

PO-CH/NL/0219

PART A



Part A

Begins: 28/11/88.

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PART A

Chancellor's (Lawson) Papers:

REPORT BY THE ELECTRONIC  
COMMUNICATIONS STEERING  
GROUP ON THE FUTURE  
COMMUNICATIONS  
INFRASTRUCTURE IN THE  
UNITED KINGDOM

Disposal Directions: 25 years

13/9/95.

PO -CH /NL/0219

PART A



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Date 28 November 1988

- WITH ATTACHMENT. ✓ 29/11

Dear Catherine,

**REPORT BY THE ELECTRONIC COMMUNICATIONS STEERING GROUP ON THE  
FUTURE COMMUNICATIONS INFRASTRUCTURE IN THE UK**

My Secretary of State was pleased to have colleagues' agreement to the publication PA's report on the communications infrastructure.

As you will know, PA's work was undertaken on behalf of an expert steering group, whose report went to MISC 128 in July. At that time, MISC 131 recommended to Ministers that the conclusions of the Steering Group should be made known in a speech, rather than that the report be published.

Now that the Broadcasting White Paper has been published, my Secretary of State is of the view that it is now appropriate for an edited version of the Report to be published. I attach this edited version, which MISC 131 have now agreed would be a suitably edited text for publication.

The Steering Group report is likely to generate debate, but it should not provoke significant controversy. The main strands of the Steering Group's thinking - the importance of market forces, the growing need for a more technology neutral approach and the convergence of different forms of communication - are all reflected in the Broadcasting White Paper.

The Steering Group's work has aroused considerable interest and pressures continue to see their report, indeed there are already press reports which have commented adversely on the lack of any published result of the Group's work. The publication of PA's report will increase interest in this





the department for Enterprise

area. In the light of this, my Secretary of State therefore strongly favours a simultaneous publication of the PA and Steering Group reports. This is provisionally planned for 14 December.

In view of this tight timescale, it would be helpful to know by close on Wednesday 30 November if any difficulties are seen in publishing the report as amended I am told that officials in the Department's concerned are content. I am sending a copy of this letter to the Private Secretaries of the Prime Minister and other members of MISC 128.

*Yrs, C  
Gareth*

GARETH JONES  
Private Secretary



COMMUNICATIONS STEERING GROUP

THE INFRASTRUCTURE FOR TOMORROW



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## COMMUNICATIONS STEERING GROUP

### CHAIRMAN'S FOREWORD:

1 Our Steering Group was presented with an exciting remit - to consider the UK's future communications infrastructure. We took as our starting point a stimulating vision - "optical fibre into the home". By this we meant the installation of a broadband high-tech network throughout most of the country over the next fifteen years. This would offer domestic and business consumers immense potential for extra TV services, video-conferencing, high-speed data transfer, video libraries and so on. It might also provide a valuable stimulus to the UK's electronics industry. We concluded, however, that while optical fibre would probably play an important role in future the Government should not make the installation of a national broadband grid based on optical fibre a keystone of policy.

2 We based our conclusion on several factors. First, although all current evidence suggests that optical fibre will play a major part in the network of the future, technology is evolving at a fierce pace; other technologies will also have a role. We found it difficult therefore to convince ourselves that it was sensible for Government to pin its colours solely to one particular technical option. Secondly, we could not see how such an approach was compatible with the twin desires, which we endorsed, that user needs should determine the pace and direction of infrastructure development (and not vice versa) and that competition should be a powerful influence in the market place. We did not see how any national goal of "optical fibre into the home by 2000" could in practice be achieved other than by measures which would further reinforce British Telecom's existing dominance; and we were not persuaded that this, however BT was regulated, was in the consumer's interests. Thirdly, we did not see any evidence from Europe, Japan or the USA that a national policy of this kind was necessary. Finally, our consultants' work suggested that attaining such a national goal could well require a subsidy or Government financial underwriting of some kind. We did not consider this justified.

3 We offer an alternative vision. We believe it is just as compelling. The barriers between services are crumbling (voice, vision and data are indistinguishable in digital form; films made for the cinema may receive their first showing on TV or on video-cassette). The barriers between delivery mechanisms should also crumble. The screen and the telephone are oblivious to the technology that lie behind them - as are their users! Thus a call to a mobile telephone in the field of a farm might come by satellite from Hong Kong to a Mercury dish, through a BT line onto a cellular radio system. And the



mobile phone might next be used to access, by an equally diverse route, possibly involving a cable TV system, a computer database operated by a broadcasting company. The

Steering Group believed that by encouraging, rather than thwarting, this convergence and by putting emphasis on improving the options available to the end-user rather than, as has happened too often in the past, putting emphasis on the technology for its own sake, Government would create a wide range of challenging new business opportunities. These would in turn stimulate far-reaching changes in the UK's communications infrastructure.

4 The Steering Group did not presume to guess where these business opportunities would arise - telecoms liberalisation was introduced to allow the market place to determine this. But we noted that, just as consumers can use in 1988 services hardly dreamt of even three years ago, the years ahead offered the prospect of remarkable change. With BT and Mercury already using large-capacity optical fibre extensively for trunk links (over 200,000 km has been installed by the two companies in their main trunk networks alone); with the economic feasibility of introducing optical fibre into local systems coming closer all the time; with mobile communication networks growing apace; with satellite and microwave offering new possibilities; and with further diversity likely, the Steering Group concluded that a complex but effective modern communications infrastructure provided in response to user needs (and quite possibly over time incorporating "optical fibre into the home" in substantial parts of the country) might well be put in place.

5 The Steering Group considered carefully the role of Government in this. How could it best set a climate conducive to such developments? We identified four key themes.

6 First, market-pull rather than technology-push should be the driving force of policy. There should be full scope for entrepreneurs to experiment with technologies in meeting demands. Indeed, policy (like services received by the end-user) should be technology-neutral.

7 Second, the thrust of encouraging effective competition should be maintained. It was with competition in mind that we recommended that transmission of new entertainment services be included in a comprehensive franchising regime for the local delivery of services.

8 Third, continuing action will be needed on standards for the interworking of systems to ensure that the end-user does have an increasing choice of service. Current industry-led efforts must not be relaxed, especially as the focus of



activity shifts to Europe. Increasing the range of offerings will increase the opportunities for chaos. Initiatives such as Open Systems Interconnection are essential: without them the future will not work.

9 Fourth, continued vigilance towards British Telecom will be essential. BT does have a role. It has special expertise in knitting differing networks and technologies together. To continue this function, it may need some operational experience of new delivery mechanisms. But a guiding principle of policy should be to safeguard market entry for others besides BT. BT should not be permitted to establish a pre-emptive position in emerging competitive services (eg local radio transmission, MVDS, new mobile services). However, it is reasonable for BT to be able to gain essential operational experience. In the longer term if we can successfully promote competition the need for such constraints will diminish.

10 Such an approach could take us along the path towards another vision. BT chafes at Government insistence that it now carry its cable TV interests on systems separate from its main systems. It can be argued that the double investment thus required within individual localities is neither technically nor economically sensible in the long term; yet the risk of enhanced BT dominance is substantial. Government might consider whether to relax this constraint on BT, possibly on a regional basis, if and when diversity and competition reach a sufficient extent at local level. Both users and market players would benefit from the growth of competition implied in this approach.

A J MACDONALD  
Summer 1988



## Explanatory Note

### THE INFRASTRUCTURE FOR TOMORROW

This note explains briefly the structure of the report which is in five sections.

#### Executive Summary: Conclusions and Recommendations

The Executive Summary draws together the main themes of the report and sets out the Group's specific recommendations for action to achieve an infrastructure truly responsive to users' demands. It can either be read alone or together with the remainder of the report.

#### Section A: Introduction

This section describes how the scene is changing as the technical capabilities of different delivery systems for communications services converge. It explains that as demands for services can be met in an increasing variety of ways there is pressure for change in the market which Government policy must address.

It goes on to explain the background to the setting up of the Group, its relationship with its consultants (PA Computers and Telecommunications) and the consultants' main findings.

#### Section B - Some key points

This section sets out what the Steering Group considers the main purpose and characteristics of the communications infrastructure and service markets to be. It then identifies the key factors which should influence any policy for the future.

#### Section C : A National Broadband Fibre Optic Grid

After defining the essential characteristic of a National Grid approach to infrastructure provision as the provision of universal access to the same advanced facilities and services, the Section examines the case for seeking to achieve this through a policy of driving the installation of a national optical fibre broadband grid.

#### Section D : Other routes to Universality - Alternatives to a Simple Grid Approach

This Section describes the Steering Group's alternative, more complex, vision to a simple optical fibre National Grid - co-existing, competing and fully interworking networks able to meet all user demands.



## EXECUTIVE SUMMARY: CONCLUSIONS AND RECOMMENDATIONS

### 1 The broad conclusions of our work are that:

- the infrastructure of the future must meet the demands of users - ideally it should be installed in anticipation of those needs. But user demand is particularly difficult to predict in this area. Different users - business and residential, urban and rural - have different requirements. Users themselves may not know what they want in the medium to long term. This indecision is understandable, given the continuing developments in delivery technology and the increasing choice (and uncertainty) which this brings. It is for the market, rather than Government, to resolve this indecision. A technology - driven solution should not be imposed. It is entrepreneurial activity - the drive to offer new services possibly using new technology - that needs to be fostered.
- the old distinctions between broadcasting, telecommunications and information technology are becoming less and less relevant. Ultimately the user will care and need care little by what means services reach him. His concern will be that the services he wants are available at a price he is prepared to pay and in a user friendly fashion. Technological convergence is making this possible. Infrastructure providers, service providers and regulators must all move with this change.
- the environment to meet the changes must be one which is flexible and which encourages entrepreneurial drive. Then the user will have maximum choice and there will be as few barriers as possible to providing services. And the environment must be as competitive as possible to provide incentives for service and infrastructure providers and choice for the consumer.
- one of the starting points for our work was Recommendation 15 of the Peacock Report. This advocated a long term technology solution, but at the expense of competition in the delivery of services which would be provided through a universal fibre grid. Our work leads us to believe that although optical fibre transmission will be of importance there is no strong case in UK policy terms for intervening to bring forward at an artificial rate such an investment. Nor can such a policy be justified in terms of developments overseas - whether in the rest of Europe, Japan or the United States.



### Recommendation 1

While recognising that optical fibre is likely to play an important role in future, the Government should not subsidise or in other ways make the installation of a national broadband grid based on optical fibre technology a keystone of policy.

- 2 With end-users essentially unconcerned about the means by which services are delivered and with a variety of delivery systems becoming available, service providers should be as free as possible to choose the delivery technologies they think best. Allowing entrepreneurs to experiment with the best way to deliver services is the way to accommodate future uncertainties and make the most of new opportunities. We recognise that this will result in some delivery technologies winning while others fail; but this is the consequence of uncertainty and the only means of ensuring that the market is properly tested and served as its needs change and develop.

### Recommendation 2

Controls which prevent or hinder entrepreneurs from using particular infrastructure systems or combinations of systems for delivering services to users should be relaxed as far as possible. Entrepreneurs should be as free as possible subject to the needs of fair competition and suitable standards for interworking to use the technologies which they believe best suited to meet user demands. It follows from the above that:-

- (i) like other delivery systems, cable systems should be left to find their natural place in the market. Cable should not enjoy special protection, nor should it be subject to unnecessary constraints. Technical requirements should be reduced to the minimum necessary to ensure interoperability and safety.
  - (ii) alternative delivery systems, for example Multi-Point Video Distribution Systems (MVDS) (if that is introduced), should also be licensed with as few restrictions as possible to allow entrepreneurs a full choice when seeking to meet user demands.
- 3 A commitment to enable entrepreneurs to choose between delivery systems will not be meaningful unless there are workable standards permitting inter-working between them. The initiative in standards-making is passing increasingly to the European level (and the wider international fora)



and the UK must play a full and effective part in such work. The primary responsibility for standards work should remain with those involved in operating and using the infrastructure, but the Government has responsibilities too. Nationally and internationally, the aim should be to ensure that different delivery networks can interconnect fully, that services are delivery-neutral as far as practicable and that users do not getlocked-in to particular delivery systems in consequence. Differences in the application of standards in Europe, for example, for satellite broadcasting and videotex show the problems that can arise.

### Recommendation 3

Work in the standards area, both national and international, will need continuing high priority and almost certainly increasing resources from both industry, users and Government as convergence and complexity of systems increase. It is in the light of developments in Europe in particular that policy will need to evolve.

- 4 Our report has made clear our view that effective competition is the best means of ensuring that changing customer demands are met. Ideally this will take the form of competition in the market (that is to say, ongoing competition between entrepreneurs using competing delivery systems to meet service demands) as well as competition for the market (that is to say, competition for entry to the market where there are natural economic limits on the number of participants in the market). We recognise, however, that there will be constraints on the extent of competition in particular areas which suggests that the presence of at least some major players is likely. The major constraints are the cost of entry, particularly in the supply of two way communications in the local network, and the need to maintain national coherence in interconnecting networks. Whilst the last can be achieved through agreement on national and international standards, those standards need to be developed on the basis of inputs from participants who between them have a total grasp of the complex issues involved. Those factors make inevitable the presence of at least some major players of whom BT will be one. BT has had a major role to play in achieving effective standards through its wide-ranging involvement in the fixed links infrastructure and is likely to remain an important source of expertise. As new markets develop at various levels, including the European level, and convergence proceeds, new expertise will be required. It is important that this can be acquired but it should not be at the sacrifice of competition.



#### Recommendation 4

BT should continue to be able to play its part in helping to maintain the coherence of the fixed link infrastructure and to ensure its interworking with other networks domestically and internationally. However, in the interest of competition, BT should not be allowed to add to its existing market dominance or to establish pre-emptive positions in any new market areas which develop.

