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Development of Digital TV in Europe

2000 Report

Austria

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Contents

1 Digital TV market overview

Digital television in Austria continues to follow the German development. The most important events in the Austrian digital TV market in 1999/2000 were closely related to German developments and service providers:

- The merger of Premiere and DF 1 and the resulting service "Premiere World", which was launched parallel in Austria and Germany
- The decision of ORF to use d-box as the decoder for its digital services and the intention to launch encrypted digital satellite broadcasts of ORF 1 and ORF 2 by September 2000.

The deployment of digital terrestrial TV still remains unclear. The decision is still outstanding if the remaining Austrian wide terrestrial frequency spectrum should be used for (analogue) commercial broadcasting or be granted to ORF. ORF claims to need this frequency for the transition phase from analogue to digital terrestrial broadcasting.

On a general level, the Austrian digital TV record since 1997 should be considered against the general situation of television in Austria, with particular importance of

- ✔ the changes in the regulatory framework and the late liberalisation of the TV market,
- ✔ and the strong overspill of German TV programmes in Austria.

Liberalisation of the Austrian television market began in 1997 and is limited to the provision of services via cable and satellite. Terrestrial broadcasting in Austria is based on the 1974 Constitutional Broadcasting Act (BVG-Rundfunk) and is practically a public service monopoly. The political debate about liberalisation of terrestrial TV has not yet resulted in a new law. The Constitutional Broadcasting Act stipulates the independence of the Austrian Broadcasting Corporation (ORF) and lays down the obligation for broadcasting as a public responsibility to be enforced by the Austrian government.[1]

Legal framework: First steps towards competition in the Austrian TV market - liberalisation of cable TV

The end of the broadcasting monopoly was enforced by a ruling of the Constitutional Court in 1995, resulting from complaints of permit holders for cable TV networks who appealed to the Constitutional Court. They considered as unconstitutional the restriction prohibiting them to feed their own programmes (i.e. their own productions, reports and videos) into their cable TV networks. According to the prevailing legal position, all owners of aerial systems, with the exception of ORF, are not entitled to actively produce and broadcast programmes. In a ruling of September 27th, 1995, the Constitutional Court refers to Art. 10 EHRC and demanded that cable TV network providers should be entitled to provide TV services independently. A second ruling by the Constitutional Court of October 8th, 1996, deemed the de facto advertising ban for cable broadcasters was unconstitutional.

[1] cf. ESIS - European Survey of Information Society Projects: Regulation Developments Report by WIFO and Techno-Z FH F&E, submitted to ISPO - Information Society Project Office of the European Commission, July 1998

The Government reacted and adopted the Cable and Satellite Broadcasting Act[2] (KSRG, March 20th, 1997) to provide a legal foundation following the Court's rulings. The organisation of television by wireless terrestrial means continues to be regulated by the Federal Broadcasting Act (RFG), due to the scarcity in transmission capacity.

Austria - a market for German TV service providers

Overspill of German TV programmes continues to play an important role in Austria, but to an even greater degree in the digital TV market than in the free TV market.

Although ORF has enjoyed a long-term monopoly from a supply side perspective, they have faced increasing competition from extensive overspill of German TV programmes in Austria. The roll-out of commercial TV in Germany, which began in 1984, along with the penetration of cable networks and private satellite dishes is also happening in Austria. About 80 % of all Austrian cable and satellite TV households can receive most of the German free-to-air TV programmes. These programmes compete against ORF for audience shares, and – increasingly – for advertising budgets. ORF’s audience market share has decreased from 77 % in 1991 to 58 % in 1999 (annual average). In multi-channel households (HH with access to cable TV and/or satellite dish), ORF has a market share of about 48 % (1999). There are no figures available on overspill of advertising investments, but the share of foreign channels is much lower than audience share.

[2] According to the KSRG, everyone will have the right to provide active cable and satellite broadcasting as long as the programme meets certain minimum requirements. Cable broadcasters will only have to register their business instead of having it licensed by a commission. Only satellite programmes need a licence, but even then the applicant does not have to go through a selection process.

Audience market share of ORF (in all households / cable & satellite households)

Marktanteile in % Erwachsene (12 Jahre und älter)	National							KaSat-Empfang						
	1993	1994	1995	1996	1997	1998	1999	1993	1994	1995	1996	1997	1998	1999
	%	%	%	%	%	%	%	%	%	%	%	%	%	%
ORF	66	62	63	62	62	61	58	44	44	47	48	48	50	48
AUSLAND	34	38	37	39	38	38	41	56	56	53	52	51	50	51
Lokal-TV Österr.					0	0	1					0	0	1
ORF1	36	32	27	25	24	26	24	22	21	20	20	19	21	20
ORF2	30	31	36	36	37	36	34	22	23	27	29	30	29	28
ARD	3	3	3	3	3	3	3	3	4	4	3	3	3	3
ZDF	3	3	3	2	2	3	3	3	4	3	3	3	3	3
BFS	1	1	1	1	1	1	2	2	2	2	2	2	2	2
DRS	1	1	0	0	0	0	0	1	1	1	1	0	0	0
3SAT	1	1	1	1	1	1	1	2	1	1	1	1	1	1
RTL	8	8	7	6	6	6	6	14	12	10	9	8	8	8
RTL2	2	2	2	3	3	3	3	4	4	3	4	4	4	4
SAT 1	6	6	6	5	5	5	5	10	9	8	7	7	7	7
PRO7	5	6	5	5	6	6	5	10	9	8	7	8	7	7
KABEL1			1	2	2	2	3			1	3	3	3	4
VOX				2	2	2	2				4	3	2	2
SRTL				2	1	2	2				2	2	2	2
DSF	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EUROSPORT	1	1	1	1	1	1	1	1	2	2	1	1	1	1
NTV				0	0	0	0				0	0	0	1
MTV	0	0	0	0	0	0	0	0	1	0	0	0	0	0
VIVA				0	0	0	0				0	0	0	0
andere	2	5	6	5	3	4	4	5	6	9	4	4	5	5
TV-Gesamt	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Quelle: Teletest 1993-1999														© ORF-GMF 2000

The emerging digital and pay-TV markets in Austria are also dominated by German players. Premiere World has its own division for Austria and markets exactly the same services to German and Austrian households.

The only domestic player in the pay-TV market is the Vienna based cable TV operator *Telekabel*, who operates an analogue optional pay-TV service with the intention to digitise the service by the end of this year.

1.1 Roll-out of digital services

The development of digital TV is still dominated by German services. The small size of the overall Austrian market (about 3 million TV households in total), combined with the massive overspill of German analogue free TV programmes, is a difficult environment for potential domestic ventures. The digital offer that is currently available or will be in the near future to Austrian TV households consists of

- ✔ The German service provider **Premiere World** markets its pay-TV service in Austria. The number of (digital) subscribers is proportionally smaller than the German figure and amounts to about 60,000 (June 2000).
- ✔ The (free-to-air) "Tourism and Weather Channel" **TW1**, which is 50 % owned by ORF, can be received in about 85 % of the cable households and 18 % of the satellite households (transmitted digitally by ASTRA 1G).
- ✔ A non-encrypted combination of **ORF2** & **TW1** is available as part of the digital package of ZDF ("ZDF.vision") since April 1998 via digital satellite.
- ✔ The two TV programmes of public broadcaster **ORF** (ORF1, ORF2), including the nine regional news programmes (30 min. / day), will be distributed digitally via ASTRA 1G (encrypted) beginning with September 2000.
- ✔ The free-to-air digital programmes of **German public and commercial broadcasters** can be received in Austrian digital satellite households.
- ✔ Vienna based Cable TV network operator Telekabel Austria (420,000 subscribers) has announced to digitise its (optional) premium pay-TV service "**Telekino**" (20,000 subscribers) by the end of this year or early 2001.

