

## Digital Terrestrial Television in Austria – regulatory activities and critical issues from a viewer perspective



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Digitisation is changing television. It alters the complete television value chain, i.e. the entire process from filming, recording, studio editing, and dissemination, to the reception and reproduction in the viewer's home. Analogue frequencies are digitally compressed, substituted by a stream of binary signals, and later made readable for the analogue television set with the help of a decoder or set-top-box. Techniques of data compression and encryption of audio, video and data have increased channel bandwidth such that considerably more programmes can be transmitted over one channel.

The essential advantages for DVB-T, i.e. the new technical standard to deliver digital programmes via traditional antenna, are manifold: frequency economies and economies of transmission costs, improvements in reception in topographically critical areas, transmission of up to four digital TV programmes on one channel (instead of just one in the analogue era), portable or mobile reception, and the possibility of the transmission of digital radio and information and data services accompanying TV programmes (e.g., digital videotext). Further, broadcasters are also attracted by opportunities to build up integrated value chains, i.e. integrated demand/supply chain systems to optimise work flow, increase customer affiliation, cut transmission costs and increase ROI (Wrabetz 2002).

Digitisation is accompanied by substantial changes on the viewer side: better viewing experience and reception, higher quality signal reproduction or increased programme quality choice, and promised interactivity with TV services. First, because digital broadcasting receivers are 'intelligent' they are able to filter out reception problems caused by atmospheric conditions, the presence of large buildings etc.. The problems caused by fading signal strength as a receiver is moved from one position or geographical area (e.g. in a car) to another are overcome. Second, because digital signals can be compressed, broadcasters have two options. They can decide to offer viewers better quality signal reproduction. But they can also offer viewers a choice of more channels.

The following article will deliver a first and realistic assessment of above mentioned benefits against the background of developments of digital terrestrial television in

Austria. In this context, developments towards terrestrially transmitted digital TV programmes and services will be considered against the following two major aspects:

- Regulatory activity to introduce DVB-T.
- Critical issues from a viewer perspective.

## **Regulatory activity to introduce DVB-T in Austria**



As for regulation, section six of the new private TV law (PrTV-G §§ 21-29) now regulates the introduction of digital terrestrial broadcasting in Austria. There, the regulating authority, KommAustria, is entrusted with the elaboration of a digitisation concept. To aid it, the study group Digital Platform Austria (DPA) has been set up by the new Federal Government. The new ORF law commits the ORF to providing its programmes via digital terrestrial and digital satellite delivery routes. The ORF is thus intended to be the pacemaker for digital TV in Austria.

The ORF is the only genuine player in the Austrian digital satellite TV market. Building on its financial capacity and content wealth, the ORF has gradually offered its programme palette on digital satellite, leasing transponder space on Astra 1G (Murschetz 2002). Digitisation is also opening up new perspectives for terrestrial transmission. The chronic scarcity of transmission frequencies could be removed at one stroke with the introduction of DVB-T. More choice, crystal-clear pictures and sound in several languages are also intended to render household TV more attractive in the future via stationary reception with roof or rod antenna. The new private TV law already foresees the politically chosen basic switchover scenario to DVB-T. As detected by a frequency-study commissioned by the Austrian Federal Chancellery, those frequencies which were found in addition to the new analogue frequency band for private commercial TV were reserved for digital terrestrial television (Morgen 2001). The commercial operator ATVplus was granted the third terrestrial TV-frequency band to compete with the two channels of the ORF, ORF1 and ORF2, on a nation-wide scale.

In the run-up to this decision, disputes naturally occurred: the ORF demanded the still unused frequency band in order to switch over to DVB-T at an early stage (ORF 1999). This would have avoided an expensive simulcast operation but would also have meant the end for national private television. By allotting the new national frequency band to analogue private TV, the government made clear that it had private analogue TV on the front-burner, leaving the ORF with additional local frequencies for the conurbation areas of Bregenz, Linz, Graz, Salzburg and Vienna for transmission via DVB-T. The ORF claimed that this action disapproved of the great plus of a country-wide third digital transmission band to create broader acceptance through greater coverage (ORF 1999). The ORF's roll-out of digital services is shown in the following table.

