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The Introduction of DTT in Latin America: Politics and Policies

Abstract

The switch to digital terrestrial television is now a global trend. In Latin America, where the terrestrial platform has a dominant role, the introduction of DTT raises important questions for economic and industrial development, as well as pluralism. This article focuses on the earliest experiences (Brazil, México and Argentina) and those of the newcomers (Chile, Colombia and Uruguay). The aim is to outline the differences between the various political decision processes and the way with which they have been turned into communication policies, so as to draw some conclusions that contribute to visualizing the future of television in the region.

Key words

communication policies

audiovisual sector

digital television

switchover

Latin America

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Introduction

Television in Latin America has predominantly followed the United States (US) commercial licensing model, financed by advertising and based on the granting of few high-power licences to commercial operators in return for loosely (or politically) defined obligations. Therefore, public and not-for-profit broadcasters have always had a secondary role and the market has been controlled in each country by few companies, some of which nowadays are moreover part of multimedia groups and/or have connections with foreign capital.¹ Both local politics and the globalization of media markets have been shaping the development of Latin American media since the nineties (Fox and Waisbord, 2002).

In such a scenario, where the television industry has historically suffered from technological dependence, financial turbulence and a lack of (or limited) competition, the switch to digital television may prove to be either a unique opportunity to achieve important reforms or another chance to favour adaptation to existing industry arrangements over change. Since terrestrial television is one of the most important means of delivery of entertainment, penetration of satellite and cable is mostly relatively low and concentration and foreign ownership are not the exception to the rule (Mastrini and Becerra, 2001; 2004; 2009), the digital future of one of the few media services universally available is crucial.

Most countries, generally speaking, are still laying the foundations for the complete switch to digital television. But the dominant role of the terrestrial platform and the economic and technical constraints the cable and satellite options present, in addition to the peculiar combination of political contexts, policy traditions and regulatory frameworks, are driving digital terrestrial television (DTT) towards the centre of switchover strategies. The numerous opportunities for economic and industrial development, as well as pluralism, that the amount of spectrum to be released and the necessity to upgrade equipment raise, have led most Latin American countries to adopt an explicit policy on the transition to digital television.

These incentives explain the launch of trials and pilots in most countries of the region. Nevertheless these are still in embryonic condition in most countries, (CITEL, 2005, 2007; CNTV, 2006) with the exceptions of Brazil, Argentina and Mexico, which represent the oldest experiences and have led the way for late starters, such as Chile, Colombia and Uruguay. This article focuses on the former as the most relevant case studies, among other reasons because of the size of their internal markets (the largest in the region) and their regional political influence. In addition, Mexico and Brazil lead the regional production of TV sets.

So, from pioneering decisions such as the Argentinean selection of ATSC, a decision later dropped but finally instead adopted by Mexico, to the Brazilians' plans to encourage an independent development of a new standard, the objectives pursued in this article are mainly two: firstly, and from a general point of view, to outline the differences that exist within these political decision processes and the way that they have been turned into communication policies; secondly, to draw some conclusions that contribute to visualizing the future of the media with the highest penetration and impact in the region.

So as to achieve these objectives, case studies are described and analyzed taking a historical approach, organized in three periods, that allows to establish similarities and differences, conclude about potential lessons – also in the light of the experience of more developed countries – and offer a summary of opportunities and challenges that contribute to the design of policies that favour the democratization of the sector.

In the light of previous digital broadcasting and switchover policy research, that has tended to analyse national case studies (Frezza and Sorice, 2004; Brown and Picard, 2005; Cave and Nakamura, 2007; Starks, 2007; Fernández Alonso et al, 2008) and stress differences between countries (Galperin, 2004; García Leiva et al, 2006; García Leiva, 2008) and even international models (Bustamante, 2008) and regional blocks (García Leiva and Starks, 2009),

it is argued here that an analysis of the younger Latin American experiences can contribute to a better understanding of the transition to digital television across the world.

