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ABSTRACT

BROADCASTING POLICY AND NEW INTERACTIVE SERVICES IN EUROPE AND ITALY

By

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This research assesses Italian broadcasting policy in the past and its future developments in the provision of multimedia and interactive services. European Community broadcasting policy is also analyzed in the light of the convergence of telecommunications and broadcasting. Several examples of interactive trials are analyzed in the United States, in Asia and in European countries. A special emphasis is placed on the roles and interactions of different actors in the policy process.

This research is a case study and mainly uses data coming from Italian Parliament proceedings concerning the evaluation of multimedia and interactive services, as well as press commentaries. Scholarly papers and books are mainly used for historical economic and policy analysis. European Union documents and Green Papers are analyzed in order to identify trends in European Union policy.

According to consociational theory, the main actors involved in policy-making in the European Community and in Italy struggle to protect their own interests, while the general public's interests are neglected. The result is policy-making in favor of a few large companies and other institutional players. The introduction of new interactive services may thus not be demand driven, but pushed by supply and/or other political interests.

To Sergio and my family

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INTRODUCTION

The Italian television industry has had a peculiar development ever since RAI Radiotelevisione Italiana started broadcasting in 1954. As happened in most other European countries, broadcasting was a public service and its control was in the hands of the government[1]. In the 1970s, Italian courts opened the broadcasting sector to private entrepreneurs and the legislature did not respond for several years. By 1990, when the reform law was finally approved, the pattern had been established. The result has often been called "the wild west" of Italian television. This has been a de facto public-private duopoly that was simply sanctioned by the 1990 Broadcasting Act. Chapters 1 and 2 report the main developments of the Italian television sector and highlight the legislative changes that were periodically approved in order to keep up with market evolution. One of the most peculiar developments is the lack of cable television networks in Italy, at the same time when other countries built them as ancillary to broadcasting. This thesis explains this anomaly, which is particularly relevant for the main thrust of this research,

[1] See chapter 1 for more details about the ownership and control of RAI. The terms "government" and "state" when referring to media ownership or control will be used as synonyms throughout this research, unless otherwise specified.

the development of interactive services[2]. The latter are being launched in several countries (see chapter 4) and, especially in the United States, they will be mainly provided by cable TV operators or alliances between telephone companies and CATV systems. The lack of a cable TV infrastructure in Italy thus will either force the transmission of interactive services over the existing telephone lines, or require the deployment of entirely new cable networks.

Chapter 3 spells out how the Italian Parliament approached this issue and identified the reforms of the Italian telecommunications and broadcasting sectors that will help the "multimedia revolution"[3] happen. Among the initiatives that were proposed, was an interactive TV trial. In spring 1994, Societa' Finanziaria Telefonica (STET), the Italian telecommunications holding company, announced an agreement with Bell Atlantic to form an interactive TV venture and a test involving 2,000 Italian TV households was scheduled for November, 1994.

The aim of this research is to assess the Italian broadcasting policy and the possible future developments of Italian TV in the light both of its history and the latest developments, which imply that heavy investments in broadband systems and services will have to be made. European Community policy will also be analyzed (chapter 5), because Italy's liberalization of telecommunications is heavily influenced by the 1998 deadline set by the EC for the complete liberalization of all telecommunications services and infrastructures, including cable systems. Past and present European Community policy and the experiences of other European countries provide several examples of launches of new technologies, such as videotex, teletext, ISDN, satellite TV and HDTV.

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[2] Although the terms "interactive" and "multimedia" are often used as synonyms, they are to be distinguished. Interactivity is concerned with two-way communication between distant locations and is generally used to indicate services such as video on demand, home shopping, home banking, games, distance education, etc. "Multimedia" defines the convergence of different media in the same location. An example is the CD-ROM, where text, audio and video images are stored on the same medium.

[3] This term was used in the Bosco report (Bosco, 1995), a document that outlines the future information society as envisaged by the European Community and adapted to the Italian framework. In this document the reference to interactive, rather than multimedia services testifies to the confusion between the terms "interactive" and "multimedia" (see note 2).

Research question n. 1: What policies of European Union broadcasting regulate the field of new telecommunication technologies?

Discussion: Broadcasting is substantially unregulated at EC level, but some attempts to establish regional policies have been made. It is important to evaluate these policies and relate them to domestic policies (see chapter 5). The focus will be on advanced media, such as cable television, satellite television, High Definition Television, ISDN, interactive services and the convergence of broadcasting and other telecommunication systems and services.

Research question n. 2: Who are the actors, what are their interests and how do they interact in the adoption of new technologies?

Discussion: This question is especially relevant in Italy, since the history of Italian broadcasting has repeatedly shown a strong influence of private interests on policy-making (chapters 1, 2 & 3). It is also important to analyze motivations and interactions of relevant players at the European level, where many policies originate and impact on national industries (chapters 5 & 6). The adoption of new technologies may be market-driven and directly related to the general public's demand for new services; it may be the result of particular interests' pressures or a mix of both.

Methodology

This is a case study. Italian Parliament proceedings will be analyzed concerning the evaluation of multimedia and interactive services, as well as press commentaries and reports by consulting agencies. Scholarly papers and books are only available until a few years after the 1990 Broadcasting Act and will therefore mainly be used for historical economic and policy analysis and for illustration of the debate on broadcasting policy in

other countries. European Union documents and Green Papers will be analyzed in order to identify trends in European Union policy.

CHAPTER 1

THE HISTORY OF ITALIAN TELEVISION UNTIL 1990

This chapter provides the historical background to the present situation of the Italian broadcasting sector. Early developments and first attempts at reform are analyzed. The general characteristics of programming are also highlighted.

The beginnings

Wireless and radio communications in Italy were first established as a state monopoly in 1910. In 1924, during the Fascist era, the privately owned Italian Radio Union (URI) obtained a six-year, renewable monopolistic concession on broadcasting, subject to government censorship. URI was financed by fees paid by radio set dealers. In 1929, URI was transformed into a semi-governmental company supervised by the state. During World War II, government control was tightened. In 1944 RAI was founded in Southern Italy as a counterpart to fascist-controlled URI. After the war, RAI was left with exclusive broadcasting rights and its ownership was transferred to the Istituto per la Ricostruzione Industriale (IRI), the government holding company for industrial enterprises[4].

RAI's monopoly on broadcasting was extended to television in 1952. Regular TV transmissions began in 1954, supported by license fees and, three years later, by advertising revenues (Noam, 1987). The first nine transmission facilities covered 43% of the population. Six years later (1960), TV signals reached 90% of the population. A 50% penetration of Italian households was attained in 1968. Programming began with 10 hours per week, increasing to 30 hours by the end of the 1950s. In the first year most of the transmission time was devoted to films. Later, opposition by film producers obtained regulations that drastically decreased the broadcasting of films on TV. In the first years of

[4] For further details on the history of Italian broadcasting, see *Storia della RAI. Trent'anni di televisione: date, momenti, personaggi 1954-1983*, Torino: RAI-Radiotelevision Italiana, Divisione affari correnti, Documentazione e studi, 1984.

TV in Italy, the most successful programs were quiz shows, the least expensive formula of mass-appeal programming (Gambaro & Silva, 1992).

In 1961 a second channel was activated with programming that was not in competition with the first channel. The latter was intended to cater to the large audiences of families, while the second channel aimed at broadcasting programs with a higher cultural value. In fact, during the Sixties, the audience share of the second channel was always lower than 30% of the total. In the same decade, the diffusion of TV sets increased from 2.2 million in 1960 to 9.9 million in 1970. The households with TV receivers (or penetration) increased from 16.6% to 62.5% (Gambaro & Silva, 1992).

The political and cultural aspects of early developments

Until 1975 control over RAI was firmly exerted by the Italian government and, specifically, by the Christian Democratic Party. Television was used as a means to create political consensus. The Board of Directors and the executives were directly appointed by the government. Besides a rigorous personnel selection based on political criteria, some forms of censorship were used. This political domination was partially helped by the lack of interest of the leftist culture toward television (Gambaro & Silva, 1992). The Catholic Church and catholic intellectuals took control of television, both theoretically and operationally. The political idea was to use TV as an extension of the evangelical mission of the Church. Therefore, Italian television chose to play a pedagogical role, the role of the enlightened educator. For several years, Italian television had a strong relationship with the academy and the humanistic roots that characterized the national culture.

These political and cultural aspects were much more exacerbated in Italy than in other European countries. They also reinforced each other because they both lacked the idea that there was an exchange between broadcaster and audience. The main thrust was a model which held that the supply of TV programs was not to be based on market success, but was responsible only toward (1) itself, (2) to the cultural elites it was related to and (3)

to the political elites that controlled it. The lack of alternatives for consumers and of competition between channels are obviously both an assumption and a corollary of this model (Gambaro & Silva, 1992).

The reform of 1975

By the end of the 1960s, the television monopoly and the RAI broadcasting model were challenged by several factors: the evolution of audience demand, the redefinition of the political power, the interests of TV manufacturers who were worried about the transition toward color TV, and the growing demand of advertising time on TV.

At the beginning of the 1970s, consumer segmentation was consolidated, different social behavior and lifestyles increased the demand for diversity in TV broadcasting and for entertainment programming. This evolution of demand was based on the strong growth of private consumption[5]. After the post-war reconstruction and the economic boom of the Sixties, the Italian society was becoming more segmented and differentiated.

The political world was also subject to a process of redefinition of its equilibrium. After the 1968 anti-establishment activities[6], the strengthening of the labor unions and the electoral growth of the political left, the Christian Democrats' exclusive control over RAI was less accepted and attacked by several sides, not only by the leftist opposition. In other countries, pressures toward the elimination of broadcasting monopolies were related to the need for collective welfare, for growth of the number of channels in order to increase viewers' choice, and to the reinforcement of the audiovisual industry through technological innovation. In Italy, the pressures for change were mainly geared toward the redefinition of the political equilibria inside RAI. In this phase, the political-institutional polarization of RAI and the Italian television culture favored the political aspect of changes in TV and

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[5] +4.8% in real terms yearly between 1955 and 1969.

[6] In the late 1960s there were student protests all over Europe that spread over to factories and were meant to lift state control over economic and social institutions. The main institutional results in Italy were a liberal reform of the educational system and the strengthening of labor unions.

neglected the institutional changes fostered by economic and social forces that would later allow and sustain the development of private television.

At the end of the 1960s other countries began regular color TV broadcasting and the evolution of TV sets from black-and-white to color spurred the Italian TV manufacturers to lobby for the introduction of color transmission to revitalize the market and keep production high[7]. Color transmission was finally introduced in 1976.

The first signs of saturation in some consumer markets and some early attempts at product differentiation caused an increase in the demand for advertising time slots. Television had become the most important unifying mass medium in the Italian market, while the diffusion of printed material was more limited and not commercially oriented. Between 1970 and 1975 the advertising budget on TV increased from 33 billion to 61 billion lire, twice as much as the press advertising expenditure (Gambaro & Silva, 1992).

All these factors caused the RAI monopoly to be questioned. Traditional alternatives to RAI lay across the border. Monaco's Tele-Montecarlo, a private broadcaster and the Yugoslavian Tele Capodistria broadcast programs in Italian for minorities. In the mid-70s, these stations were relayed into large parts of Italy from across the border.

In 1972, the first national challenge to the RAI monopoly came from Tele-Biella, a tiny cable operator which provided programs to approximately 100 subscribers in Biella, near Turin. Its programs were intended to "better inform" the local audience during elections and to counter the entrenched local political hierarchy. The government attempted to shut Tele-Biella down, but a local judge ruled in its favor, because it fulfilled a local information function that had not been addressed by RAI. When the government moved to close the system down anyway, the case went before the Constitutional Court, which permitted the operator to continue operating (Noam, 1987).

The subsequent Constitutional Court decisions (1974-1976) which addressed this issue, reaffirmed the state monopoly over TV broadcasting, but declared the government's

[7] After 1972 the growth rate of black-and-white TV sets decreased.

attempts at dismantling the foreign stations' relays illegal. They also limited the state monopoly over broadcasting to national transmission, thus allowing the development of local private TV stations[8] (Gambaro & Silva, 1992). The involvement of the judiciary was a distinctive feature of this period, due to the permanent inability of Parliament to pass new legislation. There were endless quarrels and disputes between RAI and the private broadcasters, and between private entrepreneurs themselves. The main actors found no other way than resorting to the judiciary. Sometimes the judges themselves took action unilaterally to halt illegal practices of television, thus acting as a regulator of the broadcasting system (Mazzoleni, 1991).

Finally, in 1975, Law 103 sanctioned the reform of RAI. Broadcasting was defined as an essential public service and reserved to the state. This did not necessarily mean that it had to be operated by the government. Concessions could be given to state-owned companies for the provision of service. The main aims of the system were: independence, fairness, openness to various political, social and cultural forces. This bill took the control over RAI out of the hands of the government and entrusted it to Parliament, which exercises it through a special "Committee of Vigilance" of forty representatives of all political parties, proportional to their electoral strength. The Committee sets guidelines for the implementation of the broad principles specified in Law 103 and for a balanced scheduling of programs. It directly controls party broadcasts, it indicates general requirements for the content of advertising in order to protect consumers and it supervises audience research. Broadcasting is contracted to a public-owned company, RAI-Radio Televisione Italiana, with an agreement renewable every six years (Mazzoleni, 1991).

RAI runs three TV channels and three radio networks. The TV channels are not distinct entities, but functional divisions coordinated by a Director General. RAI is

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[8] The term "local" is related to areas of not more than ten million potential viewers and usually coincides with the administrative subdivision of the Italian territory into regions. Each region is convered by one or more local TV stations, depending on its population. One local station can also cover more than one region or adjacent areas belonging to different regions.

governed by a board of sixteen administrators, appointed by the Committee of Vigilance. Each of the three television channels (RAI UNO, RAI DUE and RAI TRE) enjoys considerable autonomy in production, programming and scheduling policies. They all have a news department. The third channel, RAI TRE, was started in 1979 and it is partially a regional channel. It produces both national and regional news, while RAI UNO and RAI DUE only broadcast national news.

Through affiliated companies, RAI also controls publishing activities (ERI), sells records and video cassettes (FONIT CETRA) and programs (SACIS) and collects and sells advertising time (SIPRA).

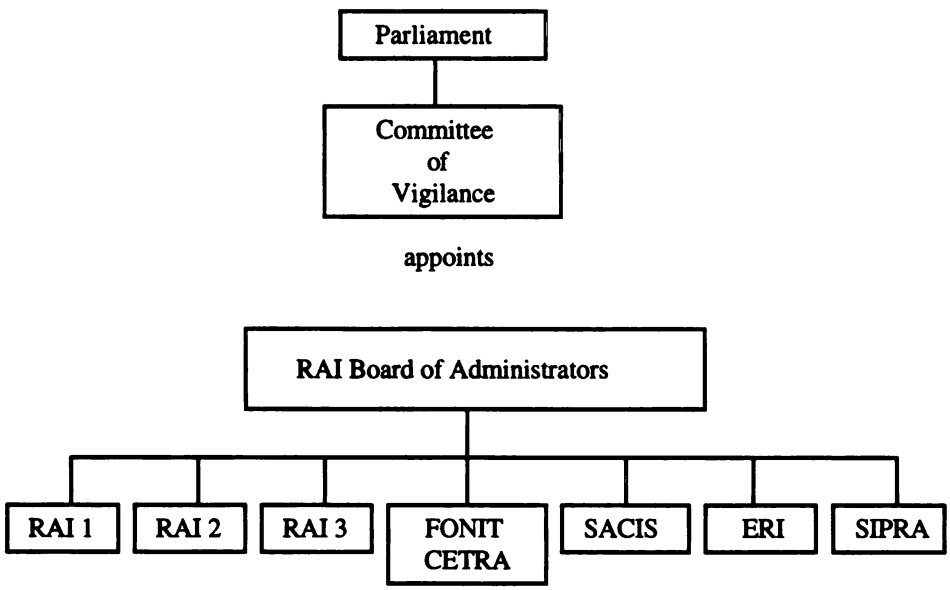

Figure 1: The governance structure of RAI.

RAI is financed from three sources: an annual license fee per household, advertising and the business exploitation of related activities. The license fee is set by the

government[9], and increases are not easily granted, because they are politically unpopular. Due to tax evasion, about 25-30% of households do not pay the fee.

Law 103 also allowed and regulated the establishment of mono-channel cable television operators in restricted areas. The limitation of potential viewers to 40,000 and strict regulations on internal production show that the economic nature of cable TV was not understood. These limitations, clearly set for the protection of broadcast television, and the high capital investment cost for the installation of cable networks discouraged cable TV development. The main feature of cable TV is in fact the distribution of external programs and a multiplicity of channels, which are needed to justify the high fixed investments.

Private entrepreneurs thus demanded more freedom and addressed the Constitutional Court again. In 1976, it acknowledged the legitimacy of private broadcasting on a local scale (Mazzoleni, 1991). The need for costly cable transmission technology thus declined and, by 1980, hardly any of the hundreds of private television stations were transmitting via cable. Ironically, cable TV, which had provided the opening wedge for private media, was cut out of subsequent developments of Italian television (Noam, 1987).

The consolidation of private broadcasting

Thanks to the partial liberalization of the 1976 Court judgement, about 700 television and 2500 radio stations were established in a few years all over the country (Mazzoleni, 1991), but no follow-up legislation, regulatory system or licensing provisions were provided by Parliament. Frequencies not used by RAI were simply occupied, largely on a first-come, first-served basis. The major Italian political parties expressed tacit agreement with the fast-paced growth of television and radio stations. The smaller political parties viewed private broadcasting as an opportunity to get their message on the air for the first time. The Communist Party, for example, set up a chain of radio and television stations in

[9] It was Lire 156,000 (about $ 100) in 1994 for color TV.

the major cities. The leading press publishers, who once opposed television because it subtracted advertising revenues, were now largely in favor of it, since many of them had entered broadcasting (Noam, 1987).