- 5 It follows from the above conclusion that there should be competition wherever feasible. Mercury shows what can be done. Meaningful distinctions can also be made between various operational functions. One such is between the provision (production/retailing) and carriage (transmission/delivery) of information (in some instances these functions may be further broken down, while in others - notably voice telephony - production is not a separate commercial activity). Where functions can be distinguished from each other competition should be encouraged as far as possible within each separate function. Particular companies may also engage in one or more of the functions subject to fair competition considerations, but we see advantages in unbundling the functions in regulatory terms and indeed adopting a functional basis for future regulation. Delivery technologies are too fast changing to provide a sustainable basis for regulation. Ongoing competition in some parts of the carriage or delivery functions however can prove difficult to establish or maintain. Where this is so a franchising system may be needed to introduce competitive pressures in its place.

Regulatory arrangements should also continue to pay regard to the need for independent regulation of private companies - notably the privatised BT - and in the shorter term to the need for an element of continuity to maintain the confidence that has been built up in the fairness of the competitive environment.

#### Recommendation 5

The Government should continue to promote and introduce competition wherever feasible. This should be within a regulatory framework recognising the inappropriateness of controls based on technology. Instead regulation should be based on separating the provision and carriage of the services the user wants. These principles should be applied across the fields of telecommunications, cable, broadcasting and to other allied areas. In particular we recommend that:-



- (i) arrangements for the provision and carriage of one-way services, including TV, should be regarded as separate from each other. Competition in both should be encouraged. Although competition already exists in the provision of such services, problems related to the cost of entry make early competition at the local delivery level more difficult to foresee. The aim should therefore be to introduce competitive pressures by a system for franchising local delivery companies who would be free to choose the mix of delivery systems best suited to meeting user demands in their areas.
  - (ii) competition in both provision and delivery of two-way should also be encouraged.
  - (iii) given their current dominance in the supply of two-way communications, neither BT nor Mercury should yet be permitted to deliver one-way entertainment services on their main networks. We see some advantage, though, in one-way franchisees being able to move into two-way services whenever they judge this viable. If and when a healthier level of competition builds up in local telecommunications, Government should then consider relaxing the regulatory barriers preventing BT and Mercury delivering entertainment services.
- 6 The high costs of entry are a barrier restricting the emergence of some types of delivery system. This is particularly true for the installation of cable. Whilst we have said that cable should not be afforded special protection, it is nevertheless important that avoidable barriers to entry should be minimised.

#### Recommendation 6

The Director General of Telecommunications should determine as quickly as possible the extent to which it is feasible and right to require BT to share its ducts, poles and wayleaves with others to enable easier market entry. He should also review cable licences to identify and remove any conditions which constitute an unreasonable barrier to entry.

- 7 A substantial barrier to infrastructure development stems from the lack of user awareness of completely new services and their potential value.

#### Recommendation 7

The Government should be prepared to participate in efforts to improve user awareness of new communications developments including where necessary awareness projects,



(though the normal presumption should be that it is for private sector participants to fund them).

- 8 We have said in this Report that the Communications Scene is a fast moving one. The pace of change will not diminish. It is more likely to increase. HDTV development is in its infancy though we have sought to take it into account. Other developments will still be in the womb. Our report provides a framework within which we believe such developments can be accommodated. It is a beginning only, however, in an era of technological convergence. The issues will need to be revisited in future. Our report cannot be an immutable blueprint.

#### Recommendation 8

The Government should consider a new the long-term needs of the UK communications infrastructure in several years time, certainly not more than 5 years, especially with reference to the case then for allowing BT and Mercury to deliver entertainment services over their main networks.



## A SECTION 1 INTRODUCTION

### A 1. The Communications Scene Today

- A 1.1 The field of electronic communications has long been dominated by two distinct networks - one for broadcasting, the other for telephony. The contrast between them has been marked. Broadcasting has a high capacity for transmitting information (required for television signals) but is one way. The telephone network supports two-way communication but has had a limited transmission capacity. More recent changes are bringing these networks closer. Other networks based on new, or previously unrealised, technologies can now be developed. As a result, we can talk about a wider electronic communications infrastructure rather than separate technologies which each happen to transmit information.
- A 1.2 Services are becoming less dependent on particular delivery technologies. Technologies other than UHF transmission are now able to carry TV signals. Satellite, microwave and cable are examples. High capacity optical fibres have the capability to convey TV and telephony and other telecommunications services. These developments are assisted by digitalisation of switching and signalling, increasing the ability of networks to carry different types of traffic.
- A 1.3 The exceptionally high carrying capacity of optical fibres has suggested to many that this is the technology which can meet all foreseeable demand for communications. Optical fibre is certainly a major development with vast potential. But it is not the which only broadband technology, still less the only one can offer two-way communication. Co-axial cable, radio and satellite also have relatively high transmission capacities and the ability to offer two-way communication, including telephony. There will continue to be demand for services which are one-way in nature or do not require high transmission capacity. Other characteristics such as mobility are becoming very important.
- A 1.4 Overall the communications scene is characterised by increasing diversity. Technology is providing a range of options for delivering services - few services need be wholly dependent on a particular technology to reach the customer. The future is not technologically constrained. The capabilities of the different technologies are compared in Annex 1 at the end of this report.



- A 1.5      Because of the many ways in which the communications infrastructure might develop at this time of both diversity and convergence, choices are becoming more complex. This is the more true because services too are changing and developing just as much as transmission technologies and the two interact and affect each other's markets.
- A 1.6      Traditionally the stages of production, distribution and retailing information and entertainment services to the customer have not been separated as much as they might have been - mainly because of the links between particular delivery technologies and particular services. This is slowly changing, but is held back by both infrastructure and institutional constraints as well as the dominant position of some organisations in the market.
- A 2.      The Setting Up of the Steering Group : The Role of the Consultants
- A 2.1      Our Group was set up in the spring of 1987 to consider the possible development of the UK electronic communications infrastructure over the next twenty years. The members of the group were John Alvey (formerly Technical Director BT), Professor Bryan Carsberg (Director General of Telecommunications), Ivor Cohen (formerly Managing Director, Mullards plc). John Fairclough (Chief Scientific Adviser), Professor Stanley Metcalfe (Manchester University), and Alastair Macdonald (DTI - Steering Group Chairman).
- A 2.2      The catalyst for this work was Recommendation 15 of the Peacock Committee on Broadcasting. One of its main objectives was to foster choice for the consumer. In Recommendation 15 the Committee sought to address this through the possibilities it saw offered by the telecommunications networks of British Telecom and Mercury Communications Limited. Specifically, Recommendation 15 proposed that BT and Mercury (with any others who might subsequently be licensed to become Public Telecommunications Operators) be allowed to carry a full range of communications services, including television, over their networks - a concept the Committee described as acting as a common carrier of services. However, because this would involve limited network competition, the Committee also proposed that the common carriers themselves should not be able to provide added value services or television over their networks. Its hope was that competition in service provision would stimulate demand and so help drive network development.



- A 2.3 Ministers recognised that this raised issues of concern to all involved in operating and using the wider communications infrastructure. They agreed that further consideration should be given to the implications of Peacock Recommendation 15, though in the wider context of the issues raised by future possibilities across the field of electronic communications.
- A 2.4 They caused both our Steering Group to be set up and a study to be carried out to identify and analyse scenarios for the possible development of the communications infrastructure. An invitation to tender for the study, on which we were consulted, was issued in March 1987 and PA Computers and Telecommunications were subsequently commissioned by the Department of Trade and Industry to carry out this work.
- A 3 The Group's Programme of Work
- A 3.1 Our role has primarily been to act as a source of external and independent advice. The issues involved are complex and subject to rapid change. Our own experience in relevant fields was therefore seen as a means of providing a resource both complementing and widening the expertise available within the Government itself.
- A 3.2 Our role has involved a number of separate tasks:-
- Advising the Department on its discussion document on the future of the communications infrastructure, issued on 9 April 1987 as an adjunct to our work
  - Taking and assessing views from interested parties
  - Assessing critically the work carried out by the consultants.
- A 3.3 In addition, two of our members undertook specific commissions on our behalf:-
- Mr Alvey investigated current developments in broadband and mobile communications in Western Europe, and;
  - Mr Cohen concentrated on the broadcasting issues relevant to our work and the inputs we have received



A 4            Inputs Sought and Received

A 4.1        During our work we sought inputs from the major interests involved in the operation and use of the communications infrastructure, both in writing and through meetings at which we were able to exchange ideas and views informally and in confidence.

A 4.2        In addition, we received a wide range of other inputs which we have taken into account in framing this report:-

- Some 50 written responses to the DTI's 9 April 1987 discussion document
- Some 30 written responses to a further discussion paper produced by the consultants. This set out possible scenarios for the future for further analysis and was published on 8 October 1987 (see Section A.5 below)
- the consultants' work and final report.

A 4.3        In this report we do not say who we believe to be right or wrong. Such judgements are inapposite when considering the future. The views expressed are our own. The stimulus of discussion and the thoughts prompted by reading those of others have assisted us greatly, but the final responsibility for what follows is ours alone.

A 5            The PA Scenarios and PA Conclusions

A 5.1        The study commissioned from the consultants required them to identify possible scenarios for future infrastructure development and to analyse the likely implications of these. PA's work was divided into two phases. In the first of these they set out their views on possible policy approaches to infrastructure development as a basis for their subsequent detailed analysis.

A 5.2        The Phase 1 work was summarised in the paper published on 8 October 1987. PA identified 3 main policy approaches which might be adopted:-

- (i) Lightly Regulated Competition. A projection of the current policy regime in which there would be gradual increases in liberalisation as far as was compatible with avoiding market disruption and ineffective competition in the market. PA posited policy changes including authorisation



of the unlimited resale of BT and Mercury transmission capacity (simple resale) following the review of this due in 1989, a limited number of additional Public Telecommunications Operators in due course, two further Direct Broadcasting by Satellite channels and permission for cable TV companies to carry voice telephony in their franchise areas independently of BT and Mercury (with whom they must currently do this) from some time in the 1990s.

- (ii) Laissez-Faire PA envisaged this would involve early relaxation of all controls which could feasibly be dispensed with. Such changes might include the opening of fixed-link infrastructure provision to all interested entrants, the removal of all restrictions (for example on foreign ownership, network design, the obligation to carry public broadcasting TV) on the terms of franchises for cable TV provision and permission for BT, Mercury and Hull to carry entertainment TV as well as telecommunications services over their main networks. The Government's role in this scenario would be limited to normal fair trading considerations and maintaining fiscal neutrality between investments. Such a Laissez-Faire approach would however, be likely to result in British Telecom establishing market dominance through its ability to participate in all areas of the market.
- (iii) National Grid. Seeing the general trend as being towards the installation of an optical fibre fixed link infrastructure, PA's third scenario posited policy and regulatory controls designed specifically to hasten the co-ordinated introduction of a nationwide integrated broadband optical fibre communications network or national grid. Such a policy would involve a number of measures to drive investment, including tight controls on the configuration of cable TV networks, imposed standards on network construction and renewal, fiscal incentives and penalties to lever investment and a clear decision to move the broadcasting of entertainment services from the existing terrestrial broadcasting network in the long term.



A 5.3 In Phase 2 of their work PA analysed likely economic and other impacts of the three scenarios and some variants using a detailed economic modelling tool. They also discussed a number of their key assumptions with us and with interested parties involved with communications services and the communications infrastructure. This has led them to the following broad conclusions:-

- In PA's view the policy approach adopted will affect the timing not the ultimate form and shape of the communications infrastructure. Even were unfettered competition between different delivery systems allowed under a Laissez-Faire policy regime this would still result eventually in a largely broadband optical fibre network but over a substantially longer timescale - at least 15 years
- than that implied in a directed national grid approach.
- In cost versus revenue terms the more diverse infrastructures resulting from Laissez-Faire or Lightly Regulated Competition approaches would be likely to pay for themselves over the period to 2010. PA believe a National Grid policy would still be likely to be in net cumulative deficit at that date even on optimistic income assumptions.
- PA estimate that over a long term period all scenarios would create additional jobs. Putting figures to these is a highly speculative business but the estimated differences between the approaches range from 134,000 long term extra jobs in the year 2010 for Lightly Regulated Competition and 151,000 for Laissez-Faire to 181,000 for a National Grid policy. A National Grid policy would create more new jobs sooner, but on the basis of trends projected by PA the total new jobs created under each approach would be about the same by the year 2020.
- In each case there would probably be some increase in net imports, chiefly in terminal equipment. The impact of this would be highest for a National Grid Scenario and lowest under Lightly Regulated Competition.
- None of the scenarios would result even in the longer term in major differences in benefits for the economy as a whole.



- More generally, PA drew attention to the importance of the effect which the regulatory framework can have on the pace and form of infrastructure development and the need for this framework to change to reflect technological changes.

A 5.4 We have drawn on the findings of PA's final report where appropriate in framing the views set out below.

B. SECTION 2 - SOME KEY POINTS

B 1 There are a number of key points to be considered in addressing the future of the communications infrastructure. These are discussed below.

1 The Needs any Communications Infrastructure Must Satisfy

B 1.1 What is the purpose of the electronic communications infrastructure? It was by considering this question that we were best able to focus our thoughts on the key issues and structure the great variety of material and views we received as inputs to our work.

B 1.2 In our view users' demands are foremost amongst the considerations which establish the requirements of a communications infrastructure, present or future. These are not only demands which currently exist, but also those which can reasonably be foreseen as likely or which may arise. And by "users" we mean both end users (the ultimate customers) and users who provide the various communication, information or entertainment services which are conveyed over networks (ie service providers).

B 1.3 Users also make up a number of different communities with different requirements. The needs of business and residential customers or of urban and rural areas are distinct in a number of ways. Telephony and television are the main elements of the residential market. Business has a growing demand for increasingly sophisticated information services. The intensity with which the infrastructure is used is likely to be much greater in major business and urban centres than in rural areas even though the communications infrastructure performs an essential role in rural areas in meeting wider social needs.

B 1.4 The assessment of user demand is complex and difficult. It is not something Government can do.