The aim of this piece is therefore to build upon the existing body of works about the region to offer a complementary broader and critical comparative picture (Hernández & Postolski, 2003; Galperin, 2003, 2007; Siqueira Bolaño & Cruz Brittos, 2003, 2007; Siqueira Bolaño & Rodrigues, 2004; Gómez, 2007; Kaplún, 2008; Cepeda, 2008).

The nineties: an embryonic period

The countries here considered took their first steps towards DTT during the nineties. In Argentina the initiative to experiment with digital terrestrial transmissions came from the private sector (ATA), upon whose request in July 1997 through the Secretary of Communications (SeCom), the government created a committee to study the different standards and give advice about a transition strategy (*Comisión de Estudio de Sistemas de Televisión Digital*, later reorganized and renamed *Comité Consultivo sobre Televisión Digital*). The committee was ornamental since the tests were never conducted and president Menem decided, unilaterally and in absolute alignment with the US approach, to adopt ATSC in 1998, after freely allocating a second channel to the incumbent national operators for three years with which to experiment.

Rhetoric aside, two were the main reasons for this decision: the pressure placed by existing licensees to preserve their position and expand towards a new service, and the governmental interest in having an advantage in the digital television market over Brazil (Albornoz, Hernández and Postolski, 2000). Although the de la Rúa government did question the decision, it had more pressing priorities and the switchover policy was left behind. The 2001 socioeconomic crisis gave place to a chaotic situation and the successive provisional administrations did not make any decision about the matter.

So, until Mexico adopted the standard in 2004 and Honduras and El Salvador followed in 2007 and 2009², Argentina was one of the first countries in the world, together with Taiwan and South Korea, to choose ATSC, but without afterwards launching officially any platform. In Mexico, Televisa and Televisión Azteca began DTT trials with ATSC in 1999 and, until its official adoption, the Secretary of Communications and Transport (SCT) authorized three national channels to experiment with digital technology. The Brazilian positioning however was absolutely divergent.

In Brazil the initial pioneering interest in DTT came from the government, which in June 1991 created a commission to design a high definition television policy (COM-TV). Four years later, the main broadcast industry groups, SET and ABERT, created a joint technical committee to study the implementation of digital TV and evaluate the competing standards, objectives that would then be taken up by the newly created regulator ANATEL from 1998 on, substituting COM-TV. Undoubtedly, such rapid official support for the broadcasters' interest can only be understood because of the country's manufacturing industry potential. But another element that made the Brazilian experience different was the fact that, due to increasing participation of civil society, the whole process that was about to begin would be characterized by at least some degree of transparency and accountability unusual for the region (Siqueira Bolaño and Cruz Brittos, 2003).

The path of DTT in Chile has been tortuous. The advent of Ricardo Lagos to the Presidency in 2000 put on hold the existing plans that by the end of the nineties had already designed a legal and technical architecture to introduce the service through the *Consejo Nacional de Televisión* (CNTV) and *Subsecretaría de Telecomunicaciones* (Subtel). According to Hernández and Postolski (2003) the main reason for this was the lack of consensus between these agencies and the broadcasters (ANATEL), who were pro-ATSC. Moreover, even though Bachelet's government finally boosted the process, some point out

that the US-Chile Free Trade Agreement signed in 2003 might have potential implications that should be taken into consideration (Bernier, 2004).

In any case, already in this preliminary phase some of the elements that would characterize DTT policies during the subsequent years in those countries with the most advanced experiences can be detected:

- Constant moving backwards and forwards in the introduction of the service. Particularly as regards the question of standard selection, Chile and Peru are paradigmatic examples of official announcements followed by successive delays.
- Hasty decision-making, significant in the case of Argentina, the consequence of none or little planning.
- Dependency issues, in relation to media groups, as well as trade commitments.
- And a lack of debate, only partially overcome in Brazil through public consultations and an increasing participation of civil society in communication issues. In the same direction, but with different outcomes, public hearings have also set important milestones in Chile and Colombia.