After several years of local operation, three major broadcasting enterprises established in 1981-82 the first nation-wide "networks". These were groupings of several local stations linked with common scheduling patterns and exclusively funded by advertising. However, national broadcasting was illegal and the Constitutional Court (1981) prohibited any electronic link-ups between stations. Therefore, the "mother" station had to prerecord cassettes of the programs, including commercial breaks, and physically transport them to the affiliated stations for simultaneous transmission. This system obviously prevented any live nation-wide news broadcasting by private stations (Mazzoleni, 1991).

In the fall of 1984, several local courts ruled that this system infringed the limitations on local broadcasting, because it created *de facto* national networks and private networks had to switch off their signals in certain regions, including Rome. Finally, the need for legislation could not be further ignored and the Minister of Posts and Telecommunications prepared a bill that provisionally allowed the networks to beam their signals beyond local boundaries. The bill still prohibited private national news programs, but permitted local and regional news. The government decree (labeled "Berlusconi's Decree" by the opposition) was converted into Law 10 by Parliament in February 1985 and was renewed in August, but eventually expired at the end of 1985. No further renewals were effected by the government. A new reform bill was supposed to be approved in 1986, which would reaffirm the state monopoly over nationwide broadcasting. It would also be the first official legalization of the creation of a mixed system of public and private broadcasting. Private operators were to be obliged to broadcast 25% of domestic or European Community produced programs (40% after July 1986). A licensing system would be introduced for private broadcasters, with special authorizations for nationwide networks. Two regulatory bodies were to be introduced, one to process frequency licensing and one

to enforce content regulations. The latter concerned the amount of internally produced programs[10]. Advertising regulation would also be introduced for private stations. Throughout 1986, the government repeatedly declared that the reform bill was ready, but it was never presented to Parliament (Noam, 1987 and Mazzoleni, 1991).

Three major private networks were created in 1982. The first one was Canale 5, owned by Silvio Berlusconi's Fininvest. A few months later Italia 1 and Rete 4 appeared. They were both owned by large publishers, Rusconi and Mondadori respectively. These entrepreneurs did not last long in the broadcasting business and soon sold their networks to Berlusconi, who became in 1984 the only private broadcaster that could effectively compete with RAI (Gambaro & Silva, 1992). Among the reasons for the failure of Italian publishers like Rusconi and Mondadori in television, Noam (1987) identifies the lack of television know-how, the inability to interconnect and inadequate financial resources. Berlusconi, on the other hand, invested large amounts of money into the TV business. He spent billions of lire on stars and technology and established a strong reputation for anticipating audience tastes. He kept advertisers happy with low rates and wooed viewers by offering less ad time per hour than other channels. He introduced innovative ways of charging advertisers, especially small and medium-sized sponsors. He also had good political connections with then Prime Minister Bettino Craxi, a Socialist, even though he personally leans toward the right.

Several other minor private entrepreneurs who did not exit the market survived in marginal positions and never were a real threat to the public broadcaster. After 1985 the battle between RAI and Fininvest for advertising money and audience caused a sharp increase in investments in Italian TV programming production, in imported fiction and in co-production[11] of movies that would later be shown on TV. By 1990 the duopoly

[10] Ten percent for local stations, twenty percent for national networks, fifty percent for RAI. The term "internally produced" indicates programs that were entirely produced by the station, not purchased from other producers.

[11] Co-production was carried out between film producers and TV networks. These programs, generally movies, were first exhibited in theatres and later shown on TV.

situation was largely consolidated. RAI and Fininvest controlled three networks each. Fininvest collected about 58% of the total TV advertising expenditure and RAI collected about 30%. Although the Fininvest networks obtained larger audience shares than RAI in 1984-1985, RAI audience shares in 1990 were normally ten percentage points above Fininvest's, both in prime time and in the daily average. In a pure market situation, RAI's larger audience shares would entail larger advertising revenues than Fininvest's. The mismatch between audience shares and advertising shares is due to the limitations imposed on RAI, that prevent it from earning all possible revenues. This limit was originally established to protect the printed press's advertising revenues and it caused advertisers to direct their demand to the private networks (Gambaro & Silva, 1992).

Besides RAI and Fininvest, in 1990 there were ten minor networks, including two foreign ones[12]. They all survive because they have agreements with the major networks to avoid predatory policies. The minor networks sell advertising time through Publitalia (Fininvest's concessionary) and SIPRA (RAI's concessionary) and buy a large part of their programming from the major networks. The collection of advertising revenues and the production of programs are clearly stronger entry barriers than the scarcity of frequencies in preventing new networks from growing to an adequate size.

Programming

The Italian public broadcasting service is based on independence, fairness and pluralism. The pattern of scheduling thus is characterized by the need to establish a balance between informational programs, educational programs and entertainment. As stated above, the beginnings of RAI were strongly marked by a stress on educational programs. The advent of private broadcasting, both on a local and on a national level, had some effects on the scheduling of programming. Wolf (1989) identifies three main effects:

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[12] The minor networks are: Italia 7, Junior TV, Cinquestelle, Videomusic, Rete A, Telecampione, Odeon TV, Euro TV, Capodistria and Telemontecarlo.

"1. A progressive lengthening of the broadcasting day, beginning with an extension into the late evening and followed by early afternoon and morning programming.
2. An increase in the number of imported programs (films, made-for-TV movies, animation).
3. An increase in the amount of informational material such as news and current affairs, not only on RAI [...] but also on the private networks."

The increase in the number of broadcasting hours caused a parallel increase in the amount of advertising, especially on the private channels. On the supply side, the number of broadcast hours on RAI rose from 5,950 in 1976 to 9,225 in 1980, 14,500 in 1986 and 15,900 in 1987. Fininvest broadcast 19,500 hours in 1986 and 19,650 in 1987. Within ten years, the total supply of programs rose from about 6,000 hours to over 34,000. Advertising slots for RAI were 40,000 in 1983 and over 60,000 in 1987. The three Fininvest networks carried 284,800 ads in 1987 (Wolf, 1989).

On the consumption side, the mixed system exposed viewers to an overabundance of programming, interspersed with advertising messages and distributed over the whole day.

The second consequence of the public-private system is the huge amount of imported programming. At the beginning, private stations broadcast almost only imported material, especially US fiction. In the late 1980s the total amount of imported programs was 71%, compared with 17% for France and 60% for Kenya (Mazzoleni, 1991). There were absolutely no legal obligations for stations to produce their own programming and the prices of international programs skyrocketed as a consequence of this "race". The result for the networks was an enormous increase in debt, especially for RAI, which had a ceiling on its advertising revenues and suffered losses due to tax evasion.

The third effect of the competition between public and private networks lies in the strategic use of program scheduling. This is particularly evident in the field of news and public affairs. While private networks were not allowed to broadcast live news reports,

RAI greatly increased the number of news bulletins from two per day at the beginning to nearly 25 in 1989, with at least 14 new bulletins being introduced in the late 1980s. The news was used as a "strategic product" to harness RAI's competitive advantage over the private networks and to establish public television's "distinctiveness" across the schedules. While in the early times of RAI the news served as a political tool for the ruling elites, competition between public and private TV assigned it a role of corporate image-making. At the same time, the format of news programs changed, becoming more market oriented. The same happened for current affairs programs. Several new programs were developed aimed at specific market sectors and grouped around themes related to particular interests. New "journalistic" genres developed which indiscriminately mixed formal aspects of different genres (fictional reconstruction, junk-TV, TV realism, etc.). The emphasis was placed on dramatic and spectacular effects, the audience was lured into viewing by creating scandal and getting programs talked about (Wolf, 1989).

At the same time, there were developments within the two main groups, the three RAI networks on one side and the Fininvest networks on the other. The RAI channels were in competition with each other for a long time in the 1970s and early 1980s, until the threat of private national networks became clear. The political system of staff appointment made it clear that RAI UNO was under the influence of the Christian Democrats, RAI DUE was run by the Socialists and RAI TRE was influenced by the Communists. After 1982 RAI UNO and RAI DUE started to adopt more integrated programming policies and somewhat reduced their rivalry. Political influence and rivalry were still very strong and brought about a real power game over the election of the Governing Board. Finally, in 1986 a balance of powers was found: the presidency of RAI went to a Socialist and the general management to a Christian Democrat, while the channels resumed their organizational and political distinctness and rivalry (Mazzoleni, 1991).

In the 1990s the characterization of the RAI channels can be broadly described as follows. RAI UNO provides information and entertainment for large and popular

audiences, while RAI DUE focuses on more elitist programming, with a stronger emphasis on social issues. RAI TRE concentrates somewhat on cultural issues and political satire.

The three main private networks also stopped competing after they were all acquired by Fininvest. They target different audience groups: Canale 5 is aimed at a general public, much like RAI UNO. Rete 4 targets female viewers and Italia 1 is directed at a younger public. This distinction only applies to a portion of the daily scheduling, while the rest is undifferentiated. According to Mazzoleni (1991), "failure to specialize further is mainly due to uncertainties about the future of Berlusconi control over all three networks".

CHAPTER 2

THE 1990 BROADCASTING ACT

This chapter completes the historical overview of Italian broadcasting and analyzes the 1990 Broadcasting Act. The latest proposals for broadcasting reform that were presented to Parliament in 1995 are also discussed.

After a long debate, Parliament approved a new Broadcasting Act (Law 223/1990)[13] in August 1990. While this act was intended to introduce a new discipline into the Italian broadcasting industry, it mainly sanctioned the RAI-Fininvest duopoly. During Parliamentary discussions, left-wing Christian Democrats made it clear that they did not support the bill's favor to Fininvest and they withdrew five senior ministers from the government after the bill was approved (Rao, 1991).

The first article reaffirms the principle of general interest of broadcasting. The main principles that govern broadcasting are pluralism, objectivity, the completeness and impartiality of information, the openness to opinions, and to various political, social, cultural and religious tendencies. For the first time, it is stated that the broadcasting system is made of public *and* private subjects[14]. Broadcasting is entrusted to the public service concessionaire (RAI) and can be carried out by private entities through a concession or an authorization.

Radio frequency planning and allocation

The national radiofrequency repartition plan is prepared by the Minister of Posts and Telecommunications and is revised every five years or at the Minister's initiative. It

[13] It is also called "Mammi' Law", from the name of then Minister of Posts and Telecommunications, Oscar Mammi'.

[14] The previous law 10/1985 stated that broadcasting is reserved to the state.

identifies the frequency bands that can be used by the various telecommunications services.

The frequency allocation plan determines service areas and user areas, based on the population served, on its distribution and on the geographic, socio-economic and cultural conditions of the areas. They generally coincide with the political-administrative partitions of the Italian territory into regions.

National broadcasting must cover at least 60% of the country, while local broadcasting covers at least 70% of the user area assigned to the station. Thirty percent of the total TV programs and 70% of the total radio programs broadcast in every user area must be local transmissions. The frequency allocation plan is also revised every five years or at the Minister's initiative.

The Guarantor for broadcasting and publishing

While the Minister of Posts and Telecommunications manages the radiofrequency allocation and has the power to issue and revoke broadcasting licenses and to issue administrative sanctions, a Guarantor for broadcasting and publishing is established. He or she is proposed by the Chairpersons of the House of Deputies and of the Senate and appointed by the President. S/he must be a former judge of the higher courts, a university professor or an acknowledged expert in the mass media sector.

The Guarantor is responsible for keeping a national register of all broadcasting and publishing companies. S/he examines the broadcasters', programme producers' and distributors' budgets as well as those of advertising companies. In the case of violation of the law, s/he can issue administrative sanctions or propose the revocation of licenses. The Guarantor also monitors the rating system.

The 1990 Act thus created a "supervisor" for the broadcasting/publishing industry, that replaced the previous Guarantor for publishing, created in 1981. The monitoring of broadcasting and publishing are now united under one authority.

Advertising

A large part of the Mammi' Law (articles 8 and 9) is devoted to advertising. As a general rule, advertising must not offend personal dignity and encourage racial, gender or ethnic discrimination. It must not encourage behavior that damages health, security and the environment. Advertising must not damage children morally or physically, and it is not allowed to interrupt cartoons.

Advertising must be easily recognizable as such and be separated by other programs by optical or acoustical means.

In addition to commercial breaks before and after programs, there can be one break in theatrical plays, films, operas and musical programs which last less than 45 minutes. Programs that last less than 110 minutes can have three commercial breaks and longer programs can have four breaks. The Guarantor can appoint a commission to determine works of artistic value, educational and religious programs that cannot be interrupted by advertising.

The advertising of medicine or medical treatments is forbidden and programs cannot be sponsored by companies whose main activity is the production or sale of tobacco, spirits, medicine or medical treatments. Sponsored programs are considered advertising and account for 2% of the daily advertising allowance. RAI cannot allocate commercials to more than 4% of its weekly programming time or 12% of each hour. For national radio networks the limit is 18% each hour and for local radio 20% each hour. Private national TV networks can allocate to advertising up to 15% of the daily programming time and 18% each hour. Private local TV stations cannot exceed 20% of each hour and 15% of the total programming time of the day.

Local advertising can only be broadcast by local stations, national networks must transmit identical commercials in the whole country.

Sponsors cannot influence the contents of programs and must be clearly identified at the beginning or at the end of the program.

Every year the Prime Minister sets the maximum limit for advertising revenues for RAI in the following year. Public administrations must allocate the private local broadcast media at least 25% of their advertising budget. The Prime Minister decides messages of social interest that the public broadcaster is obliged to transmit, with a limit of 2% each hour and 1% each week.

Antitrust measures

Law 223 approaches antitrust issues with an eye to media cross-ownership. Owners of newspapers with at least 16% of total annual circulation cannot own national television networks. They can own one national network if their newspaper circulation exceeds 8%. If their circulation is less than 8%, they can have up to two national TV concessions.

No one can control more than 20% of the total mass media resources or more than 25% if at least two thirds of their revenues come from the mass media. One person cannot control more than 25% of the total number of national radio or television concessions, and in any case cannot exceed three. This rule basically confirmed the RAI-Fininvest duopoly and was later declared unconstitutional by the Constitutional Court[15], because it does not promote pluralism (Cherchi & Mele, 1995). In 1990, the total number of networks was supposed to be twelve, of which three would be public and nine private. The Minister, Mammi', prepared a plan for fifteen networks. A new law (n.422/1993) established a total number of eight networks, which would reduce the number of concessions for a single owner to two. The latter has surprisingly not been declared unconstitutional by the Court, although it can hardly be said that it promotes pluralism. The antitrust measures of Law 223/1990 have been enforced only partially, because the concessions came as late as 1992 and for six private networks only, without a frequency allocation, as was stated in the law. One reason for the delay lies in the replacement of the Republican Minister Oscar Mammi'

[15] Verdict n. 420/1994.

with Socialdemocratic Carlo Vizzini in that period. Local TV and radio stations have not yet been granted their concessions.

Another provision that has not been enforced was the 20% ownership limit of the total mass media resources for a single subject. Lack of clarity in the definition of what was meant by "mass media resources" made it impossible to enforce the limit. According to former Minister Mammi' (Cherchi & Mele, 1995), the main problem in determining limits to network ownership is not the number of networks, but audience. He recently proposed a ceiling of 10% to ownership of media companies, so that the latter would be in the hands of a large number of investors. He also proposed to make the Guarantor a collective organ instead of a monocratic one. It should be composed of five people, three of whom elected by the House of Deputies and two by the Senate. Last, but not least, Mammi' would limit commercial time slots for owners of more than one network, instead of setting a ceiling to advertising revenue, because it could be easily eluded, thus distorting the market mechanism (Cherchi & Mele, 1995).

The 1990 Law further considers cross-ownership issues between broadcasters and advertising companies. If the latter are controlled by a broadcasting company, they cannot collect advertising for more than three national TV networks or two national TV networks and three local networks or one national networks and six local networks.

Local broadcasters can control, in different areas, three TV stations (four in Southern Italy) or seven radio stations[16]. Only one local radio or one TV license will be awarded to the same person in each area, but TV operators can also obtain a radio license if there are fewer applicants than frequencies available. Cable systems or pay-TV services count as licenses for the purpose of anti-trust rules.

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[16] Radio stations can be adjacent and air the same programs if they do not serve more than ten million people.

Licensing

Licenses last for six years and can be awarded to Italian and EC citizens or non-EC citizens whose countries allow reciprocity. Licenses cannot be awarded to state bodies, banks or financial corporations.

Private local broadcasters must broadcast for at least eight hours a day and sixty-four hours a week. National networks must broadcast at least twelve hours a day and ninety hours a week. National broadcasters must transmit daily newscasts.

A group of local stations that want to broadcast programs simultaneously must obtain an authorization from the Minister of Posts and Telecommunications. They cannot broadcast simultaneously for more than six hours daily and they are considered local networks. The latter is an intermediate situation between national networks and single local stations. Groups of local stations are frequently labeled as "circuits" (Gambaro & Silva, 1992) and they represent a way of acquiring part of the national advertising budget that has been traditionally controlled by the major networks (especially the duopoly RAI-Fininvest). A circuit can also afford programming that would be too costly for a single local station. On the other hand, the affiliation to a circuit affects the local identity of a station as opposed to national networks. The local station loses autonomy in the management of broadcasting time and depends more or less on the circuit it belongs to. One way of keeping a local identity is to invest in local information and news, although this type of programming is expensive.

Private stations and networks are required to pay a yearly license fee, but the amount is very small: five million lire (approximately US$ 3,000) for local radio stations, twenty million for local TV stations (approx. US$ 12,000), five million for every area served for national radio stations and twenty million for every area served by national TV networks.

A yearly tax of 25% of the above fees is also due.

Up to 25% of the concessions in each area can be given to private foundations, non profit associations or cooperatives for community broadcasting. For all broadcasters, concessions are allocated according to objective criteria, like economic viability, quality of programming and technical capacity, past experience in the market, quantity and quality of self-produced programs (especially news). For local concessions, at least 20% of weekly programming must be local information/news and non-commercial local issues.

