

**Case Study on transition from analogue to digital terrestrial TV  
(DTTV) broadcasting in the Republic of Macedonia  
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Draft**

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## **Strategy for transition**

Discussions with the above-mentioned officials have been focused predominantly on the Strategy for transition from analogue to digital terrestrial TV broadcasting in the Republic of Macedonia.

Total of 133 pages document “Strategy for Development of Broadcasting Activities in the Republic of Macedonia from the year 2007 to 2012” has been elaborated by a Group of Experts, composed by representatives of relevant Ministries, Regulatory Authorities, Broadcasters and Media Institutes, supplemented by eminent experts and academia intellectuals of this country.

Thus Strategy defines the fundamental changes of the broadcasting industry and pays due attention to the complexities of the transition to digital sound and TV broadcasting. In our opinion this document would have been of much greater value if the trends identified of the modern broadcasting environment in the Republic of Macedonia would have been linked with agreed activity deadlines and coordinated assignment of responsibilities amongst all stake-holders concerned. Further culmination of such initiative would have been its adoption at higher government level, enabling coordinated and synchronized stream of activities leading to efficient action plan for the transition to digital in this country.

As per the RRC-06 deadline for analogue switch-off of the terrestrial TV broadcasting of the Republic of Macedonia is the end of 2015, but the time is running quickly and actual clear-cut strategy would be the most appropriate solution to integrate efforts in order to achieve appropriate results. Many countries of the CEE sub-region have elaborated not only an intellectual strategy, but also a detailed coordinated management strategy and evidence suggests that such approach is by far more rewarding. We may strongly recommend that this document be used as a building platform subject to appropriate updating and be supplemented by managerial and operational range of coordinated actions by relevant stakeholders in this country.

## **Broadcasting Legislation**

Broadcasting activity in the Republic of Macedonia is regulated by two Laws:

- (1) the Broadcasting Law and by the Law on amending and supplementing the Law on Broadcasting Activity, and by
- (2) the Electronic Communications Law.

Special Laws regulate the status of the Macedonian Radio-Television and Macedonian Broadcasting as public broadcasting enterprises.

The Law on Concessions is also regulating the broadcasting activities in this country.

The Broadcasting Law was the first normative act that set the legal framework for establishing and operation of the electronic media in the Republic of Macedonia, in pluralist set-up. It determined the basic conditions and requirements to pursue broadcasting activity on the basis of principles of freedom of expression, freedom of reception and access to information, freedom to establish institutions of public information, guaranteed in Article 16 of the Constitution of the Republic of Macedonia and Article 10 of the European Convention for Human Rights.

The Law also contains several general principles, rules and obligations which result from the international documents ratified and accepted by Macedonia, and which arise from the acts adopted by the Council of Europe and the European Union.

The Law was adopted in a situation when Macedonia has already established a factual plurality, i.e. over 250 broadcasters were already present in the air, spontaneously developing since 1990.

The Law created the legal basis for formal constitution of the entities and sectors of broadcasting activity. Deciding to accept the European model of public and commercial broadcasting sector, the Law provided that:

- Macedonian Radio and Television shall continue to operate as public service that will pursue broadcasting on the whole territory of the Republic of Macedonia;
- Public competitions may be held, concessions granted and commercial broadcasting companies may be established, i.e. provided for formal legal framework for the private broadcasting sector;
- The constituting of the commercial broadcasting companies and the normative regulation of the public broadcasting enterprises – Macedonian Radio-Television and Macedonian Broadcasting – and provided formal legal plurality in the field of electronic media in Macedonia;
- The Law established the Broadcasting Council as the first independent regulatory body which represents the interests of the citizens in broadcasting.

Furthermore the Law for Establishment of Public Enterprise Macedonian Broadcasting (JP MRD) and its amendment regulate the distribution, transmission and reception broadcasting aspects for the Public Service Broadcasting in this country.

This Strategy provides detailed analysis of the sound and TV broadcasting market and suggests legislation measures enabling reasonable media integration and consolidation. In fact the trends identified might lead to amendment of the legislation in force and towards this end some valuable directions are summarized on pages 52, 53, 54, 55 56 and 57.

