

The Establishment of Cable
Television In Britain

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and 1976, the first two decades of competition between public and commercial television, the BBC's political coverage quadrupled. Its coverage of electoral events had been, originally, most reluctant. Anthony Smith, in observing that until the mid-1950s the BBC did not cover the influential annual conferences of the major parties, adds that "in its early days, the BBC actually prided itself for *not* covering the general elections" (1979, p. 28). The initiative was finally taken by the commercial IBA broadcasters.

Nor does the BBC always aim for the high end of the audience. When "breakfast television" was introduced in Britain, ITV's show, licensed as the separate operation TV-AM apart from the regional companies, began as loftier than the BBC's (Smith, 1983).

Non-British television audiences often incorrectly assume that any high quality programs with British accents are BBC productions. In fact, many quality programs from Britain originate with ITV companies. For example, both "Jewel in the Crown" and "Brideshead Revisited" were created by Granada Television, a broad-based media company known for its investigative journalism and its pioneering of the docudrama format (Nadelson, 1984, p. 26). In 1958, it caused a national controversy when it challenged the stuffy terms of a 1949 agreement that prohibited televising debates between political candidates and interviewing candidates on electoral issues.

The Establishment of Cable Television

The transmission of broadcasting signals over cable actually began before the introduction of British television. Radio relay by wire became popular in the 1920s because it often provided better sound quality and because users were able to avoid the greater expense of a regular receiver instead of simply a loudspeaker.

For a while, the BBC considered operating its own wire relays as an alternative form of distribution. Peter Eckersley, the BBC's first Chief Engineer and one of its visionary early figures, tried to persuade the BBC in 1925 to substitute wire for wireless. He argued that wire transmission solved spectrum scarcity. "It is not impossible to visualize, in say 20 years time, complete wire broadcasting, supplemented, it is true, but in minor part, by wireless broadcasting."³ He even planned an experimental BBC exchange at Norwich, with wiring by the Post Office. But nothing came of it, partly because the Post Office would not promise to maintain the BBC monopoly in wireline transmission.

When the commercial Radio Luxembourg took to the air, the BBC tried to prevent its being carried on British wire relays. In 1937, "must-carry"-type rules were enacted that required the BBC to be carried, and relay companies were prohibited from originating programs.

By 1950, more than 1 million subscribers in urban areas received radio via wire networks (Dornan, 1984). Most systems were merely emerging cable TV upgrades of the earlier wire distribution of radio. Others were master antenna

television systems in housing developments aimed at preventing antenna forests. One inhibiting factor for the growth of cable was the restriction on program channels other than BBC and ITV by restricting cable transmission to simultaneous retransmission. At most, out-of-area regional ITV signals could be imported. Because of improvements in broadcast transmission and reception technology, the existing cable system actually declined in importance. Of the relay cable systems, about one-half were operated by noncommercial operators such as local authorities and housing associations. In 1982, there were 185 commercial operators (10 percent less than the year before and declining). Of those operators, only a few had over 5000 customers. Commercial operators served 1.36 million subscribers, and the 1566 noncommercial operators served 1.1 million subscribers (Veljanovski, 1984). In 1984, the three major systems were Rediffusion (fifty-four franchised areas and 300,000–350,000 subscribers); Visionhire Cable (fifty-five systems and 300,000 subscribers); and Telefusion (forty-two systems and 230,000 subscribers). Most systems had only a four-channel capacity (McGhee, 1984, p. 41).

In 1972, the Conservative Heath government granted several limited experimental franchises that would have permitted additional programs. However, no advertising, feature films, sponsor programs, or additional subscriber charges were permitted. Only a few firms took advantages of this less-than-overwhelming opportunity. In 1974, with the Labour party back in power, even this modest development of cable was stopped.

But five years later, with the Conservatives' return, government policy changed. The high-technology field was regarded as a key to Britain's recovery. And the Labour party was consumed by internal struggles and did not pay much attention to cable television matters. In addition, the left wing of the Labour party was hostile to the BBC and ITV.

A main catalyst for British cable was the 1982 report of the Information Technology Advisory Panel (ITAP), a group consisting primarily of representatives of the technology sector rather than of the media and culture fields. The report strongly supported the desirability of cable television on the grounds of industrial development. These advantages could be secured without government funds, merely by allowing entrance of the private sector.