The public broadcasting company

The public broadcasting company, RAI, is allowed to operate three TV networks and three radio networks, plus one radio network devoted to the broadcasting of parliamentary proceedings. The board of directors is still appointed by the Committee of Vigilance.

RAI must broadcast at least 51% European programs[17]. Italian programs must be at least 50% of the European programs and at least one fifth must have been produced in the last five years.

Each household must pay a yearly license fee.

Cable television

The Mammi' Law does not directly address the issue of cable television. It only instructs the government to make a new law that modifies the 1975 law on cable television. The main principles stated by Law 223/1990 are:

1. The transmission of programs by mono or multichannel cable is subjected to authorization by the Minister of Posts and Telecommunications.

2. The duration of the authorization, the requisites to obtain and the obligation of authorized subjects are to be fixed according to the ones established for broadcasting concessions.

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[17] It was 40% until 1993.

3. Cable TV operators must use public telecommunications infrastructure. If no public infrastructure is available, the installation and operation of private networks are to be subjected to concessions.

4. The authorized subject will have to pay a fee and a governmental concession tax the amount of which is to be fixed in correspondence with broadcasting fees.

The expected law on cable TV was never approved, thus impeding once again the development of the sector. A 1991 decree (2.22.1991, n.73) on cable TV introduced further principles for the regulation of cable TV. Concessions to private operators can only cover local areas, they have a duration of twenty years and can be renewed. The authorization to transmit cable programming was subjected to the same antitrust principles established by the Mammi' Law for broadcasting. According to the decree, the government should specify the definition of "local" areas, the requisites required from applicants for concessions and the technical characteristics of the service. The required government specifications were never established and the rules established by the Mammi' Law for broadcasting still hold for cable TV.

The latest developments

In 1994, some political groups, both from the right and from the left, decided to challenge the Mammi' Law and proposed five referenda to the judgement of the Constitutional Court, which judged four of them acceptable. The Northern League, a rightist party, proposed the elimination of the law that assigns the public TV service to a publicly held company. This referendum would allow private ownership of the public broadcasting company. Leftist groups proposed to abolish the rule according to which one subject can own more than one national TV network. This would clearly imply a divestiture of two of Fininvest's networks and, possibly, of RAI's networks, too. Leftists also wanted to reduce the number of commercial breaks during films or theatrical plays and to eliminate the possibility for advertising concessionaires to work for three national

TV networks. The only referendum that was not admitted wanted to abolish advertising on RAI (Menghini, 1995). The vote on June 12 was a "no" to all issues but the one on RAI's ownership. The sale of shares to private investors is now allowed. The duopoly of RAI and Fininvest remained unchallenged as far as number of networks that can be owned and advertising.

As usual, the need for a more comprehensive legislative intervention is clear and was only made more evident after the referenda. These are, according to the Italian Constitution, only admitted to abolish laws, not to create new ones. Parliament will therefore be called to intervene and produce a new reform of the television sector in Italy.

In May 1995, a few weeks before the referenda were voted and in order to avoid them[18], a new bill for the reform of broadcasting was presented. Its 35 articles redesign the entire sector. At the end of a transition period until 1998, private broadcasters would only be allowed to own one national broadcasting concession (two in 1996) and the public service would be entrusted to a national network funded by advertising and a "federal" network funded by a license fee. RAI would have to sell to private investors at least 20% of one network by 1996 and 80% by 1998. Both public and private broadcasters would be allowed to own cable and satellite networks and private broadcasters would be able to control both daily and weekly newspapers. In order to address antitrust issues, private concessionaires would not be allowed to control more than 25% of all economic resources of the television sector (advertising, telemarketing, sponsoring, public funds and revenues from pay-TV). If they also control daily and weekly press companies, the limit is 15% of the total resources.

For cable TV the country would be divided into areas with a maximum of 500,000 hook-ups (or terminal connections). The installation of cable networks in each area would be allocated through bidding procedures by the Region in which the area is located.

[18] In the Italian system, a referendum abolishes a law or parts of it. If a referendum is approved by the Constitutional Court and them that law is abolished or amended by Parliament before the vote, the referendum has no further reason to take place.

According to current law, STET is the only operator authorized to wire the whole country. This new rule would therefore decentralize the decision process.

The bill also includes several institutional reforms: the Ministry of Posts and Telecommunications would become Ministry of Communications. The Parliament Committee of Vigilance would be replaced by a committee composed of ten deputies and ten senators appointed by the chairpersons of the two Chambers. The Guarantor for broadcasting and publishing would be a collective body composed of two committees of four members each, a chairman and a council (including members of the two committees and the chairman). Members of the two committees would be elected by Parliament for six years. The chairman would be elected alternatively by the Senate and by the Chamber of Deputies with a two-thirds majority. This Authority would have larger powers than the Guarantor's, including issuing broadcasting concessions (Ecco l'Antitrust..., 1995). One of the two committees would regulate networks and infrastructure, the other one would be responsible for services and products (Mazzocchi, 1995). The submission of this bill could not avoid the referenda, because after its presentation to Parliament no decision was made as to its approval or refusal.

Conclusion

Law 223/1990 was the first comprehensive attempt at regulating the television sector in Italy after private broadcasters started operating on the basis of self-imposed rules. This situation has been appropriately called the "wild west" of Italian television. This law is nevertheless still the result of a compromise between different powers, it is divided between the idea of television as a public service and television as consumer entertainment. On the one hand the law underlines the role of advertising and regulates it, that is, it recognizes the existence of commercial television. On the other hand, it is worried about defending pluralism and public service. This concern dictated the creation

of the Guarantor for publishing and broadcasting and the introduction of antitrust measures, although they are not very strict, especially in the TV market.

This law does not promote competition either, because it essentially confirms the RAI-Fininvest duopoly. There is an a-priori limitation of the total number of national networks and of the number of local concessions allowed for each subject. Most of all, there is no legislation to promote the development of cable television, that could provide competition to broadcasters.

As far as advertising revenues are concerned, the law imposed a low ceiling on RAI both for time and revenue. The regulation of sponsored programs and advertising on private channels is more permissive than what was established by the corresponding EC Directive 89/552. This allows private broadcasters high profit margins, while the annual license fees are extremely low.

Although the law requires private television to follow the principle of pluralism and objectivity as well, the main requirement of pluralism, that is the existence of a large number of networks, is not promoted.

With respect to the public broadcaster, Law 223/1990 does not introduce any substantial changes. It maintains the same number of channels and sources of funding and no efficiency controls have been introduced. The latter have been increasingly needed after the mid-eighties, when the RAI budget went from a slightly positive to an increasingly negative balance. This was mainly due to high labor costs and the competition with Fininvest, that caused a sharp increase in input costs, such as foreign programs and stars.

The regulation of local broadcasting is more restrictive than that of national networks. Programming rules (minimum transmission hours and obligation of providing local news) are rather strict, while advertising time is little more than what is allowed on national networks. Considering that local spots are much cheaper and quality programming costs are high, the economic space for local broadcasters is not very large. On the other hand,

the law is more permissive as far as media cross-ownership at a local level is concerned. The limits set for national networks and newspapers are completely absent for local media.

On the whole, this law seems to intend to consolidate the existing situation, more than introduce new principles and/or rules. It does not provide any policy indications for the development of new technologies such as cable TV, pay TV and satellite TV.

The 1995 bill is definitely more innovative, especially in its ownership limitations, which would entail the divestiture of two of Fininvest's networks and one of RAI's. Another important issue, cable TV, is treated with a decentralized approach, as opposed to STET's monopolistic ownership and operation of the telephone infrastructure. As far as regulation is concerned, the proposed shift of powers from the Ministry to a collective Authority would mold the Italian system in a way that is similar to the US model. The Federal Communications Commission is also a collective agency and it is dependent on Parliament. Further considerations on the form of regulation to be adopted in Italy will be made in the next chapter.

CHAPTER 3

MULTIMEDIA AND INTERACTIVE SERVICES IN ITALY

This chapter evaluates the present situation of the Italian telecommunications and broadcasting sectors in the light of the "multimedia revolution". The most urgent reforms are identified and the January 1995 bill is analyzed. The latter is the result of a Senate inquiry on multimedia services that was carried out in 1994.

The Parliament's initiative

In August 1994, the Senate Commission for Public Works and Communication deliberated an inquiry on multimedia services. From September to November of the same year several experts and representatives from a number of companies and associations[19] were invited to express their opinions to the Commission.

The Commission's initiative was based on the recognition that digital technology is determining a convergence and integration process among the different sectors of the telecommunications industry, television and information technology, which in the past operated distinct networks and services. This process is leading to the global interconnection of networks, to the creation of new infrastructure and the development of new services. The changes that are occurring can be very beneficial for the industry, in terms of increased productivity and employment, as well as cost reduction. Users will also be favored both as consumers and as citizens, because they will be able to satisfy new communication needs and increase their freedom of choice between different cultural

[19] Hearings included IRI, Olivetti, Omnitel Pronto Italia, Consiglio Superiore delle Poste e Telecomunicazioni (Superior Council for Posts and Telecommunications, a consultative body with the Ministry of Posts and Telecommunications), the Authority for Informatics in the Public Administration, IBM, the Guarantor for Broadcasting and Publishing, Telepiu', several radio and TV associations, The US Chamber of Commerce in Italy, RAI, the EC, STET, Telecom, Fininvest and the CNR (National Research Council). Written statements were requested from several related asssociations including banks (ABI), unions (CISNAL-Poste, CISL-FPT, UIL-Post, CGIL-FILPT), Confindustria (entrepreneurs), Confcommercio (wholesale and retail), Confesercenti (retail), ENEL (electricity), Societa' Autostrade, SIAE (copyright), SNAM (gas), foreign telecommunications regulators (Oftel, Conseil Superieur de l'Audiovisuel, Direction de la Reglementation Generale des Postes et Telecommunications), research and consulting companies (Reseau, Andersen Consulting).

stimuli. It was also pointed out that the communication revolution could entail short-term employment and mobility problems and that it is crucial for the cultural identity of countries that the contents of communication be developed as well.

Three main themes were identified for the experts to develop:

1. Given that the Italian system is characterized by delays in competition for value-added telecommunications services[20], by the Telecom Italia monopoly over network infrastructure, by poor development of electronic publishing, by lack of cable TV and satellite TV and by only very recent competition in mobile telephony, the Commission wanted to verify how, in the next 5-7 years:

a) new value-added and multimedia services can be developed;

b) the infrastructure can be adapted to the new needs (what investments are needed, how many financial resources are needed, who can operate in the new markets);

c) the capacity and competitiveness of the Italian industry can increase and support the development of multimedia services (hardware, software and contents);

d) the Italian TV system can be transformed by wiring the country, by using satellite broadcasting, by transmitting video signal over the local copper loop, by a more rational use of frequencies;

e) mobile communications can be further developed;

f) the joint development of telecommunications and information technology can be enhanced through a better interoperability of systems and standardization.

2. What is the role of network infrastructure operators in the convergence and liberalization of telecommunications? In Italy potential competitors are other utilities that currently do not use their infrastructure for telecommunications (railways, electric and gas utility, the freeway system). Further, the vertical integration between infrastructure operators and service providers must be analyzed: while there may be synergies, there is a

[20] Complete liberalization was only introduced in 1993.

risk of distortion of competition where bottleneck facilities allow restriction of access to the network.

3. What kind of regulation should be adopted? Several options are possible:

a) A single regulatory body for telecommunications, information technology and television or separated bodies;

b) A regulatory authority with antitrust responsibilities or reservation of the latter to the general antitrust authority.

The "multimedia revolution"

According to the experts that were interviewed (Bosco, 1995), the main technological determinant of the "multimedia revolution" is the evolution from analog to digital technology. The latter allows a high level of compression, manipulation and protection of information, thus increasing the potential of information supply and elaboration. Other elements are new microprocessors and new switches (Asynchronous Transfer Mode).

The information society was described in the Bangemann Report, adopted in May 1994 by the European Community. The report identifies the conditions for the creation of the new society (liberalization, interconnection, interoperability, new regulation, intellectual property protection, privacy and information security protection) and highlights ten applications to start the revolution: telecommuting, distance learning, university and research center networks, telecommunications and information technology services for small and medium businesses, road and air traffic management, health care networks, application of information technology to tenders[21], transeuropean networks of public administrations, urban information highways.

The Senate inquiry concluded that the communications convergence is not only technological, but it also entails the creation of a global market and global operators.

[21] For example, the use of information technology for the electronic processing of applications.

According to some, the convergence of media will create a single "new media" industry. The introduction of digital technology, satellite and cable into the television industry will change the character of television from broadcasting to narrowcasting, pay-TV and interactivity (catalogue TV, pay-per-view, video on demand). The third generation of personal and mobile communications will allow individuals to communicate voice and data in any part of the world, with minimum-sized handsets.

In order to realize the "multimedia revolution" a broadband telecommunications infrastructure is needed, for the transmission of voice, data and video at the same time and at an accessible cost over most of the national territory. The objective is wiring Italy by 2015 with fiber optics and increasing the use of satellite communication and broadcasting. At the same time, the state and public administrations will have to promote the growth of services and programs to be transmitted over the new infrastructure.

While it is possible to forecast the features of the future supply of multimedia services, the size and structure of the potential market are still unknown. There is uncertainty on the demand for multimedia services, especially residential demand. Some countries are experimenting with multimedia and interactive services and are conducting market research. Some of these initiatives will be analyzed in the next chapter.

While the potential for communication through multimedia services will undoubtedly bring great advantages to its users, there is a risk involved in the "multimedia revolution". Access to the new technology may not be universal, thus dividing society into "haves" and "have-nots". Individual privacy and the security of data transmission are at risk. Last, but not least, the availability of broadband media entails the need for new services and radio and television programs. If a country's supply of programming cannot keep up with the pace of technological development, there is either a risk of wasting the new capacities, or a risk of being invaded by foreign products. The result would be a loss of cultural identity and the further marginalization of national entertainment industries.

The Italian situation

While the above considerations apply to most countries at the beginning of the new multimedia era, some peculiarities of the Italian context need to be spelled out in more detail.

Discussions in Parliament pointed out several negative aspects of the Italian telecommunications and television industry. As a general observation, it is clear that the liberalization and innovation of the industry lag behind other industrialized countries. The degree of monopoly in telecommunications is among the highest in industrialized countries. Tariffs for leased lines, international and long-distance telephone prices are extremely high (up to ten times the corresponding US prices). The liberalization of value-added services (EC Directive n. 388 of 1990) was not completed until 1993 due to the incumbent's attempts at hindering liberalization. The Italian efforts in R&D are insufficient, both at the national and at the EC level. There is poor integration between research and industry and the latter is not sufficiently involved in R&D. The Italian telecommunications sector was weakened by the failed attempt at creating a national industry. Instead of pooling resources into the "Telit" project, some parts of the industry were sold to foreign investors (Telettra and Italtel).

The television industry shows similar problems. The restrictive laws of the 1970s, aimed at protecting the public monopoly on broadcasting, prevented the development of a cable TV industry in Italy. Several studies on the development of satellite broadcasting, that called for the creation of a national satellite system were ignored by the same authorities who commissioned them. The most recent law on broadcasting, n. 233/1990, did not address the issue of cable TV and satellite TV in a comprehensive way either, although more recent laws sanctioned the obligation for pay-TV channels to transmit over a cable or satellite infrastructure that does not exist.

The frequency spectrum has not been managed effectively. The last frequency repartition plan was made in 1983 and there are delays in the new allocation plan. At

present, the frequency spectrum is congested with radio and television channels, thus preventing the development of mobile communications[22].

The public sector lags behind in the adoption of new technologies for the communication and processing of data. These resources are not used rationally in order to supply better and faster services to citizens. There is no integration or interoperability between public networks. At the same time, there is a lack of coordination between public authorities in publishing, entertainment, broadcasting and related industries.

Some data will better illustrate the Italian situation in comparison with other European countries. In the telecommunications field, fixed network telephone service is a monopoly in all countries but the United Kingdom. Mobile services are provided by 4 operators in the UK, 3 in Germany, 2 in France and, very recently, 2 in Italy. ISDN networks in 1993 were 1,500 in Italy, 15,000 in France, 25,000 in the UK and 60,000 in Germany. While the UK has completely liberalized telecommunications infrastructure and services, in France it is possible to build networks for closed user groups that can be opened up to third parties under certain conditions. In Germany this possibility is extended to the creation of private networks by public utilities. In Italy, public utilities have their own networks, but closed user groups cannot build their own networks and resell excess capacity to third parties.

In the television industry, direct broadcasting satellite TV has over 3 million viewers in the UK, 6,5 million in Germany, 150,000 in France and 200,000 in Italy. Cable TV operators in Germany are 1,900, 163 in France, 130 in the UK and 0 in Italy. Cable TV networks are accessible to 85% of households in Belgium, 37% in Germany, 5% in France, 2% in the UK and 0 in Italy.

In France there are 7 satellite channels and 7 cable channels; in Germany 6 satellite and 7 cable channels. The UK has 20 satellite channels and 20 cable channels, Italy has

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[22] There are about 4,000 applications for licenses that cannot be addressed, with a loss of 350 billion lire per year. The frequency bands assigned to mobile services are only 20% of the European average.

none. In the UK there are 4 broadcast channels, in France there are 4 plus one broadcast pay-TV. Germany has 6 broadcast channels and Italy has 9 national broadcast channels, 2 pay-TV and about 870 local stations (Bosco, 1995).