## **The Broadcasting Sector**

The TV Broadcasting sector is composed as follows:

#### *Terrestrial broadcasters*

In Macedonia television programmes are broadcast by entities of the public sector and the private sector. The current estimate is that the share of the terrestrial broadcasting is within the range of 26-28%. It is worth noting that the fact that 39,5% of the population has installed and connected roof-top antennas.

In the public broadcasting sector TV national programmes are broadcast by the Macedonian Radio-Television (three TV channels on three terrestrial networks) and by 12 local stations. Towards this end the JP MRD broadcasts the public TV programmes by network of 82 transmitters covering 93 to 95 % of the population.

In the private broadcasting sector, TV programmes are broadcast by commercial broadcasting companies: 5 of them on national level, 10 at regional level and 47 of them broadcast at local level programmes in different languages. Their networks ensure population coverage within the 80-85 % range.

#### *Cable operators*

In addition to the terrestrial broadcasters, there are around 65 commercial broadcasting companies – cable networks operators that have been granted notifications to distribute radio and television programmes over cable networks. The number of channels distributed on the cable networks varies between 30 and 60 channels per network.

The current estimate is that the share of cable TV broadcasting is about 65% (52,1 % as per Paragraph 5.8. of the Strategy for the May 2007) . Digital delivery to households is already taking place via DVB-C standard. Monthly subscription fee varies between 5 and 8 Euro.

#### *Satellite broadcasting*

The current estimate is that the share of the satellite TV broadcasting is between 7 to 8 % range, predominantly free-to-air.

The Broadcasting Council of the Republic of Macedonia has issued total of 18 licenses for broadcasting over satellite, inclusive the following:

- a) via satellite “Intelsat 901” broadcasts TV A2, Nasa TV, TV Era, and Kanal 5 Plus; and
- b) via satellite “Eutelsat W2” broadcasts AB channel, Alfa TV and Sitel 3.

#### ***Studio Television Production infrastructure***

As per the Strategy document, the above-mentioned infrastructure is not technologically adapted for the transition to digital.

#### **TV market status-quo**

It has been estimated until 2007, that for the public service broadcasting (PSB) revenue generated from subscription fee of 6 Euro per month per household paid by 535000 households would annually amount to 38,52 million Euro for both sound and TV public service broadcasting. Roughly it represents 90% of the MRT budget for the year 2006. It has been further estimated that after the year 2007 the reduction to 2 Euro of the monthly subscription fee per household would have generated an income of 12,85 million Euro for the PSB. This income is distributed as follows:

- 4% for the Broadcasting Council,
- 20 % for the JP MRD for distribution and transmission over the air, and
- the rest to MRT for programme production.

Studies suggest that advertisements, publicity and sponsorship are predominantly delivered to the population via the TV possibly thanks to the fact that average viewer spends 4 to 5 hours per day watching TV. Total annual value of these revenue generating activities was estimated at 22,2 million Euro.

Pools studies for such highly fragmented market suggest that during the year 2006 around 12% of the viewers allocated their preference to public TV programmes, while national commercial TV programmes were viewed by 49%, local commercial TV programmes were viewed by average of 16,3% and the share of viewership preferring foreign TV programmes was 23,2%.

The Strategy sends a clear warning message that public service TV broadcasting was underperforming and made substantial financial losses in the year 2005 and 2006. Given the circumstances, after the subscription fee reduction enacted as from the year 2008, the budget of MRT might not be looking better.

In sharp contrast to the MTV modest income of around 10% from the overall advertisements, publicity and sponsorship's business, the commercial TV broadcasters, mainly the national ones, have generated comfortable income of almost 80 % of the said amount of 22,2 million Euro. (kindly refer to Fig.3.8. of the Strategy document).

The transition to digital terrestrial TV broadcasting would impose challenges to all stake holders in this country in finding ways and means to restructure and adapt the TV broadcasting sector to the short-term and long-term future needs.

### **Pluralism and Cultural Diversity Issues**

The strategy analyses the pluralism and cultural diversity issues in Chapter 4 devoted to content and suggests wide measures to make the programme content more attractive.

### **Digitalization Aspects**

Of particular importance to this case study is Chapter 5 dealing with the digitalization aspects. It identifies the benefits to be derived from the transition to digital, provides extensive overview of the STB and Integrated TV receivers issues and the various options for digital TV reception by users, such as free-to-air, conditional access etc.