We suggested that (a) there would be a net employment generating effect, which could be substantial, (b) that insofar as manufacturing products are involved, these would at present . . . more likely be British made than if the same consumer expenditure were devoted to cars, video cassette recorders, etc., and (c) that the resulting stimulus to programme and information producers would result in products that had significant international market, given the high reputation of U.K. broadcasting and information services [ITAP, 1982, pp. 28–29].

[A decision to encourage cable systems would] therefore provide a large stimulus to developments in optical fiber technology as well as in the industries associated with consumer electronics and the supply of programme material [ITAP, 1982, p. 29].

The committee put pressure on the government's timing:

A delayed decision is, in this case, the same as a negative decision. There is a very limited time in which industrial capability and market opportunity will exist in the UK. Beyond this time, the chance of creating a strong UK presence in cable systems will have disappeared and with it some thousands of jobs and prospects of substantial export earnings [ITAP, 1982, p. 49].

On the day the ITAP report was issued, Home Secretary Whitelaw appointed a commission of inquiry chaired by Lord Hunt of Tanworth.⁴ The committee was instructed,

to take as its frame of reference the Government's wish to secure the benefits for the United Kingdom which cable technology can offer and its willingness to consider an expansion of cable systems which could permit cable to carry a wider range of entertainment and other services . . . , but in a way consistent with a wider public interest, in particular the safeguarding of public service broadcasting [U.K. Home Office, 1982, p. 1].

In other words, the decision had already been made, without public debate, in favor of the expansion of cable television, and the Hunt Committee merely had to recommend the best way to achieve it.

When the Hunt Committee report was published, only six months later, it was termed by the *Financial Times* a "fiendishly clever web of British compromise, [that] appears to square every circle. . . ." The Hunt report agreed that multichannel cable not only was desirable, but could coexist with existing broadcasters without seriously harming them. This position was also held by the Department of Trade and Industry, which supported cable more strongly than the Home Office, the ministry in charge of supervising electronic media.⁵ The report also stressed the importance of advanced service, a view that matched the government's.

The report distinguished between cable providers, cable operators, program or service providers, and program makers. The report recommended that only the cable providers and operators be regulated and licensed. It rejected a common carrier model with total separation between cable provider and cable operator, because it would discourage private capital, since the willingness to invest in the network infrastructure depended on control over the nature of the service offered to subscribers. Similarly, the Hunt report permitted the cable operator also to provide programs (i.e., be vertically integrated into program supply). An undesirable monopoly situation could be avoided by an "expectation of some channels to be available for lease use by persons having no connections with the cable operator" (U.K. Home Office, 1982, p. 8).

The then Director General of the BBC, Alasdair Milne, vehemently attacked the report: "The BBC does not . . . accept that cable operators should be licensed to interrupt the entertainment patterns of network television in order to finance a limited spread of cable in the United Kingdom" (*The Times*, Oct. 12, 1982).

Similar attacks were made by the chairman of the IBA, Lord Thomson, who said of the Hunt recommendations, "They could drive our broadcasting services—which have evolved over the years to be the highest quality in the world—

over a precipice, and break their back" (*Sunday Times*, Oct. 17, 1982, as quoted in Dorman, 1984, p. 30). Despite its own traumatic birth, the IBA clearly had no sympathy for the next generation of newcomers.

A government White Paper was published in April 1983 and took a more conciliatory line than the Hunt report: "the Government accepts that it has a responsibility to safeguard public service broadcasting" (U.K. Department of Trade and Industry and Home Office, 1983, pp. 38–39).

The White Paper recommended that a regulatory cable authority "use a light regulatory touch, and adopt a reactive rather than proactive style" in its franchise policies (U.K. Department of Trade and Industry and Home Office, 1983, p. 59).⁶

Importantly, the government encouraged the provisions of telecommunications services over cable. The exclusive right to interconnection of different local cable systems, however, would belong to British Telecom and Mercury. Moreover, cable operators would be able to provide voice telephone service only if they did so in partnership with BT or Mercury. Similarly, an association with one of those two companies would be necessary for a cable operator to provide data services in the five major business districts of the country.

On the same day that the government published the White Paper, it announced its intention to grant up to twelve interim cable licenses and emphasized testing advanced technology and interactive services. In selecting among the thirty-seven applicants, it generally favored technologically advanced systems.