Table: Roll-out of ORF Digital and first regulatory steps towards DVB-T

Channel / regulator	Launch	Activity
TW1 (50% ORF)	12/1997	TW1, non-encrypted digital tourism, weather and sports channel, free-of-charge via digital satellite Astra 1G
ORF Digital Teletext	1/1998	Videotext service
ORF2, TW1	4/1998	Non-encrypted mix of ORF2 and TW1 on digital bouquet ZDF.vision. ORF2 taken off-air in 09/2000
ORF Digital (DVB-S)	08/2000	Decision on STB-standard 'd-box', start of encrypted transmission of ORF1 and ORF2 as regular service ORF Digital via digital satellite Astra 1G
ORF Digital (DVB-S)		Change of encryption system from BetaCrypt to CryptoWorks
ORF Digital (DVB-T)	01/2002	Discussion on piloting of DVB-T
DPA	01/2002	Constitutive meeting of DPA
DPA	01/2002 – 12/2003	Plenary and expert panel meetings
DPA	01/2003	Thesis catalogue on DVB-T
ORF Digital (DVB-T)	10/2003	First pilots of DVB-T for Graz 2003
DPA	12/2003	Submission of digitisation concept for DVB-T

Following a series of expert panel meetings and two plenary discussions, Austrian broadcasting regulatory authorities, RTR GmbH and KommAustria, submitted a thesis catalogue for the introduction of digital terrestrial television (DVB-T) in Austria to the general assembly of the DPA. It includes the following main arguments:

- Different to cable or satellite would a terrestrial transmission mode safeguard fair and discrimination-free access for TV programme-makers. DVB-T is thus to function as a national culture-identity backbone.
- DVB-T would help achieve geographic, audience and programme universality in new ways, i.e. by preferential selection of PSB programmes and other competing national offers likely to be consumed by viewers. This is also to strengthen regional economic policy.
- As for Austrian TV households, more than 80% of are equipped with cable and satellite, with many terrestrial households having switched to (analogue) satellite reception. However, there is still 17% of households (i.e. 565.000) receiving programmes only terrestrially. Moreover, 44,7% (i.e. 1.347m) of Austrian TV households dually use satellite dishes *and* roof aerials to receive ORF1 and ORF2. This is because the ORF channels are not transmitted via analogue satellite (see, DPA 2002). They can only be consumed via digital satellite (see below).
- DVB-T would also bridge the digital divide between urban and rural areas. Small communities in rural areas would thus be able to take part in an information society for all.
- TV would increasingly develop into an accompanying medium consumed only partially throughout the day (Bretschneider 2003). Portability and mobile reception thus come as USPs for DVB-T. Convergent end-user technology such as mobile telephones and PDAs may serve as appropriate platforms.

According to a first 4-scales-plan an accelerated transfer to DVB-T should take place after a test-phase and a smooth simulcast phase starting from the end of 2006. Complete analogue switch-off is projected between 2008 and 2012. As for financing infrastructure, services and accompanying research into DVB-T in Austria, the Cabinet Council (Ministerrat) passed a draft law to install a digitisation fund endowed with Euro 7.5m. First critical discussions are now being spread on the DPA agenda and the results of the thesis catalogue (Steszgal 2003). This paper will address critical issues from a viewer perspective.

### **Critical issues from a viewer perspective**

In fact, the power of DVB-T and its advantages are in the matter-of-factness of its nature. But even if the attraction of DVB-T is as strong as widely promised, does it really mean better television for the viewer? From the viewer perspective, factors slowing uptake of DVB-T are:

- the lack of consumer acceptance of increased choice or the low willingness to pay caused by high retail prices for DVB-T equipment.
- the low willingness to interact with TV, to purchase home shopping, undertake home-banking, etc..
- an uncertain future of digital decoder hardware issues, such as encryption and conditional access.
- an uncertain future of digital TV software issues (e.g., EPGs, API).
- uncertain retail price developments of decoders.
- the lack of content surplus value for the viewer through delivery of 'more-of-the-same' programming.
- issues of data protection and privacy caused by control over viewer information.
- the abundance of free TV stifling viewer take-up of digital television.

Let us address the three following major critical issues in detail: increased programme choice, decoder issues, and interactivity.