It is worth mentioning that we have identified digital TV related text only in the Electronic Communications Law, Chapter Thirteen “Digital Radio and Television” as follows:

#### **Article 120 Digital Radio and Television**

- (1) Public communications networks intended for the distribution of digital television services must be planned so as to be appropriate for the distribution of wide-screen television services and programs of wide range.
- (2) Operators providing public communications networks shall be obliged in the receipt and redistribution of wide-screen television services or programs of wide range to maintain their format.
- (3) Operators of public communications networks, at the request of the Agency, shall be obliged to ensure access to application program interfaces or electronic program guides under fair, appropriate and non-discriminatory conditions.
- (4) The Agency shall prescribe the conditions for operation of digital television equipment used by consumers.

#### **Article 121 Conditional Access Systems**

- (1) Conditional access systems for digital television or radio services need to have the necessary technical capability to allow the possibility for full control by the public communications network operators.
- (2) Operators that offer conditional access services, which provide access to digital television and radio services shall be obliged to offer to all broadcasters, under fair, reasonable and non-discriminatory conditions, technical assistance that enable their subscribers to access their services by means of decoders.
- (3) Operators that offer conditional access services shall be obliged to keep accounting for the provision of conditional access services separate from other activities.

To our knowledge, the remaining seven countries subject to similar Case Studies, have done extensive preparation and legislation work to adapt their national legislation to the challenges of the upcoming transition to digital before starting the national action plan for transition.

At this juncture it is highly recommended that the matters of adaptation of the national legislation be considered as pressing priority for this country.

#### **AnalogueTV broadcasting networks and DTTV broadcasting experiments**

The Republic of Macedonia possesses eight networks for analogue terrestrial TV broadcasting and number of cable TV networks. While the public TV programmes are broadcasted by JP MRD, the commercial TV programmes use their own distribution and transmission networks.

One Multiplex for 4 TV and 4 Radio programmes was experimented by JP MRD with low power transmitter of 100 W on Channel 39 in the area of central Skopje since year 2004.

Only few analogue TV transmitters are digital ready.

The Strategy indicates that the population was not ready for the transition to digital.

The Strategy provides information on possible applicable technology standards and suggests DVB –T transmission standard with MPEG-4 Part 10/ ITU-T Rec. H-264 AVC for video coding. It further suggests API open type, limit of 25% of the data rate capacity for secondary and supplementary services. It suggests further that a separate Multiplex be dedicated to DVB-H.

### **Spectrum Planning**

***All measures should be taken to ensure that this Strategy is in full conformity with the GE-06 Plan and under the envelope concept adopted at the RRC-06.***

This Administration believes that the delicate and complex transition process will be successful if properly coordinated in detail with neighbouring countries concerned and planning of analogue switch-off in harmony with the plans of neighbouring countries indeed will facilitate greatly such sophisticated task.

### **Multiplexes and Longer-term planning issues**

During the discussions, a “Strategy for development of the Activities of the JP MRD covering the year 2007-2012” was provided to this ITU mission in full, but only in Macedonian language. In fact it is a well defined project concept, based on use of current JP MRD microwave network for signal distribution and maximum use of its available infrastructure. This DVB-T network is planned to enable broadcasting of single multiplex with 4 Standard Definition TV programmes encoded with MPEG-2 / ITU-T Rec. H.262 /ISO/IEC IS 13818 Standard.

This strategy is justifying the selection of MPEG-2 because of Intellectual Property Rights payment requirements for MPEG-4 and the five-fold higher price of the MPEG-4 STB. However, in spite of higher retail price of MPEG-4 Set-Top Boxes (STB), such decision might permit more efficient use of the spectrum and provide better technical quality. Prices of STB’s are falling in Europe and industrial sources estimate that MPEG-2 STB’s might be more expensive than MPEG-4 STB’s in a not too-distant future.

The network planned is budgeted for total of 6,141 thousand Euro and will be composed of 44 transmitters on 8 allotments with SFN configuration.

However The Strategy suggests use of MPEG-4 Part 10 / ITU-T Rec. H.262 AVC / ISO/IEC14496-10:2005 Standard., instead of MPEG-2 proposed by JP MRD. This discrepancy is indicating important disagreement between stake-holders.