The first lustrum of the new millennium: trials and drawbacks

Around the turn of the century a second phase began, mainly due to the emergence of a debate that questioned the real consequences of migrating terrestrial networks, a new socio-political context and some changes among the incumbent audiovisual operators. Whereas this resulted in Argentina in the abandonment, in practice, of ATSC, in Mexico the process that would adopt it was initiated, while Brazil supported the option of creating a completely new standard (of its own creation).

In Argentina, setting aside de la Rúa's victory, stakeholders' consensus around ATSC disappeared when Telefónica entered the television market and subsequently decided to

support DVB (Hernández and Postolski, 2003). After several years without important advances within the implementation field, digital television returned to the official agenda in September 2005. Kirchner government considered the possibility of adopting the same standard as Brazil, but afterwards confirmed that the decision would be independent.

In Mexico, the *Comité Consultivo de Tecnologías Digitales para la Radiodifusión* was established in 1999 as a government/industry group to define by 2002 the regulatory and technical framework for DTT implementation. Experimental transmissions took place in Mexico City and Tijuana, while the committee supported trials with every available standard. Nevertheless, its actions and recommendations were one-sided due to the lack of representatives of civil society in its composition.

In Brazil, to the surprise of many, the 1999/2000 tests came out in favour of the Japanese system, opening a broad debate that took place in many public consultations conducted by ANATEL. The complexity of the interests at stake placed them outside ANATEL's mandate, which is why the Cardoso government decided to wait until making any decision. In fact, the President ignored the ideas of the professional sector (*Federação Nacional dos Jornalistas*) and dismissed the Chinese offer to jointly build a fourth alternative international standard.

The outcome of the 2002 general elections, won by Lula, marked a major shift in the Brazilian digital strategy. Not only was the possibility of cooperating with China or India put back on the table, but the idea of creating a national standard from scratch was also supported. In short, a more strategic approach to transition was taken and digital television became a key tool for achieving other two goals: revitalizing the Brazilian consumer electronics industry and addressing the significant inequalities in access to advanced information and communication services among the population (Galperin, 2007).

By mid-2003, the Chinese option was ruled out due to the fear of being swallowed by China's huge market (Siqueira Bolaño and Rodrigues, 2004: 128) and in November the so-called Brazilian Digital TV System (SBTVD) was launched by Decree N° 4.901. Its aims were the promotion of research and development, the expansion of Brazilian technological industries and the planning of a gradual transition from analogue to digital television.

The government decided to support R&D centres working on the possibility of creating self-designed components that could form part of the SBTVD, distributing among 22 research consortiums 30 million reales of the 80 million promised. Some kind of consensus was reached about the idea that the service should offer Internet access and have an interactive dimension.

From 2005 on: time of definitions

The formal adoption of the ATSC standard by the government of Mexico in July 2004 inaugurated the current period, in which Latin American countries are finally making some decisions.

The pioneers

The Mexican decision, contained within a detailed policy document issued by the SCT,³ has not been a surprise and must be understood in the context of the NAFTA: the complete transition to digital television can constitute a unique opportunity for the domestic consumer electronic industry. At the same time, ATSC's efforts were officially supported in a systematic way because it has always been crucial for the US and its global audiovisual industry to achieve a North American market (Canada had already adopted the standard in November 1997).

As Michael McEwen, Secretary General of the North America Broadcasters Association, put it: 'We are set for an historic leap in North America, with a market of well over 400 million consumers, consumer DTV equipment will have the advantage of the economies of scale of a huge mass market. Likewise broadcasters and manufacturers will benefit from similar economies'.⁴

Following the example of its neighbour, Mexico allocated a second channel to incumbent operators to simulcast their analogue signals. The government approved a plan to extend digital terrestrial television by 2021, in six phases of three years each, but no precise date for the switch-off of analogue transmissions or the return of the analogue frequencies was established. At the end of the third period, all simulcasting stations will have to offer high or enhanced definition quality transmissions for at least 20% of their total broadcasting time. Interestingly, television stations might include the provision of telecommunication services.

