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1. Digital TV market overview

1.1 Roll-out of digital services

1.1.1 Satellite digital services

Digital television was introduced in Italy in March 1996, when the pay-TV operator Telepiù launched its satellite digital service. In May 1997, Canal + became the majority stakeholder in Telepiù, passing from a 45% to 90% stake. Change of ownership has reoriented Telepiù's strategy towards the Canal+ premium channel model. The absence of an analogue cable and satellite market and the aim to gain a competitive advantage over incumbent, Telecom Italia and public broadcaster RAI, had convinced Telepiù to develop a digital strategy rather than strengthen its position in the analogue market. Telepiù digital offer, called **D+**, broadcasts from Eutelsat/Hot Bird II satellite. D+ offer includes also 6 thematic channels (on a total of 10) developed by **Raisat**, the venture set-up by RAI to enter the digital TV market. Raisat's stakeholders are the public Italian TV company RAI (99.9%) and Rairade (0.01%), the latter being responsible for the commercialisation of RAI products at the international level. On 30 June, 2000, D+ accounted for 1,160,000 subscriptions.

The second digital pay-TV operator in Italy is **Stream**, a Telecom Italia subsidiary, that started to offer a digital package over cable in September 1996. Since September 1998, Stream began to broadcast its bouquet from Eutelsat/Hot Bird II satellite. Stream suffered a lack of strategy and commitment on behalf of Telecom Italia during the first two and a half years of its life. During 1998 there were continuous talks and negotiations between Telecom Italia and a plurality of other parties, such as public broadcaster RAI, Murdoch's News Corporation, Italian commercial broadcaster Cecchi Gori Group and others. Decisions about Stream's future were also hampered by the tumultuous process of Telecom Italia privatisation and the change of ownership following the success of the Olivetti bid to acquire the majority of Telecom Italia. In May 1999, the deal for re-launching Stream was finally closed. Telecom Italia sold 65% of its cable and satellite subsidiaries: 35% was acquired by Murdoch's News Corp. Europe; 18% by film producer and distributor Cecchi Gori Group and 12% by Società Diritti Sportivi (SDS), a newly formed venture set up by four Serie A football clubs: Roma, Lazio, Parma and Fiorentina. In August Telecom Italia acquired directly and indirectly 75% of Cecchi Gori's Group. Therefore, indirectly, Telecom Italia is again holding a stake in Stream.

.On 30 June, 2000, Stream's subscriptions (including both satellite and cable) accounted for 600,000 subscriptions.

1.1.2 Cable digital services

Before the law n. 249 of July 31, 1997 was issued, the installation of cable network for public use was reserved to the State. The law provides that construction of cable networks requires a licence from the Telecommunication Authority; furthermore, it also provides that the roll out of telecommunication networks on public properties has to be authorised by the means of operating licences granted by the municipalities to the operators. The provision was fully implemented in September 1997, with the Regolamento (Regulation) n. 318. The provision of cable TV services is subject to authorisation from the regulatory body.

Currently, the only nation-wide cable network infrastructure is Telecom Italia whose property is managed and commercialised by its subsidiary, Stream. The network roll out is the result of the digital cable project Socrate, started in 1995 by state-owned telecom holding STET. The work started in 1996, and until that date Italy had no cable, mainly due to the lack of cable legislation. The Socrate project suffered a dramatic slow down during 1997, due to the change of strategy of Telecom Italia after privatisation. In addition, the fibre optic cable deployment was stopped, due also to the emergence of the solution based on ADSL technology (Asymmetric Digital Subscriber Line). Thus, Telecom Italia has reduced the total investment of the project from 6,7 million Euros to about 3,8 million Euros. At the end of 1997 the cable broadband infrastructure extended to 54 cities, passing approximately 1,5 million households, of which 1 million had been equipped with the necessary transmission equipment and the wiring backbone to receive advanced telecommunication services, cable television broadcast and multimedia applications. During 1998, 1999 and 2000 there were no sensible changes to this situation, as Telecom Italia had set aside for the moment its plan of increasing its digital cable. In addition, the decision of Stream to provide its service through satellite platform halted the growth of cable subscribers, but helped to increase the total subscribers' base.