1.1.1 Satellite digital services

Austria has one of the highest penetration rates of satellite dishes in Europe. TV reception via satellite has increased fast from 2 % in 1990 to 41 % at the end of 1999, surpassing cable TV penetration (39 %). As a result, reception via satellite is considered to play an important role in the future roll-out of new digital services, although many – probably the majority – of the Austrian satellite households have yet to upgrade their dish for digital reception (universal LNC) and purchase a digital receiver. It is expected that digital receivers will gradually penetrate the market, depending on the roll-out of digital free-to-air and pay-TV services.

- There are no Austrian pay-TV satellite television services available yet.
- Digital satellite is mainly used as a means to receive additional (free-to-air TV) programmes, predominantly German ones.
- Premiere World offers its pay-TV services via satellite. Prices compare well to those in Germany, the offer is exactly the same as in Germany.

Satellite digital broadcasting: roll-out history and plans of ORF

The Austrian public broadcaster ORF is the only genuine player in the digital satellite TV market. No other Austrian content provider has either the financial capacity or the content wealth necessary to justify leasing satellite transponder space. ORF started with digital satellite broadcasting in late 1997, when it launched TW1 as a thematic channel.

ORF would already broadcast all its TV programmes digitally via satellite, if the limited licence rights did not require encryption. For many programmes broadcast by ORF1, ORF only has the rights for Austria, but not for Germany or other countries. As a consequence, digital non-encrypted distribution via satellite is not allowed.

ORF has decided to use Kirch Group's Betacrypt system for encryption (see chapter on "Decoder issues"). Subscribers of Premiere World will receive the ORF smart card for free until 31st December 2000. After that time, new Premiere subscribers will have a small fee (210 ATS / 14 Euro) for the ORF smart card. The card is also available directly from ORF (without a Premiere subscription) for ATS 200 (until 31st December 2000) / ATS 400 (in 2001).[3] Due to the limited licence rights, the smart card will only be given to Austrian households who are registered to pay licence-fees to ORF.

Roll out of digital satellite broadcasting (ORF)

Time	***Offer***
December 1997	Launch of TW1 (tourism and weather channel). TW1 is available as non-encrypted digital programme, free of charge via digital satellite ASTRA 1G. TW1 is a joint venture of ORF (50%) and Sitour Group (50%). The programme is internationally distributed digitally via Astra 1G and fed into cable networks (in Austria, it reaches about 85 % of the Austrian cable households).
January 1998	Launch of ORF digital teletext.
April 1998	Launch of digital radio broadcasts via satellite: Ö1, Ö3, Blue Danube Radio and FM 4.
April 1998	A non-encrypted combination of ORF2 and TW1 becomes part of the digital package of ZDF ("ZDF.vision")
June 1998	All of the 9 regional radio programmes (Ö2) and Radio Österreich International are part of the digital ORF-package.
Fall 1998	Field trial: ORF1 and ORF2 are transmitted as encrypted programmes (CA system: Cryptoworks) via ASTRA 1G. ORF's "business model" for encrypted satellite digital TV services builds on the existing public service system. All Austrian households paying the (mandatory) broadcasting licence fee will be entitled to receive a smart card for their digital decoder to decode ORF's encrypted digital satellite broadcasts, once the service will be regular.
February 2000	Agreement between ORF and Kirch-Group that ORF can use d-box and betacrypt for encryption of its digital services. About 300,000 households that cannot receive the terrestrial signal in a good quality (because of the topographic situation) will be able to receive the two ORF channels via digital satellite and d-box by September 2000. Encryption is required because ORF does not have the licence rights to broadcast Europe-wide for parts of its programme.

[3] Salzburger Nachrichten, 17th June 2000: "ORF per Satellit in hinterste Winkel"

Roll out of digital satellite broadcasting (ORF) (cont.)

February 2000	TW1 extends its programme. In addition to weather and tourist information, TW1 includes sports and travel programmes. Starting at 17:00, TW1 broadcasts the travel programmes "Reiseland Österreich" and "Reiselust international" and various sports programmes. Since May 2000, ORF also uses TW1 as a thematic channel to cover additional sports events which are not shown on ORF1 and ORF2. For ORF, TW1 is a "test bed" for less popular sports. Two times per week, sports programmes are shown during prime time on TW1.
September 2000	All TV and radio programmes of ORF (including ORF1, ORF 2, and the 9 regional TV news programmes) can be received via digital satellite broadcast (ASTRA 1 G). Consumers need to purchase a smart card for 14 Euro (in 2000) and 30 Euro (in 2001) and a d-box.
2002	ORF plans to launch a (digital) culture channel by the year 2002. The programme shall have a volume of about 10 hours per day and contain repeats from the ORF archive as well as new productions. Co-operations with 3sat, Arte, Bayern-alpha and with the ZDF theatre channel may be negotiated.

1.1.2 Cable digital services

Cable TV penetration

About 1.2 million homes in Austria subscribe to a cable TV network (end of 1999). In contrast to Germany, where Deutsche Telekom operates a nation-wide network, Austrian cable TV network providers tend to operate on a regional or local basis. Thus, the Austrian cable TV market is highly fragmented. There are more than 250 networks, but only about 100 of these have more than 500 subscribers.

Cable networks in Austria (Dec. 1999)[4]

Province (Bundesland)	No. of network operators	Total no. of subscribers
Burgenland	3	35,000
Carinthia	8	17,000
Lower Austria	28	95,000
Upper Austria	104	177,000
Salzburg	19	65,000
Styria	37	67,000
Tyrol	38	69,000
Vorarlberg	12	56,000
Vienna	5	410,000
TOTAL	**254**	**991,000**

There is no reliable information available about the degree of digitisation of these cable networks. It varies widely between networks, depending on the market strategies of their operators. However, a considerable number of operators already offer fast internet access via cable, usually for a fee of 35-50 Euro / month. 144 out of 250 cable networks offer access to Premiere digital. Among the larger network operators offering internet access are Kabelsignal (Lower Austria), Liwest (Upper Austria), SAFE (Salzburg) and Radio Lampert / Hirschmann (Vorarlberg).

Cable digital services and pay-TV services

Premiere Digital is the only (pay-TV) service in Austria distributed via digital cable. Premiere Digital is distributed by 144 out of the 250 cable network operators, including some of the larger cable TV operators such as Telesystem Tirol Kabelfernsehen, Kabelsignal, Burgenländisches Kabelfernsehen, and Karl Lampert KG.

However, only the analogue service of Premiere is fed into the network of the largest operator, Vienna based Telekabel (420,000 subscribers). As a result, only about 9,000 Austrian cable households have subscribed to Premiere Digital via cable (June 2000). This is about 15 % of the total (digital) subscriber base. 85 % of the Premiere subscribers receive the service via satellite.