#### *Does DVB-T offer a better programme?*

Particularly relevant to issues of increased programme choice are models focusing on implications of a potential increase in the number of digital television broadcast channels on programme competition and choice (Wildman 2001). Professor Wildman (Michigan State University) argues that an increase in the number of channels is expected to increase programme diversity, but at the cost of providing lower budget programmes that likely will have less appeal to viewers. Following Wildman, diversity gains through digital multiplication of channels should be largest if individual broadcasters are allowed to control several digital channels each. As Wildman put it: "As the number of competing channels increases, the audience for each channel will decline, and, as a result of the increased competition and options available to viewers, additions in production budgets will generate smaller increases in audience and advertising revenues. With declining returns to production budget expenditures, broadcasters will produce or commission less expensive programs" (Wildman, 2001: 6).

Does this hold a message for the Austria situation? DVB-T will definitely bring more programmes. But at what cost? Will programme quality decline as production budgets tighten?

First, it is known that setting-up DVB-T infrastructures is expensive and that new cost scenarios will arise through producing, packaging and broadcasting programmes over DVB-T. Additionally, the Federal Government has recently sharpened restrictions on advertising on the Austrian PSB ORF by imposing a ban on inserted advertising, product placement and surreptitious advertising, and teleshopping. However, legal decisions are made as the case arises. For example, the new body legally supervising the ORF, the *Bundeskommunikationssenat*, has lately decided against product placement in the ORF casting-show *Starmania*, but has found interstitials and trailers to the show as consistent with existing law (<http://www.medien-recht.com/>, 23.5.2003). Digital television will also offer scenarios for new advertising techniques (e.g., split-screen advertising, virtual and interactive advertising). But while split-screen and virtual advertising are not allowed in many European countries (they are allowed in Germany under certain restrictions), no legislation yet covers the Austrian situation. It is evident that the ORF will try to exploit these possibilities too. Moreover, interactivity via DVB-T would open ways for transaction-based revenues. Here, value-added services such as tele-votings in game shows are a lucrative new source of income for the ORF. Private programme providers such as ATVplus, Premiere Austria and Sat.1, who are dealt as ORF partners for a DVB-T multiplex, will also build on these new forms of income (Eder 2003).

On the other hand, of course, the ORF already outclasses private TV with regard to advertising revenues in analogue TV. And it is well known that the ORF applies all tricks to evade advertising restrictions. Additionally, its content wealth is a big plus. Here, nothing stands in the way to republish content produced for TW1, ORF's semi-public digital narrowcast channel for tourism, weather, and sports as well as to exploit other premium special-interest narrowcasting in culture and educational programming.

### *Critical decoder issues*



The situation in Austria brings further evidence to the fore that digital television is far from being fully accepted by viewers. Although it has been possible to receive ORF via satellite and the d-box since 31 August 2000, its launch has been accompanied by a series of shortcomings. Shortcomings also to be noticed by Premiere. The bone of contention is the set-top-box technology of the d-box. The ORF declared its decision for Kirch's 'd-box' in spring 2000. However, by choosing the d-box, the ORF inherited all of Premiere's problems with the box. In gist, the d-box offers no common interface with competitive encryption systems - it only understands Premiere's Betacrypt 1 system - and thus contradicts the European TV signal directive. Whoever wants to watch ORF Digital over DVB-S needs to buy the d-box for decoding the programmes. No other technically more advanced and cheaper decoders would do.

Why did the ORF build on the d-box? The ORF argued that this was only sensible as there were already more than 50,000 Austrian households using it to receive Kirch's digital package Premiere World by then. Premiere viewers thus only needed the ORF smart-card for accessing ORF Digital via the box. ORF critics claim that this policy might have been 'doing a favour' for the ORF's most important content provider, the Kirch-group (Infosat 2000). The 'd-box dilemma' also made manifest the crucial impediment for further market development of digital television in Austria: the uncertainty of technical specifications deters potential viewers from paying for new boxes if they do not know what programmes they will receive or not. Today, the STB-situation for Austria has intensified: Premiere has changed its encryption system Betacrypt 1 towards Nagra, while the ORF has changed to CryptoWorks for its digital Sat-Box.

