task forces' work. On our engagement with software and computer companies and with local authorities, to deliver solutions, we would willingly participate if a broadened scope brought benefit.

Without wanting to go on for too long, I believe that it is worth mentioning another aspect of broadband. In places where it is difficult to access it because of the topography and the sparse population, it is possible, as a first step, to create an internet centre in a village or community hall, providing access within, say 15 or 20 minutes' walk or drive. We are very interested in pushing that. Brendan Dick may wish to tell you more about the work that we carried out with the Scottish Council for Voluntary Organisations to install up to 10,000 PCs in village and community halls, to get people in and get them used to them. The main reason for that was for people to communicate with you guys—their MSPs. If you had 300 e-mails this morning, that is probably our fault.

Brendan Dick (BT): I am happy to expand on our work with the SCVO. The 40,000 or so voluntary sector organisations in Scotland contribute several percentage points to the national wealth. As some members will be aware, we have been actively involved with the SCVO. It is a matter of trying to ensure that the third sector operates in as effective a way—in all sorts of senses—as business or Government. We have been involved in a big programme to help voluntary organisations get connectivity to various community halls around Scotland, predominantly in rural areas. Microsoft, Scottish Enterprise and the Executive were also involved.

One of the downstreams of that was the creation of the voluntary sector portal. That relates to the content aspect that we were discussing earlier. People in rural communities get online; voluntary sector organisations go online—but how do we provide the content and what are the reasons for it? That project is under way; the Executive is putting some money into it and it is going well.

There are other examples: Duncan Hamilton will certainly be aware of a project that we completed a few months ago to examine the demand side in the HIE area, specifically in Islay. The community there is shrinking, and has many economic problems. Along with HIE, we invested time and systems engineering effort effectively to create a community portal. That is going well. Officially, it has been up and running since the latter part of 2000. We took a decision not to encourage a situation in which the community would be dependent on BT or HIE for the continuing content and management—that would constitute a failure. We worked with just two or three local experts in the technology, positioning them as the people who would take the project forward. The local newspaper is core to the provision of content. A whole range of things is going on, including online trading from the whisky shop, which is selling internationally.

Thereafter, the trick—which we will be discussing with HIE on Monday night—is how to take that concept and clone it, as it were, for island communities and villages in other rural parts of Scotland. I think that it is doable. We have made an offer to help with the components of the basic capability. Clearly, it is critical to find local people to take up that task, under the auspices of BT and the enterprise agencies, and to make it happen.

To return to the educational aspect, we were heavily involved in September last year with the University of the Highlands and Islands, assessing how one might make the Highlands and Islands learning grid—with which I am sure members are far more familiar than I am—come into being. In the paper produced at the end of last year, there was a discussion of learning stream, which is basically a BT MegaStream product, priced for educational establishments. As I recollect, about 690 possible learning locations throughout the Highlands and Islands were being discussed. A way can be found to put 2Mbps connectivity into all those locations. I would take that to be a significant kick-start to some of the matters that we have been discussing today—it will largely concern rural communities.

Mr MacAskill: Do you consider your aim as obtaining a partnership with Government, not a subsidy from Government?

Graham Moore: That is the point that I was making earlier—perhaps badly. We view ourselves as working in partnership with the Government, but also recognise the competitiveness of the environment. BT would not end up as the sole supplier to Government—that would simply not happen, and we recognise that.

Mr MacAskill: From your experience, both here and internationally, while there is a cost to rolling out broadband capacity, is there a significant cost to not doing so—with regard to the evidence that we heard from the CMA of a flight to the cities and of the pressure that that would put on transport infrastructure and housing?

Graham Moore: I take your point. Scotland is at a competitive disadvantage compared with some of the countries that have been mentioned this morning—unless it has something really unique to offer but, unfortunately, life is not like that.

Mr MacAskill: I understand what you are trying to do with ADSL. Frank Binnie mentioned the direction that Sweden is taking. Should we aspire to the Swedish model of providing 2Mbps capacity rising to 5Mbps per household?