1.1.3 Situation of MMDS

The Italian Ministry of Communications has promoted a series of initiatives aiming to verify the feasibility of the introduction of MMDS/LMDS technologies into the national audio-visual system.

To date, no licensing and implementation plans still exist for MMDS, though an amendment to law n. 1138/00 (issued on 31 July, 2000) outlines a number of generic requirements to obtain MMDS licenses for national and local operators.

MMDS situation and plans are going to be clarified when a decision about the roll-out of DTTV will be taken by the Italian government and the Italian Communications Authority (see also next paragraph).

1.1.4 Situation of ADSL

A large number of operators are offering ADSL, at speeds up to 640 kbit/s. As regards higher speeds, Telecom Italia is the only operator offering xDSL services at speeds of 2-8 Mbit/s.

1.1.5 Situation of terrestrial digital television (DTTV)

The Italian Communications Authority has recently issued the "White Book on DTTV" (May 2000), aiming to provide guidance for the development of DTTV in Italy. The White Book summarises the results of the work undertaken by the Committee for the Development of Digital Systems, established on 25 November 1998 by the Italian Communications Authority. The work of the Committee has been divided into 4 research areas:

- transmission quality standards
- structure and number of allocable VHF and UHF channels
- decoder issues and multiplexing
- definition of an operational planning for DTTV roll-out

A fifth research group has been responsible for the co-ordination and the harmonisation of the Committee's work.

Two alternative development strategies have been envisaged by the Committee:

- in accordance with the National Frequency Plan (issues by the Authority according to the requirements of law n. 249/97). This hypothesis can be taken into account only if the transition to the digital is not going to be completed before the year 2010. The National Frequency Plan allocates 4 frequencies to DTTV (channels VHF-9, UHF-66, UHF-67, UHF-68). These frequencies can be used only after the complete implementation of the National Frequency Plan (in year 2010), or, alternatively, during the implementation process (i.e. in about 3-4 years). In order to provide adequate governance to the transition to the digital, an option would be to realise 4 national SFNs (Single Frequency Networks), for a total of 4 multiplexes and 16 digital programmes. Among these 16 programmes, 11 should be used for analogue-digital simulcast and 5 for the launch of new services and programs. This situation should be considered valid up to the reach of a "critical limit" of decoders' penetration, i.e. in about 4 to 5 years from now. After this period, simulcast mode should be quickly abandoned, and DTTV national services should be provided in digital mode only.

- in accordance with the development of digital TV markets and the progressive transformation of analogue networks into digital ones. This hypothesis presents some advantages in case of an earlier transition to the digital, i.e. by the year 2006, and acts itself as a driver for an earlier introduction of DTTV in Italy. This scenario foresees an uneven development of DTTV in the Italian territory and the take-off of the digital terrestrial services in those areas where the penetration of digital decoders is higher, with a consequent positive impact on local broadcasters. This scenario however requires a careful assessment about the capacity of the Italian industry to provide an adequate number of set-top-boxes at reasonable prices to TV households, as the digital offer will continue to be separated from the analogue one (no simulcast) for the whole transition period (i.e. up to 2006). According to this scenario, a new Digital Frequency Plan should be issued by the Italian government.

Further technical implementation issues are currently under investigation by the Italian Authority.

Noticeably, both scenarios will imply a change in the present legislative framework on media regulation (including the National Frequency Plan). A final decision on which scenario to implement is going to be taken at the political level in the next few months. According to industry experts, the government orientation is to assign one terrestrial multiplex to public broadcaster RAI, one to the MEDIASET group and two to other operators, possibly new entrants into the Italian market.

1.1.6 Market development

The presence of just two operators makes the Italian operators relatively simple to analyse.

- D+ benefited from the privileged position of being the first and only satellite digital operator in the country (March 1996). D+ maintained his position until mid-1998, when Stream launched its satellite services in addition to its cable offer. The entrance of Stream in the satellite market constitutes a menace for D+, as D+'s market shares are slowly but progressively reducing (from 81.6% to 68.8% in the period March 1999-March 2000), though D+ still remains the dominant digital TV operator in Italy (1,160,000 subscriptions on 30 June, 2000). Canal+ forecasts a total number of 1,480,000 by this year's end.