There are, fortunately, some positive aspects of the situation of telecommunications in Italy. There have been large investments in the infrastructure: links between cities and between central offices in cities consist of optical fiber cables. Urban networks are being increasingly wired with fiber optics to the curb, although fiber to the home has not been realized due to its high cost. Intelligent networks are available, ISDN is expanding as well as the use of advanced software for network management. An electronic mail system (Postel) has been introduced. Digital mobile telephony is being introduced and videoconferencing facilities are available. RAI's ample production capacities in the radio and television sectors will be a valuable asset for the production of multimedia services.

Reforms needed in the telecommunications sector

Because the "multimedia revolution" has so many potential advantages for the whole society and the economy, Parliament debates produced proposals aiming at the adoption of a "National Project", that could use multimedia to trigger the economic development and industrial policy. The definition of a plan for technological development in the information and communication sectors, of a new telecommunications plan and of an industrial development plan for the growth of employment were also deemed necessary. Furthermore, according to the Bangemann Report, each country should start the ten projects mentioned above for the creation of an information society.

It is generally accepted that the information society will be governed by market forces and will develop from private financial resources. The new society emerging from the "multimedia revolution" should make the most of individual differences and specificities, and this cannot be disciplined by centralized authorities. The state's role should be to support and regulate the new developments.

More specific initiatives that need to be taken include the liberalization of telecommunications: not only value-added services and mobile telephony, but also local telephony and the infrastructure.

One proposal plans competition for a specific market. Local authorities would tender limited areas to be wired by private companies for the introduction of cable TV. Telecommunications services might be supplied by other public utilities that own and operate large private networks. According to others, smaller towns with poor telecommunications and broadcasting facilities should be wired first.

The liberalization of telecommunications must be accompanied by new regulatory methods. Liberalization is not to be intended as the lack of rules, it is rather market access according to modern rules, that allow the process of technological innovation, but at the same time are certain and enforced. The main regulatory issues have been identified as follows:

a) Open access for subjects that present qualitative requisites (moral, financial, technical and organizational) that protect users adequately;

b) Free access for service providers to any network infrastructure at predetermined conditions;

c) Restructuring tariffs of the public operator, setting cost-based prices, eliminating cross-subsidies;

d) Determining access and interconnection tariffs that are cost-based, equitable and non-discriminatory;

e) Creating rules for the protection of security and integrity of networks, for data protection, and for the promotion of interconnection of networks and interoperability of services;

f) Eliminating restrictions on foreign ownership in the infrastructure;

g) Reforming the law 223/1990 and other laws concerning broadcasting, so that restrictions on cable TV and satellite TV are removed.

Several tasks have been pointed out for the state. It should adopt an industrial development plan for the Italian telecommunications and software industry. It should also promote the development of services and demand for such services, by supporting pilot projects, reorganizing the information networks of the public administration, and making it easier for citizens to access them. The state can also play an important role in promoting education and professional training in the multimedia industry. The development of a multimedia market can be supported through tax breaks for investments in technological innovation and lower cost services. The Italian show and entertainment industries need support and intellectual property laws should be adequate both at the national and at the European level. Laws and research projects are needed for the protection of privacy in communications. On a broader level, the state should promote R&D, both public and private, and help increase Italian participation to EC projects, integration between universities, research institutes and the industry.

The reform of radio and television broadcasting

The reform of radio and television broadcasting builds on four main projects: 1) wiring the country; 2) developing satellite broadcasting; 3) experimenting with video transmission over copper wire; 4) regulating the radiofrequency spectrum.

The first project seems essential for the development of narrowcasting and pay-TV and for the provision of interactive services. Estimates of the investments needed to lay cable in Italy go from 30,000 billion lire (US$ 24 billion, to reach 16 million households), to 60,000 billion (US$ 36 billion, for 20 million households[23]). The cost per household would be US$ 1,500 with fiber optics to the building and coaxial cable to the apartment or US$ 2,500-3,000 with fiber to the home. These hypotheses are based on an estimated customer base of 4 million households in the year 2002. Of course, costs vary greatly

[23] The total population of Italy is 58 million, with 20 million TV households. Telephone penetration was around 43 per one hundred population in 1994. The number of TV sets in use per one hundred population was 42.

according to population density. It is estimated that by the year 2000, 20% of households could be connected. While STET would lay fiber on all long-distance connections, other entrepreneurs could wire specific areas and provide both TV and telephone service, as has been done in the UK. The provision of both services would make investments economically more viable and greatly reduce telephone bills for users.

Satellite technology can be used at a lower cost and in shorter time both for telecommunications and for broadcasting, thus freeing radiofrequencies for other services. Satellite technology does not provide interactivity though and can be best used for one-way service. While it is more affordable than fiber optics, the equipment cost for broadcaster and user is not to be ignored. Therefore, the promotion of satellite services should be supported through financial aid or tax breaks. As long as Italy does not have its own satellite, European satellites such as Eutelsat's Hot Bird Plus (to be launched in 1996) or Astra can be used.

The third project, radiotelevision transmission over copper wire, was supposed to start in 1996, with a potential demand of 2 million users by the year 2000. An experimental project was started in November 1994 by Stream, STET's subsidiary for multimedia services, a joint venture with Bell Atlantic. Adsl (Asymmetric digital subscriber loop) technology is used, which allows the transmission of video signals over copper wire at a speed between 1,5 and 6 Mb/sec. This speed allows the reception of three TV channels with VHS or better quality.

The experiment involves a test market of 2,000 households in Milan and Rome. They will be divided into two parts: during the first six months (starting in fall 1995) 1,000 users will experiment video on demand, while the rest will use a less advanced system (near video on demand). At the end of the first cycle, both technologies will be installed in the homes of the entire sample. This will allow to verify the reactions of the two groups. The experiment will be followed by surveys to spell out customers' needs and make the needed technical and marketing variations. This interactive service aims at promoting movies,

other TV programs, games, home banking, electronic mail, videoconferencing, telemedicine, distance learning, telecommuting and teleshopping. The latter would use Bell Atlantic's "Stargazer" technology for credit card payment. The total investment for the launch of the service is estimated in 5,000 billion lire (US$ 3 billion) over the next four years (Vergnano, 1994).

The experiment was also criticized by RAI and other television associations, because signal quality would be poor and the cost for users would still be high. According to them STET should adopt fiber and coaxial cable technology in order to obtain larger bandwidths and enhance the productivity of its investments. This point has also been raised at a more global debate level and was quite relevant to STET's following decisions.

After the experiment was started, STET announced that it would pursue a different option and take fiber to the home after all[24], thus creating an embarrassing situation for Stream, that was investing in a less costly and more limited technology. Moreover, Stream's partner, Bell Atlantic, became a partner in Olivetti's Omnitel consortium, that won the second mobile telephone license and is therefore Telecom's competitor. This move deteriorated the relationship between STET and Bell Atlantic, which finally withdrew from the joint venture. The future of the Stream experiment is now uncertain at best.

The fourth project, the management of the radiofrequency spectrum, calls for a new plan for the repartition of frequencies that takes into account future developments of mobile telephony. The frequency allocation plan for broadcasting should also aim at the reception of the largest number of possible signals with low interference. The introduction of digital technology in broadcasting would allow a remarkable increase in the number of channels that could be received in each area. No precise plans for these developments had been made at the time of writing.

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[24] At first, the decision had been made to go with Adsl technology for 7-10 years and then switch to more advanced technology.

Network infrastructure liberalization

The debate over infrastructure competition has been focused on two alternative solutions: on the one hand is the US model, with a number of specialized private networks that are interconnected with each other. On the other hand is the French model, that features the concept of one integrated network for everyone. Supporters of the integrated solution underline its lower cost and reduced interconnection and interoperability problems. The US model, on the other hand, focuses on competition for a diversified demand and lower price to consumers. While an integrated network has a potential lower cost, the consumer benefits in a monopolistic environment depend on the public authorities' access to cost information and regulation of supplier behavior.

In the meantime, the Commission of the European Communities designed a path for the gradual liberalization of the telecommunications infrastructure in Europe. The first step will be the liberalization of infrastructure for the supply of value-added, mobile and satellite services. The liberalization of the use of alternative networks (public utilities) and cable TV networks by third parties will follow. By January 1st 1998, the total liberalization of all infrastructure should be achieved.

Infrastructure competition will have to be regulated in the interest of users. The interconnection of all networks and the interoperability of services must be assured. Each operator must respect uniform technical and provision standards. Each service provider must have free access to each network and each network operator must contribute to the public service obligations of other operators.

The debate in Parliament brought up different opinions as to whether network operation and service provision should be separated. TV associations declared to be in favor of separation, possibly allowing cable operators to supply telephone services as well. Others pointed out that the operation of networks and the provision of services can have synergies in a context of pluralism of networks and competition. One proposal would

allow integration only for basic services (voice telephony), not for value-added services. Whatever decision will be made, it is clear that regulation is needed to protect competition. A structural or at least accounting separation between network and service activities is needed, as has been done in the UK. Asymmetric regulation for incumbent operators in order to promote competition might be another solution. Past experiences are available for evaluation in the UK and in the US.

Regulation

Most experts expressed their support for a single regulatory body for telecommunications, television and information technology, because these sectors are converging. The lack of an authority is slowing down the development of these sectors because of the high uncertainty of future regulations. According to the experts that were interviewed, the regulator should be agile, technically qualified and operate to liberalize and promote competition, without bureaucratic relationships with companies. It must operate in a transparent manner, publish and diffuse its decisions and motivations. The regulator must be strong and authoritative especially with regard to network interconnection and service interoperability in a liberalized context.

Several different opinions were expressed as to the regulator's antitrust powers. The number of those who wanted to keep regulation and antitrust separated was slightly larger, even though everybody agreed on the need for a strict cooperation between the two bodies.

There is a general agreement on the need to make the regulatory authority independent from the government. The main reason is related to the inefficiencies displayed by the Ministry of Posts and Telecommunication's technical structures. The Ministry is a bureaucratic structure, slow in adopting innovations and involved in the collusion between politicians, suppliers, service companies and unions. Moreover, the government operates with short-term objectives, while an independent authority can

pursue long-term goals. The government would impose political goals such as increasing employment and reducing inflation over an efficient structure of the system.

Other countries' experiences were analyzed, namely the French model, where the Ministry of Posts and Telecommunications regulates telecommunications, the British model, where regulatory tasks are shared between the Ministry and Oftel, or the US model, where most regulatory powers are centered in the Federal Communication Commission and are shared with state governments through coordinated policy-making. Both the UK and the US models tend to concentrate the bureaucracy involved in regulation in their regulatory bodies, while governments provide broad industrial policy objectives. There is thus a clear separation between the two areas.

The reform bill of January 1995

After the Parliament debate and the hearings that produced the above conclusions, the chairman of the Senate Commission for Public Works and Communications, Bosco, presented a bill containing new rules for the telecommunications and cable/satellite television sectors (N. 1331, 1.31.1995). This bill was based on the major trends of convergence, multimedia services, the need to reform Italian law and align it with European legislation and the need to establish a number of stable principles on which to build flexible laws.

The most innovative aspects are related to institutional changes. The Parliament Committee of Vigilance would be replaced by a Committee for Communications that would be responsible for telecommunications, broadcasting and new technologies. The Ministry of Posts and Telecommunications would change its name into Ministry for Communications and include responsibilities over publishing, public information and the show business as well. It would be the policy making body for both software and hardware in the broad telecommunications sector. The Ministry of Communications would still adopt technical norms for equipment, approve the frequency repartition plan and

public service contracts with telecommunications concessionaires, but it would share its powers with a new Authority of Communications. The latter would be appointed by the Parliament Committee among independent experts in the telecommunications sector. It would be articulated into two commissions of three members each plus the Authority chairman. The first commission would be responsible for the powers now in the hands of the Guarantor for broadcasting and publishing and enforce future rules on communications contents. The second commission would take over the responsibility to prepare the frequency allocation plan and make proposals to the Minister for the frequency repartition plan. It would grant concessions for the construction and operation of telecommunications networks on a pluriregional and national scale. It would also grant authorizations for the supply of cable and satellite television services. This commission would determine and manage access tariffs, universal service conditions, concession and license fees and enforce the conditions spelled out in licenses and authorizations.

Another innovation in the Bosco bill was the creation of an interministerial committee for communications, gathering the Minister of Communications, the Treasury Minister, the Minister for Industry, Commerce and Crafts, the Minister for University and Scientific and Technological Research, the Minister for Public Functions and Regional Affairs, the Minister of Public Education and the chairman of the Authority. This committee would ensure the coordination of the different public administrations for the development of communications and promote pilot projects in the different sectors related to communications.

The last proposal concerns the creation of a Fund for technological innovation in communications. It would be financed by concession and authorization fees, a tax on the price of telecommunications services and part of the revenue derived from the national tax on communications (to be created). The Fund would finance pilot projects in the communications sector and the objectives identified by the European Community for the

creation of the information society. Investments in satellite and digital technology could also be funded.

Several tax exemptions are proposed for companies that invest in optical fiber networks and for the purchase of satellite dishes.

According to the bill, the Authority proposes regulations for telecommunications and cable and satellite television to the Minister of Communications. He then sends it to the competent Parliament commissions and the Committee for communications. If there are no amendments, the regulation is approved with a ministerial decree (see figure 2). If there are amendments, the regulation is changed according to the Committee's suggestions and then approved. If it is rejected, a new regulation is submitted to the Committee.

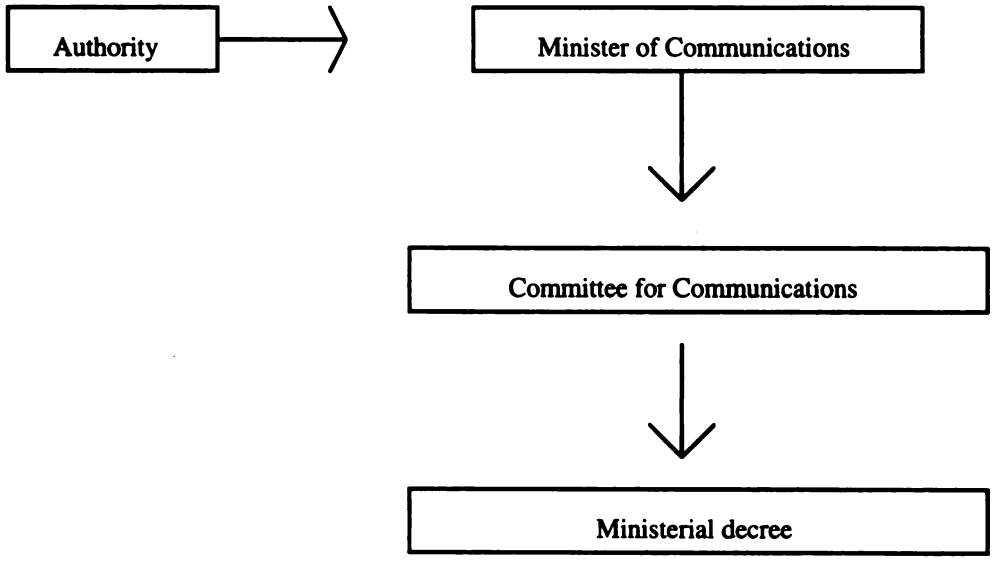

Figure 2: The regulatory process according to the reform bill of January 1995.

The leading principles for the regulation are: liberalization of the construction and operation of telecommunications networks, cable TV or satellite TV networks. Networks for closed user groups in specific areas are also to be authorized by the relevant local or national authorities. EC directives in the telecommunications, cable and satellite sectors must be enforced. Universal service obligations can be imposed on concessionaires. All telecommunications services, including voice telephony, must be liberalized. Infrastructure operators can also provide services, but they must have administrative and accounting separation of their activities. Authorizations for the provision of voice telephony cannot be obtained before January 1st 1998, unless the concessionaire is a cable TV operator. Private network operators can supply infrastructure and services to third parties, as long as the different activities are separated. The Authority regulates access and service tariffs in monopolistic or oligopolistic contexts. It also imposes quality requirements for telecommunications, cable TV and satellite TV services.

Conclusion

From the Parliament proceedings related to the "multimedia revolution" the need for an integrated approach emerges very clearly. If the aim is the creation of an "information society" and compliance with EC policy, very much needs to be done to complete the liberalization process and to adopt new technologies. All decision makers should coordinate their activity and not waste resources in unnecessary duplicated efforts. The most recent example of this waste is the Stream-Bell Atlantic Adsl experiment: a significant amount of resources has already been committed to this technology, but STET, that is Stream's major shareholder, changed its mind and just decided to pursue fiber to the home, thus creating further confusion in a sector that is already undergoing so many changes. The feeling one gets from the reform projects as well as from past performance, is that the telecommunications sector has attracted the attention of many players and many verbal commitments have been made, but it will be very difficult to carry out all projects.

The main problem is that too many actors are involved and they all have veto power, thus rendering decision making a very lengthy and complicated process. The risk is that, as has happened in the past, no decision or the wrong decisions will be made and Italy will continue to lag behind in the innovation of its telecommunications and television industry. The pressures coming from incumbent operators that do not want to lose their privileges will only make the reform process harder.

As will be shown in the next chapter, numerous other countries have been experimenting with interactive and multimedia services for the last couple of years. The United States is a particularly significant example, because its broadcasting and telecommunications industries are based on private enterprise. Investment decisions in advanced technologies are not being made by the US government, but by private companies that estimated that the market is ready for new services and are addressing the segments they think will be most profitable. The approach in the United States is thus not centralized, but market-led, insofar as that is possible, because the real demand cannot be known until the new services hit the market.

CHAPTER 4

MULTIMEDIA AND INTERACTIVE SERVICES IN OTHER COUNTRIES

This chapter enlarges the horizon of the interactive services that are being planned and implemented worldwide. Examples of interactive trials are given from Canada, the United States, European countries and Asian countries.

STET's alliance with Bell Atlantic in the Stream venture gives a hint as to where the technology for interactive services is being developed with the most intense effort: the United States. The "interactive fever" hit the US a couple of years ago and all major companies in several related industries (cable TV, telephony, software, hardware) have been setting up trials in limited geographic areas. But the US was not where it all started. The first "interactive" television service, Videoway, was launched in 1990 by Le Groupe Videotron Ltee, a Canadian cable company.