12:00

Graham Moore: I agree completely with Frank Binnie that every household should have a 5 to 10Mbps capacity. However, the problem is the practicality of doing that.

Mr MacAskill: We have heard that it will cost £800 million to roll out broadband provision to 99 per cent of Scotland and we have heard other figures for an international cable. Is that amount not significantly covered by the money that BT will pay for third generation communications licensing? If the Government returned part of the amount that you are paying for licensing that is not anticipated in budgetary forecasts, could we not roll out broadband all over Scotland and have at least one—if not three—international cables?

Graham Moore: Can witnesses applaud? [*Laughter.*] Almost £23 billion was generated through five third generation licences and it would be only sensible to spend some of that money on providing broadband in rural communities.

I was so excited by that part of your question that I have forgotten the first part.

Mr MacAskill: Do you see merit in some of the money being partly—if not wholly—hypothecated for investment in the national telecommunications infrastructure?

Graham Moore: Yes. If there is provision for infrastructure, we can suggest certain models for competition among users of the infrastructure and providers of services. The suggestion is definitely workable.

George Lyon: The two organisations that have already given evidence this morning believe that the way forward is a consortium of companies with the Government in the lead, but I get the impression that you do not think that that is the solution. Furthermore, you have not expressed the

great vision of fibre optic cables everywhere; instead, you advocate a mix of better technology to make the most of the existing copper network and the use of satellite technology in remote areas. Why are you so hostile to the consortium proposal?

Graham Moore: I am not hostile; indeed, we have a number of examples of working in co-operation with others. I am very open to the idea. Perhaps I went overboard with the point that I was trying to make. I have spoken to a number of our competitors around Scotland and have found them reasonably willing to come together to deliver certain aspects such as sharing base stations or rolling out broadband to certain geographies, as long as we can find a commercial model that works. I do not underestimate that task, but it could happen. Without being a smart Alec about it, we are reasonably comfortable about putting together partnerships with some fairly well-known computer software and hardware companies; as I have said, we have already had such partnerships.

George Lyon: Have there been talks about developing the matter? Is it being seriously considered at the highest levels in BT?

Graham Moore: Very much so. For example, we have been working very closely with Scottish Enterprise on the k-web project to find out how we can link its portal—which is mainly for SMEs—to other portals to allow access to information that we have. Furthermore, we have a venture with the Bank of Scotland to deliver banking and communication facilities and internet access to SMEs throughout Scotland. We are used to working with other companies; however, we are not sure about the idea of the consortium itself.

Brendan Dick: On the transatlantic cable, all the trans-something cables that BT has all over the world have been constructed through consortia; indeed, BT is even involved in a consortium over the Irish transatlantic link. It would happen where appropriate.

Graham Moore: We are not really reluctant about the proposal, as long as the partnership is acceptable to the market place.

George Lyon: Is international connectivity a big issue for Scotland?

Graham Moore: It depends how one looks at the matter. The UK is probably one of the most connected countries internationally; we have more connections than the other 230-odd countries and have cables coming out of our ears. We have spare capacity going across the Atlantic. However, Frank Binnie's point is that the entry point of the vast majority of those cables is the south coast of England and goes to places such as the docklands. Some internet service providers have

to come down to the docklands to access their data, which is a bit of a disadvantage. However, that is more of a tariffing issue.

George Lyon: So it is less a physical infrastructure issue than a tariffing issue.

Graham Moore: I think so—Frank Binnie might want to come back on this point if he gets the chance. Instead of distance-related tariffs, we have introduced bandwidth-related tariffs, which means that the whole problem might start to disappear as prices go in only one direction.

George Lyon: So there is no issue about Scotland being linked into the London centre, where you say there is huge spare capacity.

Graham Moore: In Scotland alone, we have invested £160 million in the Colossus network, which is a UK-wide internet provider network that has a huge capacity.

The Convener: In that case, are there advantages in having one or more spurs from one of the transatlantic connections directly into Scotland?