This has led to a fierce battle between television and telecommunication operators. The so-called 'Televisa Law',⁵ passed in April 2006 and for the most part overturned by the Supreme Court the following year and a Convergence Agreement issued by the Presidency in October 2006 have formed the background for constant but difficult negotiations between Telmex and Televisa (as well as between these two and TV Azteca and the government). Whereas cable companies had been offering voice, data and video services since 2005, led by Televisa's Cablevision, Telmex needed specific authorization to provide video services. The Agreement established the framework for the telecom and cable operators to enter each other's markets offering triple-play services.

As regards implementation, DTT is improving slowly, with 36 channels on air in 2009 and some high definition content, but with progressive pressure being placed on public service broadcasting: since planning obliges non-commercial stations to broadcast in areas with at least 1.5 million habitants from 1 October 2010 on, it seems they will have to face the

necessary upgrades with no additional funding or resources. The regulator has identified the following challenges: low digital receiver penetration, scarce knowledge of digital television's advantages among the population and an absence of DTV rating evaluation.

In Brazil the appointment of communication minister Helio Costa put an end to plans to develop a separate and independent standard, ATSC was excluded for not being appropriate for mobile TV reception – a key requirement for the government – and, in the end, a fourth alternative consisting of a hybrid system specifically adapted for Brazilian requirements was chosen. This decision was made in spite of a visit by Viviane Reding, the European Union (EU) Commissioner for Information Society and complaints by SBTVD supporters. With Decree N° 5.820, Lula established in June 2006 the Japanese ISDB-T system as the basis for the 'new' Brazilian standard called SBTD-T (*Sistema Brasileiro de Televisao Digital Terrestre*).

The final system was designed to be adapted to existing infrastructure, is based on MPEG-4, supports a Brazilian open middleware named Ginga and is of course capable of transmitting low bit rate video programmes to mobile handheld devices. This was a very important detail that made broadcasters push for the decision through Helio Costa, since it will allow them to deliver content without relying on telecommunication companies (Intervozes, 2006).

The decree also states that incumbent operators are to receive free-of-charge one additional frequency to simulcast their analogue channels and that the transition will take ten years to be completed throughout the whole country before the final switch-off of analogue TV. Japan's promises were in the end decisive as well for a country whose local manufacturing capacity is critical: exemption from royalty payments, the possibility of building a new semiconductor factory in the country and joint funding for the transition from the existing TV standard PAL-M to SBTD-T. Whereas exemptions were granted and the

Japan Bank for International Cooperation provided in 2008 the first loan to finance the introduction of digital broadcasting in Brazil, no effective progress has been verified in the semiconductor manufacturing industry.⁶

The main reason that resulted in the selection of the SBTD-T might be summarized, according to Siqueira Bolaño and Cruz Brittos (2007: 95), as follows: the national system was supported by civil society (movements for the democratization of communications),⁷ while the Japanese standard by Red Globo and the European option was mainly of interest to Telefónica. The final decision clearly favoured broadcasters, because it will not only preserve the *statu quo* (there will be no new entrants to the market), but will also allow operators to expand towards the new niche of mobile broadcasting.

The *Fórum do Sistema Brasileiro de TV Digital Terrestre*⁸ was set up at the end of 2006 as an association created to promote the adoption of DTT. Nevertheless, its take-up has been slow: even though transmissions started in December 2007 in Sao Paulo and coverage has improved as planned,⁹ by the end of 2008 only 200 thousand DTT boxes had been sold. Affordability has been an issue, as well as initial technical uncertainties. The service was launched without the existence of affordable receivers, including Ginga, in the market. By March 2010 coverage had reached 27 metropolitan areas; sales of receivers added up to two million by December 2009 (fixed, mobile, integrated and non-integrated options considered).

