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ABSTRACT

This paper looks at the possible roles that the European Economic Community (EEC), as a pan-European quasi-governmental institution, might play in the management and organization of a European educational satellite system. The argument is made that there is a need for the EEC Commission to play an ongoing, regulatory role in this area. An examination of ways in which education and training might gain access to a satellite distribution system leads to a discussion of low-powered services and direct broadcasting services, including national systems, pan-European satellites, and possibilities for educational services on the ESA (European Space Agency) Olympus satellite, an integrated European-wide DBS (direct broadcasting services) system planned for the near future. The roles of different types of organizations in getting a satellite service operational are described, including international regulatory agencies, international consortia, governments, satellite owners and operators, channel operators, and program producers. Economic models for education and training on satellites are also described, i.e., the commercial model, the "must carry" model, and state ownership. Discussion of operating models for providing an educational service covers a free-for-all situation and an educational channel, and descriptions of several ways in which an EEC educational channel could operate includes open access for educational producers and a public service channel. It is concluded that there is a need for a consortium to bring educational television providers together, with the EEC providing baseline funding and a framework in which to encourage the development of an educational satellite channel. (EW)

IET PAPER NO. 263

THE ORGANISATION AND MANAGEMENT OF A EUROPEAN EDUCATIONAL SATELLITE SYSTEM

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Introduction

This paper looks at the possible roles that the EEC as a Pan-European quasi-governmental institution might play in the management and organisation of a European educational satellite system. The paper argues that there is a need for the EEC Commission to play an on-going, regulatory role; indeed it is difficult to see how a European educational satellite system can become operational without a positive, interventionist role from the EEC.

There are several ways in which education and training might gain access to a satellite distribution system. It is worth examining these first.

Low-powered services

Low-powered services are defined as those that require retransmission through ground services, such as cable or terrestrial broadcasting, for domestic reception.

There are several low-powered satellite systems already planned or operational (see Table 1 over). It will be seen that there are a number of services already available which could be used for the relay of educational material. However, to date there have been few attempts to use low-powered services for educational services in Europe. Foreign language broadcasts have been taken down from satellite transmissions for foreign language teaching (e.g. at Brighton Polytechnic, UK). University College, Dublin, has used Intelsat services through Project Share to relay a set of 16 live lectures on water management to Amman in Jordan, using audio-back for questions. Texas Instruments has used satellite links to relay lectures on artificial intelligence to audiences in over 50 locations in Europe and the USA. However, these are isolated instances.

Table 1 Low-powered satellites in Europe

Name	Launch	Operator	Country	Transponders	Bands	Functions
Astra	1987	SES	Luxembourg			16 TV channels
DFS	1987	?	?	11	K	Telecoms
Eutelsatl(1)	1984	ESA	Europe	12	14/12GHz	Eurovision TV; telephone; cable TV
Eutelsatl(2)	1984	ESA	Europe	12	14/12GHz	As above + business services (SMS)
Eutelsatl(4) (5)	1986 1987	ESA	Europe	9	14/12GHz	As above + occasional-use TV + videoconferences
Eutelsatll	1990	ESA	Europe	16	?	European DBS?
IntelsatV						
(F2)	1980	Intelsat	Europe	23	C/K	Telecoms (including trans-Atlantic)
(F4)	1982	Intelsat	Europe	23	C/K	As above + TV for Spain
(F6)	1983	Intelsat	Europe	23	C/K	Telecoms (including trans-Atlantic)
(F8)	1985?	Intelsat	Europe	23	C/K	Telecoms (including trans-Atlantic)
Marecs 1-3	1981/87	Inmarsat	Europe	?	1.5/6GHz	Maritime + mobiles
OTS-2	1978	ESA	Europe	6	11/14GHz	Telecoms + 2 TV
Symphonie						
A	1974	PTTs	France/FDR		C	Telecoms
B	1975	PTTs	France/FDR		C	Telecoms
Telecom 1-3	1983	PTT	France	12	K/C/X	Videoconference + data + telecoms + TV (overseas) + military

It can be seen that there will be nearly 200 transponders available over the next few years. Many will be fully used, but nevertheless there is likely to be spare capacity, especially for occasional television use, such as transmitting special sporting events live, or for irregular videoconferences

Low-powered transmission could be used for a number of educational or training purposes

a. point-to-point transmission between a number of different institutions (e.g. Dublin/Amman)
b. relay of broadcast programmes through cable systems or terrestrial broadcasting, across several countries
c. point-to-multipoint distribution where learners are located at centres (e.g. company offices around the country and the Texas Instruments project).