Graham Moore: Scottish Enterprise has set up a small project team to examine this issue. It has employed an American company to find out whether the idea is worth while. The team has spoken to us as well as to several of our competitors. We are quite up for this debate. For example, we have a transatlantic cable that touches Stranraer, then leaves Scotland and goes somewhere else. We have discussed the matter with Scottish Enterprise. Our experts on transatlantic and international cables are looking into it; apparently, we could drag a cable on to the beach in Stranraer, then pull it around and take spurs off to the major centres of business such as Edinburgh, Glasgow, Aberdeen and Livingston.

However, our own people have asked where, if we do that—and we can—is the demand for an international cable into Scotland? Why bring it into Edinburgh and Glasgow instead of Liverpool and Manchester? It is something of a chicken-and-egg situation, but the question always returns to the location of clusters in a particular geography that requires huge bandwidth and how we deliver to them.

Brendan Dick: Apart from the transatlantic cable, the significant intellectual and financial investment has been put into drop-off points and facilities—which might be no more than buildings, cable and office accommodation—to get companies operating. In that sense, the issue clearly does not just centre on communications. We have discussed with Scottish Enterprise the need to create such an entity—with Frank Binnie and ScotlandIS involved in the equation.

George Lyon: So the rather simplistic notion that Scotland is disadvantaged because it does not have a direct pipe to America is nonsense.

Graham Moore: Frank Binnie should be answering this question, not me. The idea has some merit. For example, placing a cluster of incubator activity such as start-up companies right next to a cable landing station would have tariffing benefits because the distances are very short; then we could start to build a centre of excellence.

George Lyon: I would like to make two other points before I finish. On rural matters, you have alluded to the two projects that you have been involved in with Highlands and Islands Enterprise. First, a partnership approach was used on ISDN and, secondly, a three-way approach—involving BT, Vodaphone and HIE—was used for installation of the mobile telephony network. How will such practice develop? What will be the next generation of technology that will be addressed. Will you concentrate on a mix of technologies or on satellite or cable? Where are we going with this? The two examples I mention are very good examples of how we have, to an extent, liberated the Highlands and Islands.

Graham Moore: HIE is focusing on two areas. The first is call centres; we are working on those that already exist and making available the technology for new centres. George Lyon has touched on the fact that that work has been successful.

I met Sandy Cumming earlier in the week and the area that we will focus on is ADSL. The Highlands and Islands is not—within a commercial framework—an area to which we would naturally go with ADSL, but HIE believes that it can create demand, so we are working together on the roll-out of ADSL. Sandy Cumming has offered us three quite testing locations in the Highlands for consideration. We are examining those locations and have promised to get back to him by February with ideas on how we can work together to develop a joint-funding model for ADSL in the three locations in HIE's patch.

The Convener: Is one of the locations in George Lyon's constituency?

Graham Moore: No comment. [*Laughter.*]

George Lyon: I would like to make a last point. We have mentioned the third generation licences—Kenny MacAskill alluded to the huge amount of money they raised. BT is obviously carrying a huge amount of debt because of the payment for third generation licences. Does that limit your potential for investment? You are saddled with—even for a company the size of BT—a tremendous level of debt.

Graham Moore: The level of debt is forecast to be about £30 billion this year. We have made a

commitment to reduce it by £10 billion by December by various means, primarily asset sales. We are confident that that will happen and that we can manage the balance sheet. The debt is manageable and we are on a good path for getting it down. However, people will say, "You can't spend any money because you have a £30 billion debt."

George Lyon: That is why I asked about investment.

Graham Moore: The point is that we have a £30 billion debt because we have spent that money. From our point of view, we are spending significant amounts on rolling out our internet protocol network and we will be spending on rolling out our 3G—third generation—mobile phone network.

George Lyon's question is valid, but we are spending significant lumps of money on broadband provision throughout the UK. We must also think very carefully about stuff that we might—in a business sense—have thought of as no-brainers only a year or 15 months ago. Our main focuses are broadband and fixed and mobile telephony, and we are investing overseas to increase our level of ownership to more than 51 per cent of some key joint ventures in Europe, so there are areas on which we cannot spend as much as we might have in the past.