The inputs we have received have consistently referred to the difficulty of predicting user demand more than a relatively short time ahead. One major company said that it did not believe users knew what they wanted more than about 18 months in advance. There is also a lack of awareness on the part of the end user about what can be available to him. Technological development and convergence mean that there are an increasing variety of ways in which particular user demands might be met. That adds to the importance of flexibility. It emphasises the key role of the market. In order that user demand can be fully and flexibly expressed entrepreneurs need to be free to experiment with the possibilities of different delivery systems and the services which can be carried over them.

- B 1.5 If entrepreneurs are allowed to test the market it is likely that some delivery technologies as well as some customer services will lose out while others grow in importance. This is to be expected in a market where there is uncertainty about the exact form of users' demands. It is not a reason to prevent entrepreneurs from trying new opportunities.

## 2 How to Satisfy Needs ; The Role of Competition

- B 2.1 The role of the entrepreneur is important in enabling varying user demands for services to be expressed. It is implicit in this vision, however, that competition also exists. Without it the entrepreneur becomes the monopolist.
- B 2.2 From the user's point of view it is competition which enables users to make ongoing choices and to vary their opinions. Competition also provides a continuous pressure to improve the nature and the quality of services offered. Entrepreneurs may be sensitive to market needs but they will not have the incentive to act on them unless effective competition exists.
- B 2.3 This philosophy underlies many of the changes of recent years. For example, the decision to license a second national telecommunications operator, Mercury Communications, has boosted the total level of infrastructure investment and led to a rivalry in the introduction of new services - all to the benefit of the user. Similarly, competition in fields such as mobile communications has provided a spur for operators to extend their networks quickly to meet the service and infrastructure requirements



of the market. In general, the liberalisation of service provision over networks has seen an explosion of activity enabling opportunities to be taken and demands to be met which would not have been fulfilled otherwise.

- B 2.4 We have found it helpful to make a distinction between competition in and competition for the market though both are important. We mean the difference between ongoing competition between service providers able to use competing delivery systems to meet service demands and competition for entry to a market where there are practical limits on the number of participants. Because of the scale of investment required or for technological reasons there may be practical limits on the number of competitors who can be introduced in some fields at particular times. For example, the size of BT's existing and continuing investment in the fixed link infrastructure meant that any competitor faced a substantial task in establishing itself when the provision of telecommunications infrastructure was liberalised. The decision was therefore taken to limit ongoing competition by means of the duopoly approach to give a single competitor, Mercury, a chance to establish itself. Similarly, limits on available radio spectrum and the loss of spectral efficiency when sharing this suggested that it would not initially be sensible to license more than two operators of cellular radio services. Yet in both cases limited competition has been effective. The important point is that competition exists. Over-fragmented competition might have been ineffective and counterproductive. Careful consideration has therefore to be given to the form, extent and timescale for introducing competition.
- B 2.5 Competition in the market rather than just for the market offers the user the advantage of competition on an ongoing basis. It also has the advantage of encouraging an open approach to technological change, reducing the risk of users becoming locked-in to particular technologies.
- B 2.6 It follows from what we have said that, we believe competition in the market where achievable, to be preferable to competition for the market. That said, where costs of entry or other practical factors result in material barriers to market entry Government must look for suitable alternatives, such as periodic competition for the market through franchising, to compensate for lack of competition in the market.



3                    The Difficulties of Prediction. How far is it  
feasible to forecast?

B 3.1            We have referred to the rapid pace of technological change and the interaction of this with user demand, itself difficult to predict. Changes in technology continue and make a range of networks feasible. All depend ultimately for their cost-effectiveness on the nature and extent of different user demands. Given this fluidity and the need to respond to changing circumstances there are real risks in depending too heavily on one set of views or assumptions about the future arrived at at a particular point in time. This is why the role of the market is crucial. Issues of the kind we have been considering also need to be kept under review by Government. In particular, given technological convergence Government needs to take account of the possibly wide ranging effects of individual regulatory and policy decisions on the communications field as a whole.

B 3.2            The policy options for the communications infrastructure will need to be looked at again in the context of any decisions taken on simple resale in 1989 and on the telecommunications duopoly following the review starting in November 1990 and after the new broadcasting legislation expected during the lifetime of this Parliament. These events are bound to change the scene even in the absence of unexpected technology changes which we or our consultants have failed to identify. The history of forecasting is littered with incorrect forecasts. We may be more right than some. We would like to be more right than most. But forecasts are not blueprints and must not be treated as such. That is why effective competition is important. Trial and error in the marketplace is the best means of meeting future needs.

4                    Key Factors in Any Future

B 4.1            Certain important factors will be common to any likely future development path for the communications infrastructure. They need to be taken into account. We identify these factors below.

(a) Mobile Communications

B 4.2            We have been greatly impressed by the evidence of strong demand for mobile and personal



communications. There are already some 400,000 subscribers for cellular radio. The 1987 CSPI report on Deregulation of the Radio Spectrum in the UK forecast that there were likely to be some 790,000 subscribers by 1995. In addition, CSPI forecast a demand for some 3 million cordless telephones and 900,000 wide area radiopaging receivers by 1995. These forecasts may be low. It also seems likely that new techniques for mobile communication will appear, based on personal communications giving many more users access to cheap portable communications. This will enable the end user to roam at will and access mobile users elsewhere as well as those using fixed link infrastructures. The ability of communications facilities to go with the user wherever he goes is likely to be required both by business users and, increasingly, non-business users.

- B 4.3 Since personal communicators will need the capability of interacting with the fixed links infrastructure wherever they are, their existence will have to be catered for whatever fixed links development path is followed. The need for interfaces between personal and fixed links communications networks forms part of the work being considered in the European Community's RACE programme of pre-competitive research on advanced telecommunications.

(b) The Relevance of Europe

- B 4.4 We received many representations drawing our attention to the importance of the international dimension in communications, both at the European level and more widely. In particular:
- The commitment of EC Member States to complete the single unified market by 1992. This will help stimulate a European market for communications services.
  - The European Commission's Green Paper on Telecommunications with its emphasis on the need to agree European standards and create a policy framework for telecommunications within the EC. Notable proposals are to liberalise the terminal equipment market and the provision of services (except, for the time being, telephony), to open up the public procurement of network equipment, to establish a European Telecommunications Standards Institute, and to liberalise intra-Community satellite telecommunications. The Commission is setting ambitious timetables for some of these proposals.



- Collaborative R&D programmes such as RACE and ESPRIT within the EC and the EUREKA programme more widely within Europe with the aim of pooling national resources and drawing on Community funds for collaborative R&D into advanced telecommunications and information systems.

B 4.5

The above are all important in creating new opportunities, but they may also set bounds on the UK's freedom of action. In any case national communications policies cannot be divorced from the wider international scene, and not only in the EC. The progress and form of infrastructure installations in other countries cannot be ignored. In the wider context particular account must be taken of technical commercial and regulatory developments in major telecommunications countries such as the USA and Japan with whom we have important communications and trading links and developing common interests in terms of service provision.

(c) The Framework for Standards and Regulation

B 4.6

We believe the proper functioning of national and international standards making to be vital to any future scenario. The UK's economy is dependent on satisfactory communications links with other nations. More than this the economy, like those of other countries, is increasingly internationalised. The communications links must function just as well at an international level as at a national one.

B 4.7

As far as telecommunications is concerned BT's R&D arm has traditionally played a major part in developing technology and associated standards for the fixed link infrastructure in the UK. It is likely to continue to exercise a major influence. Terminal equipment standards are agreed nationally under the aegis of the British Standards Institution. Representatives of equipment manufacturers and major users as well as the infrastructure operators carry out this work within the relevant BSI Committees. Such representatives are also increasingly involved in work on standards at the European level. The Office of Telecommunications and the British Approvals Board for Telecommunications (BABT) are also involved. Standards for telecommunications terminal equipment are given formal affect by designation by the Secretary of State for Trade and Industry or the Director General of Telecommunications. In the broadcasting field most UK work on standards emanates from the BBC and IBA. In general each



works on de facto solutions to their particular needs which are cleared with the Home Office and the Department of Trade and Industry's Radiocommunications Division (which is concerned to prevent possible radio interference problems).

- B 4.8 The focus for standards-making is increasingly shifting to the European level. The Conference of European Postal and Telecommunications Administrations (CEPT), which covers all Western European nations, and the European Broadcasting Union (EBU) have traditionally played the key roles in setting standards in their respective fields. The European Commission is increasingly taking the initiative, however, in proposing standards in these fields and is likely to exert a growing influence. Many of the proposals in the Green Paper have implications for standardisation. There is already established the autonomous European Telecommunications Standards Institute (ETSI). This reflects the importance attached to standards as a means of fully opening up the European Community market. It will be important for UK operators, service providers and manufacturers to meet the challenge and opportunity Europe poses.
- B 4.9 Much is happening in the broadcasting field also. The BBC and IBA take their work into the international sphere through the European Broadcasting Union and, through this to wider international fora. In turn the BBC and IBA will normally conform to the voluntary codes of practice and recommendations which international bodies produce.
- B 4.10 Compatible, Europe-wide decisions across sectoral boundaries are becoming more necessary and important with technological convergence. The role of the ETSI with its agreement to involve suppliers and users as well as operators as it seeks to focus better European effort will be vital in this respect. On the wider world scene under the auspices of the International Telecommunications Union (ITU), the International Telegraph and Telephone Consultative Committee (CCITT) and the International Radio Consultative Committee (CCIR) already fulfil an important role. Whilst these arrangements are valuable, we believe that continuing attention is needed to ensure that standards create sufficient opportunities to take advantage of technological convergence in the UK, as well as in the wider international field.



- B 4.11      Whatever the framework, whatever the forum, the message is the same. The UK is simply unable to go it alone. With respect to new communications infrastructures and standards it is also particularly important for the UK and, indeed, Europe to seek to track developments in America and, where it can, influence them with the goal of maintaining open world markets. In this lies the importance of active UK participation in the CCIR and CCITT. Experience shows that the size and dynamism of the US communications markets are so great that all other world manufacturers and operators are likely to be disadvantaged if they ignore them. It is however the aim of the European Community's programme for a single unified market by 1992 that a market of similar dynamism should be created in Europe.
- B 4.12      Up to now the arrangements for bringing together the various sectoral inputs to standards-making work have met user needs within the UK. They have enabled a sufficient national input to be made to work at the international level. In practice this has depended to a large degree on the presence of large players such as BT and the BBC and IBA who are closely involved in providing and using the infrastructure. The involvement of knowledgeable participants - service providers, infrastructure operators and equipment suppliers - in standards-making will continue to be important to ensure networks are able to operate coherently and interwork with each other and to ensure that the UK is able to make its case on the international standards stage. This work of ensuring the development of suitable standards is likely to become still more demanding. The technological convergence of broadcasting and telecommunications will raise new issues; the growing importance of the European level will require greater efforts to achieve satisfactory results. Standards-making should remain the province of the commercial players themselves, but the Government will need to see that standards-making arrangements continue to function satisfactorily. There is a particular need to protect the end-user from the risk of being locked-in to specific technologies. Paradoxically, this danger may increase if there is greater freedom for those active in the market to use technologies as they see fit in meeting user demands.
- B 4.13      Given that much standards-making activity will also pass up to the European level, priority must also be given to ensuring that Europe develops outward-looking, industry and user-led, fast and



effective standards-making machinery. The European Telecommunications Standards Institute offers an important beginning in this direction, but the Government will need to take an ongoing interest in how progress is maintained.

- B 4.14 Finally, the Government will also need to consider the way in which the regulatory regime for communications affects and determines issues relating to standards. A number of relevant regulatory requirements already exist - for example, the requirement for BT and Mercury to ensure that their networks are able to connect with each other and other separate networks. Provisions have also been made for Open Systems Interconnection. However, there is by no means a harmony of requirements across the whole communications scene, for example between services which are interactive and those which are not. Technological convergence makes it particularly important that the regulator as well as the standards maker is aware of the need for systems compatibility and the way in which its absence impacts adversely on other objectives such as the ability to promote competition or to unbundle functions within a particular field of activity.

(d) Increasing Awareness

- B 4.15 We have argued above that the way to ensure that user demands are met satisfactorily is to allow entrepreneurs to experiment. However we recognise that imperfections in the market might arise. New networks may not of themselves bring forward the kinds of services they can support. More probably potentially exciting services may be stifled for the want of a suitable network to deliver them. Problems of this kind could require coordinated efforts if they are to be overcome. The answer is for those involved in producing and retailing services to liaise with carriers and with end users to identify the ways to set up and package new and expanding services. The challenge is to get the market to work effectively through the timely pooling of information. Given that new knowledge may have to be disseminated widely, Government may need to be prepared to play a role in some cases at least by acting as an honest broker in focussing such efforts and bringing the various interests together.



C            SECTION 3 - THE CASE FOR A NATIONAL BROADBAND FIBRE  
OPTIC GRID EXAMINED

C 1            (a)    What is a National Grid approach to  
Infrastructure Provision?

C 1.1            The aim of the Peacock Committee on Broadcasting in making recommendation 15 was to provide the customer with a wider choice of services through high quality common carrier networks able to carry a full range of entertainment and information services. In time all users would have the same degree of choice. Such universality of coverage can, however, be achieved in different ways. In this section we consider whether a policy of seeking to achieve it by driving the installation of a universal national broadband optical fibre grid can be justified.

(b)    The National Broadband Fibre Optic Grid - What it entails

C 1.2            Optical fibre technology has already proved its value for trunk networks - BT has installed about 200,000km and Mercury is also using optical fibre technology. Our consultants' work is based on evidence that the cost effectiveness and performance of optical fibre transmission will continue to improve. This will encourage the replacement of all fixed communications links, including links to individual users and within local networks, by optical fibre over time. The distinguishing characteristic of PA's "National Grid" scenario therefore lies in a clear Government commitment to create a universal nationwide integrated broadband optical fibre communications network within a shorter time than market forces might otherwise bring about, for example by making financial assistance or fiscal incentives available where necessary.