The reason for not feeding Premiere World into its cable network is that Telekabel is a competitor of Premiere World, since it operates its own (analogue) pay-TV service "**Telekino**" (since mid 1997). End of March 2000, Telekino had about 20,000 subscribers. Adding to the basic service which Telekabel provides to its subscribers (34 TV programmes), Telekino offers 12 more TV channels (including BBC World, BBC Prime, Onyx, The Adult Channel, Extreme Sports, Reality TV), 8 movie pay-per-view channels and 2 erotic pay-per-view channels. The currently analogue service is planned to be digitised by the end of this year or early 2001. As part of the marketing effort for the new digital service, it is intended to give away digital decoder boxes for free or for a very low price, according to Martin Wilfing,

[4] source: Chamber of Commerce, Cable-TV Division. Figures differ from figures provided by Fessel-GfK market research, which are used in this report. This explains the difference between the figures in the text above (by Fessel-GfK) and in the table for the total number of subscribers.

marketing director.[5] Six of the 12 channels that are part of the Telekino package are (at least partly) owned by UPC (United Pan-European Communications), which holds a 95 % stake in the network operator Telekabel. UPC also holds a majority stake in the commercial programme "ATV", which is distributed by several cable-networks.

TW1, the only Austrian-made digital satellite programme, is fed into most Austrian cable networks. TW1 reaches about 85 % of the Austrian cable households, i.e. about 1 million households, and 450,000 (cable) households in Germany.[6]

ORF contributes individual programmes to other packages, but does not yet feed its own digital service package into any cable network in Austria.

1.1.3 Situation of ADSL

Since 1999, the online division of Telekom Austria offers fast internet access via ADSL. In mid 2000, the service was available to about 20-30 % of the Austrian households. The objective is that the service will be available to 55 % of the households by the end of this year. End of June 2000, Telekom Austria reported about 17,000 ADSL subscribers.[7]

The Telekom Austria ADSL package is called "A-Online Speed". Customers can choose between A-Online Speed aloha for ATS 799 per month (58 Euro) and A-Online Speed plus (949 ATS / 69 Euro per month). Both services offer fast internet access (512 kbit/s download, 64 kbit/s upload). The company's own ISP, A-Online, is currently the only operator to offer ASDL access in Austria.[8] However, like in telephony, Telekom Austria has been obliged to let other service providers use their network to offer ADSL services. Since June 2000, telecom companies can offer ADSL services. Telekom Control, the regulatory authority, will rule on the interconnection fee providers will have to pay to TA.

Fast internet is the first ADSL service to be offered and should open the market for other applications. Telekom Austria has announced to launch new ADSL products still this year. The new services will mainly target business customers (e.g. ADSL based corporate networks). Interactive television services or pay-TV services are not yet planned.

1.1.4 Situation of terrestrial digital television

ORF first announced plans for the transition from analogue to digital terrestrial television in 1999, but these plans remain quite vague. In contrast to Germany, where a decision was taken to terminate analogue terrestrial TV by 2010, there is no decision about a schedule for the transition procedure in Austria yet, neither by the Austrian government nor by ORF.

[5] Der Standard, 31st March 2000: "Geschenkte Boxen, verschärfter Sport"

[6] information by TW1, www.tw1.at

[7] information by Telekom Austria / A-Online, 26th July 2000

[8] screen digest, February 2000, 54

The major obstacle to a timely transition could be the shortage of frequencies. The problem is aggravated in Austria by the country's topology that allows only three nation-wide analogue terrestrial programmes.

Digital terrestrial television has become a political issue in the context of a discussion about the liberalisation of terrestrial television. The Government is considering the liberalisation of the existing broadcasting law, which constitutes the basis for the existing monopoly of the public service broadcaster ORF for terrestrial TV frequencies. The debate revolves around the objective to grant a licence for the third terrestrial frequency to a private operator. ORF claims that it will need the remaining frequency itself in order to manage the transition from analogue to digital. ORF argues that a "soft change", i.e. the simultaneous operation of analogue and digital terrestrial TV during the transition phase, requires usage of the remaining frequency.

The Government has issued a study to clear the technical possibilities. The report is due for fall 2000. The decision about the allocation of the remaining frequency will be based on the results of this study.

In December 1999, ORF launched a field trial with DVB-T in Styria to test the strength of the signal in extreme alpine areas. First results are reported to be positive in terms of efficiency of frequency usage.[9] A digitally used terrestrial frequency has a capacity for four programmes.

ORF says that it will take about 18 months to upgrade the transmitters in order to technically enable an Austrian wide coverage with digital terrestrial broadcasting.[10]

1.1.5 Market development

The digital television market in Austria (pay-TV and/or interactive services) is still very small. The number of digital subscribers is steadily growing, but the total number of pay-TV subscribers has been stagnating since the beginning of 2000. "New" subscribers of Premiere World digital are mainly subscribers migrating from the analogue to the digital service. In July 2000, digital TV services had about 60,000 subscribers in Austria.

Overview: digital services available in Austria

Name of the service	**Ownership** (as of May 1999)	**Date of launch**	**No. of subscribers/consumers**
Pay-TV services			
Premiere World (digital)	Teleclub GmbH (KirchGroup): 70 %; Canal+ Beteiligungs- und Verwaltungs-Gesellschaft mbH (owned by Teleclub GmbH): 25 %; CLT/Ufa: 5 %	October 1999	60,000 (June 2000)
Free-to-air programmes and packages of public broadcasters			

[9] Horizont, 30th June 2000: "Der ORF im digitalen Zeitalter"

[10] information by Karl Pachner, ORF Business Development, e-mail on 16th August 2000

ORF digital package	100% ORF (including TW1)	April 1998	no figures available
TW1 – Tourism and Weather Channel	50% ORF and 50% Sitour-Group	December 1997	no figures available
ARD digital	ARD	August 1997	no figures available
ZDF.vision	ZDF	August 1997	no figures available
Free-to-air packages of German commercial broadcasters			
RTL World	UFA Film & Fernsehen GmbH (CLT-UFA) (89 %), BW TV und Film Beteiligungs GmbH (11 %)	1999	no figures available
tm3 digital	News German Television GmbH (a 100 % subsidiary of News Corp.)	June 2000	no figures available
VOX (Reisekanal & Servicekanal)	RTL Television GmbH (49.9 %), UFA Film und Fernseh GmbH (49.8 %), DCTP (0.3 %)	(licensed in Sept. 1999)	no figures available

Market growth

In terms of revenues, the Austrian digital TV market has increased by about 90 % in 1999. This is a big growth rate, however, the low starting base must be taken into account. The main factors for growth were that Premiere subscribers migrated from the analogue to the digital service and the launch of Premiere World in October, which attracted a lot of subscribers in the first three months.

The changes in the market makes estimates of the total market volume difficult. Detailed figures for sales revenues of Premiere Digital, DF 1 (until October 1999) and Premiere World in 1999 are not available. Salzburg Research estimates the Austrian digital TV market (1999) at about 13.3 million Euro.[11] This is about 7.8 % of the total pay-TV market[12] and 1.4 % of the total Austrian TV market. The TV market share has increased from 0.3 % in 1997 and 0.8 % in 1998.