Sandy Walkington: It is, nevertheless, true that we have invested more in our own country's infrastructure in the past couple of years than has any comparable telecommunications company in the world. We have invested fantastically in the core infrastructure of the UK, including Scotland. That is why we have, for example, been able to introduce flat-rate tariffs.

There has been much joshing in the newspapers about why BT has been so slow to do that, but the really interesting question would be to ask why BT has been so fast. There are no flat-rate tariffs in France, Germany, Italy or Spain. Why? Because their networks cannot cope with the traffic that flat-rate tariffs would generate. The only reason we have been able to introduce flat-rate tariffs and their benefits—such as having the lowest costs in the OECD—is that we have invested.

There have been many criticisms of the UK's infrastructures vis-à-vis other nations' roads, rail and so on, but telecommunications is an area of the UK's infrastructure that is consistently measured as being the best of breed and as being up there with the best in the world.

The Convener: No commercials please, Sandy.

12:15

Mr Macintosh: You mentioned that, in certain

respects, BT is a demand-led organisation. You said, for example, that if a company asks for fibre optic technology, it can have it. I can imagine that that would work for big companies, but does it work for SMEs?

Graham Moore: No. I hope that he does not mind my saying this, but I had a chat with Ian Ritchie about this. There is no doubt that one of the biggest challenges that we face from our competitors is in relation to high-tech and bandwidth-hungry SMEs that are based in places such as Dingwall.

If sufficient forward demand from such a customer is anticipated, we might run in fibre for that SME, but life is not always so straightforward. Sometimes we would have to provide private circuits. We have a multiservice platform and a big data network that has nine access points throughout Scotland, so companies are probably not too far from a multiservice platform node. They would, nevertheless, have to pay for a private circuit. We can provide fairly significant bandwidth to a number of SMEs but, unquestionably, they must pay a price for that.

Mr Macintosh: From the Government's and the Parliament's points of view, we should be more concerned about providing services to SMEs than to the big companies.

I would like to get my head around what you said about infrastructure. You have mentioned several times that there is a lot of telecommunications capacity in the UK, but many of the arguments that we have heard say that there is not enough capacity and that we should supply more. I am not quite sure how that adds up.

Graham Moore: The answer might be that there is plenty of bandwidth, but in some cases it is not available where it is wanted—for example in Dingwall. The no-brainers—major conurbations and so on—are extremely well served by bandwidth. The bigger challenge is in rural areas—there is no question about that.

On SMEs, 99 per cent of telephone exchanges in Scotland are equipped for ISDN, which can provide 64Kbps or 128Kbps. For most small companies—unless the company is really high-tech—that is more than adequate. ISDN will probably meet between 70 and 80 per cent of the current requirements of small companies. I accept that there are some distance-related problems with ISDN—they present physical rather than commercial challenges. If a company is more that 5km from an exchange, it will be tough to deliver ISDN to it, but such companies represent a very small percentage of our customers.

Mr Macintosh: I would like to round off with a question about the international cable auction that was proposed. Are you against that? Am I right to

say that, as far as you are concerned, it would not be a good investment of £100 million of public money in the telecommunications infrastructure?

Graham Moore: Members might recognise the answer I am about to give. We are not yet sure and we are still trying to work out whether it would be a good investment. We can ask how big an issue this is for businesses in Scotland. Is the matter about £40 million for private circuits? If that is the case, why spend £100 million of public money on a transatlantic cable landing station?

We are still working the numbers in co-operation with Scottish Enterprise—a member of our staff contributes regularly to that work. We do not yet know the answer to Kenneth Macintosh's question, but we will know in the next four to six weeks whether that investment will make sense. If it will, we will support it fully and, rather than use Global Crossing, we might suggest using a cable belonging to a consortium of which BT is a member.

Mr Macintosh: On social inclusion—I will be brief—I want to ask about universal service obligations. What is wrong with Hull?

Graham Moore: What do you mean by that?

Mr Macintosh: Your submission says that

"The company's Universal Service Obligation (USO) obliges BT to make any reasonable request to provide telephony services throughout the United Kingdom (except Hull)."