The Case for a National Broadband Fibre Optic Grid

C 2            A national broadband optical fibre grid would not displace the need for a complementary and interacting network for mobile and personal communications. Other delivery systems might also have a place in roles for which they are particularly well suited. Satellite or microwave radio systems might be the only practical way of



extending some services to certain thinly populated areas. However, it seems likely that a national broadband optical fibre grid with its high bandwidth capacity for information transmission, once installed, would eventually tend to displace most other fixed delivery systems through the comprehensiveness of its geographical coverage and the ability to offer and carry services for most foreseeable user demands.

#### Technical Aspects

- C 2.1 Technically it would be feasible now to start to install such a broadband optical fibre national grid. Optical fibre cable is already a proven technology. Production capacity of fibre on the scale necessary for the creation of a national optical fibre broadband grid would not be a problem. There remains much work to be done to develop suitable broadband switching systems and to provide the software and network management skills required for such a network but we believe these challenges could be met.

#### Economic Considerations

- C 2.2 Our consultants' work suggests that in economic terms a convincing case can not yet be made for Government's driving development of a national broadband optical fibre grid. The cost of installing fibre is not yet sufficiently low. Nor is the potential for savings in maintenance and service overheads yet sufficiently clear for BT to replace copper cable - before the end of its working life - with fibre in the local network. The analysis undertaken by the consultants suggests that during the period 1990 to 2010 a policy to drive the installation of a national broadband optical fibre grid would entail higher investment costs than the continuation of the present policies of lightly regulated competition. Even assuming early and fairly rapid growth of cable TV and of new broadband dependent services such as a fully developed system of High Definition Television (HDTV) and videophony post-1995 our consultants analysis suggests that the additional investment and other costs entailed would be likely to run ahead of the additional revenues generated. This reflects the fact that most new services which are currently identifiable (except for moving picture transmission), could just as well be provided by the installation of a narrowband Integrated Services Digital Network (ISDN). Compression techniques for transmitting signals and



the capabilities of digital switching used in ISDN mean that in practice narrowband ISDN based on copper cable in the local network can meet many of the foreseeable requirements.

#### The Funding Gap : Should it be filled?

- or commercial*
- C 2.3 The funding gap suggested by PA's analysis could only realistically be closed by fiscal measures (tax incentives), direct financial assistance (grants), risk-sharing - and, hence, subsidised - finance, imposed price rises, or other directly interventionist policies on the part of Government. It would not be practical to expect investment in a national broadband optical fibre infrastructure without reasonable prospects of a profitable return. Our conclusion is that on an economic basis there is not, as yet at least, a clearcut justification for a national broadband optical fibre grid.

#### 3 Other Arguments for and against the Approach

- C 3.1 Beyond the technical and economic considerations considered above and in more detail in our consultants' report the inputs to our Group have also identified a number of other arguments for and against the adoption of a policy to drive the installation of a national broadband optical fibre grid ahead of what market forces might bring about.

##### (a) For

#### Manufacturing Base and Market Penetration

- C 3.2 Some have argued that only a "national grid policy" will ensure sufficient UK manufacturing capability to drive down unit production costs and so provide genuine national and subsequently international market opportunities. Such a policy has also been seen as the only means to establish a critical mass of users to allow new broadband-dependent services to take off. Our consultants' work suggests that these views may well be overstated.

#### Future-Proofing

- C 3.3 A national broadband optical fibre grid is the only known transmission technology which can meet all service demands other than mobile service which can currently be foreseen. However, the number of services requiring broadband optical fibre is limited\*. The demand for them is uncertain. A national optical fibre grid would enable service markets to develop at their own pace. It could



provide technological homogeneity and more easily supply trunk capacity for local mobile and personal communications adjuncts. However, this does not necessarily make it "future proof". This must be a doubtful proposition given today's rapidly changing technology.

#### UK's International Position

- C 3.4 It has also been argued by some that a policy to install a national broadband optical fibre grid is necessary if the UK is not to lag behind other industrial powers such as the US, Japan or parts of Europe. This presupposes that other countries are likely to follow such a policy. The evidence we have gathered from Europe and the US does not suggest that this is particularly likely. In Japan the Information Network System (INS) plan issued by the Ministry of International Trade and Industry (MITI) in 1985 provides a general reference model for the next 20 years. This envisaged complete digitalisation of major urban networks for Integrated Digital Services Networks by 1988 and of other areas by 1995. Broadband ISDN trials have not been very attractive so far although Japan does intend to implement ISDN at 144 kilobits. Even if the plan succeeds fully, however, and Japan's network is subsequently upgraded to optical fibre the UK would not necessarily be disadvantaged relative to Japan without its own National Grid (nor with one would we necessarily match the Japanese). The critical issue is what the UK needs. Of what will it make best use?

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#### \*Footnote P.18

Only a few services requiring carriage of high resolution moving images such as the videophone are in practice dependent on broadband optical fibre. Even full High Definition Television (HDTV) may not be fully dependent, while compression techniques enable low quality videophony to be provided on narrowband. Although the aim of HDTV is to provide the viewer with a much higher quality picture by greatly increasing the number of lines on the TV screen, the current EUREKA project for a 1250 line system could with bandwidth compression techniques be broadcast using available satellite technology and transmission standards. Uncompressed signals would however be dependent on optical fibre in practice or wider frequency bands.



### Spectrum Release

- C 3.5 Some argue that a broadband national optical fibre grid might provide a means of freeing additional radio spectrum below 3GHz for mobile and personal communications. This is attractive at first sight but not very practicable for a number of reasons. Broadcasters have an obligation to provide universal service; it follows from this that it would be possible to move off air only when an area had been completely re-cabled. This is unlikely to have happened before the early years of the next century. Even then the possibilities should not be exaggerated given other considerations such as the continuing need to provide broadcasting services to portable receivers.

### Benefits for the Regions and Small and Medium Sized Enterprises

- C 3.6 Our consultants' work suggests that a National Grid policy would give greater regional economic externalities in terms of employment and output growth when compared with other scenarios. However, this relative advantage would decline in time once fibre spreads across the country under other policy approaches. A national optical fibre grid policy might, however, improve the attractiveness of the regions to firms fearful of locating there because of the belief that London and the South East might acquire broadband optical fibre networks first on purely commercial grounds. National availability might also provide a better climate for small and medium sized enterprises in all parts of the country to help establish themselves. However, our consultants' general findings on externalities do not suggest a major overall gain in output or production via this route. Narrowband ISDN should satisfy most firms' needs.

### Other Benefits

- C 3.7 It is suggested that a national grid would facilitate beneficial changes in the lifestyles of individuals. There might be greater scope for home working and distance learning. New health-care services, R&D and design, collaboration, improved security and crime prevention might result. Such possibilities can only be speculative, but in any case, narrowband Integrated Digital Services Network (ISDN) networks should be able to meet most foreseeable requirements.



(b) Against

C 3.8 Technological Lock-In

Technology continues to advance very rapidly. The risk exists that in pursuing a national optical fibre grid policy the UK would end up locking itself into a sub-optimal technical infrastructure. Even if the basic options remain unchanged, their relative economics and the economics of network configuration for delivery of services over them to different user communities could change markedly. The scale and timespan of the investments involved would place a premium on being right. Although such risks apply to other delivery systems as well as broadband optical fibre that itself is an argument for diversity.

Loss of Competition and Economic Distortion

- C 3.9 The scale of investment involved and the need for an ongoing high level of R&D and training for network management mean that a national broadband optical fibre grid would in practice be in the hands of a very limited number of infrastructure providers. Competition between them in installing and operating the network would be virtually permanently restricted without necessarily solving the likely financing problem we have referred to. Because a universal national broadband optical fibre grid policy would seem to require Government intervention there could be distortion of economic activity, - for example, opportunity costs, notably for other delivery systems. The risk of blight on investment in other delivery systems is real. In particular this is true for the narrowband ISDN network. Investment in delivery media such as satellite or cable TV, could also be blighted.

4 Summary and the Relevance of Peacock Recommendation 15

- C 4.1 Our conclusion is that these arguments whether taken singly or in combination do not, at least as yet, justify a national broadband optical fibre grid. We believe that optical fibre will play an important part in the future. However, it does not seem viable even for BT or Mercury to proceed with a universal national fibre optic broadband investment programme at this stage even were they permitted - contrary to the Peacock Committee's Recommendation 15 - to provide entertainment services as well as value added services over their main networks.



D            SECTION 4 - OTHER ROUTES TO UNIVERSALITY:  
ALTERNATIVES TO A SINGLE GRID APPROACH

1            A More Complex View ; Taking the Best Elements

D 1.1        We were impressed by the evidence we received which suggested that, even if a national optical fibre grid of some kind were installed over the next 20 years other delivery systems would continue to exist - for example, mobile communications and other networks for delivering TV, and (if Ministers approve their introduction) systems providing MVDS services. We came to the view that this trend should be fostered and not thwarted. If the technical barriers that exist between delivery systems can be broken down the opportunity which technological convergence brings to meet service demands flexibly in ways best suited to individual requirements can be realised.

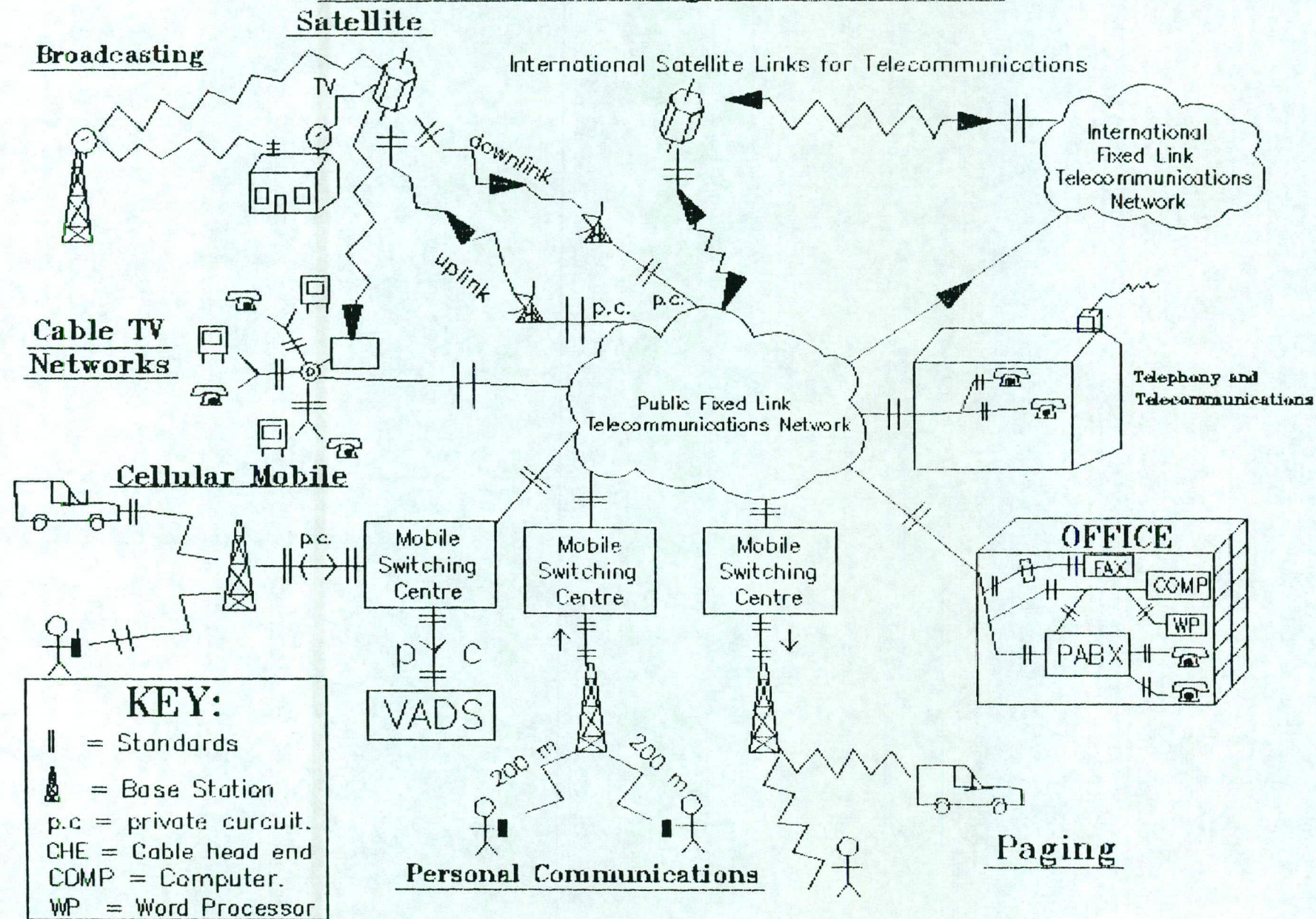
D 1.2        We believe that the more complex view outlined above should be welcomed. This would entail a number of complementary networks co-existing and competing with each other to meet varying user demands but with each able to provide the interconnection users require to its fellows. The different delivery systems would have to be technically compatible and able to interwork with each other. Given such compatibility it would be possible for users to choose the delivery system they want for their own particular purposes and still have access to other users anywhere in the country however they are serviced. To the end user the way in which services reach him is of relatively little importance (subject to any costs he incurs in changing terminal equipment). An illustration of the way in which networks can complement and interact with each other is given in Figure 1 below.

D 1.3        This vision of a more varied yet fully nationally integrated communications infrastructure seems to us an attractive way of adapting to the future. The UK would not be putting all its eggs in one basket. This approach does however open up wider questions concerning the ways in which user demand can be effectively expressed. This requires choice at the end user level. It also calls for clarity in the regulatory and standards regimes necessary to minimise the difficulties which infrastructure diversity will bring, especially in a European context. These are issues we now explore in more detail.



# The Relationship of Networks

FIGURE 1





D 2        Key Factors Revisited

D 2.1        In seeking to suggest a policy regime to encourage the evolution of a communications infrastructure satisfying users' demands, yet avoiding the pitfalls mentioned earlier associated with a "national grid approach", we return to some of the key factors identified earlier.