There are several reasons why education and training has not made more use of these services already. First, the education service throughout Europe is almost universally unaware of the availability of such services. Secondly, the prior concern of satellite operators has been to carry revenue generating services, and consequently has directed its marketing solely at the business sector. Third, there has been no recognition or definition of educational needs which might be met through low-powered services. Fourth, in most, but by no means all, existing satellite services, costs for education would be prohibitive. For instance, Intelsat is offering its services free for Europe/Third World education and development projects via Project Share. Fifth, both the satellite operators and the potential educational users are fragmented groups. Operators in particular would prefer to negotiate with one 'block' client than with a host of small clients; similarly, educators would not know which operators to go to, or what services they could offer.

Certainly, there is a need for demonstration projects using low-powered satellite communications, but that is the subject of another paper. With regard to organisation and management, though, the mounting of such show-case projects would be considerably eased if there was one organisation able to provide technical advice and negotiate times, tariffs, and facilities on behalf of the European educational community.

Direct Broadcasting Services

Direct broadcasting services are those with sufficient power for domestic television reception using small, relatively low-cost reception equipment (i.e. <1.3 metre aerials, costing less than £1,500 including installation). DBS does not preclude of course other services, such as voice and data transmission.

A special mention should be made of the Astra satellite. Although listed correctly in Table 1 as low-powered (45 watts), it will be providing 16 DBS channels, capable of reception on small

(900mm) dish aerials. This in essence drives a coach and horses through the 1979 WARC agreement, which limited each country to a maximum of five high-powered DBS channels. Improvements since then in reception equipment means that relatively low-powered services such as the Astra will provide can quite legally be used for DBS.

There are several direct broadcasting services being planned for Europe over the next few years, as Table 2 indicates.

Table 2: Direct Broadcasting Services in Europe

Name	Launch	Operator	Country	Transponders	Bands	Functions
TV-Sat	1986	PTT	West Germany			3 DBS channels + 5 with TV-Sat 2
TDF-1(1-2)	1986/87	?	France			4 DBS + 4 spare
Olympus I	1987	ESA	Europe	2	12/18GHz 20/30GHz	2 DBS + business services
Tel-Sat	1987	Swiss co.	Switzerland			DBS
Atlantic	1988	Hughes	Eire			5-6 DBS TV channels; 24 low-powered TV channels
Sirio	1988?	Italsat	Italy			DBS?
?	1990	IBA	United Kingdom			3 DBS + data/voice/ graphics + 2 DBS after 3 years

It can be seen then that there will be a capacity for between 30 and 40 DBS channels in Europe over the next five years, of which there are definite allocations or plans for about 17, in addition to the 16 being provided on the Astra satellite.

1. National systems

Each EEC country is restricted to five channels for high-powered DBS services under the 1979 WARC agreement. While for many countries there will be considerable spillover of footprint into

other countries, they are in theory national services, and certainly not fully pan-European. Most countries have either decided not to back a national satellite, at least for the time being, or have restricted the number of operational channels to two or three. These services are in most cases either regulated, or licenced to other operators, by the government of the member states. In most cases, the governments of member states have decided that national DBS services will run as commercial operations, carrying primarily entertainment television, plus some telecommunications and data services. Thus the channels are divided up and leased to commercial operators to manage

It is possible that some of these services might include an educational component, but the need for the operator to cover costs and make a profit, including repayment of the substantial loans necessary to get a satellite service going, means that the educational service must be capable of generating enough revenue to cover its costs and bring in revenue at levels which will at least match those from competing services, such as entertainment television. This in effect means that only those education and training services which can generate income for operators are likely to survive on these commercial DBS systems. This will mean services which can either carry high subscription or direct payment charges, or which the governments or private industry are willing to heavily subsidize or sponsor.