Graham Moore: There is an historical reason for that, with which I could bore you to death. However, I will be quick. When the Post Office came together 98 or so years ago, several companies had licences to run independent telephone networks. They all gave up those licences and agreed to become part of the National Telephone Company, except one, which said that it did not want to play—that was Hull Corporation. It was allowed a licence—the same as BT's—to provide basic services in Hull. We were not picking on Hull.

Mr Macintosh: I would like to make a more serious general point about USOs. One of the submissions that we received suggests that USOs should be used to put pressure on BT and other companies to expand bandwidth and internet access. Do you agree with that?

Graham Moore: I will give you my quick thoughts and then I will ask Sandy Walkington to comment.

No, I would not agree with broadband USO. Our current USO is for voice telephony and up to 2,400 bits of data, which hardly anybody uses now because it is so slow. We have that obligation because we had such a dominant position in the market. When 80 per cent of people have phones,

and they are from us, and the other 20 per cent do not, you can cross-subsidise the 80 per cent and give the 20 per cent service. That is not the case with broadband: it is new and different.

Sandy Walkington: There are two issues, which people tend to conflate. One is being required to provide broadband connections everywhere. That can be done at a price. When people pay the cost, it can be delivered. I suspect that you are thinking of people paying the same price in Dingwall or perhaps, with more difficulty, Stornoway or Kirkwall as they pay in Edinburgh or central London. In that case—as Graham Moore said—you get into a situation that, by definition, requires cross-subsidy; other customers pay more to produce that flat, even profile across the whole piece.

As Graham Moore said, the USO in ordinary, traditional telephony is laid on BT and, in the Hull area, Kingston Communications. That is a disadvantage for rural areas because, inevitably, all the competitors come in to the conurbations and seek the high-value, profitable customers. That takes those customers away from the BT customer base. Fair do's, good for them; but it means that the burden of the universal service is laid on fewer and fewer customers who are not, perhaps, especially well off. When we go into France or Canada, however, we contribute to a universal service fund—in some cases we make substantial contributions. Oftel has consistently opposed that; we think that it must be considered.

If we go down the route of universal service, we must consider that many other players with skin in the game are making money out of this. I do not mean only network operators, but software providers, content providers and PC manufacturers. It is arguable that a range of industries should make a contribution, along with Government.

All the witnesses this morning have mentioned the final difficulty: no certain technology is here yet. Everyone knew what the USO was on narrow band traditional telephony—it was a copper wire into the home: 80 per cent of customers already had it, so the 20 per cent who did not were disadvantaged. Everyone who wants a narrow band connection now has one.

We do not know what the winning technology in broadband is going to be. ADSL is one player in the game; others include fibre, digital television, universal mobile telecommunications system—the third generation mobile—and cable. In the USA, about 70 per cent of broadband connections are by cable; ADSL is the secondary technology. It is too soon to pick technologies as the market has yet to make a clear distinction. The risk is backing the wrong technology or laying too much of a burden on one customer group.

Mr Macintosh: Assuming that the commercial fairness argument can be settled, perhaps through a fund, do you accept that setting a level of access using a USO is a good idea? It is one way in which the Government can ensure social inclusion in rural areas and parts of—as we call it—deepest Glasgow. If we are to increase the level from 2,400bps to whatever, do you accept that that is the only way that we can ensure social inclusion and access to the information age?

Graham Moore: A lot of this is down to time. It will take time to roll out, given the financial pressures on commercial organisations such as ourselves; the development in technology over time will allow that roll out to be done at a far lower cost than is currently the case.

The demand to access the internet is, by and large, being met at the moment. As technology evolves and we develop financial models so that we can work together with competitors, Government and enterprise networks, there will be an incremental spread of broadband throughout Scotland. It was rightly suggested earlier that the issue is, "How much time have we got?" It depends on what we can afford to do and how long that is going to take.