The digital pay-TV services of Premiere World is exclusively financed by subscription fees. There are no advertising revenues. Comparing the Austrian pay-TV market to the total TV market therefore basically means comparing pay-TV subscription revenues of digital service providers to the combined advertising and licence fee revenues of ORF plus revenues of the cable network operators.

Austrian TV market: pay-TV revenues as part of total TV market

[11] The calculation is based on the average number of subscribers during 1999, the subscription fees for the standard package and an estimate for additional revenues through pay-per-view (based on information available about the percentage of subscribers using PPV services). For Premiere, figures for the annual revenue are available, but these include Germany and Austria, and both the digital and the analogue package. Figures are available for licence fee revenues of the public broadcasters and advertising revenues. Revenues of cable network operators have been calculated based on the number of subscribers and average monthly fees.

[12] including basic subscription to cable networks

	Total TV market	Total pay-TV market*	Premium pay-TV (without basic cable subscription)	Digital pay-TV market		
	M Euro	M Euro	M Euro	M Euro	% of total market	% of total pay-TV *
1996	754	144	16	0.4	0,0	0,3
1997	822	163	20	2.6	0,3	1,6
1998	878	171	21	7.3	0,8	4,3
1999	959	171	19	13.3	1.4	7.8

* including fees cable households are paying for basic subscription to a cable network operator. Optional services (Premiere analogue, Telekino) account for only about 10 % of the total revenues from pay-TV.

1.1.6 Barriers to competition or market development

The d-box – a market barrier?

The dominant position of the d-box in the decoder market, together with its technical specifications, is an issue of ongoing debate. Critics say d-box is a barrier to competition. In defence of its activities, Kirch Group argues that the API source code for the d-box was made available by BetaResearch in January 1999.

With the decision of ORF to use the d-box and its encryption system BetaCrypt for its digital services, the German debate is being transferred to Austria. There was a debate whether a common interface should become mandatory in set-top-boxes (see chapter on "regulatory framework"). A new law initially contained such a provision, but the passage was cancelled at short notice.

It remains to be seen if the MHP standard can help to overcome this problem. Kirch Group stresses the fact that the d-box will be fully MHP compatible.

Schedule for transition towards digital terrestrial TV is still unclear

A political decision as well as detailed plans and time-schedules for a switch to digital television are needed. A study about the technical opportunities has been issued. The Government has to take a decision if the remaining terrestrial frequency will be allocated to ORF (who claims it needs the frequency for switching to digital terrestrial) or to a private operator.

Fragmentation of the cable TV market

39 % of the Austrian TV households receive their programmes by subscription to a cable TV network. However, the cable market is highly fragmented with a lot of small operators (more than 250 in total). It is therefore not easy for new service providers to get access to cable households. They have to negotiate deals with network operators on an individual basis. In some cases, there is the paradox situation that both sides feel entitled to receive a fee from the

other side: the cable operator for feeding the programme into its network, the service provider for granting the network operator the right to distribute the programme to its customers. Programmes such as Eurosport or MTV have been banned in the past from many Austrian cable networks as soon as the service providers demanded a fee from the network operators.

1.2 Details of services

1.2.1 Number and type of services

In mid 2000, there were close to 90 digital free-to-air and pay-TV channels in German language receivable via satellite (ASTRA and/or EUTELSAT) or cable networks. This is an increase of about 25 % compared to June 1999 (73 channels in total). Additional free-to-air digital channels in other languages than German can also be received in Austria via satellite (ASTRA, EUTELSAT).

Digital TV channels in German language available via ASTRA and EUTELSAT (July 2000)[13]

Type of channel	No. of channels / pay-mode		
	Total	pay-TV	free-to-air
Movies & entertainment	28	26	2
Mixed programmes by public broadcasters	12	-	12
Mixed programmes by commercial broadcasters	11	-	11
Business, finance & news	7	1	6
Sports	7	5	2
Children & youth programmes	4	3	1
Erotic programmes	4	4	
Education & documentaries	3	2	1
Music & culture	3	1	2
Various special interest programmes (e.g. weather, fishing, home-shopping)	9	1	8
TOTAL	**88**	**43**	**45**

1.2.2 Details of the DTV offers

Premiere World - Austria

After the take-over of Premiere by Kirch Group, Premiere World was launched in October 1999. As Premiere has done before, Premiere World continues to market exactly the same product in Germany and in Austria. This is also true for the sports package. Kirch Group holds the right to show one match of the Austria football league per weekend (live). Premiere World states that its service "stands for exclusivity and diversity", offering

- 14,000 hours of programme per month
- 30 first-time broadcasts of feature movies in German television per month
- more than 1000 sports events live (per year)

[13] count is based on a list of digital channels distributed by ASTRA, cf. <www.astra.de>, and EUTELSAT <www.eutelsat.de>.

- exclusive rights for numerous sports events and long-term output deals with US majors (e.g. live broadcasts of German "Bundesliga", the premiere football league).[14]

In the marketing strategy of Premiere World for 2000, German and international football plays a dominant role, even in Austria. German football is quite popular in Austria. In contrast to earlier strategies of former Premiere Digital, the movie and sports offers have been split into separate packages.

- **Movie channels** are offered in three packages and in pay-per-view channels. To use the pay-per-view offers, a subscription of the basic package "Movie World" is necessary. The "super package" includes all four packages (Movie, Family, Gala, Sports).
- The **Sports** package includes one live match of the Austrian football league per week. The add-on "Sports World – KICK" (for additional 10 DM / month) offers a vast amount of live football, including the European Champions League. Subscriptions to "tickets" for matches of the German "Bundesliga" (premier division) are also possible.
- Three channels offer **pay-per-view** programmes, structured into sports, recent movies, and erotics.

The four movie and sports packages can be subscribed in different combinations. Most customers include the "Movie World" package as a sort of basic package in their subscription.

Pay-TV packages offered in Austria by Premiere World (July 2000)

Package	Description	Price (Euro)
	Pay-TV Packages	
Movie World	contains **8 movie programmes**: Premiere, Star Kino, Cine Action, Cine Comedy, SCI Fantasy, Romantic Movies, 13th Street, Studio Universal	40 DM (20 Euro) (if selected as the only package)
Sports World	vast variety of **sports programmes**, including football (3 matches per week live), Formular One, boxing, golf, US sports	only in combination with other package: 45-55 DM (22.5 – 27.5 Euro), depending on combination
Family World	contains **8 family entertainment programmes**: Junior, K-Toon, Disney Channel, Sunset, Comedy, Krimi & Co, Discovery Channel, Planet	20 DM (10 Euro) (if selected as the only package)
Gala World	contains **6 programmes**: Goldstar TV (popular music), Filmpalast (classic movies), Heimatkanal, Krimi & Co, Discovery Channel, Music Choice	20 DM (10 Euro) (if selected as the only package)

[14] Presentation by Ferdinand Keyser, Managing Director of Premiere World, 21st March 2000, at the Handelsblatt Konferenz "Zukunftsforum Medien". Presentation can be downloaded at http://www.premiereworld.de (Presseservice)