Few European governments seem willing to provide a subsidized satellite service for educational or training purposes. Although it is possible for a government to pass an act making it compulsory for a satellite operator on a national DBS satellite to carry educational programmes, none has yet done so, and is unlikely to do so, given the considerable financial risks of setting up a satellite service, and the determination of many governments to be seen to be encouraging satellite services without it being a drain on public expenditure.

Lastly, it will be well into the 21st century before the majority of homes in Europe are capable of receiving satellite transmission. A market study by CIT (1986) estimates that only 400,000 satellite dishes will have been installed in Europe by 1990, and 1.375 million by 1995 (out of 121 million homes).

Do education and training want a satellite?

For many educational institutions, satellite is likely to be the least preferred way of delivering televisual materals on a national basis until the majority of households have satellite reception capabilities. For instance, national distance teaching institutions such as the British, Dutch and Spanish Open Universities, are concerned primarily with home-based teaching. Given the relatively

high costs of production, television can be justified only if it plays an important role in the teaching If though it plays an important role in teaching, it must be available to all students, in their homes Distance learning students already have to pay substantial amounts for part-time study, and the need to purchase a satellite reception system specifically for educational purppses would restrict the concept of open-ness which many of these institutions hold. Furtherrnore, terrestrial broadcast facilities already provide widespread transmission for many distance learners. Many distance education courses have less than 400 students, and for such courses, distribution by video-cassette is perfectly feasible financially.

Local on-campus institutions looking to extend their courses beyond the campus are more likely to prefer cable rather than satellite distribution, because of the logistics of providing support services for far-flung students.

What education and training would be interested in though are new services, in other words the ability to do things that cannot be done at the moment. For instance, the Open University would not be interested in using satellites to replace terrestrial transmission in the United Kingdom, but it would be interested in the opportunity to extend its programming and courses into Europe. The most likely users of satellite services for education and training then are large commercial companies with substantially distributed training needs, especially on an international scale, and educational organisations wishing to provide new services.

Because of the failure to date to define clearly educational advantages in satellites, and the movement towards mainly commercial satellite services, the chances of educational services on national DBS systems are likely to be slim, at least over the next 10 years, unless there is a strong regulatory system to give preference and assistance to education and training, and a framework which encourages new developments and new services of relevance to education and training. Attempts to impose regulations to ensure the funding and transmission of education and training materials on 'national' services would have to be taken by national governments, and member states are not likely to be sympathetic to the EEC interfering with the allocation and management of national services. For these reasons, national DBS does not seem a promising route for EEC involvement.

2. Pan-European Satellites

There are three ways to provide a Pan-European satellite service. One is by means of a single high-powered transponder with sufficient power to generate a European-wide footprint (currently,

there are no plans in the near future for such a service via direct broadcasting), the second is to use two or more transponders to cover different areas which is the way the ESA Olympus satellite plans to provide European coverage, the third is to link two or more different satellites together, through inter-satellite communication, which is the way Intelsat provides the EBU with international services, but at the moment only through low-powered services to the ground, for redistribution. Thus the only integrated, European-wide DBS system planned for the near future is through the Olympus satellite. Furthermore, the ESA has agreed that for a limited trial period, new and innovative services will have free access to pan-European DBS facilities.

3. Educational Services on DBS

Apart from the offer from the ESA for use of Olympus, there are currently no other plans for educational services on DBS. A study by GTS Ltd. suggests that there will only be one or two transponders available before 1990 for educational use, and these will be only at off-peak times (i.e. before 5.00 pm.). However, this may be a little pessimistic. Satellite operators will find it hard to fill 30 full-band television channels. Several of the satellites in orbit are used only as stand-by. Some operators may consider allowing stand-by facilities to be used, on a pre-emptible basis, for education or training services, possibly even free of charge, at least on a 'national' satellite.