Of the eleven interim franchises granted in 1983, eight were switched-star network configurations. British Telecom was involved in five of the consortia.⁷

In October 1984, the first of the initial real broadband cable systems to operate in Britain was opened in Swindon by a subsidiary of Thorn-EMI. The systems had a thirty-two-channel capacity and at first used thirteen channels, including the four TV broadcast channels, two out-of-area commercial ITV services, and the commercial satellite channels Music Box, ScreenSport, the Children's Channel, and Sky Channel. The pay channel Premiere was also offered. Also included was a local news program, teletext service, and stereo radio.

The Regulatory Framework of Cable Television

The Cable and Broadcasting Act 1984 that was passed following the White Paper provided a statutory framework for the new medium and established a Cable Authority to oversee it. The Authority granted and enforces franchises for new cable systems and establishes codes of program standards, advertising, sponsorship, and other content matter. The Authority also promotes the provision of all cable services, a point of potential conflict. As part of the Broadcasting Act 1990, the Authority became the Cable Division of the newly created Independent Television Commission.

Although the Cable Authority was appointed by the Home Secretary, it was

an autonomous body. The first chairman was Richard Burton, retired chairman of the Gillette Razor Company. Appointed as the first Director General was Jon Davey, a former Home Office official who had served as secretary to the Hunt Commission and had been instrumental in developing cable policy.

The Cable Authority announced the opening for bids to provide cable in areas where local interest for service has been expressed. Applications were then received and published, and public comments invited. In contrast to several countries having extensive cable systems—the United States, Canada, the Netherlands, Belgium, and Switzerland—cable franchises in the United Kingdom are awarded by a central rather than a local government authority, partly to avoid vetoes by local councils dominated by the Labour party. Local input is only an informal influence.

A cable franchise operator requires two licenses: a program license from the Cable Division and a telecommunications license from the DTI. Of the two, the program license by the Cable Division is the significant hurdle, since the DTI tends not to stand in the way as long as technical requirements are fulfilled. By statute, the Division must consider certain specific points concerning applicants. These include their willingness to offer program materials originating in Britain and the E.C. countries; extension of assistance in the production of educational, local, and community access programs by local nonprofit organizations; assistance to the deaf; and provision of interactive services.

The Cable Division's mandate requires applicants to ensure decency, protection of children, news impartiality, and absence of political or religious bias. Code provisions govern the showing of violence and appeals for fund raising. The Division follows complaints and it samples programs to enforce standards.

Advertising on cable channels must accord with Division standards, which are similar to those of commercial broadcasting. There are fewer restrictions affecting the quantity and scheduling of these advertisements. Sponsored programs, which are prohibited on broadcasting, are also permitted.

The ITC has extensive powers. Under a Conservative government, it is unlikely that these powers would be exercised in a way that would hurt the cable industry during its early phases. But the standby powers nevertheless exist and could be applied in a less favorable political climate. For example, the ITC has the power to exclude certain organizations from holding shares in cable companies where it is "against the public interest." It can also change licenses after they have been granted and has the right to restrict the percentage of foreign language programs. Moreover, there is no forum for substantive appeal against the withdrawal of cable licenses.

Upon issuance of their licenses, license holders are charged a fee of £10,000 or more, depending on the number of homes passed. Additional fees are charged annually. The DTI also levies a license fee of £5,000 to £10,000, with annual renewal fees in the same range.

Companies and individuals that are not EC nationals or UK residents are restricted from holding a license. Also excluded are local authorities (to prevent hostile local government ownership, reminiscent of the early history of telephone service), political or religious bodies, and ITV commercial broadcasters

in their franchise areas. The ITC has the power to judge whether granting licenses to companies with other media interests may lead to adverse results for the public interest and to disqualify those that do. Non-EC ownership is not completely excluded, as long as it is less than 50 percent of the voting shares. Where ownership is fragmented, non-EC participation must be less than 30 percent.

The licensing conditions set by the ITC and the Department of Trade and Industry reflect lessons from cable systems in other countries, particularly the United States. But some of the problems that have arisen in the context of American cable television were ignored. No provision exists for leased program access as a matter of right by those who supply video programming on a commercial basis.