The Strategy suggests in the First Phase to allocate for free one Multiplex to the JP MRD for broadcast of public TV programmes and national commercial TV programmes with “must-carry status”. It also suggests that international tender invitation for up to three additional Multiplexes be set up in motion for a single operator.

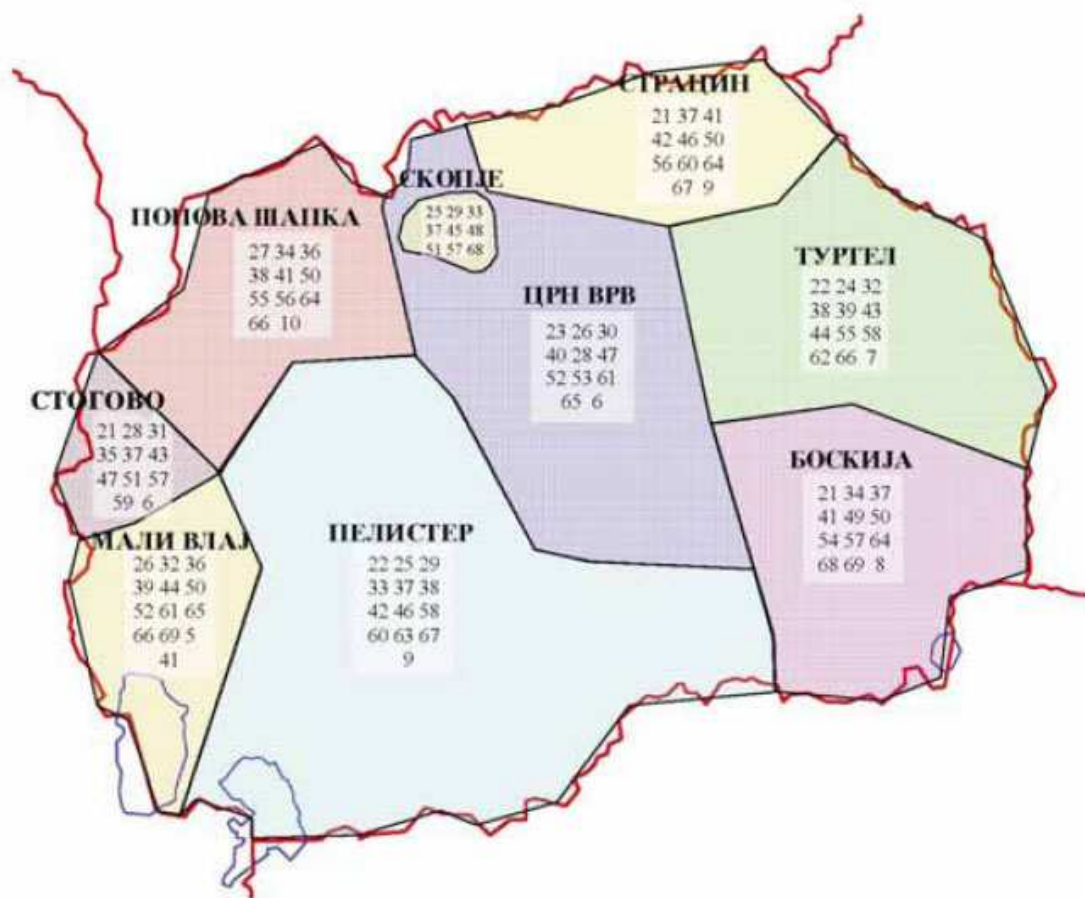
This should allow for analogue switch-off after its implementation.

It also suggests, if possible, setting up of invitation for regional multiplex tender for Skopje area.

Simulcast is yet to be defined and agreed between stake-holders, but precondition suggested is achievement of population coverage by DTTV broadcasting by 80%.

The strategy also suggests that Multiplexes should be based on the SFN allotments planned for the Republic of Macedonia by the GE-06 Plan as indicated below:





The Strategy further suggests that during the Second Phase to plan for two additional multiplexes for commercial TV broadcasters and additional/secondary services. Remaining spectrum should be allocated to DVB-H, HDTV and other innovative services, as need arises.