If a DBS satellite channel is available to educational users, it might be used for a number of purposes (these are detailed more fully in another paper).

a. Distributed training (one transmission point, multiple reception points), with return audio via normal telecommunications facilities. Over time, return facility will increase in range (voice, data, graphics, compressed video, full video) as communications facilities (ISDN, broad-band cable services) improve. This could be on either a national or international basis.

b. Extension of existing television services to new target audiences/countries. While the British Open University would be concerned at the use of satellite for distribution to its UK students, when it already has comprehensive coverage by terrestrial distribution, it would be interested in extending its courses to other European countries through a DBS satellite signal (provided the necessary ground-support can be provided).

c. Provision of 'teleseries' and data services with particular pan-European content (Art, language teaching, agricultural information, stock prices, etc.), using specially created

programme material, which local colleges can build courses round

These are just a few examples. With proper dissemination of information, and communication within and between educational and training providers and satellite operators, it should be possible to build up an extensive educational provision on both DBS and low-powered satellite in Europe over the next 10 years. This will not happen without some form of intervention, though, and the rest of this paper explores the issues surrounding the organisation and management of such services

The main players

There are a number of different types of organisation who are involved in getting a satellite service fully operational, once the satellite is in place.

International regulatory agencies

These would include agencies such as the ITU The key agreement is the 1979 WARC, which alocated the five channels per country for DBS. The potential role of the EEC itself in terms of regulating satellites is open to some discussion, and will be returned to later.

International consortia

There are several consortia invelved in the satellite business. Intelsat is a consortia of PTTs which provides a world-wide telecommunications service via satellites. The European Broadcasting Union is a consortium of European broadcasting organisations which uses Eutelsat for Eurovision broadcasts, i.e. broadcasts from one European country to another. The European Space Agency is a consortium of companies providing satellite construction facilities. Although consortia are important for both financial and organisational reasons, it is more helpful for the purpose of this paper to consider them as players within the other categories. The prevalence of consortia in the satellite business though is not without significance to educational institutions.

Governments

Governments in most member states still have the power to allocate DBS services within the five channels allocated to that country. Some countries have no intervening or controlling body

beyween the government and the satellite operator, others such as the UK, and probably France under Chirac, will have a regulatory body which monitors and controls satellite operators, and evens grants franchises. In the UK, this will be the IBA. Since in practice it is difficult to prevent overspill of footprints into different countries, or to prevent reception from pan-European services, government control and regulation is much more difficult than with terrestrial broadcasting.

Satellite owners

These are the people who put the satellite up in the first place. The best example of the is the European Space Agency, which will own Olympus, but will not operate the services which run on it.

Satellite operators

These are the organisations or companies responsible for running the services which operate on the satellite. This may be a regulatory organisation appointed by government (such as the IBA) or a commercial company, which leases facilities on the satellite from the satellite owner, then sells services to those wishing to use the service. An increasingly important role for satellite operators is likely to be the arrangement for charging viewers and collecting payment, through subscription or direct payment.

Channel operators

These are probably the players best known to the general public, because they are the people who provide the different television channels seen by the public. The major channel operators are the public broadcasting organisations, such as RAI, BBC, etc., or the national commercial broadcasting companies, such as Thames or Granada in the UK. The largest private channel operator in Europe, in terms of audiences, is Rupert Murdoch's Sky TV, with over 5 million regular viewers per day, relayed to more than 10 countries. However, most of this audience watches through cable services, although the programmes are often relayed by satellite.

Programme producers

This group is often forgotten, yet without them, there would be nothing to run on the channels. Some of the largest producers of programmes are the national broadcasting organisations, but there is a natural reluctance on their part to make programmes available, even on a commercial basis, to a

satellite operator who might be in direct competition with the broadcasting organisation for audiences. On the other hand, few cable or satellite operators to date have been prepared to get into the extremely expensive business of original programming, or buying programmes originated especially for cable or satellite, with the possible exception of pop videos, although even these were often produced originally for marketing purposes. Most observers anticipate a considerable shortage of programme material for satellite and cable, which again is likely to be of significance to education and training.

It is important that a clear distinction is made between these different players. They have different and often competing interests, and in considering the educational use of satellites, it is necessary to know at what level and with whom arrangements need to be made.

Economic models for education and training on satellites

A number of economic models have been tried, both for general satellite services and for education.

The commercial model

In this model, the satellite or channel operators are not restricted by any regulation which requires that an educational service must be carried, or that preferential rates must be given to education or training uses. This is likely to be the model for most 'national' DBS services. In such a situation, any educational user must pay commercial rates, i.e. not only the marginal transmission and administration costs, but also the value of access to the channel, which is determined by market factors. If though there is more channel capacity than demand from channel operators, or if there is a shortage of programme material, or lack of demand from the public for other satellite services, then the market value of unused time on a channel may be zero. With marginal transmission costs at around £200 an hour, this may be an acceptable economic basis for an educational user. Indeed, if there is spare capacity, satellite operators may be willing to provide a free service, under certain conditions, for education and training, as with Intelsat and Project Share.