Pay-TV: Single channels		
Extras	3 programmes are offered for single programme subscription (or in combination with Premiere World packages: • classica: classic music) • seasons (hunting and fishing) • blue channel (erotic)	classica: DM 10 (DM 20) seasons: DM 10 (DM 15) blue channel: DM 14 (DM 20) in brackets: if subscribed as a single channel and not in combination with a Premiere World package
Pay-per-view		
Superdom	pay-per-view channel for German football (Bundesliga / premiere league).	season ticket: 349 DM (175 Euro); weekend ticket (9 matches): 25 DM (12.5 Euro) single match: 12 DM (6 Euro)
Cinedome	pay-per-view channel for movies (access only via Movie World)	6 DM (3 Euro) per movie
Blue Movie	pay-per-view channel for erotic movies (Access only via Movie World)	6 DM (3 Euro) per movie

Combinations of packages offered for subscription by Premiere World

Movie World	Sports World	Family World	Gala World	Price (Euro)
x	x	x		25
x	x		x	25
x		x	x	25
x	x			23.5
x		x		23.5
x			x	23.5
		x	x	16
x				22
		x		11
			x	11

Premiere Analogue

There are still about 50,000 subscribers of the analogue pay-TV service of Premiere in Austria (i.e. about 45 % of the total subscriber base). Since Premiere World was launched in October 1999, the service provider tries to motivate the subscribers of the analogue service to migrate towards the digital service. At the end of 1999, analogue subscribers were still the majority (53 %).

The analogue pay-TV service of Premiere is being continued, but no new subscriptions are possible since August 2000. Information for subscribers about the programme of Premiere analogue is available on the web site of Premiere digital <http://www.premiereworld.at>. Technically, Premiere analogue has been integrated as one of the various services offered by Premiere World. The plan is to have all subscribers "digitised" by September 2001.

Audience behaviour

Premiere World does not provide much information about the user behaviour of subscribers, the popularity of the various packages or about the demographic structure of the audience. The company states that it does not have that information itself at this point – empirical tests how popular individual channels within the packages are only starting now.[15] However, most of this information will probably remain confidential matter. Since Premiere World is not advertising financed, it is in a position to withhold this information. It does not need to "sell" their audience to advertisers, i.e. provide figures about the reach of different channels. The company states that

- about 75 % of the Austrian customers have subscribed to a combination of the three packages "Movie", "Sport" and "Family".
- 21 % take all four basic packages (including "Gala")
- only a minority of a few percent take only one package
- Figures about the acceptance of pay-per-view offers are confidential. Premiere only states that topical feature movies are more popular than the erotic movies.[16]
- The "Season Ticket" (live broadcasts of all 306 German Bundesliga matches) seems to become a success, at least in Germany. Shortly before the start of the new football season (2000/2001) already 110,000 tickets have been sold (349 DM each) there.[17] Since German football is popular in Austria, too, this service could also become popular in Austria.

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[15] questionnaire answered by Premiere World, 10th August 2000

[16] Der Standard, 20th April 2000: "Tausche Filme gegen Geld"

[17] tv media, 33/00, 9th August 2000: "TV Revolution"

Digital programmes of ORF & TW1

ORF’s digital programmes do not offer any content specifically created for digital broadcasting other than its conventional programmes. The package does not include an EPG (for a minimum of interactive use of the digital programmes). The "culture channel" which is planned to be launched by the year 2002 could be the first thematic TV channel by ORF.

Digital Programme	Description	Distribution	Technical reach in Austria
TW1	weather, tourist information, travel, sports	satellite (ASTRA), non-encrypted	85 % of cable households, dig. satellite households with d-box (~ 50,000)
ORF2 & TW1	a mixture of programmes from the 2nd channel by ORF (ORF2) and TW1[18]	satellite (ASTRA), non-encrypted, as part of the ZDF.vision package	digital satellite house-holds with d-box (~ 50,000) and ORF smart card
ORF1	1st channel by ORF (unchanged)	satellite (ASTRA), encrypted (BetaCrypt): launch date: Sept. 2000	digital satellite house-holds with d-box (~ 50,000) and ORF smart card
ORF2	2nd channel by ORF (unchanged)	satellite (ASTRA), encrypted (BetaCrypt): launch date: Sept. 2000	digital satellite house-holds with d-box (~ 50,000) and ORF smart card
ORF regional TV programmes (9)	regional news (9 versions); 30 min./day	satellite (ASTRA), encrypted (BetaCrypt): launch date: Sept. 2000	digital satellite house-holds with d-box (~ 50,000) and ORF smart card

In the first phase of introducing digital television to the Austrian audience (beginning in September 2000), the value added from the ORF digital programming will consist of the ability to receive the regional programming of all nine ORF Bundeslaender studios. Viewers in Vienna, for example, will then be able to watch the news broadcasts from the other eight provinces.

Projects planned

Cable network operator Telekabel intends to digitise its analogue pay-TV service **Telekino** by the end of this year or in early 2001. End of March 2000, Telekino had about 20,000 subscribers. Telekino offers (in addition to the basic package by Telekabel of 34 TV programmes) 12 more TV channels (including BBC World, BBC Prime, Onyx, The Adult

[18] basically the programme of ORF2. Those parts of the programme for which ORF does not have licence rights beyond Austria are replaced by content from TW1

Channel, Extreme Sports, Reality TV), 8 movie pay-per-view channels and 2 erotic pay-per-view channels. As part of the marketing effort for the new digital service, it is intended to give away digital decoder boxes for free or for a very low price, according to Martin Wilfing, marketing director.[19]

[19] Der Standard, 31st March 2000: "Geschenkte Boxen, verschärfter Sport"

1.3 Operators and market structure

1.3.1 Concentration of the pay-TV market

The slowly emerging Austrian market for digital pay-TV shows signs of high concentration, being dominated by German players. With Bertelsmann's (nearly complete) opting out of Premiere[20], Kirch Group will have a dominant position on the Austrian digital pay-TV market. Genuine Austrian services, e.g. by cable network operators, have not yet been launched, except the analogue pay-TV service "Telekino" by Telekabel.

1.3.2 Co-operations and vertical integration

Planned co-operation between ORF and publishers for an internet platform

ORF and major Austrian publishing companies consider launching a common internet platform ("AustriaNet"). The players would aggregate their contents in order to create the number one internet portal for Austria. However, the business model and terms of co-operation have not yet been agreed on, and it seems uncertain if the common platform can be realised.

There venture may have powerful competitors. The German WAZ Group (a major German publishing group), which holds about a 50 % stake in the Mediaprint, Austria's largest publishing company (*Neue Kronen-Zeitung*, *Kurier*), has acquired a stake in the online company of book retail chain Libro, "libro.cc". Libro.cc operates its own internet portal. This could mean that Kronen-Zeitung and Kurier will not be part of the ORF co-operation platform. German broadcaster RTL is also reported to have an interest in creating an internet portal for Austria. A co-operation between RTL, libro.cc and WAZ group could be a powerful competitor to any ORF online service.[21]

Telekabel: Infrastructure + content + telecom service provicer

Vienna-based cable TV operator UPC Telekabel (420,000 subscribers) has extended its activities from the cable TV market into the telecommunications market. Since 1997/98, Telekabel has actively pursued the (technical) upgrade of its cable network and launched new products based on its infrastructure:

- Internet access: UPC subsidiary *chello* sells fast internet access via the cable network of Telekabel
- telephone service (*Priority Telekom*).
- cable TV basic package (*Telekabel*) and premium pay-TV (*Telekino*)

[20] see report for Germany

[21] Horziont, 11th August 2000: "Brösel schon vor dem Start"

The digitised version of pay-TV channel Telekino will probably contain six TV programmes owned by UPC. UPC holds a 95 % stake in Telekabel.