The beginnings of interactive TV

Videoway features a pay per view service that allows subscribers to order movies and special events by using their remote control. The Interactive Television menu allows them to modify the course of a program, select a different camera angle, choose among news stories. For example, during a hockey game, they can select close-ups on two different players, along with statistics on their performance and get instant replays of the last few seconds of the action. This service is still one-way, all channels are sent to the home and viewers actually interact with the set-top box (Anne Hoag, personal communication, October 1994). The same network offers electronic mail, videotext, games and a number of optional services by other networks, both Canadian and from the US. In 1994, Videoway subscribers paid CDN$ 18.95 per month, including a Pay TV service or CDN$ 7.95 without Pay TV. 67% of subscribers have taken the more expensive package and

63% of customers retain Videoway after the 30-day testing period. This service has reached 26% market penetration in four years and has proved an effective retention tool for basic TV service and Pay-TV. The simplicity of its set-top box allows installation by the subscribers themselves in 85% of cases (Videoway, 1994). The Videoway experience provides an interesting example of market testing of an interactive service, even though it comes mixed with other traditional cable services. It seems to have been quite successful in terms of market penetration, even though critics report that subscribers have soon grown impatient with the limited interactivity of the service (Landler, 1990).

In early 1994, five of Canada's biggest companies (Videotron, Hydro-Quebec, Canada Post Corp., National Bank of Canada and the Quebec Lottery) and Hearst Corp. announced plans to launch the UBI (Universality, Bidirectionality, Interactivity) project in September 1995. It will be the world's largest interactive TV system, with 34,000 homes connected within the first few months. Chicoutimi, a town five hours' drive north of Montreal, will be the first market for UBI. The service will offer home shopping, electronic catalogs, coupons that can be printed out, banking services, educational tools, home automation, e-mail, classified ads and an electronic business directory supplied by Hearst. Customers will receive, free of charge, a set-top box, in-home printer, "smart" card and remote control. They will pay monthly basic cable charges, but no additional charges to use the system. There will be pay-per-view movies, but no video on demand (VOD). It is thus a low-tech choice until VOD costs become more reasonable. This is the main reason why UBI has been almost totally ignored by US companies, whose tests all focus on VOD. Although UBI is a lower profile initiative, it has several advantages over similar US trials. First, it is not a test, but a complete launch: all Chicoutimi homes are scheduled to be wired within a few months. Thus, precious data on demand characteristics can be gathered that will be superior to the data collected in US trials that, for the most part, wire only a few hundred to a few thousand homes. The Canadian environment is also more friendly than the US: there is no competition, while in the US all major cable

companies and telcos are racing to be there first. Moreover, there are less regulatory constraints in Canada and one of the partners (Videotron) already has some experience and reputation as an interactive TV provider (Aho Williamson, 1995a).

US telco projects in interactive services

While cable companies are more naturally focused on TV-based interactive services, the first moves by telephone companies have been toward providing communications and networking services to businesses. Examples are AT&T's WorldWorx and MCI's networkMCI Business, both launched in 1994. AT&T's product was first and offers access to numerous services, but MCI provides all in one package. Services provided are e-mail fax, video conferencing and access to the Internet (Keller, 1994). Later, in May 1995, MCI signed a four-year, US$ 2 billion deal with Rupert Murdoch's News Corporation. In exchange for the cash transfer, MCI will acquire a 13.5% equity stake in the media company[25] and the two partners will each invest an additional US$ 200 million into a new joint venture. News Corp. content (news and entertainment) will be electronically distributed to businesses and homes through MCI's telephone network, first to users' computers and later to their TVs (Krantz, 1995a).

The MCI/News Corp venture is a response to similar alliances, such as Sprint's content distribution alliance with cable companies TCI, Comcast and Cox. This venture, called Triple Play, aims at offering alternative wireless (WirelessCo) and wired (NewTelco) local telephone services. The participants are likely to be the first to offer combined local/long distance and telephone/cable services under a single brand (Sprint), glued together by a single switching architecture (Teleport's), with combined billing and customer service, and with shared (and thus lower cost) and more quickly-deployed network infrastructure (Merrill Lynch Capital Markets, 1995).

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[25] With an option to acquire up to 20%.

AT&T seems to be the only major long-distance company to have bad luck when it comes to multimedia and interactive initiatives. Its alliance with Viacom to build an interactive TV system in Castro Valley, California, has been put on hold pending the outcome of Viacom's proposed sale of its cable TV systems. AT&T was to develop equipment and video services through Downtown Digital, a division created in 1993 to develop content for this and similar ventures that, too, were later canceled. AT&T developed sophisticated digital set-top boxes that were too expensive for commercial deployment, while General Instruments and Scientific-Atlanta, among others, made cheaper models that just do what customers are likely to pay for, like ordering movies (Kupfer, 1995).

Another telephone company, GTE, was also among pioneers in interactive television. They obtained an FCC waiver of telco-cable cross-ownership rules in 1989 to build a cable system in Cerritos, California. At the end of 1993 GTE was ordered by the FCC to put an end to the trial. The main problems in the unsuccessful test were its limited scope, a feature that made it unsuitable for advertising, and its failure to use full-motion video (Selinger, 1993). In 1994, GTE was planning another video network that would provide cable, broadcast and interactive TV programs by 2003 to seven million homes. The test locations would be four cities in California, Florida, Hawaii and Virginia (GTE plans video..., 1994). In the meantime, the company made an agreement with Nintendo to create interactive video games and thus tap into Nintendo's retail channels and established consumer market (Berniker, 1995a).

Similar problems occurred to Regional Bell Operating Companies (RBOCs), such as US West, that is about a year late in rolling out a video system designed to service 50,000 customers in Omaha, Nebraska. US West's video dialtone gateway, TeleChoice, is expected to offer conventional cable and new interactive services in its trial area. It signed a number of contracts and made verbal deals with 22 video program and information providers: movie studios, television production houses, video game producers and others

will put their shows into massive video servers, creating a library of video choices that consumers can access in an on-demand format (Berniker, 1995b).

Ameritech has chosen a different strategy. It will not conduct any trial and expects to sell its video services to 300,000 households by the end of 1995. The company awarded US$ 475 million worth of contracts for various pieces of equipment from Scientific-Atlanta, Digital Equipment Corp. and ADC Telecommunications. The network aims to provide alternative service to cable, but has not disclosed details on the programming it plans to offer (Berniker, 1995c).

Nynex is also planning to start up a separate subsidiary for content production. It plans to use digital set-top boxes by Zenith and digital video servers by Digital Equipment Corp. A fiber-coax access system, including transmitters and receivers, will come from ADC Telecommunications. Nynex is already testing some interactive services over its analog network to a limited number of consumers as part of its Manhattan video dialtone trial. The programming and interactive services for that trial are largely provided by Liberty Cable, that occupies 70 of Nynex's 160 channels. The first service offered by Liberty Cable was movies on demand, with test participants ordering a movie per week[26]. Liberty also offers conventional cable, Reuters and Dow Jones. It will make available home shopping through Bergdorf Goodman and educational classes through The New School. An air and traffic information service through the Port Authority of New York and New Jersey is also provided. The interactive video services are being tested on a limited customer base (27 in September 1994, 800 by the end of 1995), but 25% of the 2,500 customers participating in the analog portion of the video trial expressed interest in interactive services (Berniker, 1994a).

Nynex also participates in a joint venture with other RBOCs, such as Bell Atlantic and Pacific Telesis, and Hollywood Creative Artists Agency, that has been called Tele-TV. The new company plans initially to provide nationally branded, traditional and interactive

[26] Take rates for this service are apparently 5.2 times those of typical pay per view.

home entertainment, information and educational programming over new broadband and wireless networks in six of the top seven media markets. An initial deployment of wireless technology will supply one million US households with interactive digital service by late 1996. By the end of the year 2000, the number of customers will have expanded to 10 million. Market trials of on-demand programming began April 17, 1995 in the Washington area. Tele-TV will offer more than 100 channels and pricing will depend on cable competition in markets, with 10%-15% discount off cable fees likely in competitive markets and no discount offered consumers in less competitive markets. In July 1995 Tele-TV was scheduled to begin a six-month laboratory test of an operating system from Microsoft for possible use in the venture (Tobenkin, 1995).

As emerges from the above examples, there are still uncertainties as to the best technology to use. For example, Bell Atlantic, Tele-TV's strongest partner, recently withdrew two applications for video dialtone on the East Coast because it wanted to upgrade the technology it had committed to. Its original plan was to wire its system with a mix of fiber-optic and coaxial cable. The company now will go to all fiber, allowing for more interactivity and better picture quality. Interestingly, Bell Atlantic's Italian partner, STET, made the same decision approximately at the same time. Bell Atlantic is conducting two market trials, the high-profile Stargazer video on demand system in Fairfax County, Virginia and the lower-tech Toms River, New Jersey test. They are both scheduled to start in 1995, with 1,000 Stargazer households online by July and 10,000 to 20,000 by December. The project will eventually be taken over by Tele-TV (Aho Willamson, 1995b). The first trial will offer access to more than 700 hours of video on demand, including movies, music videos, vintage TV shows, how-to shows, educational and children's programming and shopping services featuring Land's End, Nordstrom's and J.C. Penney. By 1996, Bell Atlantic plans to offer its phone customers more robust services, including cable TV (Krantz, 1995b).

A common problem for all telephone companies is that they need to wait until their fiber/coaxial cable networks are in place before they can start offering interactive television services. In the meantime, they are turning to older technology, such as wireless transmission of cable channels. There are several "interim" technologies that are being adopted by telcos such as Nynex and Pacific Telesis: Multichannel Multipoint Distribution (MMDS), Satellite Master Antenna Television (SMATV), and Local Multipoint Distribution (LMDS). All three technologies enable telephone companies to transmit programming over the airwaves, rather than through their wires. These systems are relatively cheap and easy to install, but they have serious drawbacks. Wireless cable can only transmit up to 33 channels and the signal is easily interrupted by trees, buildings, hills, etc. MMDS, for example, has been used mostly in areas that are either too rural or too poor to interest regular cable operators. New digital technologies would enable companies using MMDS to increase the number of channels to more than 100, but customers would have to purchase expensive set-top boxes. LMDS is even more rudimentary than MMDS, because it is sufficient to install a small satellite dish to receive signals. Of course, wireless services use spectrum, which is currently being preferably allocated to mobile communications. SMATV is also limited, because it is a useful technology for large apartment buildings, where the signal is captured by a central receiver and distributed through the building via coaxial cable. It is far less suitable in rural or suburban areas with single-family houses (Landler, 1995).

US cable operators' projects in interactive services

The largest US cable operators are all testing interactive television, too, in conjunction with other cable companies, telephone companies or software houses such as Microsoft or ACTV. They are all ready to start between 1995 and 1996 and heavy investments in cable modems, set-top boxes, ATM switching and content are being made. According to some commentators (Dempsey, 1995), "cable operators are way behind in

delivering on their brave new world promises of everything from movies on demand at the flick of a button on the remote, to a whole array of interactive goodies ranging from video game playing to horse race betting." There are delays in the delivery of interactive services, due to technical problems and federal regulation. Another difficulty seems to be access to capital, a problem that telcos do not have, because they have much larger cash reserves and greater sustained revenue streams. The lack of capital slows down the cable industry's upgrade of their systems and prevents new cable operators from entering the business due to lack of channels. On the other hand, cable companies are trying to get into the telephone business. Besides regulatory hurdles, entry into telephony requires ability to provide point-to-point communication, while cable systems' architecture has always been one-to-many. Itemized billing is another necessary innovation for would-be cable telephone providers (Krantz, 1995c). According to John Malone, TCI's chairman (Kline, 1994 and Meletti, 1994), the real reason why telephone companies are entering the interactive television business is to keep cable companies out of the telephone market. Cable companies can in fact offer telephone service at lower prices than telcos. The telephone companies' strategy allegedly is nothing but a defense of their own monopoly. According to Malone, the failed merger between Bell Atlantic and TCI and between Southwestern Bell and Cox, as well as the successful alliance between US West and Time Warner are nothing but telcos preparing for the real battle, the one among themselves. It is actually not clear why the huge telcos should be afraid of cable TV's competition. The latter are considerably smaller, but they could be the Trojan horse to invade other RBOCs' territories if "cable telephony" develops.

The cable companies' efforts have been especially geared toward addressing not only TV sets, but computers, too. Information and entertainment will be provided over cable to subscribers' computers, in direct competition with telcos and online services. Cable modems will bring two-way digital broadband signals from cable lines to computers, thus turning Internet and online services from slow text-and-graphics offerings to high-speed,

interactive applications. Continental Cable has been testing cable modems from two manufacturers, LAN City and Zenith. The cost of the boxes is still very high, from US$ 500 to US$ 5,000. Similar tests are being carried out by Cox Communications, Comcast, Time Warner and TCI (Buergi & Krantz, 1995). TCI invested US$ 125 million in The Microsoft Network, an online service that will be bundled with up to 20 million copies of Windows95[27], Microsoft's upgraded operating system. In 1996, The Microsoft Network over cable will undergo a limited technical test in Denver, Seattle and San Francisco (Berniker, 1995c). Microsoft is also involved in two other interactive trials, one with SBC Communications (formerly Southwestern Bell), in Richardson, Texas, and one with NTT, in Japan. Switched digital fiber to the curb network technology architecture from AT&T and BroadBand Technologies will be used (Berniker, 1995e). Microsoft has deals with Hewlett-Packard, NEC and General Instruments to have its software run through their set-top boxes. International partners include Deutsche Telekom, Telstra Corp. of Australia, Olivetti, Alcatel, Sony and Andersen Consulting (Berniker, 1994b).

One of the most closely watched interactive TV trials is Time Warner's Full Service Network (FSN) in Orlando. After being put off for several times for technical reasons, it finally started in late 1994. The service brings video on demand, home shopping and video games at this time and new services, such as news on demand, more movies and grocery shopping are expected to be added by the end of 1995. The service was initially free, but charges for movies (US$ 2.95 per film) and games were soon introduced (Blank, 1995).

A different kind of VOD service is the one provided by Your Choice TV. It rotates its daily menu from a video library of hundreds of recent and past programs provided by the broadcast networks and cable operators. The Your Choice system offers consumers the opportunity to purchase a programs they missed or they want to see again for a low price (roughly US$ 1) and to watch it when they choose or several times. Each day a 24-title

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[27] This strategy is being challenged by the US Justice Department, Antitrust division, as anticompetitive because it restrains vertical market potentials.

menu is available including documentaries, news specials, entertainment shows and children's programs. Your Choice has been included in TCI's VOD trial in Littleton, Colorado. The test will show if consumers are willing to pay for old TV programs, which could then be one of several offerings on the future menu of interactive TV. Your Choice TV was included in several other trials with Comcast, Time Warner, Cox Cable Communications, Continental Cablevision and others (Berniker, 1994c).

Entertainment is not the only focus of interactive cable programmers. Viacom's Nickelodeon will launch the first interactive learning channel, the Big Orange, in late 1996. Competition will be tough, though, because TCI's programming subsidiary, Liberty Media, holds big stakes in such networks as the Discovery Channel and the Learning Channel, which have interactive plans of their own. It will thus be difficult to sell the Big Orange to TCI, which controls 25% of US cable households (Robins, 1995).

As far as sports are concerned, ACTV adopted a technology similar to Canadian Videoway's to enable viewers to call up replays, isolate star players and retrieve up-to-date statistics and graphics. The service is now available to households in California that are served by Ventura County Cablevision. ACTV's technology is used for basketball, hockey, college football and basketball games, horse races and boxing matches. Subsidiaries of TCI and Turner Broadcasting are also participating in the experiment. ACTV's technology has so far been used for educational purposes and it was developed from the electronic design of a robot invented in the mid-1970s by Michael Freeman, the founder of ACTV. The robot was scaled down to an educational question-asking toy, called 2XL, and ACTV took this technology to TV. The main difference with Videoway's service is the adaptation of ACTV's interactive technology to advertising. Viewers in Ventura County can select commercials in various product categories and languages. By picking the commercial, their attention and recall levels are expected to be higher (Sandomir, 1995).

Interactive projects in Europe

European telecom operators and other companies are also getting ready for the multimedia and interactive revolution. In Germany, Mercedes Benz and BMW are testing a Deutsche Telekom system to design cars faster via computer links with suppliers. Other business applications include a multimedia project at Lufthansa to reduce aircraft repair times, a program to introduce lean administration at state and local government and teleservices for medicine, education and training (Edmondson, 1995). Deutsche Telekom also reached an agreement with Microsoft to develop software for video on demand services, home shopping and TV games. While the software is being developed in the United States, it will be tested in Germany on systems developed by Deutsche Telekom. If successful, the German telecom operator will incorporate the software in its pilot multimedia projects, which it plans to test on cable, optical fiber and standard telephone networks (Interactive deal..., 1994).

The country where the largest number of interactive trials are being conducted is the United Kingdom, where the liberalization of the telecommunications sector is more advanced. Cable TV operators can also provide telephone service, while BT is banned from offering broadcasting services directly until 2001[28]. Canadian Videotron was scheduled to launch an interactive TV test in collaboration with advertising agency Chiat Day in November 1994, but the trial was delayed until April 1995. Videotron already offered some interactive programming on its cable system, using the same technology it deploys in Canada.

British Telecom also postponed its interactive TV project to mid-1995 to add more services than just video on demand. The 2,500 home trial will offer home shopping, banking and educational programming, using Oracle interactive multimedia software. Marketers, such as Vauxhall and supermarket retailer Tesco, are also experimenting with interactive CD-ROM kiosks (Bowes, 1994).

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[28] BT has a cable subsidiary with 12,000 customers.