In 1999 Fininvest sold its 10% Telepiù stocks back to Canal+, who invited RAI to join the stakeholders group with a 1% shares¹, with an option to increase its participation up to 10% in some years.

- Raisat digital offer is today limited to 10 channels. Among these channels, 4 are available free-to-air (Raisat, Rainews24, RaiSport, Raisat Nettuno), 6 thematic channels (Raisat Album, Raisat Art, Raisat Cinema, Raisat Gambero Rosso Channel, Raisat Ragazzi and Raisat Show) are now part of the pay-TV D+ offer, also as a result of RAI entrance into Telepiù stakeholders group.
- Stream market position initially suffered from the cable-only provision. The poor Italian cable infrastructure posed intrinsic limits to the potential development of digital cable TV. In June 1998 Stream decided to add a satellite offer to its traditional cable offer, with evident benefits in terms of subscriptions' increase and competition with D+. The distance between the two operators in terms of subscription is progressively reducing (Stream market shares increased from 18.4% to 31.2% in the period March 1999-March 2000).

Both D+ and Stream operate in pay-TV mode, which is the dominant delivery model in all European countries and in Italy as well.

For the future, the Telemontecarlo Group (recently sold by tycoon Vittorio Cecchi Gori to the Telecom Italia new Internet venture Seat-Tin.it) announced the launch of a number of digital thematic channels, thus placing itself as the third competitor in the digital game in Italy. However, being Seat-Tin.it a venture controlled by Telecom Italia, it is likely that Telemontecarlo will set-up some form of alliance with Stream, also including Telecom Italia among its stakeholders. No launch dates and commercial plans are however available yet.

¹ As a reminder, D+ is a company 100% controlled by Telepiù.

Table 1 summarises the market positioning and shares of the two Italian digital operators D+ and Stream on 30 June 2000.

Table 1 : DTV platforms in Italy

<i>Name of the service</i>	<i>Major shareholders</i>	<i>Date of launch</i>	<i>Number of subscribers (30 June, 2000)</i>
D+	Telepiù (Italy) <i>owned by</i> CANAL+ (France) RAI (Italy)	March 1996	1,160,000
Stream	News Corp Europe (UK) Cecchi Gori Group (Italy) SDS (Italy)	September 1996	600,000

1.1.7 Barriers to competition or market development

The digital TV market in Italy is a de-facto duo-poly (D+ and Stream). Historically, this is a very well balanced situation, as it constitutes a de-facto balance between regulation and competition. An example of this is constituted by the analogue TV market, where the presence of two main operators (RAI and MEDIASET) bring both competition benefits to the viewer and a stable market environment. This structure makes us believe that the digital TV market will suffer of little market tensions between dominant players (D+ and Stream) and new entrants.. For the next few years it's reasonable to suppose that the market game will be played between D+ and Stream.

On the other side, the absence of a free-to-air digital offer still constitutes an important barrier for the Italian market. Italian viewers still have the perception that TV is something to be used for free, or even a social right. The concept of paying for watching TV has not been fully accepted yet, despite the fact that pay-TV offer a better choice and a better programming quality than the generalist TV as seen on RAI or MEDIASET. For policy makers, the perceived risks of this "non-acceptance" of the pay-TV model are the potential generation of a social exclusion mechanism, so that wealthier citizens, who have the money and a higher cultural degree, can benefit from digital TV services in a much easier way than those who are less well-off.

However, decoder issues today constitute the main barrier to market development. As known, in April 2000 the Italian Communications Authority issued a directive forcing all digital TV operators to unify their decoding standards. This decision was generated by a number of

paradoxical situations, such as the one regarding the Italian Serie A football championship: the rights for the Serie A teams were sold in part to Stream and in part to Telepiù/D+.

As implemented, the decision to split the football rights for competition reasons created an interoperability problem. Football clubs appear to have insisted on a team-by-team approach to the division of rights to matches. This means that subscribers to a particular pay TV platform would receive only the home matches of eg Lazio, rather than both home and away matches. It would have been possible to structure the rights differently into packages which would have ensured that consumers could receive both home and away matches for a particular club.