1.3.3 Regulatory framework and issues of debate

Plans for a new media and telecom regulatory authority

The new government coalition (formed by the conservatives and the freedom party) considers the implementation of a media and telecom regulatory authority for Austria. Plans for the "Communication Commission Austria" (KommAustria) foresee an authority with three commissions for media, content and infrastructure. The Media Commission shall regulate television and radio services (including cable TV issues), a Supervisory Commission shall regulate content issues, and the Infrastructure Commission shall be responsible for regulating telecommunication infrastructure. The KommAustria shall be financed by contributions from the media and telecommunication companies regulated by the authority.[22] The opposition in the parliament criticises the plans of the government. The social-democrats do not think that a new regulatory authority is necessary for Austria.[23]

Bringing Austria's digital TV market into line with European law

The new government parties ÖVP and FPÖ approved legislation in early June 2000 which brings Austria's digital TV market finally in line with European law. A section of the legislation according to which from mid-2001 set-top-boxes must be equipped with a common interface was removed on short notice. Before it is included, the Austrian administration wants to consult the EC, because the measure goes beyond the requirements of the EC's Digital TV Directive.[24]

Prior to these events, in December 1999, a parliamentary hearing on the issue of digital decoders had taken place. Peter Moosmann, ORF technical director, and Dorothee Belz, legal advisor to Kirch Group, defended the technical specifications of d-box against criticism that the d-box was closing the market against other service providers.

As a dominant player, ORF has to carefully consider legal aspects in their decision for a decoder system. The European Union Directive 95/47 requires dominant players to grant to third parties access to their CA services on "fair, reasonable and non-discriminatory" terms. This implies cost-oriented charges for CAS in order to reward investment, but is intended to prevent abuse of dominant position.

[22] cf. Horizont, 11th August 2000: Gesetzesentwürfe: Licht am Ende des Tunnels.

[23] cf. Salzburger Nachrichten, 11th August 2000: "SPÖ lehnt Medienbehörde strikt ab"

[24] Inside Digital tv, 12th June 2000: "Austria puts CI rule on hold"

1.4 Technical issues

1.4.1 Decoder issues

Decision by ORF to use Betacrypt / d-box for encryption of its programmes

ORF has always announced that it would follow the development in the German market before making its choice of decoder. Since the Austrian digital decoder market is dominated by the German d-box decoder, an agreement with Kirch Group seemed to be logical. However, in 1998, Kirch Group demanded more than 1.5 million Euro per year to make ORF's digital service available through the d-box decoder.[25] ORF was not willing to pay this amount. As a result, the first digital satellite broadcasting trials of ORF1 and ORF2 were running with the Cryptoworks encryption system.[26]

In February 2000, ORF and Kirch Group finally negotiated a deal that ORF could use Betacrypt (the CA technology of d-box) for encryption of its digital channel signal. This decision marked the first free-to-air television application of the d-box outside Germany. ORF announced that it would use Kirch Group's conditional access system Betacrypt and linked a simulcrypt agreement that would allow the d-box to use a second conditional access system from another service provider. About 50,000 subscribers to Premiere World in Austria already use the d-box decoder.[27]

These plans nearly had to be abandoned, however, in May 2000. The Government considered a new law that contained a passage requiring that beginning with 1st June 2001, all digital decoders or TV sets with integrated decoders sold in Austria had to be equipped with common interface technology. The argument was that a monopoly arising in the decoder market should be prevented. But the Austrian Government put this CI rule on hold only shortly after and removed the passage from its recently approved legislation.

The Austrian government subsequently notified the CI provision as a technical rule under the Single Market transparency mechanism contained in Directive 98/34/EC.[28] This procedure had not finished at the time of writing. [29]

Technical development of the d-box: the new generation

Since November 1999, the second generation of the d-box is in use. The hardware manufacturers Nokia, Philips and Sagem are licensed to produce the new d-box. There are three versions of the d-box for cable, satellite and digital terrestrial reception. The new d-box is prepared to enable services based on the MHP standard. It is equipped with a 56k modem, allowing access to online services and to the internet, with a 40 MB RAM memory and with two smart card slots for future e-commerce applications (e.g. home-banking).

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[25] cf. interview with Peter Moosmann, Technical Director of ORF, in: Die Presse, October 23rd, 1998, p. 29.

[26] Data provided by FUN, June 1999.

[27] screendigest, March 2000, 67

[28] of 22 June 1998, laying down a procedure for the provision of information in the field of technical standards and regulations

[29] The Commission issued a Detailed Opinion on 18.10.00; this is not a public document.

The CA system of the new box is BetaCrypt, which has also been developed by BetaResearch. BetaCrypt is based on the previous Irdeto system. The API ("Betanova") is based on the specifications of DVB-Java (capable for HTML-applications). The Betanova software developer kit (SDK) for the d-box system software gives C/C++ programmers access to the d-box platform. BetaResearch states that the SDK allows the development of applications (such as EPGs, games etc.) that can be loaded to the decoder via satellite or cable.[30] Premiere World confirms that the new d-box will be fully compatible with the Multimedia Home Platform (MHP).

In late August 2000, the new d-box will receive a software-update (version 1.5) via satellite or cable. Version 1.5 is expected to offer the following features:[31]

- automatic switch to 16:9
- The navigation will be simplified for the user. The various "assistants" will be integrated into one system.
- VCR signal can be passed through the d-box, even in stand-by mode
- video-text reception on television (is inserted into the FBAS-signal)

The d-box will be offered for sale in the near future for a price of about 500 DM (250 Euro).[32]

1.4.2 16:9

The vast majority of the players – including ORF, manufacturers, retailers and consumer associations – is convinced that 16:9 will be the television format of the future. However, the pace of innovation, i.e. the diffusion of 16:9 equipment and programming in Austria, is not a fast one, but takes more time than anticipated.

The problem for the 16:9 development obviously is how to overcome the "chicken-and-egg" dilemma, i.e. the question who will go first: consumers or broadcasters. As long as only little content is available in 16:9 format, consumers have no incentive to "upgrade" their TV set to 16:9. Broadcasters, on the other hand, hesitate to broadcast in 16:9 since they do not want to annoy their audience. As a consequence, the impact of 16:9 television on the development of digital TV has been modest up to now. ORF is currently transmitting about 1.3 % of its programme in wide-screen format.