On the other hand, the licensing requirements exhibit a progressive view of cable as an alternative form of local telecommunications distribution, beyond its role in video mass programs. A number of provisions deal with rights of interconnection, access charges, and equipment standards. These rules recognize that the second communications wire reaching British households can do more in the future than transmit television programs.⁸

The Problems of British Cable Television

The development of British cable program channels was more active than anywhere else in Europe. But the actual cabling of Britain has been very slow. Software was far ahead of hardware. Of the first eleven franchises awarded in 1984, several had not started any activities by 1987, whereas others were considerably delayed. Unlike Germany or France, where the telephone authorities are active in the construction of the cable networks and invest large sums of money, Britain tried to encourage private investors to assume this expense, but they have proved reluctant to do so.

Among the many reasons for the slow pace was a change in tax laws that reduced the ability to write off investments in cable and led to considerable ownership shifts in virtually all the systems. For various reasons the subscription rates for service ended up almost twice as high as initially anticipated, choking off subscriber demand. Only about 20 percent of homes passed actually subscribed. Also, the perceived risk for investors in cable television increased. DBS became a competitor, and the penetration of VCRs to two-thirds of all TV households reduced consumer demand for cable programs.

A casualty of the slow development was the switched-star system. Whereas in 1984 many systems had promised to offer such architecture, they subsequently moved to more conventional systems. British cabling policy, favoring a switched-star architecture and optical fiber, has been technologically more ambitious than that in other countries. Cable television, from the days of the ITAP Report, was considered a matter of industrial policy (Dyson and Humphreys, 1985). In contrast, the German Bundespost has been criticized for not being ambitious enough technologically and for not using fiber, the next gen-

eration of transmission. Thus, British cable policy was an uneasy mix of media policy, telecommunications policy, and industrial policy. It was wrought with multiple priorities and contradictions.

The technological requirements of a switched-star architecture is both the strongest and weakest part of the regulatory scheme. This distribution method reflects the leading edge of regulatory thinking about the role of cable transmission and its integration into the remainder of the telecommunications system. Yet these rules were not based on technological or economic reality; they set up a game for which no willing players turned out. Thus, the regulatory scheme pursued internally contradictory goals: encouraging competitiveness in telecommunications by establishing the next generation of cable transmission while at the same time espousing economic market principles.

No cable system offered true switched-star systems.⁹ The emergence of switches that can handle the large capacity required for true broadband switches is only developing. Moreover, there is no evidence of present great need for switched, fully interactive services over cable, although it may well emerge in the future. Any need that does arise could be met mostly by traditional telephone systems without upgrading. In this area, however, the British government had a strong industrial policy goal in seeking a great leap forward in cable technology. This hazardous contradiction led to the emergence of cable television in economically fragile circumstances. In its first years, a cable operation requires large capital investments, and public acceptance is far from assured. A new media system has to set up an entire infrastructure consisting of program suppliers, advertisers, equipment manufacturers, and others. In the United States, this process took a substantial time. The various technical requirements of the systems, based on the desire to help British industry and high technology, complicate the development of commercially viable cable in its infancy.

To encourage switched systems, licenses were extended to twenty-three years (rather than fifteen) for cable operators who adopt the technology. An agreement on the technical specifications had to be entered with the DTI in advance.¹⁰ Even operators installing tree and branch systems had to lay underground ducts in a configuration that would permit upgrading to a switched system without requiring the streets to be dug up again.

Cable operators were required to bury cable underground, which increases cost. Estimated construction of switched-star underground network for an area of 100,000 homes was £35 million, with a payback period of twenty years and a 10 percent return rate. An underground tree and branch system, on the other hand, cost about £26 million, with a payback period of fourteen years and a return rate of 17 percent. Still less expensive is an above-ground tree and branch system utilizing telephone poles, costing about £16 million with a payback period of twelve years and a return rate of 25 percent. The latter is the system typically used in the United States.