Interoperability between different CAS can be achieved via a simulcrypt agreement, normally negotiated on commercial terms, assuming the companies had wanted to co-operate. Initially they did not. So the regulator forced them to conclude an agreement using the “unique decoder” decree passed by the Italian Parliament and its own implementing decree passed in April.

The two APIs – Media Highway and Open TV/NDS version - are not interoperable and cannot be made interoperable, at least without disproportionate investment. That is why DVB decided to introduce a new API in the MHP.

The regulator is under much political pressure to ensure that football fans can receive all services on one decoder. Partial interoperability can be achieved, for subscription TV, but not for PPV which depends on the incompatible APIs.

1.2 Detail of services

1.2.1 Number and type of services

In general, the majority of the channels broadcasted by the two digital pay-TV operators are produced abroad and are normally dubbed for the Italian audience. The channels produced in Italy are some news channels (such as Team TV and EuroNews for Stream) and Stream interactive channels. In addition, eight channels are offered by both operators to their subscribers.

Table 2 summarises the dimension of the offer of D+ and Stream for what it concerns thematic channels. Services (such as EPG or Super-Teletext) have not been considered in the table. Free-to-air Raiset channels are included in the table as well

Table 2 : DTV offer in Italy*

	<i>D+</i>	<i>Stream</i>	<i>Raiset</i>
Number of Italian channels (in Italian language)	6	12	4
Number of foreign channels (translated and not translated)	29**	16**	0
Number of interactive channels (translated and not translated)	0	10	0
Total channels/services	35	38	4

* free-to-air satellite channels included in the commercial offer of D+ and Stream have not been considered in this table

** in this figure, eight channels (CNN, Eurosport, Discovery Channel, Cartoon Network, Blomberg TV, Tele+Bianco, Tele+Nero, Tele+Grigio) are in common to both offers. The six Raiset channels are included in the D+ figures. Special pay-per-view programming (e.g. football, Formula 1 and cinema) are not included in this table.

Therefore, in June 2000, the Italian digital audio-visual landscape consisted of :

- 3 national TV stations (out of 12 in the analogue domain), D+, Stream and Raiset
- 69 thematic channels mainly broadcasted in digital standard over satellite and cable, of which about 32% (22 channels) are real Italian thematic channels
- 47 foreign channels, translated into Italian or in original language
- 10 permanent interactive TV services, offered by Stream

1.2.2 Details of the DTV offers

The commercial offer developed by the two Italian digital pay-TV operators (D+ and Stream) is very articulated and need to be presented in detail.

D+

D+ offers 5 different subscription packages to its clients:

- PREMIUM
4 Movie Channels (Tele+Bianco, Tele+Nero, Tele+Grigio and Tele+Grigio for 16:9 screens),
29.44 Euros per month (VAT included)
- BASIC
24 Channels (national and international, including Raisat thematic channels. They are: Eurosport, Canal Jimmy, Discovery Channel, MTV, Planete, Blomberg TV, Cartoon Network, BBC World, Marcopolo, Bet on Jazz, Match Music Satellite, CNN, Hallmark, INN, Multimusica, Happy Channel, CNBC, Sky News, WishLine, Raisat Album, Raisat Cinema, Raisat Show, Raisat Ragazzi, Raisat Art, Raisat Gambero Rosso)
16.01 Euros per month (VAT included)
- DIGI
10 Channels (national and international, mostly leisure and travel. They are: Eurosport, Canal Jimmy, Happy Channel, Cartoon Network, Planete, Marcopolo, INN, Match Music Satellite, Multimusica, Hallmark)
10.85 Euros per month (VAT included)
- SUPERBASIC
Combination of Basic and Cine
23.76 Euros per month (VAT included)
- SUPERPREMIUM
Combination of Basic and Premium
38.22 Euros per month (VAT included)

Besides these basic structure, D+ offers a number of option channels, namely:

- Cine (including the channels Cinecinema 1 + Cinecinema 2 + Cineclassics)
- Disney Channel (7.75 Euros per month, VAT included)
- Seasons (5.16 Euros per month, VAT included)
- Classica (5.16 Euros per month, VAT included)

- Milan channel (6.71 Euros per month, VAT included)
- +Calcio full (pay-per-view, variable subscription fees, from 10.72 to 24.53 Euros per month, VAT included)
- +Calcio away (pay-per-view, variable subscription fees, from 7.23 to 12.86 Euros per month, VAT included)
- +Calcio gold (pay-per-view, more than 600 football matches per year, 30.99 Euros per month, VAT included)
- +F1 (pay-per-view, Formula 1 championship, 103.29 Euros for 16 races, VAT included)

In addition, D+ offers free access to a number of free-to-air national and international channel.