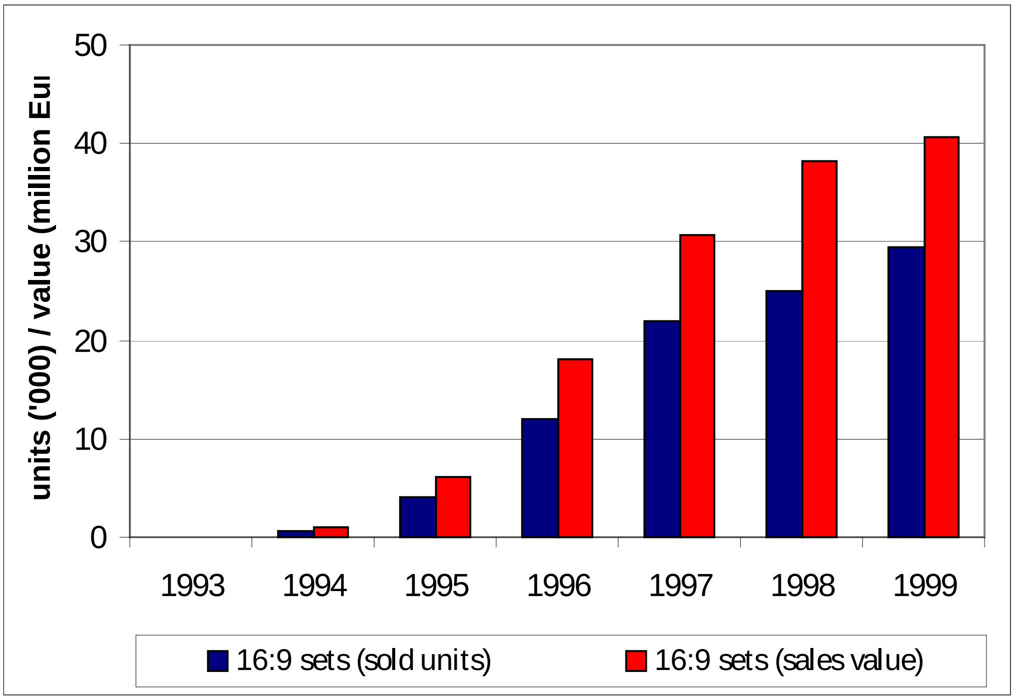
16:9 TV sets were commercially launched in Austria in 1994. In 1995, about 0.8 % of the total annual sales where wide-screen television sets. The market share of 16:9 sets in terms of units sold has increased to 6.4 % (1999) since. In total, about 3 % of all TV households were equipped with a 16:9 set at the end of 1999.

[30] http://www.betaresearch.de/product/product.html

[31] Press information by Set-Top-Box.de, 25th July 2000

[32] Kabel und Satellit, 17th July 2000

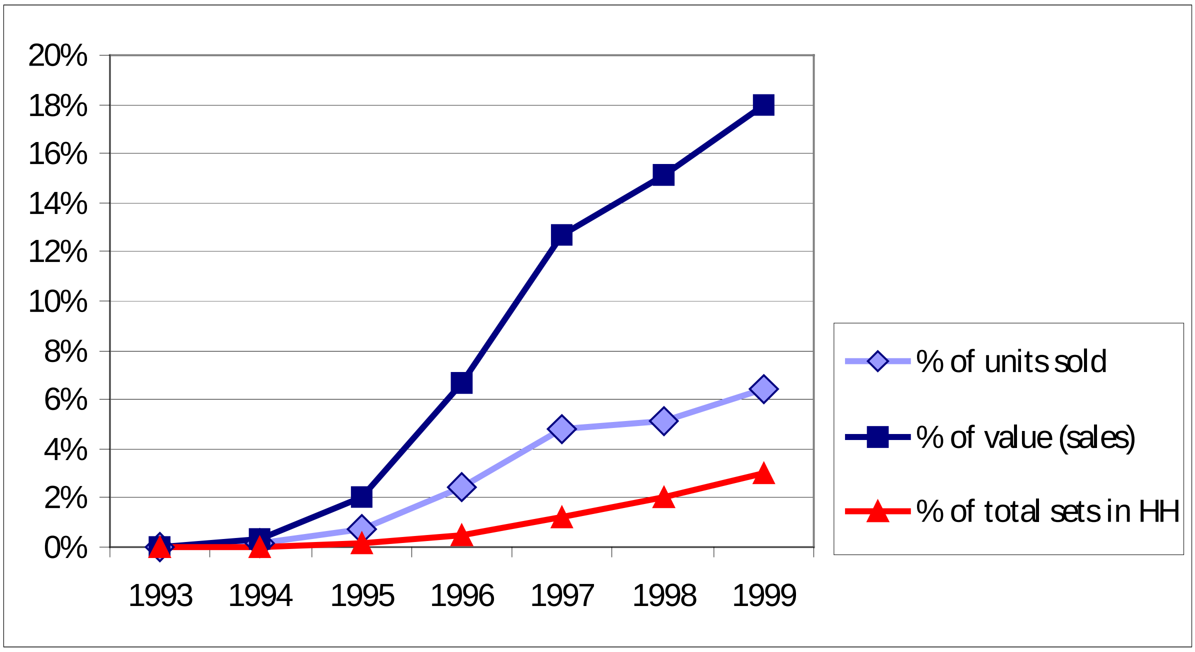
Sales of 16:9 TV sets in Austria: units sold (shipment) and sales value (in Euro)



In 1999, an average 16:9 TV set still cost nearly three times as much as an average 4:3 set. This figure, however, has limited significance, as the comparison includes a large number of small, portable 4:3 TV sets without any 16:9 counterpart. If only sets with the same screen size are compared, the difference between average prices for 4:3 and 16:9 sets amounts to 150 – 500 Euro.[33] About 80 % of the sales value of TV sets in Austria is realised by chain stores (46 %) and buying groups (33 %).

[33] Data based on information provided by Austrian retailers in June and July 2000.

Market share of 16:9 TV sets in Austria (annual sales, sales value, total installed base)



The growth of 16:9 broadcasts by ORF was related to the participation of the broadcaster in the 16:9 Action Plan of the European Union. In 1995 and 1996, ORF submitted proposals to the Action Plan and received substantial funding from the European Commission. As a consequence, 16:9 productions were launched and broadcast. The percentage of 16:9 programmes increased steadily from a zero base to 0.3 % in 1996 and 0.9 % in 1997. (Many projects submitted in 1996 were realised and completed in 1997). When the Action Plan came to an end in 1997, the financial incentive for ORF to produce in 16:9 format was gone. As a consequence, the volume of 16:9 productions did not further increase. The percentage of 16:9 programming in 1998 (1.0 %) was nearly the same as in 1997. Only in 1999, ORF increased the percentage of its 16:9 broadcasts again.

1.4.3 Mobile / portable reception

Mobile reception and indoor portable reception of TV signals have not been particularly considered as an issue in Austria. However, the digitisation of terrestrial broadcasting will also address this issues, though the schedule for the transition is still unclear.

1.5 Conclusions

The development of digital TV in Austria is still intertwined with the market development in neighbouring Germany – hardly any genuine services.

The most prominent service which is associated with "digital television" in Austria is Premiere World. The pay-TV service provider offers exactly the same packages as in Germany at comparable prices. Premiere World has about 60,000 digital subscribers in Austria, 50,000 of these via cable (June 2000).

The only genuine Austrian services are TW1 and a mixture of ORF2 & TW1 (as part of the German digital platform "ZDF.vision"). TW1 is a thematic free-to-air satellite channel offering weather and tourist information and some travel and sports programmes. ORF owns 50 % of TW1.