Videotron is not the only foreign cable operator in the UK. Seven of the nine biggest companies come from the US and are RBOCs and cable operators. The only exception is French General Cable, a subsidiary of Generale des Eaux. Although these operators are making good profits both from the cable TV and the telephone businesses, BT's dominant position in telephony is difficult to challenge. The real opportunity for cable operators remains building up a big enough share of the entertainment market before BT is allowed into broadcasting. Cable penetration rates are around 20% and competition from broadcast and satellite TV is strong. Interactive services might give the cable business a push and turn out a competitive advantage (Down the line, 1994).

In France, Focale 7 launched its multimedia business with interactive educational videos for the government on tobacco and nutrition. It also proposed a project that would put graphics and visual materials on France's 2 million small and mid-sized companies into an interactive video data bank. Infogrames Entertainment, that started out designing services for Minitel, is now launching its own online product (Edmondson, 1995).

Interactive services in Asia

In Japan, until 1993 the nascent interactive TV industry was limited by tight regulations that limited foreign investment, restricted the geographic area each of the country's 158 cable operators could serve and favored investment by small, local companies. After those restrictions were lifted, alliances with US companies were made, such as the one between Sumitomo and TCI. Itochu Corp., one of Japan's largest trading companies, is working on interactive applications with Time Warner and US West. Three other large trading firms, Mitsubishi, Mitsui and Nissho Iwai, are also planning to get involved. Fujitsu plans to start testing interactive TV with services such as near video on demand, games, karaoke, local community information and communication services for telephones, fax and personal computers. NTT, Japan's largest telecommunications carrier, is a passive partner in TCI's interactive test in Seattle, Washington and is working with

Microsoft and Silicon Graphics to develop TV set-top boxes and servers. In summer 1995 an interactive trial is scheduled to start in Tokyo, Chiba and Kanagawa, offering video on demand and phone service through fiber optic cable. The project, which will involve three local cable TV operators, is expected to run through March 1997. None of the Japanese cable services will have advertising, because cable penetration is still too low in Japan (4%) (Kilburn, 1994a).

Hong Kong Telecom is also upgrading its infrastructure for multimedia services. It is working with IBM to introduce video on demand by the end of 1995, with home shopping and banking to follow in 1996.

Korea Telecom is testing a video on demand service in 100 Seoul homes. The service will extend nationwide in 1996, but home shopping is not part of Korea Telecom's plans (Kilburn, 1994b).

Demand characteristics of interactive TV

It is clear that information and data on the supply of interactive services is abundant. Every company is eager to advertise its projects and trials. Much less is known about the demand side. Huge investments are being made without having a precise idea of what consumers want and how much they are willing to pay for it. It is very difficult to forecast demand for new services before it actually starts to emerge. Brandweek (Homes on the...,1994) surveyed the present state of the information highway in the US. Most households are equipped with information and telecommunication technology: 82% own a VCR, 80% have two or more telephones, 68% have two or more TV sets, 56% have an answering machine, 47% own a cordless phone, 25% a personal computer, 13% a cellular phone and 4% a fax machine. There is a high correlation between these appliances, i.e. those who own a computer a very likely to also have a VCR, two or more telephones, an answering machine and several TV sets. When it comes to interactive services, though, only 38% of adults are extremely interested in at least one interactive service, with the

highest proportion (57%) of young respondents, aged 18-24, and the lowest percentage (19%) among those over 55. Movies on demand are the highest rated service (30%), followed by information (13%), sports and game shows (12%), video games (11%) and home shopping (7%). Since interactive services have hardly been tested, these data only express attitudes toward them and therefore can only give a tentative idea of actual demand characteristics.

It is still not clear which application, between the TV and the personal computer, will be the winning technology. As far as penetration and ease to use are concerned, TV beats computer. Computers are only found in one household out of four in the US, much less in other countries. People seem to be afraid of the keyboard, even though interfaces are becoming more user friendly with each new generation of operating systems and software. The convergence between TV sets and computers into new "information service appliances" will eventually close this gap, because more and more information technology is being incorporated in electronic equipment.

The low interest expressed for home shopping may be related to the social dimension of shopping at the mall, besides the need to touch what is bought. Do people want to stay home all day and do all their transactions without ever leaving the house? This possibility is convenient for those who are forced to stay home, for health, weather or family reasons. But most people want to go out and be among people at least a couple of times a week. On the other hand, home shopping channels have been very successful, both in the US and in Europe. They actually opened new markets that could not have been measured by typical survey research.

The last question nobody has been able to answer so far is: how much are consumers willing to pay for interactive services? Most interactive trials are free at the beginning, in order to lure customers into trying them, but nobody knows how much these services should be charged in order to get people to subscribe. A Cablevision survey (Cablevision, 1994) found that 45% of respondents were willing to pay $5 a month in addition to their

regular cable bill, while 39% would pay $10. The huge cost of interactive TV can thus not be recouped from the consumer, who already pays an average of $35 for cable. The only other source of funding is advertising. Trading companies are alert and, in some cases, have already signed deals with interactive services providers, but will they withdraw their dollars from well-established media such as the broadcast TV networks and invest in ventures with an unclear future? An intermediate solution that combines subscription charges, advertising and direct sales of advertised products and services might also be viable in order to generate acceptable revenue streams and rates of return.

There are only very tentative suggested answers to these questions, based on possible elaboration of tests described in this chapter, until the new services have been launched on a commercial basis, but it is important to keep them in mind and use the necessary caution when making forecasts for future developments.

CHAPTER 5

BROADCASTING POLICY AND NEW TECHNOLOGIES IN EUROPE

This chapter attempts to answer the first research question of this research and analyze the European Community approach to broadcasting policy and new technologies. The role of the European Broadcasting Union and of the Council of Europe for the European media industry is also investigated. This chapter sets the framework for a more encompassing analysis of the main actors and their interactions in the policy process, both at a pan-European and at a national level.

Main actors and features of European broadcasting and audio-visual policy[29]

Media policy in Europe is closely related to questions of culture and national identity. In turn, these issues build on the conflict between those who view Europe as a community of nation states linked together in a convenient free trade area (the United Kingdom, for example), and those who envisage a Europe moving towards a supranational identity and consciousness (France). European unionists have sought to support growing European political structures with a corresponding European culture and consciousness shared by all citizens. Media and broadcasting policy, therefore, has been at the forefront of their concerns (Collins, 1994).

The four Directorates General (DGs) of the Commission of the European Communities[30] that are more directly involved in broadcasting are: DG III (Internal Market and Industrial Affairs), DG IV (Competition), DG X (Audio-visual, Information, Communication and Culture) and DG XIII (Telecommunications, Information Industries and Innovation). DG III led the EC's main initiative in the media sector to date, the 1984 Green Paper "Television without frontiers" (Commission of the European Communities, 1984), which

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[29] Throughout this chapter the terms "broadcasting and audiovisual policy" and "media policy" will be used as synonyms.

[30] For an analysis of the political structure of the European Community, see Collins, R. (1994), *Broadcasting and audio-visual policy in the European single market*, London: John Libbey, p. 16-17.

was designed to establish a single European Community television market. To implement the proposed policies, the Council of Ministers issued a Directive in 1989, and gave DG X the responsibility. DG X also has specific responsibility for the audio-visual industries and is the host directorate for the Community's MEDIA 95 program[31]. DG IV has no specific responsibilities for the media sector, but its competition policies have a profound impact on the industry. DG XIII is concerned with telecommunications, including satellite and High Definition Television (HDTV). It sponsored the Green Paper on communication satellites (1990) and the Directives on satellite television transmission standards (1986 and 1992). The most recent initiative in the field of media policy is the Green Paper on telecommunications infrastructure and cable television networks (1994 and 1995).

The Council of Ministers maintains a sub-committee on audio-visual policy and the European Parliament has a Committee on Youth, Culture, Education, the Media and Sport, which has responsibility for broadcasting and audio-visual matters.

The media policy of the EC focuses on three distinct, but interdependent sectors: hardware (television transmission standards), software (production and distribution of films and TV programs), and the restructuring and harmonization of the TV broadcasting market. The Community's policy focuses on the establishment of rules, the promotion of film and television production, and the development of the technological competence and productive capacity of the Community.

Two themes distinguish the development of EC media policy: the creation of a well functioning, integrated, competitive European market for broadcasting and the audio-visual and intervention in the EC media markets to redress what have been perceived as undesired outcomes[32] of the single market, as fostered by the "Television without frontiers" Green Paper. The most important factor which structures audio-visual markets

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[31] MEDIA is an acronym for Measures to Encourage the Development of the Industry of Audiovisual Production. It funds the pre- and post-production of films and TV programs. For more information, see Collins, op. cit.

[32] While the creation of a single broadcasting market would create European unity, it was perceived that it might also have the negative effect of reducing cultural diversity between and within European countries.

and prevents perfect integration is the difference in language and culture between different groups of Community citizens.

There are thus two main tendencies, that became evident in the early 1980s. The first is directed toward the establishment of a single competitive broadcasting market. The second is more interventionist and means to correct the mechanism of the single market. At the beginning, the single market was perceived to deliver too much diversity. Later, interventionists began to try and compensate for too much unity. The establishment of the MEDIA program and the inclusion of European content quotas in the broadcasting directive of 1989 constituted the main interventionist measures in the software domain.

Interventionists also focused on hardware and the establishment of an integrated Community satellite TV market. In 1986 a Community Directive established MAC (Multiplexed Analogue Component) satellite transmission standards as a Community norm, to facilitate the development of HDTV and to support the EC consumer electronics industry. The acceptance of the D2-MAC standard, however, made it difficult to implement television services reaching audiences of different language communities, because it has capacity for only two stereo and four mono channels. Provision of multilingual services were thus rendered difficult. Promotion of a single hardware market thus worked against the creation of a single software market, because it reduced the amount of different languages in which a program could be transmitted at one time.

The struggle between liberals and interventionists in broadcasting and media policy is part of a wider ideological debate concerning Community jurisdiction in cultural matters. The inclusion of cultural competencies within the Commission's powers is as recent as the Maastricht Treaty (1991). Some member states, notably Denmark and the UK, are deeply opposed to the inclusion of culture within the jurisdiction of the Community. Germany and Belgium, too, resist closer union, although their opposition has been less determined than that of Denmark or the UK.

The evolution of European Community media policy

Although formal recognition of Community competency in cultural matters is very recent, broadcasting policy started in the early 1980s. The European Parliament, which has very restricted powers, was first involved in broadcasting policy with the Schall Report (1981), which criticized the Community's information policy and emphasized the importance of radio, television and film as mass media. It advocated pro-active measures by the Community, notably the establishment of a European television company or of a European television channel, to promote the Community and its activities and institutions to Community citizens.

The Schall Report was followed in 1982 by the Hahn Report and the consequent Hahn resolution. Hahn identified the mass media, and television in particular, as instruments through which the EC could become a genuine "political community" (European Parliament, 1982). This report inspired the Commission's Interim Report, "Realities and tendencies in European television: perspectives and options" (Commission of the European Communities, 1983). The Commission stated that new telecommunications technologies (in particular DBS) would internationalize European television and that technological changes would both create a greater cultural unity and offer competitive advantages to European industry and culture. The Commission's report also emphasized the mismatch between expected increase in television distribution capacity (through satellite technology) and European production capacity. This imbalance would cause an invasion of foreign programs (especially from the United States) and thus threaten European cultural identity. In the early 1980s, European cultural identity was viewed in terms of unity rather than diversity. "A double determinism governed the Community policy debate. Technological determinism would ensure that new communication technologies (notably satellite television) would transcend and supplant national media. Cultural determinism would ensure that the cultural characteristics of the programs would be reproduced in the consciousness of those who consumed their output"

(Collins, 1994). The Community and other European institutions, such as the Council of Europe and the European Broadcasting Union (EBU), thus supported the Eurikon and Europa satellite television channels and the EBU's Euronews satellite television channel. Later in the decade, the diversity of tastes of European audiences became evident in the failure of these attempts to establish pan-European television services. Integrated European audio-visual markets began to be seen as an enemy of cultural diversity within the Community. Viewers of the first European transnational satellite channel clearly recognized the different, European character of the new service, but equally clearly preferred their own national services. They tended to perceive Eurikon as another foreign channel, rather than their own channel.

"Realities and tendencies" was endorsed by the European Parliament's Arfe' Report and Resolution. It recommended that the Community's powers in television be expanded, that national legislation be harmonized and a unified television transmission system be introduced. This was considered an essential prerequisite for the production of multilingual European programs. It also advocated the establishment of common frequency and orbital positions for satellite television, the creation of a central data bank on film and television and of a European film distribution organization (European Parliament, 1984a and 1984b). The Arfe' Report and Resolution marked the official genesis of the ideas of a European Media Observatory and of the MEDIA program. Pan-European television was thus welcomed as a potential instrument of European integration and as a counter to the threat of foreign television invasion.

The most important of all Community initiatives in the broadcasting and audio-visual sector has been the creation of a legislative framework for a single market through the 1989 "Directive on Television Broadcasting" (Council of the European Communities, 1989). The latter derived from the "Television without frontiers" Green Paper (Commission of the European Communities, 1984). The Commission brought a new perspective to the media market, by asserting that it was an economic activity and

therefore under its jurisdiction. By fostering the creation of a single market of broadcasting, the Green Paper challenged both national prerogatives in broadcasting regulation and the interests of established public service broadcasters, while it was supported by commercial broadcasters and advertisers.

The two main policies proposed by the Green Paper were:

1. to ensure that the circulation of broadcast signals and services emanating from member states was not impeded in other member states;

2. to harmonize European broadcasting regulation so that competition between signals and services took place on a fair and equal basis.

The latter proved to be the hardest goal to reach. While harmonization of advertising and program contents were achieved, harmonization of copyright laws was unsuccessful.

Besides offering cultural benefits and an increased European consciousness, a single broadcasting market would support the competitiveness of European television producers and enable them to substitute their products for imported works.

A draft Directive on broadcasting was published in 1986 and contained the Commission's specific proposals for regulation of broadcasting to achieve a single market. Its main thrust was the promotion of freedom of expression and of freedom to provide broadcasting services across the EC. It also aimed at increasing the production and distribution of European television programs, as well as stimulating the development of a modern communications infrastructure in the Community. The single market would, in addition to its economic goals, promote "important objects in the fields of cultural policy, information policy, and policy designed to promote European integration" (Commission of the European Communities, 1986). Culturalist interests had thus succeeded in including their perspective and concerns into Community broadcasting policy. However, between publication of the draft Directive (1986) and promulgation of the actual Directive (1989), the balance of forces between the "economists" and the "culturalists" changed again. The final Directive (Council of the European Communities, 1989), reflected compromises

between the rival goals and interests of liberals and interventionists, culturalists and economists. The objectives included in the Directive were:

1. the creation of a common market in television broadcasts and program supply;

2. the promotion of independent production and distribution enterprises, in particular small and medium sized enterprises;

3. the stimulation of the audio-visual sector in countries with low production capacity and/or in restricted language areas;

4. the establishment of minimum standards for television advertising and sponsorship;

5. the establishment of a European content quota;

6. the affirmation of the right to reply;

7. the protection of minors from undesirable contents, especially programming containing violence or pornography.

According to Collins (1994), the most important effect of the Green Paper "Television without frontiers" and of the Directive of 1989 has been to increase competition within the national (or language) television markets, rather than to create a single Community-wide broadcasting market. Even without formal barriers to entry, Community audio-visual markets remained stratified on largely national and linguistic lines. "Changes in regulation and establishment of subsidy programs have done little to rupture the cultural and linguistic membranes which separate European television viewers" (Collins, 1994).

New technologies: satellite, HDTV, cable

Technological and cultural determinism once again influenced Community policy in the 1986 Directive on satellite television standards (Council of the European Communities, 1986). It was believed that European cultural integration and the Community's electronics industry would be largely promoted through the adoption of

common television standards[33]. Adoption of a Community standard for High Definition Television would, it was thought, lead to the establishment of a single market for new communications technology. The common standard which was adopted by the 1986 Directive was the MAC standard, but the Community requirements were largely disregarded by the major satellite channels (Luxembourg's Astra satellite used the PAL system) and the systems that adopted the MAC standard were disadvantaged in the competition with other channels, because the cost of receiving equipment was notably higher than for PAL equipment. In fact, adoption of the MAC standard would render the existing SECAM and PAL TV sets obsolete. Notwithstanding pressures from broadcasters for the adoption of a standard such as E-PAL (extended PAL), which would be compatible with PAL receivers, the Community decided for MAC, because it offered an incremental route to a European HDTV standard (Collins, 1994). The Commission planned that D2-MAC transmissions in standard 4:3 picture size ratio would be followed by 16:9 D2-MAC and then by 16:9 HD-MAC. It was hoped that the early adoption of a European standard would provide the Community a competitive advantage over similar US and Japanese initiatives. Opposition from the most liberal member state, the UK, faced supporting member states, such as France and the Netherlands, the domiciles of the two leading enterprises in the development of HDTV, Thomson and Philips. The European Parliament was strongly committed to maintaining a strong European presence in advanced technologies and thus supported the HDTV policy.

Technical and cost problems have not been solved yet in order for HDTV to have a mass appeal. Moreover, the European standard is based on analog encoding techniques, while the US digital standard seems to have better chances to become the established world-wide standard (Collins, 1994).

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[33] France uses the SECAM standards, while most other European countries adopted versions of the German PAL system at the time when color television was introduced.

The 1986 Directive expired in 1991 and was followed by a new Directive in 1992 (Council of the European Communities, 1992). It reaffirmed the use of the HD-MAC standard for any HDTV transmission that is not completely digital. It thus opened up the possibility of digital, rather than MAC services, and in addition did not forbid the use of non-MAC standards for low power transmission services, such as those provided by the Astra satellite. The UK, Denmark, Spain and Ireland successfully blocked the efforts of France, Germany and the Netherlands to reestablish Community requirements for the exclusive use of MAC satellite TV standards.