In spite of the lack of any amendment to the broadcasting related legislation in this country, the Agency for Electronic Communications has issued an invitation for public tender No.02-4140/1 of 18<sup>th</sup> of December 2008 for three nation-wide Multiplexes for provision of radiocommunication service – transmission of digital television services via public communications network (DVB-T) on the territory of the Republic of Macedonia in the radio frequency band 470-862 MHz. Expected validity of license to be granted will be for ten years. It does not stipulate any more technology related precision. However it requires the following Conditions, Requirements and Qualification of the Bidders:

<<2.1 All domestic and foreign legal persons-operators of public electronic communication

networks and services that shall purchase the tender documentation of item 7 of this tender shall have the right to participate in the public tender for granting an Authorisation

for radio frequencies utilisation of item 1, sub-item 1.1 if they shall meet the conditions as follows:

- a) provision of electronic communication services to a minimum 500.000 subscribers;
- b) have an annual revenue of minimum Euro 300.000.000 (three hundred million euro) of provision of electronic communication services in the last two years (2006 and 2007).

2.2 Persons who have not the right to participate in the public tender are as follows:

- a) legal person providing or intends to provide distribution of TV and radio programs on parallel technical platforms in the Republic of Macedonia (cable distributive networks, IPTV);
- b) legal person that is a creator of contents and at the same time deals with the production and emission of audiovisual program.>>

The decision taken after the evaluation of this tender will enlighten the way in which the Republic of Macedonia will proceed any further towards the transition from analogue to digital terrestrial TV.

### **Digital Dividend**

The digital dividend will be generous to the Republic of Macedonia.

The DTTV Broadcasting deployed may redistribute market shares thus balancing partially distorted and fragmented current TV broadcasting market.

It would bring substantial advantages to the regulators, operators, TV programme producers, TV broadcasters and the population in this country.

### **Cost implications of the transition to digital**

Information about actual cost implications for deployment and operational yearly budget of every multiplex and corresponding transmission network could be obtained after the end of the tendering procedure.

### **Broadcasting network structure (ownership of multiplex, transmission network)**

The current legislation provides opportunities for shared use of electronic communication infrastructure, but decision taken will be known upon completion of the tendering process. At the time of writing this Case Study such information was not available.

### **Business model and plan**

The existing satellite and cable digital communications market is a very good example of the development possibilities without an "external intervention".

However the Parliament of Republic of Macedonia has adopted amendments to the Law establishing the Public Enterprise Macedonian Broadcasting (April 2009) stipulating that, within the next three years, the Government of Republic of Macedonia will be obligated to finance the construction of one multiplex for DTT for transmission and broadcasting of the programmes of the Public Service Broadcaster MRTV.

The Agency for Electronic Communications has decided to apply promotional measures for new DTTV broadcasting operators via reducing the license fees by factor of two until year 2012.

However, the analogue to digital television broadcasting switchover process, whereas the terrestrial television represents the basic television programmes reception technology for the majority of consumers – viewers in the Republic of Macedonia, cannot be successfully implemented without support and co-ordination from the competent public administration bodies and without ensuring the necessary funding from the state budget, in accordance with the defined public interests.

The following main items of expenditure from the state budget of the Republic of Macedonia should be identified by the Strategy for the implementation period of digital terrestrial television:

- digital receivers subsidy in a technologically neutral form like grant of vouchers to natural persons paying RTV fee,
- costs of the promotion campaign with the purpose to inform the public,
- cost of Strategy implementation (analyses, opinions, public surveys, etc.).

Under the relevant EU legislation, direct governmental subsidies for commercial interests are generally not allowed. Consequently, any additional costs incurred during the analogue to digital television broadcasting switchover must be covered within the limits of funds planned by each stakeholder in this process. When the digital switchover is finished, the overall television programmes transmission costs can be expected to be significantly lower due to the use of digital technology.

Since the Law of the Republic of Macedonia obliges, all television and radio set owners on the territory of this country to pay RTV fee, the Government of this country shall ensure that in the period of the implementation of this Strategy there is no group of population which is socially disadvantaged or deprived for any reason during the analogue to digital television broadcasting switchover process.

Governmental subsidies for digital receivers to the citizens – end-users may significantly contribute to the increase in the number of digital terrestrial television services users in the Republic of Macedonia, thus enabling the full digital terrestrial television switchover within deadlines defined by the Strategy.