The 'must carry' model

Some countries (such as the UK) already stipulate that cable TV operators must carry the national broadcasting channels as well as any other service they are offering. The four British national broadcasting channels have a statutory duty to produce and transmit educational programmes. Many US cable stations, when franchised, had a 'must carry' regulation for an educational and/or

community channel. It may not be the obligation of the channel to produce educational materials for a channel, but if someone was willing to provide an educational service, it had to be carried. In theory, governments or national regulatory bodies could insist on a 'must carry' clause for satellite operators. None in Europe has done so to date. For European-wide services, such a regulation would be more difficult to impose, unless the EEC intervened in some way. Negotiating such a right of intervention with the member states would not be easy. The 'must carry' model though only works if the operator is making good profits from the other services. In the USA, pressure from cable operators under financial difficulties has frequently led to the 'must carry' regulation being dropped.

State ownership

The major use of satellites for education has been when the State, or a State organisation or department, owned the satellite and was the satellite operator. In this case, the State can give education and training priority. Thus the government of India, which funded the INSAT satellite, made the main priority for programming education and development, as did the Indonesian government for the PALAPA satellite. Similarly, Knowledge Network in Canada has access to Anik-C, owned and operated by the Federal Government of Canada. In this case, though, the central government charges an annual fee of about £500,000 for transponder time, which is paid by the the British Columbian provincial government, which funds Knowledge Network, to cover the marginal costs.

Operating models for education and training

The last section was concerned with the economic basis underlying the provision of a general satellite service. This section now looks at ways in which an educational service might be provided.

Free-for-all

Unfortunately, this does not mean that the service will be free for all educational users, but that there is no collective organisation within the educational world, with each institution 'free' to make individual arrangements for use of a satellite service. This in fact will be the situation if there is no form of intervention.

The main advantage of a free-for-all is that any organisation is free to make its own decision of how to use satellites for education, then finds a satellite operator willing to co-operate.

There are several disadvantages though in a free-for-all situation. First of all, satellite operators, in order to keep their running costs down, are looking for comprehensive services to fill a channel. Individual, ad-hoc proposals can be difficult to fit into the broadcast schedule, take a good deal of time to negotiate and do not usually fill much transmission time. Satellite tranmission charges to the educational or training user are likely to be high, if the channel is a commercial one, and ad hoc use does not allow for economies of scale on the part of the educational institution either. The amount of work that staff of the educational or training institution have to put in to ensure there is a good ground support system, and suitable materials to run on the satellite, can also be considerable, particularly if the organisation is on a once-off basis only. More importantly, a free-for-all situation does nothing to encourage or educate educational and training institutions to use satellites. Thus take-up of satellite opportunities is likely to be much slower in a free-for-all situation.

An educational channel

There is already a Children's Channel on cable TV, and which looks like being transmitted also on satellite. Why not an educational channel? Knowledge Network for instance is an educational channel, with a whole bandwidth allocated to it.

There are certainly several advantages in having an educational channel. The satellite operator does not have the responsibility of filling the channel; that is the responsibility of whoever is running the channel. A channel operating on a regular basis stands a better chance of developing a regular clientel. An educational channel can also provide a coherent and comprehensive service, if run by an educationally-oriented organisation. By using programming from a wide variety of sources, the responsibility and costs for any single institution is not too great. There are several ways in which an educational channel can be provided, depending to some extent on the economic model adopted.