I am not one for saying that it is the Government's fault and that the Government should take the lead; it is up to us in the industry, because we understand our technology, to push the boundaries as fast as we can. The Government can help by considering partnerships and co-funding. You cannot suddenly wave a wand and get 10Mbps to the home. You will deliver that incrementally over time. The question is what can we do with what we now have to get the nation online. I think that we can do a tremendous amount.

Nick Johnston: BT was formerly a public utility, which has given you the USO. The committee ought to give you credit as you give 100 per cent of your customers internet access and 65 per cent of your customers ADSL access.

Within the bounds of commercial confidentiality—I do not expect you to do it today—could you indicate to the committee the level of demand that needs to exist for you to make the investment?

I think that breaths might be drawn around the table by this question, but could you sort out the complexities of local loop unbundling in three sentences?

Graham Moore: Thanks for that.

On coming back to you with a model; that is the kind of work that we are doing with Highlands and Islands Enterprise anyway, so we will be happy to make those figures available to the committee once we have got them ourselves.

We have a copper network throughout the UK, by and large. We have been significantly involved in developing a technology, ADSL, where you put a clever electronic frame in the telephone exchange, a box in the customer's premises, turn them on and all of a sudden the copper network, which is what we call narrow band, becomes—relatively speaking—broadband. We provide ADSL and we are rolling it out throughout the country. We currently have between 27,000 and 30,000 customers throughout the UK.

Through local loop unbundling, our competitors are now able to come into our telephone exchanges to put their ADSL equipment—ADSL is not the only example, but it is the most obvious one—into our telephone exchange, hook their equipment on to our copper network that goes into your home and put a clever box in your home. That local loop is suddenly the competitor's; they have won that business and are providing that service over our local loop.

Local unbundling is about opening the exchanges and our competitors coming in to use our local loop into customer's premises. We do it in two ways. Some of our competitors want a separate room within the telephone exchange, because of security and so on, which is fine; others are prepared to share a common room. People have said that BT is holding it up; that it is high tech, so all you have to do is throw a switch and away you go. It is not like that at all. It is not high tech; it is very low tech.

When people come into our telephone exchanges, which were designed for only one tenant—us—you have to knock down walls, put doors through walls and put in raised flooring and security systems. That takes a while. We took Martin O'Neill from the Trade and Industry Select Committee to Morningside exchange in Edinburgh, which is the trial site in Scotland. It is fair to say that he got a reasonable feel for it. It is a building site. Anyone who has had an extension to their house built will know how difficult it is to get the plumber, joiner and painter there at the same time. There is an issue of timing.

This is a low-tech exercise to make our exchanges available to our competitors. We cannot say to our competitors, "Sorry, you are not coming into that exchange; we are not playing." The matter is out of our hands. Oftel takes inquiries from our competitors about entering particular exchanges and Oftel and the Electoral Reform Society sort out who goes where. We just provide the facility. There might be 10 competitors that want to come into a city-centre exchange that has room for only four. We did not want to be involved in deciding which six should be refused.

That answer was a little more than three sentences.

Nick Johnston: A separate inquiry may be required.

The Convener: It might be an idea for some members to undertake a site visit, if that is in order.

12:30

Graham Moore: Yes. The invitation to the committee to do that has been made.

Mr Hamilton: I am mindful of the need to press on, so I will jettison some of the questions that I intended to ask. I can tell Mr Moore that, after one look at Holyrood, most of us know what a building site looks like.

I have a question for Brendan Dick on the electronic Islay pilot project. It was interesting that some things worked and some things did not. One of the committee's inquiries is into how the enterprise structure works. Have lessons from that project been learned by the Government agencies that have been involved in it? How could lessons be better learned? I am aware of lessons that have not been embedded in the community or enterprise structure. Has that project worked well? How could it work better in future?

Mr Moore's comment at the beginning of the session about being demand led caused a frisson of worry among members. Obviously, creating demand is as important as responding to it. You recognise the frustration of SMEs in rural and remote communities that cannot get equality of service and whose potential business growth is retarded. You discussed the case of Ireland. My understanding of the announcement in Ireland on 16 January was that there would be 10 or 11 pilot projects in the remote and rural communities of the south and west of Ireland. Those are not natural markets, but seven private companies are working with Government agencies to create demand. Are you monitoring that example? Is it the kind of model that you would be happy to embrace?