Once again, the developments in satellite TV show how opposing Community goals, and the need to find compromises between different national approaches, lead to inconsistencies in Community policy, which is at times liberal and at times interventionist.

A sector of the media industry that has only been marginally addressed by Community policy is cable television. Most EC countries, with the exception of Greece and Italy, host cable television networks, both of the Master Antenna TV (MATV) type and of the Community Antenna Television (CATV) type (Brants, 1986). Later in the 1980s and early 1990s, cable dedicated networks were also introduced, such as France's Canal Plus. As of late 1994, penetration rates varied considerably from more than 90% in Belgium, the Netherlands and Luxembourg, to around 5% in France and the United Kingdom. In terms of subscribers, Germany represents the largest national market with nearly 15 million subscribers and a penetration rate of around 45% (Commission of the European Communities, 1994). The Green Paper on the liberalization of telecommunications infrastructure and cable television networks (1994) contained some explicit reference to cable TV networks as part of the European telecommunications infrastructure. The main concern of the Commission was to include cable TV into the telecommunications services that were to be considered already liberalized, as opposed to the survival of special and exclusive rights over basic voice and data communications. In the framework of complete liberalization of infrastructure and services, cable TV networks would immediately

become vehicles for the provision of non-reserved telecommunications services. Existing restrictions would therefore have to be removed. The only countries that allow use of cable TV networks for the delivery of liberalized services so far are the UK and the Netherlands (which is still in the experimental phase). France allows the provision of non-voice services only and rules are lacking altogether in Ireland and Luxembourg. All other countries had not removed restrictions on the use of cable networks for liberalized services at the end of 1994. According to the Commission, and this opinion was also shared by the European Parliament, it was necessary to "adopt as soon as possible the necessary measures to take full advantage of the potential of existing infrastructure of cable networks for telecommunications services and to abolish without delay the existing restrictions in the Member States on the use of cable networks for non-reserved services, and to adopt measures to obtain optimum utilization of the cross-border telecommunications networks of railway operators and electricity producers" (Commission of the European Communities, 1994). Failure to adopt such measures would impede the development and distribution of multimedia products and services in Europe and result in loss of competitive margins over the United States, which is most active in the experimentation of such services. The convergence between telecommunications and broadcasting is one of the issues covered in the second part of the Green Paper, published in January 1995. Pilot projects of new services allowed by this convergence include home shopping (catalogue-browsing, live video displays, "navigation" around the shopping center from home, viewing property); home transactions packages (banking, making ticket reservations, buying, selling); "edu-tainment" (interactive video games which entertain and educate); specialized interactive on-line databases. The lifting of current restrictions will also encourage the provision of new applications, such as home alarms and telemetry (i.e., distance meter reading). Cable operators can offer such services at a significantly lower cost than telecom operators (The Commission..., 1995). A review of the 1989 Directive stemming from "Television without frontiers" was also foreshadowed in the July 1994

Communication of the Commission to the Council and the European Parliament, "Europe's way to the information society. An action plan" (Commission of the European Communities, 1994b).

Early developments in telematics

Although the European Community is not a pioneer in multimedia and interactive services, it is worth looking at some early and "primitive" forms of "interactive" services that were developed in some European countries in the early 1970s and were largely adopted by the mid-1980s. They were called "telematics", a combination of "telecommunication" and "informatics", which indicates "a set of services, different from the traditional telegraphic and telephonic ones, which can be provided to the users by a telecommunications net and which allow public and private information and data to be sent and received" (Mazzoleni, 1986).

Telematics includes services such as teleconferencing, telemedicine, home banking, teletext and videotex. The latter two were the first telematic services to be developed in Europe in the 1970s. Teletext is a television broadcast of paged information that the user can call, select and visualize on a television screen. It is not interactive and was first developed by the UK and France. It is provided by broadcasting companies and falls under broadcasting policy.

Videotex, on the other hand, carries information through cable to users who can interact with data banks and visualize the required content on a special video terminal. The interactivity of videotex is absolutely impersonal, because the information is standardized and because of the formal nature of the service provider. Videotex pioneers were, again, the UK and France in the early 1970s. While videotex was developed for social reasons, notably for the hearing impaired, videotex stemmed from economic motives: to make computerized information available to a large public via telephone networks. The British PRESTEL started operating in 1979, while the French TELETEL was launched in 1983.

Videotex is a telecommunications services and it managed by the telcos. Unlike the broadcasting organizations with teletext, the telecommunications companies do not provide the content to be carried by the videotex medium. The information comes from various sources, such as travel agencies, stock exchange, real estate, insurance companies, specialized data banks, banks and, especially, newspapers.

The new telematic services raised several policy issues concerning control over contents and access to the provision of information through teletext and videotex. Despite efforts to promote and advertise these services, they have generally not been very successful with users, due to high cost of decoders, low software quality and technical difficulties. Videotex was only successful in France, when France Telecom decided to provide all telephone users with free MINITEL terminals. Tariffing and advertising were two key issues in the marketing of videotex services. Short-sighted choices in these domains caused the new services to score limited success in most countries and thus frustrated the hopes of those who considered telematic services as boosting factors for national industries. On the whole, these media were not actively promoted, with a few exceptions, by any of the interested actors. The industry was reluctant to invest in the new technology, there was no comprehensive plan for telematics by the EC, and national authorities in most countries, especially technology followers, failed to stimulate the demand for the new services (Mazzoleni, 1986).

This is not a very encouraging example for prospective new interactive services, especially since there are similarities with these early experiments, in that (1) demand characteristics are uncertain and (2) the more advanced technology is being developed elsewhere (the United States). The main difference is that the new services will be offered in a liberalized infrastructure and market context. Centralized control over content and access to services will be much weaker and private entrepreneurs will most likely be able to enter the market. It remains to be seen if they will be able to avoid the mistakes that were made by their predecessors.

ISDN

The European approach to the convergence of broadcasting and telecommunications is best exemplified by the development of Integrated Services Digital Networks (ISDN), a worldwide network along which data, video, voice can be transmitted and that can be accessed by users through one identical plug (Hills, 1991). The advantage of ISDN over separate networks is that it allows the simultaneous transmission of voice, data and images over the same equipment. ISDN was originally put forward in the early 1970s with the goal to cut PTT costs, improve the quality of transmission and integrate separate networks. With the reduction on cost of fiber optics and the requirements on the part of large users for larger bandwidths, narrowband ISDN[34] evolved into broadband ISDN (B-ISDN)[35]. Global standards for ISDN were established by the Consultative Committee on International Telegraph and Telephone (CCITT) of the International Telecommunications Union and International Standards Organization (ISO).

During ISDN evolution, it became clear that the original idea of service to residential users was not economical and ISDN began to be marketed as a replacement for private networks and as an innovation that would reduce costs and increase large users' control over their communications.

According to Hills (1991), although ISDN was put forward as a market-led innovation, its introduction in Europe seems to have more to do with industrial policy and the provision of a home market for domestic companies. Broadband involves a number of regulatory issues related to the convergence of broadcasting and telecommunications:

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[34] The basic rate service of narrowband ISDN was divided between two channels of 64 kilobits per second each that would carry voice and data and one channel, of 16 kbps that would control the signals and could be used for low-speed data such as facsimile and videotex. For heavy business users, a primary rate access was available of 30 B (Bearer) channels of 64 kbps and two D (Delta) channels of 64 kbps.

[35] The main difference between broadband and narrowband ISDN is that broadband is based on packet-switching technology using the Asynchronous Transfer Mode (ATM). Potential broadband services are: high-quality broadband videotelephony, high-quality broadband videoconferencing, HDTV distribution and existing ISDN services. The width of the broadband channels can go up to 132-138.4 Mbps, as compared to 2 Mbps for narrowband ISDN.

privacy, the distribution of fixed costs, whether residential users will have to pay for services they do not use, and tariffs. Most of these issues have not been addressed. As happened with videotex, ISDN suffers from an "original sin": it was decided upon with no public debate and, while sold by technologists and PTTs as the transmission medium of the future, it was devised without consideration of usage or who would pay (Hills, 1991). Also, no means by which ISDN could integrate into existing systems was successfully developed. Technological "supply-push" was considered but the "demand-pull" component was ignored. Thus, in most cases, ISDN remains an "island" development and not generalized service.

The role of other European institutions: the European Broadcasting Union and the Council of Europe

European broadcasters always collaborated with each other, through the International Broadcasting Union (IBU) first[36], the International Broadcasting Organization (OIR)[37] after World War II, and the European Broadcasting Union (EBU) after 1950.

The EBU is an association of 39 European and Mediterranean broadcasting organizations. There are 55 associate members in 33 other countries across the globe. Members must provide a national service and regional broadcasters are not eligible (Noam, 1991). They must also be ITU[38] members. The EBU was headquartered in Brussels, which also housed the Technical Center and node of the EBU's networks. Geneva was the administrative center of the EBU, but in 1993 the Brussels arm moved to this location (Collins, 1994).

The EBU established a program exchange through the Eurovision system, which was seen as a way of protecting public broadcasting from commercial broadcasting by

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[36] The IBU was founded in 1925 at the BBC's initiative.

[37] The OIR was soon abandoned by the Western European countries and was renamed OIRT with the advent of television. In 1993, after the break-up of the Eastern bloc it was absorbed by the EBU.

[38] The ITU is the International Telecommunications Union.

providing smaller broadcasters with programs from other countries. The majority (about 80%) of the EBU's program exchanges are sports events and news. An important role for the EBU is to provide a common bargaining position against copyright holders. An example of its power is provided by the bidding for the 1984 summer Olympics in Los Angeles. ABC, after competing with other US networks, paid $1.67 per household, whereas the EBU, being the sole representative of its members in international purchase negotiations, had no competition and secured the right for $0.17 per household. The EBU's cartel power was challenged by the rise of cable TV and satellite TV channels. Commercial broadcasters who were denied access to the EBU eventually formed the Association of Commercial Broadcasters (ACT) in 1989, which weakened the EBU's buying power (Noam, 1991).

The EBU has been collaborating with the European Community and it welcomed both "Realities and tendencies" (Commission of the European Communities, 1983) and the Arfe' Resolution (European Parliament, 1984b). In the early 1980s, the EBU took the lead in establishing several pan-European satellite TV services, such as Eurikon in 1982, Europa in 1985, Eurosport in 1989 and Euronews in 1993 (Collins, 1994).

In the domain of media policy, an alternative forum to the European Community is provided by the Council of Europe. It was established in 1949 by 10 members. By 1992 it had grown to 25 and new applications were being considered[39]. The structure of the Council of Europe is loose and it is formally held together only by its members' assent to the European Convention on Human Rights, signed in 1950. The latter guarantees every person freedom to receive and impart information and ideas without interference by public authority, regardless of frontiers. Council measures related to broadcasting policy are the 1982 Declaration on the Freedom of Expression and Information and the 1989

[39] The founders of the Council of Europe were the UK, France, Belgium, the Netherlands, Luxembourg, Sweden, Norway, Denmark, Italy and Ireland. Later members are Greece, Turkey, Iceland, Germany, Austria, Cyprus, Switzerland, Malta, Portugal, Spain, Liechtenstein, San Marino, Finland, Hungary and the Czech and Slovak Republics. Bulgaria, Poland and former Yugoslavia had applications for membership under consideration in 1991.

Convention on Transfrontier Television, which show similarities with the European Communities' Directive on "Television without frontiers", but are fundamentally different in their approach. The Council of Europe focuses less on economic issues than on issues of personal freedom. Freedom of expression seems to be a major goal. The Council also takes positive action in media policy, by sponsoring multinational coproductions of programs. The aim is once again to foster European culture and identity, by "encouraging closer unity between peoples as well as the mutual enrichment of cultures...Without the increased and competitive audio-visual production, there is a real risk that the new channels will be fed by re-broadcasts of existing programs or extra-European programs" (Council of Europe, 1991). In 1988 the European Support Fund for the Co-production and Distribution of Creative Cinematographic and Audio-visual Works (Eurimages) was established, following a French initiative. The rationale of Eurimages was (1) to develop the program industries, (2) to utilize the new communications technologies, and (3) to promote Europe's cultural identity. Interestingly, France had attempted to promote a similar initiative within the EC MEDIA program, but opposition from Germany, Greece, Denmark and the UK blocked it. Eurimages is thus an example of what Collins (1994) calls "European variable geometry", that is, "the use of European institutions outside the European Community by a member state of the Community, to achieve goals unachievable through the institutions of the Community."

No initiative has been taken either by the EBU or the Council of Europe for the development of multimedia and interactive services. The obvious conclusion, thus, is that neither European public broadcasters (represented in the EBU), nor European governments (represented in the Council of Europe) have deemed it necessary to take steps for concerted pan-European action in this new industry. The European Community itself has so far addressed this issue by promoting several programs in the field of R&D[40].

[40] Examples are the Research in Advanced Communications technology in Europe (RACE) program and its continuation, the Advanced Communications Technologies and Services (ACTS) program. These initiatives address the following areas: interactive digital multimedia services; photonic technologies;

Efforts in the provision of multimedia and interactive services are largely national in character for the time being. The awareness of a significant threat from non-European countries, notably the United States, to be first comers and thus establish technical standards and market power, although present in EC documents (Commission of the European Communities, 1994), has not yet affected other pan-European institutions.

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high-speed networking; mobility and personal communications networks; intelligence in networks and services engineering, quality, security and safety of communication services and systems. Another program is the Telematics Applications program, for projects concerning the application of telecommunications and of information technology in areas of importance to the economic and social development of the European Union.

CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS FOR FURTHER RESEARCH

This chapter attempts to answer the second research question and identify the main actors in the broadcasting policy process and their interactions, both in Europe and in Italy. Recommendations for further research are given both for the European framework and for analysts of the Italian telecommunications and broadcasting industries.

The preceding chapter attempted to answer the first research question with which this work is concerned. The aim of the above section was to analyze the main features of European broadcasting policy, with particular emphasis on new technologies, such as cable TV, satellite TV and interactive services. An extensive overview of Italian policy in the field of broadcasting and new media has been provided in the first three chapters, as well as examples of US and European initiatives in interactive services (chapter 4).

The last concern of this work will be to draw conclusions from the information that was gathered above, regarding the main actors involved, their motivations and interactions. The theoretical framework within which this analysis will be conducted has been called "consociationalism" (Hills, 1991) and was first developed by Arend Liphart in relation to the Netherlands. Liphart analyzed that society as an elitist one, that was divided into groups more concerned with themselves than with each other. Each of the groups was represented in proportion to its numbers within the various state organs and layers of elites. Decision making took place through a cartel of elites in which interests were traded off against each other, until consensus was reached. Further, in order to deliver its portion of the trade-offs, the retention of stability of the political system demanded the control of each of the subsegments by its elite. Paul Taylor (1990) extended the concept of consociationalism to Europe and its political mechanisms:

> "Integration in the sense of strengthening the regional functional systems may help to sharpen rather than soften the cleavages in the existing society of nations...Members of the cartel of elites...will have an interest in increasing the

> size of the cake, and the share obtained by their own segment, whilst at the same time protecting the distinctiveness of their segments in comparison with others, since they serve as each member's constituency and power base."

The interests of the elite of any one segment are not necessarily the interests of the general population. According to Taylor, the elites become more determined to strengthen their control over their segment of society. Thus, regional integration "helps to reinforce the anti-democratic tendencies of elites" (Taylor, 1990).

As applied to the European Community, consociationalism suggests that there are competing national alliances of state bureaucratic and business elites. The European Commission, on the contrary, seeks to move power to the center and thus undermine national sovereignty on which the consociational model is based. Within the EC, tensions have arisen over the pace and extent of the economic and political integration that should take place. Generally speaking, the conflict has been between those that view Europe as an integrated federal entity with power skewed toward the center (Brussels) and those who see Europe as a federation of sovereign states with minimal harmonization at the center. The theory of consociational democracy helps explain why some national governments resisted to the European Commission's entry into the cultural and broadcasting field. The political elites of the UK, for example, feared that the increasing power of the EC would undermine their control over their own cultural industry, which was heavily regulated at the national level.

According to Hills (1991), consociational theory also explains why there is fundamental lack of concern at the EC level for the societal implications of the new technologies. The political and economic elites are more concerned with pursuing their own interests than benefits for individual citizens. This would explain the substantial failure of videotex and teletext services and the substantial difficulties encountered with the adoption of the MAC satellite standard and ISDN. All these technologies have been developed and adopted by the technocrats and the political elites of Brussels and the

national governments with no regard to demand characteristics coming from potential users. There is a risk that the introduction of new interactive and multimedia services will follow the same path. National governments and the EC are concerned with technological innovation as a means to achieve competitiveness on the global market. Technological leadership is viewed as a necessary means to acquire a dominant position on the world scene, both politically and economically. This is clearly what pushed the French government to invest heavily in satellite technology and lobby for the establishment of the European Space Agency. The French struggled at the European level in order to get their TV and HDTV standards accepted, because the country whose standard was selected for the Community would gain markets, revenue and political prestige. Both in the PAL-SECAM debate and in the MAC-D2 issue, French national champions, such as Thomson, fought hard to win over German and British rivals and achieve technological supremacy (Hills, 1991).

The main actors

As has emerged from the preceding chapters, several actors are involved in media policy-making and they control a segment of the decision-making process. These are: the electronics and media industry, the national political system (parliament, government, ministries, political parties), organizations specifically related to mass media and telecommunications and transnational organizations.

The industry's main goal is generally the development of new technology, both hardware and software. The political argument that is most frequently used is the need to expand national know-how, although their hidden agenda includes economic benefits (Siune, Sorbets & Rolland, 1986). Industry lobbyists will strive to gain protection for their sector through government policy. This logic has led to the creation of national champions in the electronics industry, such as Thomson in France and Philips in the Netherlands.