In 1985, the industry was shocked when the two largest firms, Rediffusion and Visionhire, departed from cable television within two days of each other, soon to be followed by Thorn-EMI. British Electric Traction sold Rediffusion, with 1.8 million homes passed, to Pergamon Press for \$13.2 million, and was

renamed British Cable Services (BCS). Pergamon is owned by the media magnate Robert Maxwell. Thus, as a traditional "technical" cable operator exited, a major publishing company entered. Robert Maxwell, who had arrived penniless from Czechoslovakia before World War II, started his publishing empire in 1951 from the base of five specialized trade publications that grew to over 350. His firm, the British Printing and Communications Corporation (BPCC), was a highly profitable printing, labeling, and publishing operation (Kerver, 1986). For a while, he served as a member of Parliament for the Labour party, until a financial controversy ended his political career. Maxwell, an increasingly significant presence in European and U.S. media, was also active in a videocassette magazine, in DBS, and in satellite program channels. He was creating an integrated media company: newspaper interests, cable network operations, and program channels, though the mix of these holdings kept changing toward a greater orientation to print and international involvements (Mirror Group; Pergamon; Macmillan; Collier; Berlitz; Official Airline Guide; New York *Daily News*; East European Publishers) and less television (divestiture of participations in Central Independent TV; TF1; MTV Europe; UK cable systems).

Another firm that left cable operations, Thorn, was engaged in appliance manufacturing, defense, entertainment, and music. In 1979, it acquired EMI, which owned record, film, and television productions, movie chains, and diverse copyrights. EMI also had experience in high-technology defense electronics and medical technologies and owned various dance halls, billiard and bingo halls, hotels, and restaurants. Together with Yorkshire-TV and Virgin Records, Thorn-EMI established the Music Box television channel. But in 1984-1985, Thorn-EMI profits declined, its chairman resigned, and it cut back many of its "new media" activities, including cable television.

In the face of this adversity, the government lowered its high-technology requirements. Going one step further, it also decided to support cable television financially by providing a subsidy to encourage R&D in interactive services and star-switched networks. These funds would go to cable operators to help demonstration projects for interactive services. The government also increasingly sought out the newly privatized British Telecom to play an active role in developing cable. Such reliance on BT was an acknowledgment that the private sector outside the telephone industry had difficulties in independently shouldering the large capital investments necessary for widespread cabling. To safeguard competition and prevent internal cross-subsidization, BT was required to keep its cable subsidiaries separate.¹¹ BT, however, eventually became more interested in upgrading its telecommunications network to broadband fiber and sought to exit cable altogether.

Next, the government encouraged foreign entry. Several dozen North American companies acquired equity interests in cable franchises. Investors include five of the regional Bell Holding Companies, and U.S. and Canadian cable firms. Although there are restrictions on the participation of non-EC interests in U.K. cable ownership, these can be bypassed by establishing British-controlled trusts (Glenn, 1990a, p. 4).

American interest in British cable stems both from the fact that the U.S.

cable market is largely cabled up, and that American Bell telephone companies can participate in Britain, in contrast to the restrictions placed on them in the United States.

Between 1983 and 1988, the Cable Authority issued thirty-one cable franchises; in 1989, it issued twenty-eight; and in 1990, it issued another twenty-five. But franchises and actual cable in the ground are two different matters. Only seventeen broadband systems were actually operational in 1990, but all franchises made available, save one, in major urban and suburban areas had been awarded. In January 1991, there were 150,000 subscribers and 670,000 homes passed, and the broadband penetration rate was a low 16 percent (*Cable Telco Report*, 1991, p. 9). In Aberdeen, only 11 percent of the 91,000 homes passed in 1990 chose to subscribe. There were fewer subscribers in the United Kingdom than in small countries, such as Austria, Finland, Norway, or Switzerland, not to mention Belgium or the Netherlands. The top cable companies in 1990, measured by population in the franchised areas and prorated by the equity share a company held in a consortium, showed a striking North American presence.

In most instances, the cable systems have not actually been constructed. But it suggests a future dominance of foreign firms in British cable, which is problematic for its long-term stability. If cable becomes the major distribution medium, as is the case in North America and parts of Europe, and as its financial and media power grows, the question of national sovereignty over communications will arise. This will be aggravated by the frictions with customers that unavoidably accumulate over the years. In a changed political environment, North American domination may not be acceptable. Thus, foreign investors may find themselves welcome when cable is lagging, but less popular when it becomes a success.