(a) Standards - the need for ongoing attention

D 2.2        If the communications infrastructure is to be truly national and truly integrated as well as interworking acceptably with other national systems it must be based around suitable functional specifications and workable standards for interconnection and user access. Without end user to end user communication there will be a sub-optimal use of resources and duplication of effort. The primary purpose of an effective communications infrastructure would be compromised.

D 2.3        As discussed in Section B.4 above, we believe that broadly speaking past industry-led arrangements for co-ordinating work on suitable network and interworking standards have worked satisfactorily. The international, and most immediately, the European, dimension is of increasing importance. More resources will need to be put in. We believe that with continued attention the need for interoperability can be accommodated by operators, manufacturers and service providers in most cases.

(b) Regulation - a Functional Approach to Harmonisation

D 2.4        We have received evidence that the possibilities created by technological change and convergence may in some cases be being held up or distorted because regulatory arrangements which are specific to particular delivery systems are failing to respond to changing circumstances. The prohibition on, for example, broadcasters providing data services to closed user groups is, in the broadcasters' view, inhibiting them from making best use of their delivery networks. As convergence increases it is likely that the number of such cases will grow.

D 2.5        Any regulatory approach chosen for the future must pay full attention to these factors. It must also pay regard to the need for independent regulation of privately owned companies - notably BT after privatisation - and to the need for an element of



continuity to maintain the confidence that has been built up in the fairness of the competitive environment in telecommunications. It must start from a clear understanding of the complex current regulatory arrangements. The distinctions between particular delivery systems such as broadcasting and cable and telecommunications are eroding with time. If it is to be effective the regulatory approach needs to deal with alternative delivery systems in a unified framework.

(c) Competition and the Role of BT

- D 2.6 For entrepreneurial activity to flourish there needs to be effective competition. With ineffective competition, whether too little or too fragmented, the entrepreneur will not have the incentive to experiment. The optimal amount of competition is determined by the character of the market. Government policy and the regulatory structure which underpins it must take account of this.
- D 2.7 Inseparable from this is the role of BT. BT is the dominant player in terms of infrastructure provision at present. (This is illustrated in Figure 2 below which shows the scale of BT's investment and some of the areas in which it is active in addition to its main telecommunications role). This necessarily affects the competitive climate for others and the way in which competition in the communications infrastructure can be introduced effectively. The obligations and constraints placed on BT in its licence as a Public Telecommunications Operator reflect this - for example, the obligations to provide service throughout the country and to ensure its network is operated openly and fairly. BT's dominant position has also conditioned policy for the convergence between telecommunications and broadcasting. BT's main licence prevents it from carrying entertainment (TV) services over its network although it would be technically and economically possible for it to move in this direction. The aim has been to prevent BT from extending its dominance to a new area. We are, however, in an evolving situation. There have been many changes already in the telecommunications field and the BT/Mercury duopoly is to be reviewed from November 1990. A range of decisions will need to be taken in the broadcasting field. Nevertheless, BT's dominance remains a factor requiring careful consideration. The regulatory regime will need to ensure that BT is not allowed to add to its existing market dominance or to establish pre-emptive positions in new market areas which develop. BT's participation is one thing; dominance is another.



# British Telecom's Position

FIGURE 2

## R & D

Spends c. £195 million per annum

## Off - Air Broadcasting

Provides about 25% of BBC and IBA transmission links

## Viewdata

c. 90,000 Prestel Customers

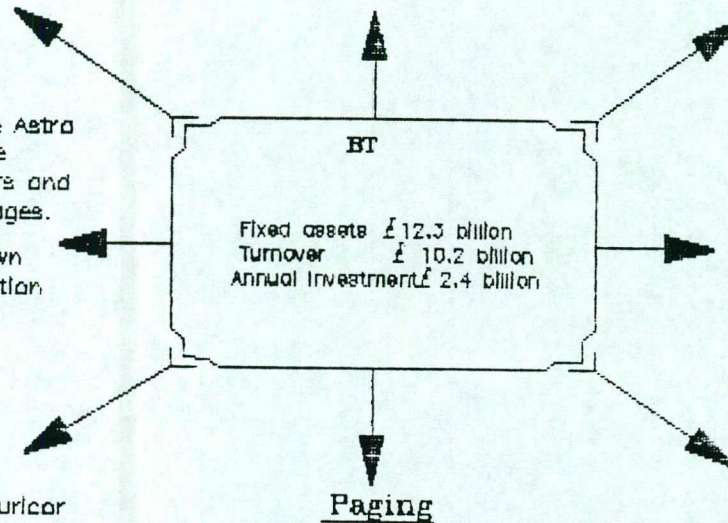
## Satellite

- plans to lease some Astra transponders, on-lease to programme providers and market resultant packages.
- Provides up and down links, though Liberalisation of specialised Satellite services pending.

## Cellular Radio

- Joint Owner with Securicor of Celnet, one of two licensed national services.

Source: BT Reports & Accounts  
Specialist Press  
Summer 1988



## Cable

- Involved in 4 franchises of which it is at least part owner.
- Either BT or Mercury must be involved in provision of telecomms services by cable companies.

## VADS

- BT provides most of private circuits for VADS.
- Main electronic mail provider (c.100,000 customers for Telecom Gold)
- One of the largest players in the VADS market as a whole.

## Paging

- c. 400,000 pagers
- 80% of market.



## D 3.1

The scope for competition and the nature of that competition in the local network are particularly important. It is here that the end user is directly involved. It is here that network provision remains a (near) monopoly bottleneck. A practical difficulty which constrains the way competition can be introduced is the problem of harmonising interconnecting protocols for a multiplicity of delivery systems. This is a genuine constraint; but we do not believe that it need prevent our vision of entrepreneurially-led activity to meet users' demands. It should be possible for industry to develop workable national and international standards allowing for a variety of local delivery systems extending to the end user. These could allow not only for different forms of fixed link connection to the end user (such as optical fibre, coaxial cable) but also for radio links (terrestrial broadcasting, satellite, "radio tails"). Links of this kind might be one way or two way depending on the end user needs. Radio tails in particular offer a new approach. It should be technically feasible in time to provide radio head-ends in the street. This would mean that local radio links could be used not only to the home but also at other locations, eg Telepoints. Such links would apply most obviously to existing and foreseen forms of personal communication such as cordless telephones, but narrowband perhaps even broadband based local radio links can be envisaged in time. Given these possibilities, the chances of personal portable communications systems interacting fully with the fixed link infrastructure are real.

## D 3.2

The possibilities are encouraging, but the high cost of infrastructure provision and the requirement for large players for standards-related reasons remain material factors affecting the way in which competition can be introduced. The essential difference between one-way and two-way delivery systems must also be recognised. While two-way media may provide one-way services if required, the converse is not true. We believe that all these factors point to the need for a tailored approach to the promotion of competition. We set out below our own ideas for this.

## D 3.3

In seeking a route to the goal we envisage the starting point has to be taken into account. This means that a distinction must be drawn for now between the provision of telecommunications services and the provision of entertainment services



(television). A tailored duopoly policy for introducing competition has already been adopted for telecommunications. The duopoly approach recognises the difficulties of market entry in that it allows a single competitor to BT time to establish itself. Meanwhile the provision of telecommunications services, except voice telephony and telex, over the BT and Mercury infrastructures has been opened to third parties. The duopoly will be reviewed from November 1990. Our proposals are intended to be compatible with whatever emerges from that review.

- D 3.4 BT and Mercury are prevented from providing television services to the home over their main networks by the terms of their operating licences. This has been in order to allow the independent cable operators the chance to develop their systems using the market pull for (additional) entertainment services. But the number of routes over which entertainment services may reach end users is growing. All offer prospects for increasing customer choice. Licensing decisions to date have however revolved around the individual delivery media rather than the service requirements per se in the entertainment market. If this approach continued it would perpetuate decision taking and regulation on a technology-specific basis instead of being service or function-specific as we believe it should be.
- D 3.5 Costs of entry to the market are significant for the carriers of entertainment just as they are for the carriers of telecommunications services. Unless there are major differences between the capabilities of delivery systems those systems which are first in the field will have an inbuilt advantage and be difficult to displace. Unless policy takes into account such factors the end result may well be ineffective competition.
- D 3.6 We have already proposed that entrepreneurs should as far as possible be free to select the means of delivery they think most suitable - in other words, to harness the possibilities of all available technologies in meeting user demands for services. What is needed possible. Given the problems of market entry then for those areas where ongoing competition in the market is difficult to establish or maintain (and until it can be established and maintained) we believe the answer lies in introducing competition for the market. In our view this should be by a system of renewable local franchises free to provide services to customers in an area through the delivery technologies they deem



best. We believe this approach should be applied to the local carriage of entertainment services. Such franchises would also logically include a right to carry all other one-way services, for example, data distribution, thereby providing direct competition with one-way telecommunications services provided over conventional telecommunications systems.

- D 3.7 Subject to the outcome of the duopoly review and the need to ensure that universal service requirements can be met, one way franchisees might also be allowed the right to move into the carriage of two-way services whenever they judged the time was ripe. This would gradually enable a healthier level of competition in local telecommunications gradually to be built up.
- D 3.8 As competition develops in particular areas of the country it will be reasonable for the regulators to consider relaxing the prohibition on BT and Mercury or any subsequent PTO carrying television to the home on their main networks for those areas. The restrictions are in pure terms a distortion of economic and technological possibilities. In the current state of the market, however, it is not feasible to relax the controls without adding to BT's dominant position. We would like to see the distortion lifted if and when this can be done without damaging competition.
- D 3.9 We offer below purely as an illustrative example the sort of course that could be charted. We do not seek to be prescriptive. Other variants are possible and may be preferred.
- D 3.10 One-way franchising offers a means of providing competition for entry to a potentially rewarding market where competition is otherwise difficult to establish. Over time such a regime would become geographically comprehensive covering all or nearly all the UK. (This would not necessarily be true for any migration from this into two way services given BT and Mercury's existing national coverage). Note that we are referring to local provision of services. In the current environment, however, there are sound arguments for the arrangements for distributing BBC, ITV and DBS entertainment services remaining separate from this one-way franchise concept. These media already compete in providing entertainment television. It is also necessary to ensure the continued nationwide distribution of the existing BBC and ITV channels. A unitary system of one-way franchising could only provide this in the



short term by contracting back such transmission to the existing terrestrial networks. Since DBS has the potential to access all its customers direct there are also good reasons for leaving the current arrangements for DBS services in place. Nevertheless, there are no reasons to prevent one-way franchisees, existing off-air broadcasters and satellite operators also coming to local distribution agreements where they see merit in doing so. Should the Government decide to authorise additional nationally-configured terrestrial television channels using the UHF bands, comparable arrangements to those decided upon for the existing off air channels will be sensible at least in the short run. We also assume that sound radio services will develop in line with the Government's recent proposals. Here too though there should be no reason to prevent sound radio service providers coming to arrangements for delivery with one-way franchisees in the longer term if they both wish to do so.

- D 3.11 Given these assumptions, one-way franchises might begin by conferring local rights to deliver additional entertainment services and other local one way services. If MVDS were authorised by the Government, the franchisee would have a choice between it or cable or a mixture of the two. Where MVDS was used it might be natural, provided regulatory arrangements ensure this can take place on fair terms, for the franchisee to make some use of the existing terrestrial transmission network where they wished to do so.
- D 3.12 One-way franchisees when providing entertainment services would face competition from satellite and national terrestrial broadcasting channels. When providing other one-way services they would face competition from the two way networks (which have an inherent capability to deliver one-way services). If an insufficiency of competition was feared under this approach it might be feasible to allocate only some of the local MVDS channels available to a franchisee with the possibility of allocating remaining channels to a competitor in the franchise later. Our hope is that in time and in the light of convergence one-way franchisees will want to move positively into the provision of local two-way services. This will then open up the way to realise more general competition in the local provision of all communications services.
- D 3.13 A pre-requisite for these changes to be effective is that the production of entertainment and information



services should be unbundled from their carriage and delivery - indeed there are good reasons to believe that this may happen anyway. In any case we see it as a desirable move in its own right. Particular companies could engage in both functions, subject to the overriding need to preserve fair competition. But those engaged in delivery should be under obligations to treat with all service providers on a fair, equal and transparent basis accessible to regulatory oversight.

- D 3.14 Care in the choice and size of franchise areas and in the licensing conditions will be required. It is important that there should be a real incentive for the franchisee to perform well. The length of franchise periods will need to be long enough to allow franchisees to earn a reasonable return on their investment. Franchise areas will need to be of a sufficient size - probably 500,000 people upwards - and mix of customers (business and residential, urban and rural) for there to be real opportunities (and for the loss of a franchise to be a painful penalty). Nor should the size and geographical make-up of franchises be biased towards particular technologies. Decisions on spectrum availability and frequencies to be used as well as the coverage of existing transmitter facilities will fundamentally affect the way in which franchise boundaries can be drawn. The prospective franchisee will want to know what spectrum is available to him when submitting a bid for a particular area.
- D 3.15 A commitment on the part of all the players involved will continue to be required to ensure that whatever network architectures and protocols are utilised are open and able to accommodate or be varied to meet changes in technological know how and user preferences. While much of this can be left to market-led initiatives and work at the international level will be increasingly important, the regulatory framework will need positively to encourage open and compatible network design.
- D 3.16 We believe it should be possible to work in this way towards a multi-faceted but compatible UK national communications infrastructure. In time it should be possible for competing and complementary delivery technologies to be made available in differing ways in virtually every area of the country in order to satisfy the user demands which exist, can be foreseen or may be expected to materialise in future.