ORF's digital business strategy focuses on online activities rather than on (broadband) digital TV. ORF will only start to digitally broadcast its two channels (ORF 1 and ORF 2) and the daily regional news programmes (9 different regions) via ASTRA 1G in September 2000. Due to limited licence rights, the programmes will be encrypted. Smart cards will be available for Austrian households only. There are no concrete plans for additional digital channels except for a culture channel that may be launched by the year 2002.

The only cable operator who has announced to launch a digital TV service is Telekabel in Vienna. Telekabel plans to digitise its (analogue) pay-TV offer "Telekino" by the end of this year or early 2001.

Digital (pay)-TV competes with a large offer of German free-to-air analogue programmes

Austrian households benefit from the overspill of German free-to-air programmes. 80 % of the TV households have access to more than 20 programmes in German language either via satellite or via subscription to a cable TV network. It is therefore extremely difficult for digital service providers to offer consumers a clearly perceivable added value with their pay packages.

The competition between public and commercial broadcasters is not as fierce as in Germany. ORF is the dominating player (audience share in 1999: 48 %), holding the licence rights for sports events and feature movies in Austria. The Austrian market is too small for German commercial broadcasters to enter into a fierce competition with ORF.

Decoder policy: MHP standard - or a mandatory common interface?

In February 2000, ORF decided to use the d-box and its BetaCrypt encryption system as the technical platform for its (future) digital services. This decision, however, could be challenged by regulatory provisions. The Government nearly passed a law according to which digital decoders sold in Austria must contain a common interface, but withdrew the provision. The draft law had to be notified as technical rule under Directive 98/34 and its adoption is frozen during that procedure.

The underlying questions is the same as currently under debate in Germany and other countries: How far should technical specifications of digital decoders be left to the market, and should "open systems" (e.g. boxes with common interface) be enforced by regulatory provisions? It remains to be seen if the MHP standard helps to overcome this debate. Kirch Group stresses the fact that the d-box will be fully MHP compatible, in line with remedies agreed in the framework of the BskyB/Kirch case.[34]:

- The Kirch company will offer to all interested parties on a fair, reasonable and non-discriminatory basis, technical services enabling the interested third parties' digitally-transmitted services;
- The Kirch company will keep separate financial accounts regarding its activities as a provider of technical services;
- The Kirch company will use all reasonable endeavours to ensure that the implementation of the MHP API will be operational within 9 months after tha adoption and publication by ETSI of the technical specifications;
- The Kirch company will offer licenses for the d-box on a reasonable and non-discriminatory basis.

Digital terrestrial policy: Allocation of the third frequency

The most important political decision in the near future with regard to digital television will be the allocation of the remaining (third) frequency spectrum. ORF, currently operating two frequencies, claims it needs the third frequency spectrum to manage the transition from analogue to digital terrestrial broadcasting without an abrupt stop. Other players demand that the spectrum should be allocated to a commercial operator in order to further liberalise the Austrian television market.

Convergence: Focus on combining Online & TV & Print

The major Austrian media players (ORF, publishers, Telekom Austria) are paying more attention to business on the internet than to (broadband) digital TV. Publishers and ORF are currently negotiating a co-operative internet portal for Austria. Portals and platforms combining online & TV as well as online & print are regarded as the main future business model.

[34] JV37, see: http://europa.eu.int/comm/competition/mergers/cases/index/by_nr_jv_0.html#jv_37

2 Key figures for the Austrian market

2.1 Country fundamentals

	1993	1994	1995	1996	1997	1998	1999
Population (millions)		8,030	8,047	8,059	8,072	8,078	8,092
Households (millions)		3,070	3,131	3,164	3,182	3,209	3,243
GDP (in Euros billions)		164,340	175,680	176,020	180,760	190,590	195,736

2.2 Equipment

As of 31 of December	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*
TV households (millions)	2,857	2,898	2,929	2,979	3,015	3,050	
TV households (% of total households)	93,1%	92,6%	92,6%	93,6%	94,0%	94,0%	
TV Households with 2 TV sets or more (millions)	1,289	1,362	1,465	1,480	1,510	1,580	
TV Households with 2 TV sets or more (% of TV Households)	45,1%	47,0%	50,0%	49,7%	50,1%	51,8%	
TV Households with 16:9 Television sets (millions)	0,001	0,005	0,017	0,039	0,064	0,094	
TV Households with 16:9 Television sets (% of TV Households)	0,0%	0,2%	0,6%	1,3%	2,1%	3,1%	
VCR Households (millions)	1,965	2,095	2,241	2,337	2,455	2,550	
VCR Households (% of TV Households)	68,8%	72,3%	76,5%	78,4%	81,4%	83,6%	
Digital STB Households (millions)	0,000	0,000	0,002	0,012	0,029	0,052	
Digital STB Households (% of TV Households)	0,0%	0,0%	0,1%	0,4%	1,0%	1,7%	
IDTV Households (millions)	0,000	0,000	0,000	0,000	0,000	0,000	
Digital TV Households (% of TV households)	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	
Digital Households (millions)	0,000	0,000	0,002	0,012	0,029	0,052	
Digital Households (% of TV households)	0,0%	0,0%	0,1%	0,4%	1,0%	1,7%	

2.3 Television market estimates

Millions Euros	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*
Analogue TV Market							
Licence fees		323,100	324,050	329,720	324,190	350,800	354,300
Advertising		287,420	270,510	280,460	334,730	355,090	424,975
Subscription		125,179	133,916	143,232	160,043	163,965	166,211
Total analogue TV		735,699	728,476	753,412	818,963	869,855	945,486
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	0,367	2,568	7,313	13,383
Total digital TV		0,000	0,000	0,367	2,568	7,313	13,383
TV Market							
Licence fees		323,100	324,050	329,720	324,190	350,800	354,300
Advertising		287,420	270,510	280,460	334,730	355,090	424,975
Subscription		125,179	133,916	143,599	162,611	171,278	179,594
Total TV market.		735,699	728,476	753,779	821,531	877,168	958,869

2.4 Details of the subscription-TV market

Cable

	1993	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*
Home passed (millions)		1,600	1,680	1,680	1,685	1,690	1,700
of which digital (millions)		0,000	0,000	0,000	0,000	0,050	0,800
Home passed (% of TV households)							
of which digital (% of TV households)		0,0%	0,0%	0,0%	0,0%	1,7%	41.1%
Analogue Basic Subscribers (millions)		0,985	1,035	1,070	1,125	1,171	1,187
Digital package subscribers (millions)		0,000	0,000	0,000	0,001	0,003	0,008
Analogue Basic Subscribers (% of TV households)		34,5%	35,7%	36,5%	37,8%	38,8%	38,9%
Digital package subscribers (% of TV households)		0,0%	0,0%	0,0%	0,0%	0,1%	0,3%

Satellite

	1993	1994	1995	1996	1997	1998	1999
Satellite households (millions)		0,886	0,956	1,054	1,132	1,188	1,265
Satellite households (% of TV households)		31,0%	33,0%	36,0%	38,0%	39,4%	41,5%
Satellite subscribers (millions)		0,025	0,033	0,046	0,057	0,050	0,086
Satellite subscribers (% of TV households)		0,9%	1,1%	1,6%	1,9%	1,7%	2,8%
of which digital (millions)		0,000	0,000	0,002	0,011	0,027	0,045
of which digital (% of TV households)		0,0%	0,0%	0,1%	0,4%	0,9%	1,5%