Many franchises did not speedily begin construction of their systems. In some instances, cable construction proceeded so slowly after the award of a franchise that the regulatory system took action. Oftel, the U.K.'s telecommunications regulatory agency in charge of enforcing the DTI's technical license, took action in 1991 against several franchises to speed up their construction. It also further announced, in a March 1991 White Paper, that telecommunication services could be provided by cable networks, and it restricted British Telecom from offering cable TV services for seven to ten years (DTI, 1991).

For all its efforts, British cable did not have much to show in terms of either technological performance or widespread presence as a distribution medium.

Cable Television Programming

In contrast to actual cable distribution network, the provision of program packaging has been very active. For nonbroadcast channels, no requirements exist for license or for carriage. A 1988 Cable Authority memorandum summarized the approach: "entry into this market is totally free: no license, contract, or

official approval is required by anyone wishing in the UK to set up in business as a provider of programs to cable operators" (Home Office, 1988).

Of the new British channels, the most widespread in Europe is Sky Television, Rupert Murdoch's satellite program service, which has operated since 1982 and provides programs to several European countries.

The idea for Sky Television started with Brian Haynes, a former British television producer who had reported on the American cable boom and had the idea to set up a similar cable program distribution in Europe linking the various European cable islands. With access to an Intelsat transponder, Haynes secured credits and, together with publishers and insurance companies, founded Satellite Television (Biebl and Manthey, 1985).

The firm quickly ran into problems. First, it had to overcome a host of legal hurdles in different countries. In many instances the cable systems were operated by the domestic PTT and required time-consuming negotiations. Program copyrights did not necessarily cover all countries reached and led to legal and royalty expenses. Also, cable systems had not yet invested in satellite antennas that could connect the cable islands to each other. Haynes therefore needed to acquire and install the relatively costly dishes.

When Haynes ran out of money, Rupert Murdoch bought out the firm. Through his large involvement in Australian and American commercial broadcasting, he was also in a position to provide the ingredients for a European operation. Toward the same end, Murdoch was purchasing satellite distribution rights for much of Europe for many feature films. After 1984, Murdoch received access to the cable networks in Britain, Norway, Austria, Germany, and the Netherlands; he switched to the newer European ECS satellite and renamed the service "Sky Channel." Although audience interest was adequate and growing, Sky's problem was to attract advertising, of the kind that appeals across national boundaries.

Rupert Murdoch, the Australian media entrepreneur (he subsequently became an American citizen), is also one of the major figures in British media. Born in 1931 in Melbourne into a newspaper publisher family, he studied at Oxford and gained reporting experience in Birmingham. In 1952, he acquired the *Sunday Times* in Perth and made it into a success. It became a model for his operations, which later included over eighty newspapers and magazines with a combined circulation of more than 70 million. In the United States, Murdoch's media plans were not always successful; he failed in his attempts to acquire Warner Communications and the pay cable channel Showtime; he had to give up plans for a "Skyband" direct satellite broadcast system. Subsequently, he acquired American broadcast interests by purchasing six stations (in Chicago, New York, Washington, Dallas, Houston, and Boston) from Metromedia for \$2.1 billion as well as the major Hollywood film studio and distributor 20th Century Fox. With these elements, he successfully structured a fourth network, Fox Television.¹²

In 1989, Murdoch expanded the single-channel Sky Channel, which operated on a low-power satellite, into the four-channel Sky Television—Sky One, Sky News (Britain's first 24-hours news channel), Sky Movies, and Eurosport—on

the medium-power Luxembourg Astra satellite; there are also several radio channels (Sky Radio)

In 1990, a rival DBS system, British Satellite Broadcasting (BSB), launched its own multichannel program. BSB's channels, receivable directly over cable, were The Movie Channel (subscription movie), Now (leisure and women's programs), The Sports Channel, The Power Station (music videos), and Galaxy (drama and variety). It provided high-quality weekend arts programs. BSB's satellite system was its own, using two Hughes Communications satellites; it was incompatible with Sky. BSB's Marco Polo satellite signal was more powerful than Sky's and uses a square antenna, or "squarial." Three of its channels also had must-carry status on cable. (TBI, 1990). However, the high cost of BSB's investment required a large subscriber number to break even. Furthermore, BSB's D2-MAC standard required that subscribers purchase compatible decoders; there were manufacturing delays, and viewers experienced technical difficulties. Also, BSB's programming did not create a great demand. As a result, it did not do well financially, with less than 200,000 subscribers. Murdoch's Sky-TV, in contrast, expanded to about a million direct reception dishes in 1990, (plus many cable households) of which 70 percent subscribed to a pay-movie service. In 1990, Sky TV and BSB merged, having lost, respectively, \$600 million and \$900 million. The new company was named BSkyB and aimed at consolidating its nine channels to five and its two satellite systems to one carried on Astra and using PAL. Murdoch received a substantial cash payment that reduced his huge burden of debt, about \$8-10 billion which was refinanced in 1990 subject to the requirements of some asset liquidation. British DBS is discussed further in the chapter on European DBS.