D 3.17 Such arrangements should help to avoid some of the major drawbacks of current technology-specific arrangements. Our consultants' work emphasises that there is a finite revenue pot to pay for the provision of an increasing range of one-way services and the installation of the networks to convey them. This means that under current arrangements the greater the number of different fixed delivery systems licensed and services provided over them the more likely it is that some will fail. Unless there turn out to be major differences between their capabilities, those delivery systems achieving the first significant penetration will be hard to displace. Although we do not see failure amongst fairly competing systems and services as necessarily a bad thing it is not obvious that Government can easily provide a level playing field between them. Some systems already have spectrum allocations, others do not. Some have existing infrastructures, others do not. In the current climate, whatever the action the Government takes it will be seen as a decision for or against particular technologies. Yet the same is true of inaction. This is why we believe a tailored approach to the promotion of competition for the delivery and retailing of one way and two way services represents the best way forward. The market can then genuinely decide over time the best means from the options available for meeting particular demands. The answers may well be different in different areas. That too need be no bad thing if it reflects the fulfilment of differing needs.

D 4 Some of the Policy Measures Immediately Available

D 4.1 We have already set out above the main principles which we believe should underpin the approach to the electronic communications infrastructure. We have also suggested one way in which our vision of effective competition might be approached. Whatever route is chosen will necessarily involve decisions on a number of current issues in the communications field. In particular:

(a) Licensing of Further Delivery Options

D 4.2 The Government will need to determine which controls on the use of specific delivery technologies genuinely need to be retained under the approach we have advocated. The objective should be to allow entrepreneurs freedom as far as possible to use the technologies they deem best to meet particular market demands. A number of



decisions could be made to increase the range of delivery options as outlined briefly below:-

(i) Telecommunications Networks

- D 4.3 The BT/Mercury duopoly is due to be reviewed from November 1990. Following this review the Government could agree to allow additional PTOs to be licensed. It is not for us to pre-empt the outcome of the duopoly review. However, we believe particular attention should be focussed on increasing competition in the local network.

(ii) MVDS

- D 4.4 The possibility of adding to transmission routes by allowing MVDS distribution of one-way services is also open to the Government. (They would not be suitable for providing a full range of telecommunications services as they are only one-way links). The technical capabilities of such delivery systems and the timescale for their development are already the subject of a separate DTI financed study by Touche Ross. They might, if permitted, be used in conjunction with other delivery systems or independently of them, obviously with very different consequences for those systems. Again we take the view that it is preferable for the market rather than regulators to decide. In particular we believe that MVDS, if introduced, should be available to entrepreneurs with the minimum of restrictions.

(iii) Cable Companies

- D 4.5 Cable companies may wish to seek to become the type of one-way franchises we have suggested. A number of changes to the current conditions for cable franchises would, however, be necessary to facilitate this. These are part of a wider range of barriers to market entry surveyed below.

(b) Avoiding Barriers to Market Entry

- D 4.6 Besides the possibilities for making additional delivery options available to entrepreneurs, the Government can also take action in a number of areas to ease or remove barriers to market entry.

(i) Removing "Asymmetry"

- D 4.7 "Asymmetry" is a term used in licensing to describe a regulatory imbalance, for example the constraint which prevents equal access to certain markets, even where this is technically feasible. The best known



example of this is the licensing prohibition on BT and Mercury which prevents their delivering television over their main networks (discussed in section D.3 above). Whilst this acts as a barrier to entry to the television market for BT and Mercury, we believe this asymmetry is necessary at present to enable other competitive delivery systems to thrive.

- D 4.8 This is not the only example of asymmetry. BT is required to provide service to anyone who requests it anywhere in the country; Mercury is not. Cable TV companies can choose whether to offer voice telecommunications services (in conjunction with BT or Mercury), although their networks must be of a kind which could support such services. The BBC and IBA are able to provide universally broadcast information services such as Teletext or Oracle, but cannot provide information services to closed user groups. In most cases such constraints have originally been applied for good reasons, in particular to promote effective competition. However, as the technical barriers between delivery systems are broken down and markets evolve these regulatory controls will need to be looked at closely in a wider context.

(ii) Wider Provision of Ducts and Poles

- D 4.9 A measure which might have a considerable impact would be to require BT and other national fixed link telecommunications operators to negotiate freely with others who wished to use their ducts or poles or wayleaves wherever it is feasible to do so. The Director General of Telecommunications is already investigating how this might be done. Cable TV franchise companies in particular could benefit (although views on the extent of the benefit vary). In practice cable companies with which BT is already associated may enjoy some of the benefits to be expected. For others, however, the extra costs saved in not having to duplicate fully BT's infrastructure could be material. We do not regard the practical questions to be resolved were BT to be required to share ducts and poles as necessarily insoluble. Although of particular concern to cable TV companies such a mechanism would also facilitate effective competition under our proposal for the local franchising of services.

(iii) Cable TV Franchises

- D 4.10 In addition to an ability to share BT's ducts, poles and wayleaves where feasible, other changes might



also better the prospects of cable television companies. For example, the current requirement for cable franchisees to adopt particular network configurations and architectures could also be made redundant under the approach we advocate. But the need for interoperability should remain paramount - especially where such franchisees in time wish to provide two-way services. Unnecessary restrictions should be avoided with the burden of proof resting with those who advocate restrictions. To our minds, however, the need for interoperability has already been clearly demonstrated.

(iv) Alternative uses of spectrum

- D 4.11 Within international constraints the Government has the power to make changes to the allocation of spectrum. We are aware that some are already under consideration, as indeed is the issue of spectrum pricing. In our view, in seeking to meet user demands, franchisees should be allowed to experiment with all the available technologies for delivering services. Nevertheless, given the constraints on spectrum availability the Government does need to consider how the developing pattern of demand can best be met within existing international allocations of spectrum and the adjustments to these which are possible.

(v) Simple resale of BT and Mercury capacity

- D 4.12 A decision on this is due to be taken in 1989. We do not seek to pre-empt this. That said, a decision to relax further the rules on the use of leased circuits might help to generate fresh demand for capacity and so stimulate the rate of infrastructure provision and upgrading. There might also be well increased scope for competitive pressures in the provision of certain fixed link telecommunications services.

(vi) Fiscal and Financial Measures

- D 4.13 Given our approach we do not see any case for the Government's seeking to stimulate a faster provision of infrastructure by particular delivery routes or over a variety of systems through changes in tax law and allowances. It is important, ~~however~~, that the fiscal regime should be neutral between competing delivery systems.



D 5      The Way Forward - Linking of the Policy Changes

D 5.1      Ours is a radical view of the future entailing a change from a technology-specific to a technology-neutral regulatory environment. As we have indicated above, many individual changes will be needed to realise this vision. It will not be practical to introduce all of these at once, but policy changes will need to be linked. Technological convergence requires this. As barriers are broken down what happens in one area of the infrastructure necessarily affects other areas and the climate for service providers generally. We have suggested an illustrative route by which our vision of encouraging local competition in the provision of both one and two-way communication services might be reached. This is not prescriptive. A number of issues currently under consideration by Government will have a bearing on this. Nevertheless, it will only be by considering a co-ordinated policy for the communications scene as a whole that effective competition - and so choice for the consumer - can be maximised. The potential to liberate technologies so they can best serve service providers in meeting user demands is evident.



# COMPARISON OF CAPABILITIES OF DIFFERENT DELIVERY TECHNOLOGIES

ANNEX 1

	TERRESTRIAL BROADCASTING	DBS	MVDS	LOCAL CABLE NETWORK (COAX/ BROADBAND)	NARROW BAND (COPPER PAIRS) ISDN	BROADBAND (OPTICAL FIBRE) ISDN	RADIO/ PAGING/ MOBILE
TV Capability	Four channels, possibly five or six	5 channels currently available plus Astra	6-12 channels	Up to 30 channels	None	Almost infinite	None
Geographical Availability of TV	100% for existing channels 60- 70% for new ones	National for those with means of receiving	70% of country	Limited at present. Few ultimate constraints	-	Few ultimate constraints, but would take a long while to reach 100% of population	-
Ability to offer other one-way services	Yes, Teletext/ Oracle. Could provide closed user group services if permitted	Yes. BSB plans to offer information services	Yes.	Yes. All one way services feasible	Yes, but not those requiring high resolution moving pictures	Yes, including any based on moving pictures	Yes
Ability to offer two- way services	No	Yes	No	Yes	Yes	Yes	Yes



CH/EXCHEQUER	
REC.	30 NOV 1988
ACTION	MRS CASE ✓ 30/11
COPIES TO	CST, FST SIR P MIDDLETON MR ANSON, MR MONCH, MR PHILLIPS, MR BURGWER, MR SPACKMAN, <i>From the Private Secretary</i> MR WALKER, MR FARTHING, MR PERFECT, MR CAVE, MR NICHOL, MRS CHAPIN, MR THRE, MR CALL.



10 DOWNING STREET  
LONDON SW1A 2AA

30 November 1988

Dear Gachn,

REPORT BY THE ELECTRONIC COMMUNICATIONS  
STEERING GROUP ON THE FUTURE COMMUNICATIONS  
INFRASTRUCTURE IN THE UK

The Prime Minister has seen a copy of your letter of 28 November to Catherine Bannister. She is content with the proposal to publish the edited version of this report in parallel with the PA Report.

I am copying this letter to the Private Secretaries to members of MISC 128 and to Trevor Woolley (Cabinet Office).

Yan.  
Pcl

Paul Gray

Gareth Jones, Esq.,  
Department of Trade and Industry.



FROM: T U BURGNER  
DATE: 30 November 1988

CHANCELLOR

cc Chief Secretary  
Financial Secretary  
Sir P Middleton  
Mr Anson  
Mr Monck  
Mr Phillips  
Mrs Case  
Mr Spackman  
Mr Waller  
Mr Farthing  
Mr Perfect  
Mr Cave  
Mr Nicholl  
Mrs Chaplin  
Mr Tyrie  
Mr Call

Dr Freeman -CCTA

REPORT BY THE ELECTRONIC COMMUNICATIONS STEERING GROUP  
ON THE FUTURE COMMUNICATIONS INFRASTRUCTURE IN THE UK

1. Lord Young's Private Secretary has written to Ministers on MISC 128 seeking consent for an edited version of this report to be published. He is hoping for confirmation by close today.
2. This is a change of direction by DTI. MISC 131 (the official group on Telecommunications) had earlier recommended that the conclusions of the Steering Group's work should be used as a quarry, eg for Ministerial speeches, rather than published direct. The change by Lord Young appears to be a response to public interest following the publication of the White Paper on Broadcasting. Interest will also be stimulated by the publication (already agreed) of the PA report on future Telecom scenarios.
3. I recommend that you agree to publication. The report's broad conclusions are helpful to the Government's general policy stance: pro-competitive, market led, and in favour of a generally neutral stance by Government ie opposed to intervention, direct subsidy or fiscal action in favour of any particular technology. The existence of the Steering Group (which has a majority of outsiders, but includes the Government Chief Scientist and a DTI



Chairman) is public knowledge and there will be continuing pressures for the report's publication. Publication may well spark some controversy, but it will include a disclaimer making it clear that the report is not a statement of official Government policy. Its general message and approach cannot <sup>but</sup> be helpful. For background I attach a note giving the group's membership and the main recommendations of the report.

4. If you are content a telephone call by your Private Secretary to Lord Young's office would suffice.

TR

T U BURGNER



ANNEX

STEERING GROUP MEMBERSHIP

Alistair MacDonald	- DTI (Chairman)
John Fairclough	- Chief Scientific Adviser
Prof Bryan Carsburg	- DG OFTEL
Ivor Cohen	- Formerly MD of Mullard
John Alvey	- Formerly Technical & Procurement Director of BT
Prof Metcalfe	- Manchester University

Recommendation 1

While recognising that optical fibre is likely to play an important role in future, the Government should not subsidise or in other ways make the installation of a national broadband grid based on optical fibre technology a keystone of policy.

Recommendation 2

Controls which prevent or hinder entrepreneurs from using particular infrastructure systems or combinations of systems for delivering services to users should be relaxed as far as possible. Entrepreneurs should be as free as possible subject to the needs of fair competition and suitable standards for interworking to use the technologies which they believe best suited to meet user demands. It follows from the above that:

(i) like other delivery systems, cable systems should be left to find their natural place in the market. Cable should not enjoy special protection, not should it be subject to unnecessary constraints. Technical requirements should be reduced to the minimum necessary to ensure interoperability and safety.

(ii) alternative delivery systems, for example Multi-Point Video Distribution Systems (MVDS) (if that is introduced), should also be licensed with as few restrictions as possible to allow entrepreneurs a full choice when seeking to meet user demands.



### Recommendation 3

Work in the standards area, both national and international, will need continuing high priority and almost certainly increasing resources from both industry, users and Government as convergence and complexity of systems increase. It is in the light of developments in Europe in particular that policy will need to evolve.

### Recommendation 4

BT should continue to be able to play its part in helping to maintain the coherence of the fixed link infrastructure and to ensure its interworking with other networks domestically and internationally. However, in the interest of competition, BT should not be allowed to add to its existing market dominance or to establish pre-emptive positions in any new market areas which develop.

### Recommendation 5

The Government should continue to promote and introduce competition wherever feasible. This should be within a regulatory framework recognising the inappropriateness of controls based on technology. Instead regulations should be based on separating the provision and carriage of the services the users wants. These principles should be applied across the fields of telecommunications, cable, broadcasting and to other allied areas. In particular we recommend that:

(i) arrangements for the provision and carriage of one-way services, including TV, should be regarded as separate from each other. Competition in both should be encouraged. Although competition already exists in the provision of such services, problems related to the cost of entry make early competition at the local delivery level more difficult to foresee. The aim should therefore be to introduce competitive pressures by a system for franchising local delivery companies who would be free to choose the mix of delivery systems best suited to meeting user demands in their areas.



(ii) competition in both provision and delivery of two-way should also be encouraged.

(iii) given their current dominance in the supply of two-way communications, neither BT nor Mercury should yet be permitted to deliver one-way entertainment services on their main networks. We see some advantage, though, in one-way franchisees being able to move into two-way services whenever they judge this viable. If and when a healthier level of competition builds up in local telecommunications, Government should then consider relaxing the regulatory barriers preventing BT and Mercury delivering entertainment services.