Graham Moore: Brendan Dick will answer on the Islay project, as he was intimately involved in it. We are talking to HIE about that right now. HIE has given us three areas. We have made no commitment yet. We would love to go there, but those areas are testing geographically. If we can work with HIE on at least one or two of those three communities, the challenge for HIE is to generate demand and get businesses in.

Some people say that we should build the infrastructure and then businesses will come; we say that there has to be demand first. Even if we talk for ever, we will still hold opposing views.

Therefore, we are just going to try it with HIE. Assuming that we can deliver to the areas for which it has asked, we will deliver ADSL and HIE is committed to trying to grow that business environment.

Mr Hamilton: The process of generating interest and demand has to be done in tandem. What is the process of evaluation of that in HIE?

Graham Moore: We are not aware of the decision-making criteria. I am sure that we will become more aware of those as the project develops. It is probably best to ask HIE that question. We are up for this. If we can make it happen, we will do so.

Brendan Dick: I will be happy to answer any questions that have not been asked about the variations in technology for rural Scotland.

The Islay project was an interesting example. It took a long time to achieve—nearly a year from when HIE and BT agreed to set it up. The biggest early challenge was to generate local interest. The champions scheme was important; it worked eventually.

What struck me about Islay, in comparison with the hi-ways project—it is sometimes called the TITAN project—which was a Highlands and Islands gateway, was that it tried to encompass all aspects of the island community. The most excited group of people actively using it are the kids in the school—they have various wacky things going on—the local newspaper, the tourism industry and some shops.

It took us a long time to get a feel for the structure and applications that might be wanted. To be fair to HIE, given the resources that it had on Islay, the individuals involved worked extremely hard. We got to the point we have reached through a lot of hard work by those people. I have not been party to discussions—negative or positive—between local people and HIE. I am concerned about how one clones that model, which has been successful to a degree and can grow. HIE shares my concern, so I am not talking out of school. I am convinced that it would be a mistake for BT to replicate that model elsewhere, even if it had the resource and the cash to do so— we invested about £100,000 of man time in the project. The objective is to help local people become better able to work in the high-tech world. As far as I understand it, the enterprise agencies, including Scottish Enterprise, have restrictions on what they can do to make something happen. If HIE cloned the model, would it be taking business away from local IT businesses? All sorts of issues have to be worked out.

There is no question but that the technical capability exists to copy the model throughout Scotland—we have had discussions with Scottish

Enterprise Borders, which faces similar issues. The issues are more subtle and cultural, as was mentioned. How does one get the culture of the community on board so that one can have a stab at such a project? From my experience of Islay, I am convinced that the youngsters are key. It is important to get schools and local newspapers involved. That may not answer the question fully, but you may be aware of other factors.

Mr Hamilton: That is a fairly full answer. I was interested in the perspective of a commercial company working with a public agency. We are in the public sector, so it is interesting to hear your view on how that agency is working to facilitate the partnership.

Brendan Dick: I will discuss the matter in a broader context. Satellite has been mentioned a few times. Interestingly, this week I will meet HIE and colleagues who are considering the business case for satellite, which would cover Scotland and potentially have a significant impact on rural areas. Our dialogue with HIE is open, honest and, I think, fruitful. The trick is to move from wanting to do something to making the case for it and doing it. I do not know how that will be funded in the long term. It may be funded by HIE, European money, or by no outside funding at all. Some of the figures that we have for that are based on demand, and it may be that the business case for it flies. We are exploring all avenues.

The Convener: Before we finish, I will ask three quick questions that arise from what has been said. First, Graham Moore mentioned that he hopes to conclude the study on the feasibility of the international cable option and other issues that he is carrying out with Scottish Enterprise in four to six weeks' time. That time scale ties in with that for the production of our report. If that study is completed before the completion of our report, access—private, if not public—to its conclusions would help to inform our conclusions and recommendations. Given that Scottish Enterprise is involved, we would expect access to the study's conclusions and recommendations.