One possibility is for the channel to be run by a commercial company. One such company is trying to organise an educational channel in Australia, to run on AUSSAT. There are three ways in which such a channel run by a commercial operator could be financed. Educational institutions or training organisations could pay to have their programmes transmitted. This is unlikely to succeed in most cases, because not only will the cost of transmission as well as the satellite operator's administration and capital costs have to be found by the educational institution, they will also have to find the cost of programming. The Australian company is hoping to fill a large part of the channel with programmes brought in from the BBC, British independent television companies, and the Open University. However, for copyright and overseas marketing reasons, there are substantial

costs involved in doing this. For instance, to clear residuals on an Open University programme for satellite transmission can cost anything from £500 to £5000 for a single programme, and take up to six months to negotiate. Secondly, in a European situation, educational broadcasting organisations may be reluctant to allow transmission of their programmes on satellite when their own programmes may be in competition with their own services. The Open University's policy is that any satellite (or cable) operator can use Open University programmes (and there are over 1500 current at any one time, plus a backlog of several thousand more), provided the operator clears rights and pays residuals, and squares it with Open University marketing agents in the country in which the programmes will be transmitted. There have been no takers so far. However, a large company may be willing to pay for both programming and satellite operating costs for internal training purposes if there were enough distribution points for training. This would mean though that many for whom education and training was needed would not be able to benefit from such a service, because no educational institution was able to afford the costs of programming and transmission.

The second way to finance an educational channel run by a commercial company is through subscription or direct payment for programmes. Programmes can be scrambled, and only those who have enrolled or pay directly for the programme can decode it. This has several disadvantages. First, it is extremely risky financially. There is no guarantee that viewers would be prepared to pay the charges necessary, particularly if they had to purchase reception equipment in the first place. Secondly, one of the main reasons why educational and training institutions want to use satellite is because of its open-ness. They want to attract people to education and training, through the programmes being widely available and encouraging people, perhaps for the first time, to follow up the programmes, and enrol for local courses or send for more material. Bates (1984) found this was perhaps the most valuable role for broadcasting in education, given the advantages of other media, such as video-cassettes or video-discs, over broadcasting for purely instructional purposes. However, by its nature, subscription or pay-TV destroys the open-ness of satellite transmission.

A third way for a commercial company to provide an educational channel is through sponsorship or advertising. An educational channel is likely to appeal more to the up-market sector, who might buy goods and services in the more expensive ranges. Either the channel as a whole might be sponsored by a number of companies, or individual companies may sponsor individual programmes or time-slots, or advertising time could be sold to finance the service. Again though this would be very risky financially; there is no guarantee that the service could break even, certainly in the early years, given the struggles cable companies are having with even popular programming. The main

educational disadvantage of sponsorship is the possible effect on programme content and style. The programming for instance might be directed more towards those in least need of education or training, but with large disposable incomes. Sponsors are naturally going to favour programmes which best promote their products, or present their products in the best light. No doubt mechanisms could be devised to keep programming decisions separate from marketing decisions, but the more this is done, the less likely the channel is to be commercially viable.

The other way in which an educational channel could be financed is through public expenditure. There are strong reasons why the EEC in particular might consider the funding of a pan-European educational satellite channel. First of all, the evidence from around the world is that the successful educational satellite systems are all government funded. Secondly, a pan-European satellite would meet a number of educational needs not met by national systems of distribution:

a. it would provide a vehicle for the promotion of European culture and co-operation, furthering the arts, culture and science on a truly European basis; it would give the EEC a voice in Europe;
b. 'national' satellites are unlikely to provide an educational service, either through a channel or on an ad hoc basis, because of commercial reasons;
c. the provision of education and training is a public service, and should be publicly funded; the EEC is the obvious body to fund pan-European public service activities;
d. a pan-European satellite would be of major benefit to companies operating throughout Europe, and would also encourage the expansion of successful distance education initiatives across national borders, opening up new opportunities for study and bringing the advantages of economies of scale to European distance education institutions
e. there is clear evidence from other satellite projects that there is a disproportionate spending on hardware (satellites, reception systems) compared with expenditure on the programmes that need to run on them; EEC expenditure on promoting an educational channel would be tiny compared with its other expenditure on IT developments;
f. a firm commitment to a securely funded channel would make an educational channel much more attractive to a satellite operator, and would provide a stimulus to education and training institutions throughout Europe to work with the channel.

How would an EEC educational channel operate?

There are several possible ways in which an educational channel could operate.