D+ has a packaging model very similar to that used by the parent company Canal Plus in other European countries. Subscribers can take a basic package of thematic channels and/or D+ premium channels for access to a selection of extended tiers, pay-per-view and single premium channels. Like Canal Plus in France, the D+ premium channels are offered at a reduced rate to those also taking the thematic package

Stream

Stream offer is based on one basic package and a number of optional channels. The offer is articulated as follows:

- **BASIC STREAM**
29 Channels (national and international, including 10 interactive channels. They are: Studio Universal, Duel TV, Comedy Life, Cult Network Italia, National Geographic Channel, Discovery Channel, Canale Viaggi Fox Kids, Cartoon Network, Euronews, CNN International, Class Financial Network, Team TV, a.anteprema, TVL, Eurosport, Snai Sat, Music Choice, Blomberg, TVL Interactive, Canale Viaggi Interattivo, Stream Meteo, Stream Oroscopo, Stream Arte, InGame TV Action, InGame TV Strategy, StreamCalcio Interattivo, Stream Borsa, Stream Lotto)
12.39 Euros per month (VAT included)
- **CINEMA STREAM**
Combination of Basic Stream and the two Stream Premium Channels (Primafila Stream Cinema, Primafila Stream Spettacoli)
22.21 Euros per month (VAT included)
- **SPORT STREAM**
Combination of Basic Stream, the Stream Premium Sport and the Sport ITV service)
22.72 Euros per month (VAT included)

- MULTI STREAM

Combination of Basic Stream, Cinema Stream and Sport Stream
27.89 Euros per month (VAT included)

As for D+, football is offered under pay-per-view conditions:

- Calcio Stream In (pay-per-view), 12.91 Euros per month (VAT included)
- Calcio Stream Out (pay-per-view), 5.16 Euros per month (VAT included)
- Calcio Stream In&Out (pay-per-view), 15.49 Euros per month (VAT included)
- Calcio Stream Global (pay-per-view), 25.82 Euros per month (VAT included)

In addition, some movies and special sport events are offered under pay-per-view conditions.

The Stream cable offer is slightly different than the satellite one, as part of the channels available on satellite cannot be visible for cable subscribers.

1.3 Operators and market structure

1.3.1 Concentration of the pay-TV market

The Italian pay TV market is characterised by the presence of two competing platforms:

- Telepiù, majority owned by the French group Canal Plus, with the participation in the capital of public broadcaster RAI, that contributes to the venture with channels production. The Telepiù platform is richer in terms of premium content (film and football rights) and far ahead in terms of subscriptions. Moreover, the agreement with RAI gives Telepiù a very rich archive of programmes. The channels supplied by RAI to Telepiù are all thematic channels realised on purpose for the pay-TV operator, as a contribution to get a participation in Telepiù capital. Under this perspective, the new thematic channels shall not be considered as a public service and their broadcasting can be limited to paying audience.
- Stream, backed by telecom operator Telecom Italia, News Corp. Europe, Cecchi Gori Group and SDS. Stream is positioning at a lower level of the market: the offer is less articulated, the premium content available, in terms of football and film rights, is still inferior to that offered by the incumbent operator. Stream is currently pursuing an aggressive marketing and promotional campaign. It is not clear whether this model will be able to lead the second platform break even in a reasonable lag of time.

1.3.2 Agreements between satellite operators, cable operators and DTTV operators

The oligopolistic Italian market situation (only 2 satellite pay-TV operators, 1 cable operator, no DTTV operators) doesn't allow much room for agreements. The only relevant agreement in the Italian digital TV market has been signed in 1999 between Telepiù and Stream. This agreement carries the digital Telepiù offer over Stream cable infrastructure and is motivated by the predominance of Telepiù in premium programming, though Stream is rapidly filling the gap. Telepiù keeps the subscriber control.