Other early satellite-delivered commercial channels were Music Box and ScreenSport. Cable News Network, from Atlanta, also entered the continental European market, first in large hotels and later on several U.K. cable channels. In 1987, the Super Channel was started as the satellite channel of fourteen ITV broadcasters, and with the major participation of Granada and Virgin. Eventually, it merged with Music Box and was owned by Italian investors (Marcucci) and then United Artists and Virgin. Another active participant in various program ventures was WH Smith, a retailing company.¹³

Another type of program provision is pay TV. In 1966, a firm by that name was established and provided service to about 10,000 subscribers in London and Sheffield. Two years later, the new Labour government decided to discontinue the experiment. Pay TV was reintroduced in 1981 when the Home Office designated a dozen two-year pilot projects by seven companies. Programs were supplied by a variety of sources, including the BBC and motion picture suppliers. None of the pilot projects could use advertisements, and all lost money, since only about 15 percent of cable households subscribed. A third effort began in 1985, this time with satellite-delivered pay channels. The first of these was The Entertainment Network (TEN), a movie channel set up by the British cable companies Rediffusion and Visionhire, the movie distributor Rank, and the equipment company Plessey. A major participant was UIP, the American

joint venture of the major Hollywood studios MGM, United Artists, Universal, and Paramount for the foreign distribution of their films. TEN went out of business despite such backing because it could not attract enough viewers, and because the partners stalemated each other. The channel was replaced by Mirrorvision, established by Robert Maxwell, who at the time had acquired the Rediffusion cable company and had become one of the partners in TEN.

The second pay channel was Premiere, a joint project of Thorn-EMI, Goldcrest, several Hollywood distributors, HBO, and Showtime. Maxwell joined later after Thorn-EMI decided to divest itself of its film and cable interests and merged Mirrorvision into Premiere. These developments prompted British Telecom also to become active in program provision. BT had initiated a budget movie channel called Home Video Channel (HVC) that was distributed on cassettes to cable operators; it established Star Channel as the premium movie service and merged it in 1987 with Premiere (Jon Davey, communication).

Other video-type offerings available to British television viewers are teletext and videocassette recordings. Teletext is a text service delivered by broadcast or cable. In the early stages of teletext development, different standards were pursued by a variety of organizations. The IBA developed ORACLE, the BBC pursued CEEFAX; and the Post Office, then in control of the telephone service, developed Prestel, an interactive text (videotex) service on telephone lines. In 1974, these bodies cooperated for some common technical specifications by establishing a system of five "levels" of increasing graphic sophistication (McKenzie, 1983, pp. 4-10). On the whole, teletext has been more successful than telephone-delivered Prestel. Both CEEFAX and ORACLE were actively used and had several hundred pages.

Videocassette recorders (VCRs) are extraordinarily popular in Britain and are almost completely outside of governmental control. After Japan, Britain has the greatest concentration of VCRs of all major countries, yet no British manufacturer developed VCR equipment. In 1990, 66 percent of all households in Great Britain had VCRs (TBI, 1990).

The widespread use of VCRs encouraged the distribution of programs of sexually explicit and violent content. This development led to the imposition of some censorship via the Video Recordings Act 1984, which was supported by an unusual mix of Conservatives and feminists. The law goes beyond the existing censorship rules of the British Board of Film Censors (BBFC), which evaluates problematic scenes in the context of the entire work. Instead, the rules for videocassettes establish an index of prohibited acts that may not be shown. Though mainly directed against scenes of particularly obscene and violent content, the rules are sufficiently broad that they could be interpreted to include any realistic depiction of war. Although these rules apply only to videos sold for home viewing, they will invariably affect broadcasting and film production, since this programming is, in most cases, undertaken with a view to future home video distribution.