As for free-to-air programmes broadcast via DVB-T, expectations in retail price developments of decoders make viewers uneasy about switching to DVB-T reception mode. First, customers will have to wait for MHP-capable DVB-T boxes which will be retailed in summer 2003. Prices are expected to be higher than Euro 450,-, an amount much too high for consumers who already have d-boxes for DVB-S in their homes and are as yet not informed on the advantages of the MHP-applications running on the new DVB-T boxes. Together with the essential lack of content surplus-value for the viewer through delivery of 'more-of-the-same' programming and the abundance of analogue free-TV via cable and satellite, viewer take-up of DVB-T is stuck in the starting blocks.

*And what about interactivity?*

It is content-rich, true two-way interactivity that drives audiences to the Internet. Does this hold true for digital television? Yes, definitely for DVB over broadband cable (DVB-C) but less so over DVB-T. Although DVB-T enables one-to-many forward transmission of programmes and services equipped for interactivity, i.e. mobile indoor and particularly outdoor reception, opportunities for back-channel communication, and thus real two-way interactivity, are technically limited. DVB-T mobile reception in cars is currently being researched (Liss 2002), with UMTS serving as partner standard for DVB-T. UMTS should function as one-to-one back-channel for services such as individual traffic information, navigation systems and location-based services (Gaida 2001). Obviously, this is not interactivity empowering the audience in terms of offering various uses, from programmes sent on demand (VOD) or selected from a rotating palette according to various set-times (NVOD), to the viewer actively participating in voting and game shows. And this sort of interactivity is far from interactivity empowering the viewer whereby interactive TV sets can be used as platforms for getting more democratic media such as, for example, community-based public access TV.

## **Conclusion**

The future of television broadcasting will be digital and this means noise and loss-free transmission of pictures, higher capacity of broadcasting channels and a substantially larger programme palette with additional television services. This will open up a totally new dimension for viewers via a new content-rich experience, turning the television into a platform for a wide range of digital TV and radio stations, 'enhanced' interactive television programs, and services such as home shopping,

home banking, Internet content and e-mail. But even if the attraction of digitisation is as strong as widely promised, does it really mean better television?

Austria offers a shining example for looking into changes induced by digitisation because its television market is currently in a state of flux. This is because private analogue television is finally in the pipeline with public service broadcasting and cable-TV currently switching over to digital distribution. Since the technical development of digitisation potentially steps up competition in the programming, advertising and viewer markets, the continued existence of public service broadcasting in Austria is at risk. Already facing strong competition from private cross-border analogue television, digital services promise increased competition for the ORF, will take away advertising volume and accelerate the cost spiral for rights. The ORF will have to face these challenges as the regulator has assigned it the role of a chief enabler of digital television in Austria. So far, ORF offers converge towards private commercial television, with its digital offers showing little innovation with respect to traditional programming. It remains to be seen how far the ORF is able to split itself both ways, by being both distinctive and attractive to its target audiences, and thus to ensure its position into the next millennium.

The ORF is also ambitious to play a major role regarding digital terrestrial television. Here, the ORF enjoys many traditional advantages in terms of content, corporate ego, rights, brand awareness and customer affiliation. The regulator should be aware of these advantages and, in turn, help newcomers play a vital part in DVB-T. This should also account for non-commercial offers such as Community-TV. The ORF and Premiere use the d-box as set-top-box hardware. Software interoperability between them was recently cut as both providers changed towards different encryption systems. This is unfavourable for the Austrian viewer. Focus is now on MHP to guarantee that independent of the type of digital receiver and the service consumed, every viewer would be able to use a broad range of different applications unrestrictedly. These decoders are yet not available and, even if so, much too expensive.

Audience acceptance of digital television programmes offered by the ORF will also depend on a tangible added content value as compared with private provision. Only this would increase the ORF's chance of market penetration in a fragmented digital TV audience environment. Above all, consumers should derive advantages from new technology and content. Email and interactive applications should supplement TV and help compensate for the loss in social integration that is said be aggravated by digitisation (digital divide). In any case, it is reasonable to be sceptical about interactivity because transmission capacities necessary and the required return channel-capabilities in DVB-T are currently lacking. But only real interactivity will stimulate the multiple use of innovative content, reinforce brand loyalty and make possible the transfer to interactive TV as a democratic medium of the future.

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