However, the real game is today about decoders, where the recent legislative requirements for obtaining full decoders' compatibility have not been fulfilled by the two digital TV operators yet. (see paragraph "Decoder issues").

1.3.3 Vertical integration

The vertical integration process from service provision and the television channel provision has been strengthened by the recent ownership changes in the two satellite platforms. RAI contribution as content provider will increase the weight of Telepiù internal production/packaging, which was already quite high.

The production chain of D+ and Stream is already rather stable and based on “in-house” or foreign production structures. No independent national producers currently play a primary role in vertical integration, with the exception, maybe, of a private company called Sitcom, that produces two thematic channels broadcast by D+.

1.4 Technical issues

1.4.1 Decoder issues

Decoder issues are the “hottest topic” in the Italian pay-TV market. Originally, two conditional access systems (CAS) were currently competing in Italy:

- The CanalPlus SECA system, adopted by D+. In September 1997 Telepiù introduced the SECA conditional access system, besides the Irdeto, which was previously the only Telepiù system. As a result, Telepiù is broadcasting its programmes using simulcrypt, allowing both kinds of set-top-boxes to receive the channels. D+ set-top-box uses MediaHigway as an operating system for interactive service technology. Thus, the access to interactive services of Telepiù is allowed only to subscribers owing a SECA decoder.
- Irdeto, adopted by Stream, is using OpenTV as an operating system.

Table 3 summarises the “historical” features of decoders used by the D+ and Stream

Table 3 : Specifications of the decoders

	<i>CAS technology</i>	<i>Interactive service technology</i>	<i>Free to air compatibility</i>	<i>16:9 compatibility</i>	<i>Integrated modem</i>
D+	Mediaguard	MediaHigway	Yes	Yes	Yes
	Irdeto	OpenTV			
Stream	Irdeto	OpenTV	Yes	Yes	Yes
	NDS	Open DTV/NDS	Yes	Yes	Yes

However, due to the contradictions generated by this situation about football offer (two different decoders needed to watch Serie A matches, as D+ and Stream did not voluntarily sign a simulcrypt agreement), generating disadvantages for the subscribers, the Italian Communications Authority decide to break this stalemate situation. As reported by the site of the Authority (www.agcom.it), “on April 7, 2000 (Determination n.216) the Authority approved a Regulation concerning the definition of common standards for pay-TV decoders. Pursuant to law 78/99, a so called single decoder will be compulsory in Italy from 1 July 2000, consequently the regulation will enter into force on the same day and apply to broadcasters established in Italy according to the Television without frontiers Directive 89/552/EEC, as amended. The regulation specifies that all pay TV decoders lawfully produced and distributed in other EEA countries may freely circulate in Italy. The new provisions apply to both set-top-boxes and integrated TV sets (IDTV) but broadcasters may choose between Simulcrypt and Multicrypt systems. Consumers are granted all conditional access digital

programs and the reception of free-to-air broadcasting through the same decoder, the definition of how to pursue this aim is left to the interested parties, namely, the two digital platforms D+ and Stream. In particular before 20 June, 2000, they have to inform the Authority about how they intend to accomplish this obligation".

Unfortunately, it is unlikely that the two operators will unify their decoding systems before March/April 2001, as market opportunity did not suggest to the operators to come to an agreement. Stream introduced in May 2000 (i.e. after the Authority decision) a new API, a variant of Open DTV developed byNDS, which is incompatible with the OpenTV specifications adopted by D+. As a reaction, D+ decided in September 2000 to close the access to football programming through Irdeto, also in consideration of the relatively high number of system violations by non-authorized users which have been reported. In substitution to the Irdeto decoders, D+ offers a new GoldBox (SECA) decoder for free for one year to its 40,000 subscribers using the Irdeto system.

This situation is currently causing many problems at the Italian government and to the Authority, as the legislative deadline for the unification of the decoding systems was fixed on 1 July, 2000. D+ and Stream are therefore currently operating in open violation of the existing legislative requirements. The Authority did not decide if to apply sanctions to the two operators due to this violation yet, but it seems that they will be soon requested to pay a first penalty of about 258,000 Euros.