#### Recommendation 6

The Director General of Telecommunications should determine as quickly as possible the extent to which it is feasible and right to require BT to share its ducts, poles and wayleaves with others to enable easier market entry. He should also review cable licences to identify and remove any conditions which constitute an unreasonable barrier to entry.

#### Recommendation 7

The Government should be prepared to participate in efforts to improve user awareness of new communications developments including where necessary awareness projects, (though the normal presumption should be that it is for private sector participants to fund them).

#### Recommendation 8

The Government should consider anew the long-term needs of the UK communications infrastructure in several years time, certainly not more than 5 years, especially with reference to the case then for allowing BT and Mercury to deliver entertainment services over their main networks.





FROM: A C S ALLAN

DATE: 1 December 1988

MR BURGNER

cc PS/Chief Secretary  
 PS/Financial Secretary  
 Sir P Middleton  
 Mr Anson  
 Mr Monck  
 Mr Phillips  
 Mrs Case  
 Mr Spackman  
 Mr Waller  
 Mr Farthing  
 Mr Perfect  
 Mr Cave  
 Mr Nicholl  
 Mrs Chaplin  
 Mr Tyrie  
 Mr Call

Dr Freeman - CCTA

REPORT BY THE ELECTRONIC COMMUNICATIONS STEERING GROUP  
 ON THE FUTURE COMMUNICATIONS INFRASTRUCTURE IN THE UK

The Chancellor was grateful for your minute of 13 November. He agrees with you that there is no reason for us to object to publication, and I have told Lord Young's office that.

Ch

This did come before  
 MISC 128 in July,  
 though was never actually  
 discussed. The ~~note~~ <sup>note</sup> below  
 covered only publication & did  
 not bring out the substantive issues.  
 Looks to me as if Anthea has a  
 better eye for broadcast issues than Tom Burgner

A C S ALLAN

(\* meeting concentrated  
 on the 'strategy page')

AA



# Whitehall blow to hopes of fibre-optic cable network

THE VISION of a single high-technology fibre-optic cable network connecting every home and business in Britain — delivering television, telephone, home shopping, banking and electronic mail — dissolved yesterday with the publication of an influential report by the Department of Trade and Industry.

The DTI's communications steering group said that even though such a network of optical fibre into the home was a "stimulating vision", it saw no reason why the Government should subsidise its installation and would not recommend changes to British Telecom's licence to encourage it to do so.

BT argues that to install fibre-optic links to the home, which could cost up to £20bn, it should be allowed to deliver television and other entertainment services, which it is now forbidden to do. Because such a move would increase BT's monopoly position, yesterday's report dashes any hopes of relaxing the constraints,

By Mary Fagan  
Technology Correspondent

at least until the BT/Mercury duopoly is reviewed at the end of 1990: "We did not see how any national goal of 'optical fibre into the home by 2000' could in practice be achieved other than by measures which would further reinforce BT's dominance."

Instead, the DTI committee sets out an alternative vision of a plethora of different communications links — including cable, satellite, microwave links and mobile radio services — linked to provide the services which customers demand.

It backs the idea of local communications franchises taking advantage of these media to provide entertainment and other one-way services into the home, with a possible extension to interactive two-way services after the duopoly review.

Perhaps most galling to BT is a recommendation that Oftel, the

telecommunications watchdog, should examine whether BT could "share its ducts, poles and wayleaves with others to enable easier market entry".

The report conflicts with advice given earlier this year by the Government's Advisory Council on Science and Technology (Acost), which urged the Government "as a matter of extreme urgency" to resolve the impasse over BT which is preventing fibre-optic cabling of Britain.

The DTI committee maintains market-pull rather than technology-push will determine the shape of future communications, and that installing a national grid would restrict market forces and perhaps thwart the emergence of other forms of communications technology. It adds: "Given their current dominance in the supply of two-way communications, neither BT nor Mercury should yet be allowed to deliver one-way entertainment services on their main networks."

Leading article, page 24

## Training vouchers for young proposed

By Barrie Clement  
Labour Editor

MINISTERS are to consider introducing a voucher system for vocational training for young people over 16.

The plan, which would introduce "training credits" worth £2,000 a year, will be developed in detail by the CBI's Vocational Educational Task Force and presented to the Department of Employment in the new year.

The Government has registered an interest in the system, which would complement the introduction of 100 local Training and Enterprise Councils, which will be dominated by employers and was announced in last week's White Paper on employment in the 1980s.

Giving young people the opportunity to "buy" will force providers to increase the quality of their vocational education, it is thought, and make it more relevant to consumers' needs.

Critics of the free market approach to training, however, contend that it will contribute nothing to the development of a long-term national strategy.

Announcing the initiative, John Banham, director-general of the CBI, said the vouchers could be financed by the reallocation of public funds.

The scheme could be operated hand-in-hand with an individual "development plan" and "record of achievement" for all the young people involved. It would be overseen by the TECs.

Mr Banham said that the programmes which employees agreed with employers would be funded by a combination of the employer and the Exchequer.

## Fibre optic subsidies opposed

By Hugo Dixon

A GOVERNMENT committee has come down heavily against the use of taxpayers' money to promote development of an advanced communications infrastructure, based on fibre optic technology.

The decision, although not unexpected, will come as a disappointment to much of the UK electronics industry. Senior figures such as Lord Weinstock, chairman of GEC, and Sir William Barlow, chairman of BICC, have argued that the development of a fibre optic network — sometimes called a "national grid" — would give a boost to British industry.

The Department of Trade and Industry committee, chaired by Mr Alasdair Macdonald, a deputy secretary, concluded that it was not the business of government to subsidise a national grid.

Nor was it the Government's

job to show favouritism to one type of technology — fibre optic cables — over other technologies such as radio and satellite, which might also be able to deliver advanced entertainment and telecommunications services to consumers.

It should be up to each entrepreneur to determine what was the best technology for delivering services, the committee argued. As such, the committee's recommendations represent the final abandonment of the dream of cabling Britain, which was seized upon by the Government in the early 1980s.

The committee's conclusions, contained in a report published yesterday, do not constitute official government policy. However, many of its key proposals have already been put into the recent broadcasting white paper.

The committee qualified the

broad thrust of its report — that entrepreneurs should be free to use whatever technologies they wished to deliver services — in two respects.

- British Telecom and Mercury Communications, the two telecommunications operators, should not be allowed to send entertainment services down their networks.

- The cable television operators should not be completely free to offer telecommunications services over their networks. At present, they can do so only in association with either BT or Mercury.

A second report by PA consultancy group, which helped the Macdonald committee to reach its conclusions, was also published yesterday.

*The infrastructure for tomorrow. HMSO. £2.95. Evolution of the UK communications infrastructure. HMSO. £6.95.*

3/12



FINANCIALTIMES

LOMBARD

# ● Pepping up Postman Pat

By Michael Prowse 25

SEVENTY or so years ago, Bertrand Russell could write to Lady Ottoline Morrell in the morning and expect a reply the same evening. Today the response to an ardent love letter would be a pile of junk mail delivered some time the following week, if at all. (If a late 20th century Bertie wanted to conduct orderly literary courtships he would be obliged to instal "fax" machines at the homes of his lovers.)

The long-term decline of the Post Office partly reflects the changing character of the communications market. If the telephone had never been invented and if electronic communication were still restricted to Dan Dare and Flash Gordon, the Royal Mail would be reaping larger economies of scale and perhaps offering a better service.

But market evolution is not the whole story. The Post Office is also beset by chronically poor industrial relations. Stoppages and disputes at the local level are frequent. The management is unable to introduce sensible pay scales or working practices. The solution often touted is competition in the Post Office's main market: letter delivery.

Caution, however, appears to be Lord Young's watchword. Unlike many of his Cabinet colleagues, the UK Trade Secretary seems reluctant to embark on reform for reform's sake.

During the recent postal strike he remained mute in the face of vociferous calls for deregulation from the private courier companies. The caution is understandable — even if the political sensitivities attached to the Royal Mail are discounted. The nub of the problem is that his department has not the faintest idea how to go about deregulating the Post Office in a way guaranteed to increase the overall welfare of consumers. Mail delivery is a natural monopoly: if the market is spread among several competitors, economies of scale are likely to be lost and overall costs increased.

A new study\* by Mr Saul Estrin and Mr David de Meza of the London School of Economics (and financed by DHL, the courier company) tries to provide a little guidance. After pages of algebra, it comes

down in favour of "controlled deregulation" — on the grounds that entry is more likely to raise consumers' welfare than to reduce it. The heart of the argument is that entry is likely to be profitable only where new competitors innovate, expand the market and offer services which are not close substitutes for those already provided by the Post Office. Nobody, for example, would be likely to succeed in establishing a duplicate national postal service.

But the authors do concede that welfare could be lost as a result of "cream-skimming" — profitable attacks on particular segments of the Post Office's market (for example, business deliveries in city centres). The Royal Mail would be tempted to respond to such competition by abandoning its uniform tariff — in other words, charging more for deliveries to high-cost rural areas. But such a reaction would not be in the interests of consumers because it would raise administrative costs and reduce the overall efficiency of the service.

What to do? The LSE answer is to allow such competition provided the new entrants pay a levy (say 5p a letter) to the Post Office to compensate for cream-skimming losses and reduced economies of scale. Thus, if the Post Office loses business, it would be compensated financially.

This may appear a neat theoretical solution. The competition would provide a spur to Post Office managers and workers, but it would not harm them or the public. The trouble is that it does not look very attractive politically.

Could Lord Young really invite free competition in letter delivery, but then impose a stiff tax on the entrants to compensate the nation for the nasty side-effects of their endeavours? Hardly. The net effect of the LSE report is likely to be reduced ministerial concern about the adverse effects of competition, coupled with greater willingness to sanction entry without strings. Postman Pat will have to run harder, but only to stand still in terms of value for money.

\*Should the Post Office's Statutory Monopoly be Lifted? (LSE, Houghton St, London WC2)

FINANCIALTIMES

# Competition, but not yet 24

IN THE MATTER of telecommunications policy, the British Government's approach owes much to Saint Augustine. The latest confirmation is a report on fibre optics by a Whitehall committee, which has many fine things to say about competition — but then finds all sorts of reasons for not putting them into action just yet.

The report rightly rejects demands by telecommunications manufacturers for a state-funded optical fibre grid linking every home in the country. While recognising that optical fibres have much to commend them, the authors emphasise that many rival technologies exist to deliver entertainment and communications services. Uncertainties about the demand for such services and the future evolution of communications technologies could make a rigid national commitment to one type of delivery system a Concorde-style solution, which would stifle alternatives. The choice should not be imposed to suit suppliers but decided freely by users, as the report proposes.

It sensibly favours a light regulatory system designed to encourage diversity and keep entry barriers low. However, at this point it comes badly unstuck. Its preferred solution is a system of regional franchises for the one-way transmission of information and entertainment. Yet it would exclude British Telecom and Mercury, at least initially, while limiting the right of cable television franchises to offer two-way services.

These local monopolies and accompanying restrictions are justified on the grounds that they will foster the emergence of entrepreneurs. Presumably, Whitehall would judge when the infant industries were ready to face all comers. Such nanny tactics are advanced in the name of promoting competition: in the bad old days of government intervention in industry, they were called "picking winners."

There are good reasons for concern that BT, if allowed a completely free hand, could drive competition out of the market. However, it seems

extreme to bar it and Mercury altogether. Indeed, the current ban on the two companies' right to send entertainment through their telephone networks flatly contradicts the report's arguments against basing regulation on increasingly obsolete technological distinctions. There is more to be said for the Peacock Committee's suggestion that BT and other telecommunications networks should be allowed to play a common carrier role for TV and other services.

It should be possible to check anti-competitive abuses by BT by, for example, requiring it to set up hands-off subsidiaries, preferably in partnership with other companies. The Government has already sanctioned such arrangements in mobile radio and cable television. However, the option is not even mentioned in the report — perhaps because Whitehall now recognises that, in practice, such arrangements have often proved ineffectual.

The explanation is simple. It is that the Government has deliberately allowed BT to retain too much of its old monopoly power. One reason is that ministers wanted an easy privatisation in 1984. Another is their decision to restrict competition to a duopoly in an ill-conceived attempt to turn BT into an information technology "flagship" and groom Mercury as a second force.

To try to restrain BT and Mercury by cordoning off markets which are rapidly converging under the impact of new technologies will merely create distortions. The solution is to subject them to much more vigorous competition by abolishing the duopoly. Expressions of concern by a government committee about the duopoly's market power only strengthen the argument.

The Government is due to review the duopoly in 1990. Before then, it should get its priorities straight and resolve to turn flowery rhetoric about competition into practical action. Otherwise, the UK telecommunications market will remain artificially constrained and the internal contradictions and contortions of regulatory policy will multiply further.

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FROM: A C S ALLAN

DATE: 19 December 1988

Pyp

MR BURGNER

cc PS/Chief Secretary  
PS/Financial Secretary  
Sir P Middleton  
Mr Anson  
Mr Monck  
Mr Phillips  
Mrs Case  
Mr Spackman  
Mr Waller  
Mr Farthing  
Mr Perfect  
Mr Cave  
Mr Nicoll  
Mrs Chaplin  
Mr Tyrie  
Mr Call

Dr Freeman - CCTA

REPORT BY THE ELECTRONIC COMMUNICATIONS STEERING GROUP ON THE  
FUTURE COMMUNICATIONS INFRASTRUCTURE IN THE UK

The Chancellor has seen the press comment on the publication of this report. He is most disturbed that the "disclaimer making it clear that the report is not a statement of official government policy" which you referred to in your note of 30 November does not seem to have got across at all. The Chancellor's agreement to publication was based on that, and he feels it is important that Ministers discuss this issue in the light of reactions to the report. He feels it is an issue of great importance, and he does not, in fact, agree with the conclusion that BT and Mercury should not be permitted to deliver one-way entertainment services on their main networks. He feels that cutting BT and Mercury out completely is more likely to ensure that nothing whatsoever is done, rather than that competition among local providers will be stimulated.