An example of the power of the industry is the RAI-Fininvest duopoly in Italian broadcasting. The 1990 Broadcasting Act clearly reaffirms these two actors' pre-eminence and does not attempt to limit their power. The strength of the media industry in Italy is also confirmed by its strong links with the political elite and by its influence over the public opinion. For example, the referenda of June, 1995, gave Italian citizens a chance to express their opinion over the issue of media ownership. Leftist promoters of the referenda expected that the preceding debate and the generalized atmosphere would be adverse to Fininvest, but the majority voted against the proposed limitations of TV networks ownership. According to some critics, this result was at least partly caused by a skewed access to the media, and especially the Fininvest channels, by the supporters of the referenda.

Outstanding examples of industry pressure at the EC level are the attempts at protecting the film industry through the MEDIA program, as well as other initiatives, such as ESPRIT and RACE[41].

The national political actors have a very important role, especially in European countries. The telecommunications and broadcasting sectors have always been regarded as strategic and related to issues such as national identity and culture, therefore governments and parliaments have tended to control the communications infrastructure and the broadcasting organizations as much as possible (Siune, Sorbets & Rolland, 1986). Historically, until the 1980s, telecommunications and broadcasting were state monopolies, operated by state departments or by state-owned companies. Only recently a process of corporatization and privatization of these organizations has begun in some European countries and competition by private operators has been allowed. This trend

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[41] The main aim of ESPRIT (European Strategic Programme for Research and development in Information Technology) is to strengthen the concept of a large homogeneous home market for European firms. Research in Advanced Communications technology in Europe (RACE) has as its objective the establishment of a European-wide integrated broadband communication system consisting of the network and the broadband services to go with it. Both programs involve the participation of twelve large European firms.

started earlier in the broadcasting and cable sectors, where private enterprises were licensed as early as the 1950s in the UK[42](Hearst, 1992).

There are three possible attitudes of governments and parliaments toward technological innovation: they can either actively promote the development and adoption of such technologies (as has been the case for France); set the rules of the game, but stay out of it (the UK is an example); or remain inactive, make delayed policy decisions and therefore increase the uncertainty that always comes with technological innovation. Italy is an example of the latter outcome. Policy makers have always lagged behind the technological and market trends. Notwithstanding the need for a clear set of rules, parliament has not been able to produce adequate, all-encompassing laws to regulate the broadcasting sector. The market has clearly taken over the lead, as is evident in the delay with which the 1990 Broadcasting Act sanctioned a *de facto* situation that had been established since the early 1980s.

The policy-making process in Italy is definitely too slow and not always consistent with one direction. Frequent changes in governments certainly do not facilitate the establishment of a strong *dirigiste* approach as in France, or a clear regulatory framework as in the UK. The result has been a total oblivion of the potential for economic and cultural development coming from new technologies. No attempt has been made to establish concrete initiatives linking the growth of radio, television, technological innovation and the development of strategic industrial sectors (electronics, opto-electronics and aerospace) in the pursuit of a general objective of modernization (Richeri, 1992). Italy is the only large European country that faces the advent of the twentieth century with no cable or satellite TV infrastructure. Whether the good intentions expressed recently in the bills under discussion will actually lead to concrete initiatives to make up for the time lost remains to be seen. The already mentioned incident between Bell Atlantic and STET in the Stream experiment (see chapter 3) does not seem encouraging.

[42] The Independent Television Act of 1954 created the first commercial television in the United Kingdom.

On the other hand, the obligation to fulfil the EC schedule for the implementation of an information society might provide the needed incentives to take concrete and consistent action as soon as possible.

Another characteristic of government institutions, especially ministries, is their working according to a bureaucratic and administrative logic. The existence of established rules and regulations often is an obstacle to the adoption of innovations. Ironically, ministries of communication often are the last to adopt new technologies for their own organizations and are generally slow at making new regulations. An example is the frequency repartition and allocation process in Italy: it was so slow, that frequencies ended up being occupied on a first come, first served basis and often illegally.

Moreover, ministries involved in the policy-making process are often more than one and they not always share the same goals and interests. For example, the French minister for communication has dominance on matters of structure and a certain influence over broadcasting content. The minister of industry has control over industrial aspects of broadcasting and these two ministers sometimes disagree on common issues (Siune, Sorbets & Rolland, 1986). Attempts at co-ordinating different ministries, such as the French "mission interministerielle" and the Italian "comitato interministeriale" are a step in the right direction.

An important role in broadcasting policy is played by political parties. In Italy, they have been able to influence programming content of the RAI channels ever since the beginning of television broadcasting. The same has happened in France (Browne, 1989), while the BBC has always been more independent from direct party control.

At a different level are the national organizations that operate telecommunications and broadcasting. They are generally at least partly state-owned and therefore subject to political pressures. Appointment of executives and personnel is often done by the government or parliament. In Italy, for example, RAI is governed by a board of administrators that are appointed by a parliament committee. STET's majority is owned by

IRI, a government holding company for industrial enterprises. These institutions, when they have a monopoly in the provision of telecommunications or broadcasting services, are not likely to give up their power position and will therefore favor a continuation of the old system. RAI managed to get a law approved that totally frustrated all attempts to create a cable TV infrastructure in the 1970s and now STET is trying to keep control over the telephone network and take on the task of wiring the country for interactive services, in order not to let private competitors enter the market. It faces the contrasting interests of potential infrastructure operators, who are trying to influence the legislative process and introduce the principle that local areas can be cabled by independent companies that win a tender[43].

Telephone companies and broadcasting organizations are generally very powerful lobbyists and they are often intimately connected to the government and the relevant ministries. This is especially true in countries where no separate regulator exists and regulation has been traditionally carried on by the ministry, which is also involved in the operation of networks and therefore combines the roles of the regulator and the regulated. Efforts are underway, in Italy as well as in all other European countries, to establish independent regulatory authorities, as decided by the EC. The Italian Guarantor for broadcasting and publishing, created in 1990, and modified by the 1995 bill, is an example of the need to regulate broadcasting through an independent body.

A more flamboyant case of the need for regulation and separation of competencies is the recent appointment of Mr Silvio Berlusconi as Prime Minister in 1994. Being the owner of Fininvest, he controlled the three major private TV networks Canale 5, Italia 1 and Rete 4. As Prime Minister and leader of the majority coalition in Parliament, he also had power over the three RAI networks. This, added to his interests in the printed press, concentrated power over the major media in Mr Berlusconi's hands. A few months after his government fell, Mr Berlusconi went as far as proposing that Fininvest be sold to

[43] See chapter 3.

STET, thus creating a huge holding for the control of both telecommunications and broadcasting. Obviously, Mr Berlusconi still being the leader of the relative majority party and having appointed the board of IRI, would retain indirect control over the new company and, as opposition press hinted, be many billion lire richer or get a controlling stake in the new STET in exchange for his Fininvest (Turani, 1995). This proposal was later withdrawn.

National political and industrial actors interact with each other and with other countries' national forces through transnational organizations such as the European Community, the EBU, the Council of Europe, the European Space Agency (ESA), the ITU. All these organizations are powerful players in the European framework and their goals and objectives range from economic growth, employment, integration (EC), to professional cooperation (EBU), to promotion of European culture (Council of Europe), to technology development (ESA) and standardization (ITU). Some of these institutions are essentially political in character, while others are technical or foster industry and operators' interests. They are fora for debate and decision-making at a pan-European level and national players do their best in getting their own views accepted by the other member states. At the EC level, the most powerful body is the Commission, because it has both legislative and executive powers. The European Council of Ministers is also an influential decision-maker, because it emanates Directives for the implementation of the Commission's policies. The weakest body is the European Parliament, because it has no substantial powers.

It has been shown in chapter 5 how difficult it is to reach a common policy on cultural and broadcasting matters within the EC. Added to that is the difficulty of attaining enforcement of EC Directives in the member states. The European content quota on broadcasting, for example, was not enforced in the UK, where large amounts of US programs are shown that exceed the limitations set by the 1989 Directive.

The EC member states feature very different national telecommunications and broadcasting industries, with different degrees of liberalization and privatization. Although the goal is to create an integrated and harmonized Community, these differences must be accounted for. Some member states adopt EC measures quickly, others are slower and attempts at unduly protecting national champions against foreign competitors are not infrequent.

Recommendations for further research: a threat to democracy?

While, formally, decisions are made by parliaments and other institutional bodies, real power is often exercised by industrial or financial actors that pursue their own interests at the expense of the general interest. The general public can only indirectly and only to a certain extent participate in the decision-making process. When it comes to making decisions about new technologies, the public is not very likely to have enough information about technical, economic and financial matters involved. Experts and politicians decide in their place, as a democratic political system demands. The question with which this work is concerned, is whether the democratic process works in the interest of the general public or whether it results in a power play between different actors that pursue distinct and not general public interests, related only to a small segment of the global picture. It is important to ask who reaps the benefits of the adoption of new technologies and at whose cost it is carried out. Technology in itself is neutral, although it carries the values of those who invent it. The way technology is deployed can make it elitist in the distribution of its benefits. Technology can increase democratic participation or widen the divide between rich and poor, between "haves and have-nots".

Technology in the media field undermines governments. The flourishing of TV, cable and satellite networks introduces new means of communications that cannot be all centrally controlled. On the other hand, the new media operate in someone else's benefit,

that is not necessarily more desirable, such as advertisers, who support the media by acquiring commercial time.

Although governments have less power over communications networks, they are still concerned with boosting R&D expenditure in order to support national or regional industries and thus acquire or retain competitive advantage in the new media. This approach, which is clearly visible both at a national and a pan-European level, focuses attention on the interests of large companies, while ignoring the social organization of technology within the nation-state. The distribution of technology among citizens is of little concern to decision-makers. At the EC level, for example, decisions concerning new technologies are made by PTTs, manufacturers and large users. No accountability to a wider public is required. The EC itself is a system of trade-offs between national governments, each concerned with their industry's competitive advantage. While decision making by technical experts seems rather inevitable, it also involves choices on how the technology will be organized in terms of access and control. Technologies such as Direct Broadcast Satellite, High Definition Television and Integrated Services Digital Networks have come out of these fora. Interactive and multimedia technologies are more than likely to be treated the same way. The high cost of these services will be shared by governments, advertisers and users. Will citizens have to pay for the infrastructure even if they don't use the services? If the money comes from their taxes, the answer is yes. Who will be able to afford interactive services on a "pay-per" basis? And who will pay for lost investments and failures, if the anticipated demand for advanced services does not come true?

If interactive media are accessible only to content providers who can afford it, minorities and non-profit organizations are likely to be excluded, unless regulations create the conditions for groups with low purchase power to participate. Who will pay for distance education and telemedicine? The user or the community (which, once again, includes the user)? What will be the consequences of the new technologies in social terms? Will it make all users couch potatoes, or active consumers of useful services? Will human

interactions increase through the use of advanced technology or will they give way to interactions with computers and TV sets? Is the new plurality of contents going to enlarge cultural horizons or dump "junk" on people?

It is crucial that appropriate regulations are in place to allow the user to take control of the immense potential of the new broadband media. If this does not occur, private organizations will try to control individuals. Citizens will be delivered as consumers to advertisers.

In the short term, broadband delivery of TV is a means whereby telephone companies can modernize the local network, by substituting copper wire with coaxial cable or optical fiber. It is also a strategic response to potential competition for the local loop, the most expensive and inelastic part of telcos' revenue from radio-based technologies and cable TV. In Europe, broadband is seen as a means to create integration and to build a European identity. The interests of the EC and of telephone companies coincide and, thus, everything will be done to foster adoption of new services and infrastructure development (Hills, 1991).

A basic question needs to be addressed. In most European countries, it is taken for granted that governments, government owned institutions or the EC (which is also a form of government) take the initiative to promote new technologies. On the other hand, in the United States and, to a certain extent, in the United Kingdom, investment decisions are made by private companies. According to the rules of the market, several of these private initiatives will fail and only the ones that meet demand will survive. This might mean a waste of resources, but at the end consumers will get what they want and suppliers will sell what they produce. In a centralized framework, on the other hand, decisions are generally based not only on market considerations, but they will be influenced by social, political and other concerns and thus not necessarily meet demand. The examples of videotex, teletext, HDTV and ISDN support this statement. European decision makers should thus consider the possibility of letting private subjects enter the market of

multimedia and interactive services to a larger extent than in the past. The United States might provide an example of a possible future scenario. Reliance on the market mechanism does not mean absence of regulation, though. The rules of the game should be clear and fair, so that the public interest does not come short.

Although the public opinion supports the launch of multimedia and interactive services as the gateway to the information society, it is worth devoting some further thought on which services really add some value to the average citizen's everyday life. Many of the proposed services are likely to find no demand and disappear. As was pointed out in chapter 4, it is too early to have a precise idea of what consumers want and how much they are ready to spend on the "information superhighway". A serious effort should be made to understand and anticipate people's preferences and thus direct investment efforts in the right directions.

The next issue is: how should broadband be regulated, as television or telecommunication? One answer is that broadband operators should be regulated as common carriers, with content provided by third parties. But no company wishes to take the financial risk of building infrastructure only to have no control in the programs that determine its return on that infrastructure. The provision of services, even though through separate subsidiaries, is a more likely solution. However, the distinction between transmission and switching versus content is increasingly blurred, since carriage of signals and content are getting integrated. An example is Microsoft's software Windows95, that is attempting to embed a network link (The Microsoft Network) in the operating system. Further, there would be a need to grant access to independent service providers, like the Open Network Provision arrangement that has been adopted for telecommunications networks. Broadcasting would be seen as a further value-added service. Would public broadcasting then be no longer distinct from commercial broadcasting? And would it be paid for in a single, bundled package that includes everything at a high price (Hills, 1991)?

Although this might be a possible long term scenario, it is not very likely that public broadcasting and existing cable TV operators will easily give up their segment of the market. As with the liberalization of telecommunications, political, economic and social factors will outweigh the technology push. The current distribution system, cable TV companies, satellite broadcasters and public broadcasters will be ranged against telephone companies, component and optical fiber manufacturers, and the European Community.

According to Hills (1991),

> "the European Community has failed to address the question of what rights citizenship of Europe entails. While itself extending its power and autonomy through the liberalization of private interests and the undermining of its member states, it has dramatically failed to address the question of democracy in Europe. In both broadcasting and telecommunications, its policies mimic those of the United States, but without the safeguards of competitive institutions, which produce public debate. It emphasizes economies of scale rather than diversity; large-scale technology push rather than diffusion and access. Hence, it undermines the very innovation and the very notions [sic] of European democracy it wishes to promulgate."

Although this is not necessarily an unbiased opinion, it suggests that more than the market mechanism is needed in order to address social and political implications stemming from the adoption of new technologies. This holds both for the national and the pan-European level. It is all the more crucial in the wake of the potential enlargement of the Community to Central and Eastern European countries, whose telecommunications and broadcasting infrastructures are not nearly as developed. It is important that further thought is given to these issues and that access to the debate is provided to all classes of citizens.

Recommendations for Italy

While the above considerations are also valid for single countries, including Italy, there are some points about that country that deserve to be underlined.

The debate is still going on as to what kind of regulatory authority should be established, whether it should be limited only to telecommunications or it should include television competencies. Some experts maintain that the convergence of technologies requires the pooling of all competencies in one regulatory authority, while others prefer the separation of two activities that are still too different (Debenedetti, 1995). Further analysis of other countries' experiences and the Italian specifics is needed, because regulation will play a crucial role in the liberalization of the telecommunications market. In particular, it worth analyzing whether the British model of a monocratic, independent regulator is more suitable than the US model, where a collective organ like the FCC depends mainly on Congress for financial and legislative input. The situation as depicted by the latest reform bills seems to be pending in favor of the US model, but further thought should be given to this issue.

Also, further research is needed regarding the desired market structure of the future telecommunications/cable TV industry. There is no agreement on whether STET should be a monopoly infrastructure operator both for telephony (which it is already) and for cable TV (which it is trying to become). According to some economists (Morganti, 1995), economies of scale and scope demand that STET complete the wiring of the country that is already almost complete for long distance routes. Others (Debenedetti, 1995) are against a STET monopoly, because it contradicts the liberalization of the market, leaving competition only among service providers, but not at the infrastructure level. According to them, other licenses should be given to competitors, but it is not clear what is the optimal number of licensees. As has been underlined for Europe in general, Italy might want to consider opening up the market of new technologies to a large number of private entrepreneurs and let supply and demand work out the definitive industry structure. Even the idea of dividing the country into local areas for cable TV, although it apparently moves decision-making from the center to the periphery, is still not a market-led solution,

because the local areas would be defined by some central (political) authority and not left to the initiative of private market forces.

More basically, the history of Italian broadcasting shows how strongly market forces influenced the policy-making process. The absence of any pressure for a change in the law on cable TV might lead to the question whether the Italian viewers really want cable TV or whether there will be any entrepreneurs ready to supply the services. The abundance of broadcast TV networks and stations, both national and local, available to the public at a low price, is in fact a high entry barrier for new operators, that will have to find market niches or provide really innovative programming in order to acquire market shares.

A third issue, that is related to contents, concerns programming. With the advent of interactive and multimedia services, several hundred channels will be available. So far, in Italy, all main TV networks have been broadcasting programming that appeals to large audiences and does not specialize in any particular issue. The only exceptions are two pay-TV channels, Telepiu' Uno and Telepiu' Due, the former of which broadcasts movies, while the latter specializes in sports. More thought should be given to the contents that will fill those hundreds of new channels. The transition to narrowcasting for specialized audiences is inevitable and requires a corresponding increase in the production or in the importation of programming. The availability of new contents should not be taken for granted and some research is needed in that area.

Last, but not least, it is worth the effort to investigate how alternative communications networks owned by electrical utilities, railways and the freeway system could be utilized for the provision of new telecommunications services, whether interactive or not. These are part of existing infrastructure, ready for use and just need to be addressed to new purposes, thus creating effective and immediate competition for the existing STET monopoly.

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