1.4.2 16:9

Sales of 16:9 TV sets had a major acceleration during 1998, thanks to the World Championship football matches, which were broadcast in this format. Both D+ and Stream operate a digital channel in 16:9. The digital broadcasters are using 16:9 to differentiate themselves from the analogue transmission to offer a richer viewing experience to the users.

The Italian market of 16:9 TV sets is however growing rather slowly, and the 16:9 TV sets can be considered still a niche market. Some manufacturers are offering 16:9 TV sets in Italy, but the general impression is that we are still far from a real take-off of the 16:9 TV sets

No reliable statistical penetration data are available.

1.4.3 Portable reception

Portable reception is currently not an issue for the Italian market. The roll-out of UMTS services in 2002 will clarify if it exists sufficient bandwidth to promote portable digital TV services.

1.5 Conclusions

Pay-TV play a crucial role in the penetration of digital TV devices in Italy, as pay-TV has been the principal way through which Italians got familiar with digital new media technologies. Furthermore, the development of pay-TV market, which is for its majority (nearly 70%) controlled by a foreign operator (D+), doesn't risk to be slowed down by the present small national production base, at least until the digital offer will be limited to 2 operators. It is therefore reasonable to suppose that in the next years pay-TV will keep on constituting the principal driver for the development of the digital TV in Italy. On the other side, policy makers perceive the risk that the pay-TV model might induce the generation of a sort of social exclusion mechanism, so that upper classes, who have the money and a higher cultural degree, can access to the digital TV services in a much easier way than lower classes.

The next step for digital TV will be DTTV. The existing plans for the roll-out of DTTV, though incomplete, demonstrate how strong is the intention of the Italian government to govern the development of digital TV towards a wider potential audience and, maybe, towards a new business model, eventually not based on pay-TV. This is still a debate matter in Italy and it remains unclear if DTTV and pay-TV are going to be competing access models rather complementary ones.

The advent of DTTV will probably cause a further decay in the already poor Italian cable offer, as DTTV. To this extent, the entrance of Stream into the satellite market may also be interpreted as a wish of abandoning progressively the cable market, which has little development perspectives with respect to the satellite market. In a medium-long perspective it is therefore likely that the Italian market will exit the TV cable business.

Interactive TV is offered in Italy by Stream only (10 channels) and constitutes just a little portion of the whole digital TV business. It's too early to say if the interactive TV will become something more than a simple "nice to have", but non-essential feature. Enhanced TV or interactive TV can aim to develop as an autonomous market in Italy, though in a subordinate position with respect to the traditional TV market. TV. Anyway, as interactive TV implies the notion of converge by itself, it will probably the advent of UMTS to tell us more about the potential of interactive TV services.

Finally, despite Authority's recommendations of adopting the DVP-MHP platform as the common standard for digital transmission, D+ and Stream are likely to keep on quarrelling about set-top-box standards until spring 2001, and a technical harmonisation of their systems seems still far to be defined.

2. Key figures for the Italian market

2.1 Country fundamentals

	1994	1995	1996	1997	1998	1999
Population (millions)	57.269	57.334	57.461	57.445	57.563	57.680
Households (millions)	19.282	19.664	20.053	20.430	20.258	20.474
GDP (in Euros billions)	858.306	840.428	967.954	1009.834	1156.471	1193.770

2.2 Equipment

	1994	1995	1996	1997	1998	1999
TV households (millions)	18.886	19.310	19.752	20.184	20.055	20.224
<i>TV households (% of total households)</i>	97.9%	98.2%	98.5%	98.8%	99.0%	98.7%
TV Households with 2 TV sets or more (millions)	7.743	9.386	8.805	9.516	9.100	9.250
<i>TV Households with 2 TV sets or more (% of TV Households)</i>	41.0%	49.7%	46.4%	49.9%	47.9%	45.7%
TV Households with 16:9 Television sets (millions)	0.005	0.006	0.013	0.049	0.027	0.039
<i>TV Households with 16:9 Television sets (% of TV Households)</i>	0.0%	0.0%	0.1%	0.3%	0.1%	0.2%
VCR Households (millions)	9.251	9.852	10.538	11.276	12.215	12.965
<i>VCR Households (% of TV Households)</i>	49.0%	52.2%	55.5%	59.3%	64.1%	64.1%
Digital STB Households (millions)	0.000	0.000	0.058	0.226	0.610	1.160
<i>Digital STB Households (% of TV Households)</i>	0.0%	0.0%	0.3%	1.1%	3.0%	5.7%
IDTV Households (millions)	0.000	0.000	0.000	0.000	0.000	0.000
<i>Digital TV Households (% of TV households)</i>	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Digital Households (millions)	0.000	0.000	0.058	0.226	0.610	1.160
<i>Digital Households (% of TV households)</i>	0.0%	0.0%	0.3%	1.1%	3.0%	5.7%