A large, stylized handwritten signature of A C S Allan.

A C S ALLAN





Tor  
Burrer  
4449

Cohn  
FarbLing  
4819  
Mike  
walley  
4659.

*[Handwritten mark]*

Mike pl retrieve  
briefing for MISC 128  
on 28/7, and BF  
to Duncan on 13/1

mp.

PWP



CHANCELLOR

FROM: T U BURGNER  
DATE: 21 DECEMBER 1988

cc Chief Secretary  
Financial Secretary  
Sir P Middleton  
Mr Anson  
Mr Monck  
Mr Phillips  
Mrs Case  
Mr Spackman  
Mr Waller  
Mr Farthing  
Mr Perfect  
Mr Cave  
Mr Nicholl  
Mrs Chaplin  
Mr Tyrie  
Mr Call  
Dr Freeman CCTA

REPORT BY THE ELECTRONIC COMMUNICATIONS STEERING GROUP  
ON THE FUTURE COMMUNICATIONS INFRASTRUCTURE IN THE UK

1. Mr Allan's minute of 19 December recorded your concern both at press comment on this report and also about the substance which you thought deserved further consideration by Ministers.

Attribution and Press Coverage

2. The published report contains immediately inside the front cover a paragraph describing the origin and composition of the Committee. The last sentence states:

"The report represents the views of the Steering Group, whose views are not to be taken as the views of Government".

The point is reiterated in paragraph 4 of the DTI Press Notice (I attach a copy). A PQ answered by Mr Newton on the report refers to it "as a contribution to the discussion about the UK's future communications infrastructure needs". Alistair MacDonald (the DTI official who chaired the Steering Group) assures me that at the press conference to launch the report he underlined the point that the report did not carry any endorsement by the Secretary of State.



3. Nonetheless it is true that much of the press comment has obscured this distinction, referring to "a report by the Department of Trade and Industry", a "Whitehall Committee" etc. The fact that the report's conclusions do not constitute official Government policy appears, if at all, in the body of the press reports. It is difficult to blame DTI for this slipshod reporting. It must presumably always be a risk where an outside Committee has an insider (DTI official in this case) acting as Chairman.

#### Substance and Ministerial Consideration

*minutes  
flagged*

4. On the substance of the issues in the report, Ministers considered recommendation 15 of the Peacock report (BT and Mercury to be permitted to become common carriers of telecommunications and entertainment services) when they discussed the draft White Paper on Broadcasting immediately before the summer holiday period. (The Communications Steering Group Report was also circulated but was not - and was not intended - to be discussed substantively). The decision not to adopt recommendation 15 was published as part of the White Paper on Broadcasting (paragraph 6.43 attached); and also the associated decision to reconsider as part of the review of the telecommunications duopoly in November 1990.

5. These decisions in no way prevent developments in fibre optics continuing at local level. BT alone had already installed about 200,000 kilometres of fibre optics and the figure is of course growing all the time. It is thought unlikely that even if all restrictions were withdrawn BT would be able to make any substantive move to bring fibre optics into the home for at least three years, ie until beyond the horizon of the duopoly review. In the meantime BT are in fact supportive of present Government policy as likely to encourage competition now and therefore more likely to make a laissez-faire regime (ie one which will remove all restrictions on the services they can provide in competition) possible in due course. You may like to read the conclusions of BT submission to the Steering Group (attached).



6. Given the evidence of continuing growth in the optical fibre network with improving performance and cost effectiveness, the difference between the Steering Group approach and a "national grid" scenario lies in the Government in the latter case giving a clear commitment, backed up as necessary with financial or fiscal incentives, to create a nation-wide optical fibre network on a shorter time than market forces would bring about. A Financial Times leader recently referred to this as "a Concorde-style solution which would stifle alternatives". An apter analogy in my view is the rejected proposal for a gas-gathering pipeline in the North Sea. It would also effectively entrench BT's dominance.

#### Next Steps

7. There is no obviously foreseeable event likely to stimulate further collective Ministerial discussion of these issues over the next 12-18 months. And to seek a discussion specifically on the Steering Group report might seem odd against the background of MISC 128 conclusions earlier this year. Lord Young's attitude is normally conditioned by his dislike of BT dominance in the market, so that neither he nor (against the background of the recent White Paper on Broadcasting) probably Mr Hurd would take a helpful line.

8. An alternative course would be to write directly to Lord Young. Such a letter would draw his attention to the very mixed reception given to the Steering Group report and also the impression that it is synonymous with Government policy. You could remind him of his earlier intention to use the report as a quarry for speeches; and go on to suggest that in the light of the press comment a speech seems particularly desirable. The message of such a speech could serve to distance the Government from the Steering Group Report underline the Government's commitment to creating the conditions for modern telecommunications infrastructure in the UK and emphasise that all options will be considered in the duopoly review in less than 2 years time. I attach a draft letter on these lines for consideration.



T U BURGNER



88/907

14 December 1988

DEVELOPMENTS IN COMMUNICATIONS - REPORTS PUBLISHED

The report of the group set up to advise DTI Ministers on the development of the UK's electronic communications infrastructure was published today.

"The Infrastructure for Tomorrow"\* is the product of the Communications Steering Group, set up last year.

Also published today is the report by PA Consulting Group Limited, "Evolution of the United Kingdom Communications Infrastructure"\*\*, which was produced to assist the work of the Steering Group.

NOTES FOR EDITORS

1. The Steering Group was set up in the spring of 1987 (PN 87/221) to advise DTI Ministers on the possible development of the UK electronic communications infrastructure over the next two decades.

It comprised:

Mr John Alvey CB, former Technical Director, BT; Professor Bryan Carsberg, Director General of Telecommunications;  
Mr Ivor Cohen, Former Managing Director of Mullard Ltd;  
Mr John Fairclough, Chief Scientific Adviser;  
Mr Alastair Macdonald, Deputy Secretary, DTI (Chairman);  
Professor Stanley Metcalfe, Professor of Economics, Manchester University.

2. The Group were assisted in their work by the PA Consulting Group whose associated report "Evolution of the United Kingdom Communications Infrastructure" is also being published today.

MORE/...



3. The Steering Group also took into account over 50 written responses to the discussion paper sent out by DTI in April 1987, and over 30 responses to a PA discussion document published in October 1987. In addition to these the Group considered numerous comments from interested companies and organisations given directly at meetings or in writing.

4. The Government is publishing the reports in order to help inform the discussion on UK electronic communications infrastructure needs. The views expressed in the reports are those of the Communications Steering Group and PA Consulting Group respectively, and are not to be taken as the views of Government.

\* "The Infrastructure for Tomorrow," published by HMSO, price £2.95  
ISBN 0 11 514663 6.

\*\* "Evolution of the United Kingdom Communications Infrastructure"  
published by HMSO, price £6.95. ISBN 0 11 514662 8.

Enquiries on the PA Report to Judith Burges, PA Consulting Group  
(Tel 01-828 7744).

Press Enquiries: 01-215 5068/5069  
Public Enquiries: 01-215 4751

ENDS



## Telecommunications issues

6.42 The Government's proposals for the independent television sector are relevant in various respects to its general telecommunications policy, which is to promote wide and effective competition in the supply of equipment, the provision of services and the running of networks. The present duopoly, which is intended to allow Mercury time to establish its competing national network and to give BT time to adjust to its new status, is due to be reviewed in November 1990.

6.43 In their Recommendation 15 (paragraph 665) the Peacock Committee proposed that the national telecommunications systems (ie BT, Mercury and any subsequent entrants) should be permitted to act as common carriers with a view to the provision of a full range of services, including delivery of television programmes. The Committee also recommended that, as a *quid pro quo*, such common carriers should divest themselves of their cable operations and should not themselves provide services over these networks. The Home Affairs Committee did not find a universally favourable reaction from its witnesses (including the operators concerned) to this suggestion, but recommended that the advantages of optical fibre as a means of transmission of entertainment as well as telephony and data should be taken into account in the context of the duopoly review (paragraph 38). The Government believes that implementation of Recommendation 15 in its original form would be impracticable and could inhibit the growth of competition in telecommunications networks. But it, too, sees attraction in the underlying idea as a route towards additional competition in the programme services market. The Government therefore proposes to examine it further at the time of the review of the telecommunications duopoly policy.

6.44 The Government has considered the case for relaxing the present constraints on provision by the broadcasters of data transfer services in addition to those, such as teletext, which are permitted at present. The Government does not wish to pre-empt the outcome of the review of the BT/Mercury duopoly, and recognises that whatever is decided the broadcasters, like any other provider of telecommunications networks and services, would need to obtain a licence under the Telecommunications Act to provide any service not intended for general reception. It therefore proposes to put in place a contingent provision which would permit these services to be offered, without prejudice to the decisions of the review, and to be activated only in the light of its outcome and any subsequent decision on licensing.

6.45 Teletext itself has been highly successful in the UK. It has provided the opportunity for the development of information services which are valued by viewers. And it has also been ingeniously used to provide subtitles for the deaf. BSB's DBS service will also include teletext, which it will be permitted to provide on a subscription basis. With the prospect of additional channels the Government sees scope for the further development of teletext. It will provide a regulatory structure designed to facilitate the development of new services.

## Financing of independent sector programme services

6.46 The Government proposes to allow all independent sector TV operators the freedom to finance themselves by advertising or subscription or a mixture of the two. Aspects of subscription which are relevant to the independent sector are discussed in Chapter III (paragraphs 3.9 and 3.15.)

6.47 The Government envisages that the ITC will have a duty to draw up and enforce a code or codes on advertising and sponsorship. This should allow more flexible regulation of advertising and sponsorship than is now possible under the Broadcasting Act 1981. The Government in particular favours liberalising the restrictions deriving from the 1981 Act on sponsorship, provided adequate



CONCLUSION

In conclusion, we have already explained in this presentation how we now see our way forward to extending optical fibre into the local network and right down to the customer on the basis of telephony and other narrowband services. This also implies, of course, that we believe PA's assumptions on the relative costs of optical fibre compared to the total costs of providing separate telephony and coaxial cable tv connections to be substantially over-pessimistic.

We therefore expect the introduction of fibre under the existing regulatory arrangements to be substantially quicker than is suggested in the PA report, regardless of the uncertain development of demand specifically for broadband services, although it will of course be influenced by that. It will be very dependent on the achievement of the expected volume of cost reductions on fibre network components, and this means that BT must be in a position to prime the pump on R&D and on focused procurement on an international scale. The current arrangements will allow this without posing the threat of BT dominance which is likely to result from the radically different scenarios that have been suggested.

On the contrary, the development of local competition is already underway and is likely in our view to accelerate if left to itself especially given the strengthening framework of the Cable TV industry. Indications are that investors are now looking more positively at the industry's long term viability, and certainly some powerful forces are beginning to emerge within it. Other signs are that there is now more activity in advertising new franchises, and that Cable TV programmes in cabled homes are winning an increasing proportion of viewing time at the expense of broadcast services. Against this background, the trend that is already being set by a few Cable TV companies who are starting to test the market for telecommunication services over their cable systems looks to be set with a fair wind.

We recognise, albeit reluctantly, that we may have to bear with asymmetry of competition during the market development phase under a continuation of the present scheme of things. However, given the uncertainties of the market and technology at this stage, and the questions about the way in which international standards and demand will develop, we regard it as essential to keep as many options as possible open for the present. Finally, any major shake-up of the Cable TV industry would be likely to undermine confidence and inhibit investment.

Having reviewed all of these factors BT believes that the best outcome from the work of the steering group would be an



(K)-

environment which encourages competition in telecommunications and TV distribution, and in particular, provides a favourable climate for the entry of new participants into the market in the early years. It is for this reason that BT supports a continuation of the present regulatory arrangements. In the longer term, as the market develops and competition becomes more soundly established, there is perhaps a good case for moving more towards a laissez-faire regime.



DRAFT LETTER FROM: THE CHANCELLOR OF THE EXCHEQUER

TO: LORD YOUNG

COPIES TO: Ministers on MISC 128

Sir Robin Butler

**REPORT OF THE ELECTRONIC COMMUNICATIONS STEERING GROUP  
ON THE FUTURE COMMUNICATIONS INFRASTRUCTURE IN THE UK**

The press coverage of the report which your department has recently published gives me some concern. Notwithstanding the clear disclaimer in the press announcement and in the report itself, several newspapers appear to regard it virtually as a statement of Government policy rather than the work of an advisory committee. This seems to me unfortunate, since the issues are of considerable public interest, Ministers have given them only limited consideration (largely confined to recommendation 15 in the Peacock Committee report) and the whole area is due to be revisited when the telecommunications duopoly comes up for review in November 1990.

Your department's earlier proposal (before publication was agreed) was that the report should be used as a quarry for Ministerial speeches. I think we should revert to that idea. The report's reception suggests that a speech on the subject would be timely. For a start it would help to distance the Government from the report itself. It would also help to link the decision on recommendation 15 of the Peacock report and the forthcoming duopoly review in 1990 - a matter which understandably did not figure prominently in the commentaries on the Broadcasting White Paper. But more positively it could make clear that, contrary to what some commentators imply, the Government stance is not one of sitting on its hands or opting out of decisions on telecommunications policy. This is a siren call from those who either have a vested interest in a particular technological solution or who still hark back to the discredited notion that



really important industrial investment decisions can only be taken centrally by Government. We need to get across positively the idea that through a policy of progressive deregulation the Government is providing a context which will encourage competition to emerge over an increasingly wide area - and provide evidence, if possible, that this is proving effective. The next major decision point for the Government collectively will come in relation to the telecommunications duopoly review in November 1990, when it will be right to look again at the future direction of telecommunications policy in the light of developments both in technology and in consumer choice in the market.

I hope you will give favourable consideration to a speech on these lines.

I am copying this letter to the Prime Minister, to Members of MISC 128 and to Sir Robin Butler.

NL