Secondly, you hinted at a new technology that may emerge two or three years from now. Is that because there is one or is it just blue-sky thinking?

Finally, bearing in mind its population density compared with Scotland's, are there any lessons that we can learn from what is done in Singapore?

Graham Moore: We are happy to tell you our thoughts on the transatlantic link.

In Singapore, the lesson was the demand. With no fixed network and no mobile network, we had a blank sheet. We won the licences, got the investment from the four shareholders and built the network from scratch, but—bearing in mind that Singapore is vertical city—even we could not

make a commercial return on running fibre to every home. I hope I am not giving too much away about Singapore. We needed about 30 per cent market share of each block of flats before it made sense to run in fibre. Even then, it had to be used for other applications, such as movies and home shopping. We ended up installing ADSL. It was a pragmatic, commercial decision. If we had foreseen a demand, we might have taken the risk with fibre. We ran fibre into some areas, either because the demand existed or because we knew that it was coming. However, in other areas, the demand simply did not exist. ADSL allows progress in providing broadband to areas.

One technology in the DSL family is VDSL, which effectively takes fibre to the kerb. Frank Binnie talked about 5Mbps and 10Mbps—VDSL would certainly give us that. Relative to the area cell, for example, it is fast. I am loth to say when it will be available, due to the fibre costing aspect and because we have to ensure that it works properly. It represents a natural progression up the bandwidth chain, if I can put it that way.

Brendan Dick: We are working on VDSL. It is an evolutionary process and we are considering a range of things; it is not even just satellite or ADSL. There are challenges. As Graham Moore suggests, there is not just the technology from the exchange into the house, which might be the VDSL bit. How do we get the core network—the fibre, if we are using copper as the last bit—nearer the house? On a housing estate, if everyone is on VDSL and using massive bandwidth, the whole capacity, right back, has to be upgraded. We are trying all options at the moment.

The Convener: That is the end of the questioning, unless you have anything further to add.

Graham Moore: I am conscious of the committee's time and thank you for the opportunity to give our view on the key subject of broadband. There are no easy solutions to rolling out broadband throughout Scotland, but I hope that you have the impression that BT Scotland is fully engaged and that we want to play our part.

The Convener: On behalf of the committee, I thank you for your evidence. It has been informative, as indeed has all the evidence we have received this morning. Before we leave the subject, I put on record the committee's gratitude to Terry Shevlin and Simon Wakefield for the quality of the briefing that has been provided by the Scottish Parliament information centre—a number of witnesses have said to me privately how impressed they have been.

I welcome the members of the Northern Ireland Assembly Enterprise, Trade and Investment Committee, who will observe the rest of our

proceedings this morning, after which they will join the committee for lunch and a discussion.

Witness Expenses

The Convener: This is a housekeeping item. The committee is asked to authorise in principle the approval of any witness expenses relating to the new economy inquiry. A number of witnesses will appear next week. Their expenses may require to be paid. They will not be extortionate or anything that might bankrupt the consolidated fund. Does the committee agree to meet those expenses?

Members *indicated agreement.*

Meeting in Private

The Convener: Under the fourth item, the committee's approval is sought to meet in private when the content of a report on the new economy and a response to the Executive's proposals for local economic forums are considered. As you know, it is the convention of the committee that we meet in private when we discuss draft reports. Is that agreed?

Members *indicated agreement.*

Education (Graduate Endowment and Student Support) (Scotland) (No 2) Bill: Stage 1

The Convener: One final item is not highlighted on the agenda. I must ensure that the committee is aware that we should have received our stage 1 report from the printers late this afternoon. It will enter the public domain at 9.30 tomorrow morning, but the convention in the Parliament is that the Executive receives an advance copy, in the same way that we receive advance copies of Executive statements. Is that agreed?

Members *indicated agreement.*

George Lyon: Will there be a press conference?

The Convener: No. We are bringing out the statement that has been agreed by the gang of five.

Meeting closed at 12:45.

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