2.3 Television market estimates

<i>Millions Euros</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>	<i>1998</i>	<i>1999</i>
Analogue TV Market						
Licence fees	1165.127	1181.653	1207.476	1213.157	1239.497	1250.054
Advertising	2487.256	2601.393	2798.680	3047.096	3067.754	3098.201
Subscription	180.760	213.297	213.297	216.912	229.823	234.725
Total analogue TV	3833.143	3996.343	4219.453	4477.165	4537.074	4582.980
Digital TV Market						
Licence fees	0.000	0.000	0.000	0.000	0.000	0.000
Advertising	0.000	0.000	0.000	0.000	0.000	0.000
Subscription	0.000	0.000	18.592	83.666	263.393	325.654
Total digital TV	0.000	0.000	18.592	83.666	263.393	325.654
TV Market						
Licence fees	1165.127	1181.653	1207.476	1213.157	1239.497	1250.054
Advertising	2487.256	2601.393	2798.680	3047.096	3067.754	3098.201
Subscription	180.760	213.297	231.889	300.578	493.216	560.379
Total TV market.	3833.143	3996.343	4238.045	4560.831	4800.467	4908.634

2.4 Details of the subscription-TV market

Cable

	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>	<i>1998</i>	<i>1999</i>
Home passed (millions)	0.000	0.000	0.800	1.500	1.500	1.500
of which digital (millions)	0.000	0.000	0.800	1.500	1.500	1.500
<i>Home passed (% of TV households)</i>	0.0%	0.0%	4.2%	7.9%	7.5%	7.4%
<i>of which digital (% of TV households)</i>	0.0%	0.0%	4.2%	7.9%	7.5%	7.4%
Analogue Basic Subscribers (millions)	0.000	0.000	0.000	0.000	0.000	0.000
Digital package subscribers (millions)	0.000	0.000	0.010	0.046	0.070	0.150
<i>Analogue Basic Subscribers (% of TV households)</i>	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<i>Digital package subscribers (% of TV households)</i>	0.0%	0.0%	0.1%	0.2%	0.3%	0.7%

Satellite

	1994	1995	1996	1997	1998	1999
Satellite households (millions)	0.350	0.475	0.560	0.740	1.200	1.950
Satellite households (% of TV households)	1.9%	2.5%	3.0%	3.9%	6.3%	9.6%
Satellite subscribers (millions)	0.000	0.000	0.040	0.180	0.540	1.000
Satellite subscribers (% of TV households)	0.0%	0.0%	0.2%	0.9%	2.8%	4.9%
of which digital (millions)	0.000	0.000	0.040	0.180	0.540	1.000
of which digital (% of TV households)	0.0%	0.0%	0.3%	0.9%	2.8%	4.9%

Terrestrial TV

	1994	1995	1996	1997	1998	1999
Analogue Pay-TV services						
Pay-TV subscribers (millions)	0.550	0.650	0.650	0.660	0.700	1.150
Pay-TV subscribers (% of TV households)	2.9%	3.4%	3.4%	3.5%	3.7%	5.7%
*Digital TV services						
Homes covered (millions)	0.000	0.000	0.000	0.000	0.000	0.000
Homes covered (% of TV households)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
IDTV households (millions)	0.000	0.000	0.000	0.000	0.000	0.000
IDTV households (% of TV households)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pay-TV households (millions)	0.000	0.000	0.000	0.000	0.000	0.000
Pay-TV households (% of TV households)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%