Open Access for Educational Producers

Perhaps the most valid model is Knowledge Network. This has two very different kinds of programming, on roughly a 50-50 basis. The first type are 'Teleseries', programmes bought in from existing agencies, such as the BBC, ITV companies, Public Broadcasting System, TVOntario, etc. These might be general series, like 'George Washington' or 'Civilisation', which not only stand on their own as attractive programming, but could also be used as the basis for courses run by local colleges around the series. The second kind of programming is generated by educational institutions within the province, in association with distance education courses run throughout the province by the institution. Thus the Ministry of Forestry ran a course for volunteer fire-fighters. These courses often comprise of television out, using a specially made programme or existing film, followed by a live studio session with a panel, with telephone questions taken live from viewers on air.

This kind of system can provide a 98 hours a week satellite channel at relatively low cost (£1.5 million a year in total, including DBS satellite transmission, cable relay, programming and administration). The secret is that the Knowledge Network itself does not produce its own programmes. By combining 'popular' educational programming with specific course material produced by other institutions, Knowledge Network has been able to attract relatively large audiences (436,000 people a week, out of a total population of 2.5 million). Secondly, it imposes no editorial control over the material supplied by educational institutions, although it does insist on minimum technical standards, and does provide advice to ensure that programme ideas and follow-up have been properly thought through.

Knowledge Network has a board drawn from representatives of the main teaching institutions in the province. Although it consistently fills its 98 hours a week of transmission time, it has had no major conflicts or overbooking of transmission time from educational users to date.

Public service channel

A different way to run an EEC-type channel would be along the lines of a public broadcasting channel, with a managing board, and a set of professionals, especially a channel controller and an engineering director, which decides a policy for programming and sets professional standards for production. This appears to be the model favoured by the European Institute for the Media.

Such a system of management has the advantage of establishing a coherent programme schedule, and coverage of a wide range of interests. It also ensures that programmes are of high quality. Its major disadvantage is that it is in a sellers market. Unless it has its own production budget - which would escalate costs considerably - it has no way of imposing coherence or ensuring that the channel is filled. Education and training users in particular are likely to object to editorial control, particularly in the field of professional training. Nor would such a service offer anything different from the educational provision of exising public broadcasting organisations. It would result in the loss of opportunity to provide a genuinely alternative educational service in the European context. Channel 4 in Britain, Knowledge Network in Canada, Canal Plus in France, and some of the European community stations have all shown that if users of the service are given open access, not only are they more likely to make use of that service, but the provision is more likely to be integrated with rest of the education and training provision for which they are responsible. Such developments have also shown that production costs can be considerably reduced, without educational effectiveness being impaired.

The need for a consortium

On the other hand, there is clearly a need for some system of organisation which brings educational television providers together, and which can help disseminate information and knowledge about satellite provision for education and training. Studies by both Communications Studies and Planning Limited and the European Institute for the Media have shown the need for a consortium of educational and training providers to get together to provide a service for an educational satellite channel, if to do nothing more than ensure an adequate supply of material.

The best way for such a consortium to operate though would be to provide advice on channel priorities, sort out overbooking problems, seek to promote and encourage the use of the channel, and to help build up appropriate ground support services, by working together in a co-operative fashion. This can all be done without imposing a public service broadcasting ethic, which would leave editorial control in the hands of broadcast professionals. The consortium in effect would be an advisory council for a small elected board, with possible national and sector sub-committees.

The main role of the EEC then would be to provide base-line funding, to provide one or two representatives on the board, and to encourage a framework within the EEC which would promote the work of the channel.

Summary

1. There is a need to create a specific channel on satellite for educational and training purposes.

2. The channel should operate on a pan-European satellite footprint, rather than on a "national" satellite footprint; this means that in the short term, the service would have to be located on the Olympus I satellite.

3. The channel needs to be publicly funded, and the most appropriate source for a pan-European service would be the EEC.

4. The channel should combine 'teleseries' with 'telecourses'; funding should be provided to purchase teleseries; telecourses should be provided by educational institutions.

5. An educational satellite users consortium is necessary to co-ordinate and facilitate the production of programmes, a policy for priorities, and use of the channel. There should however be no editorial control, other than to comply with the general laws regarding good taste and decency; individual educational institutions should be responsible for the style and content of programmes.

6. The channel should have a board consisting of elected representatives from the users consortium, and representatives from the EEC and possibly the satellite owners.

7. The EEC should seek to negotiate with an appropriate satellite owner for the provision of a European-wide educational satellite service on a regular basis for a trial period of three years.