Last but not least, there is a chance that the introduction of DTT might boost public service broadcasting due to the fact that the creation of local public service channels was announced together with the launch of a common platform for federal public service stations with the aim of reducing costs and accelerating the deployment of the service.¹⁰

Upcoming full launches

It could be said that Uruguay and Colombia find themselves somewhere in between the first and second set of launching experiences described above. Despite the initial adoption

of DVB, a number of very important decisions must still be made, while crucial challenges lie ahead (coverage implementation, effective adoption...).

In Uruguay DTT was not really part of the public agenda until the arrival of Tabaré Vázquez to the presidency in 2005. Furthermore, the digitization of terrestrial networks was not even considered until Lula's policies and decisions attracted the attention of politicians, businessmen and academia. More precisely, the adoption of the Japanese standard by Brazil accelerated the process for the creation in the beginning of 2007 the *Comisión Nacional de Televisión Digital Terrestre*, which chose for the European standard. The decree that formally adopted DVB-T and DVB-H was signed on 27 August 2007 by president Tabaré.

Nevertheless, this development was not accompanied by any decision about the regulatory framework or dates for transition, probably because these were the most controversial issues between the members of the Commission (Kaplun, 2008: 5). Definitions of such key aspects were then delayed and could not be seriously considered until 2010, as general elections took place in October 2009 and regulation prohibits the licensing of spectrum frequencies during such periods.

By 2009 it was expected that incumbent national operators – three commercial stations and the public service TNU – would receive an additional channel each and that, in compliance with the new Broadcasting Community Law (2007), five additional digital channels would be distributed among community media (three), TNU and a new commercial private operator. Existing analogue UHF broadcasters are simulcasting signals in trials, but there are still many economic and political uncertainties.

In Colombia, the *Comisión Nacional de Televisión* approved, in February 2006, a plan to implement DTT in the country. After conducting tests about the socioeconomic and technical impact of the change, that even included the Chinese DMB-T system, the adoption of DVB in August 2008 was decided upon by consensus (Comisión Nacional de Televisión,

2008). As in Uruguay and Panama,¹¹ the resolution was influenced by the European offer of technological as well as financial cooperation. At the end of 2008, Impulsa TDT, the Spanish association for the implementation of DTT, and the Colombian government signed an official agreement under which Colombia has been receiving help to implement the service.

Soft launch was possible in September 2008 thanks to public service broadcasting and its official transmissions were set for May 2009. It was expected that throughout the first year 25% of the population would gain access to the digital channels of existing national broadcasters. With a transition strategy designed to first affect the biggest cities and analogue switch-off set for 2020, the deployment of DTT has already begun. Commercial services were launched in Bogotá in January 2010.

Successive delays and erratic processes

Two groups can be identified within the rest of the countries that have begun more or less explicit processes to introduce DTT services. Firstly, the most recent Peruvian, Venezuelan and Bolivian experiences can be mentioned. In Bolivia as well as in Peru, the debate about the migration to digital television was not introduced until 2007 and trials took place in 2008. This is also the case of Venezuela whose peculiarity resides in the fact that ATSC was ruled out as an option for ideological reasons from the very beginning. Secondly, the contrasting older and more complex Argentinean and Chilean journeys will be outlined.

In Peru a special commission to decide on the technical standard to be adopted was set up in February 2007, so that the Ministry of Transport and Communications could adopt an official position. Successive delays prevented this from happening until ISDB-T was recommended and chosen in April 2009, foreshadowing the Argentinean, Chilean, Venezuelan and Ecuadorian decisions.¹² Brazil had then become an additional and successful external actor lobbying for a particular standards choice. Jorge Cuba, the Peruvian minister,

announced a phased approach for the implementation of the standard (beginning in the provinces of Lima and Callao in 2010), as well as for the end of analogue transmissions (set between 2020 and 2030 for most of the country).

In Argentina Néstor Kirchner's decision to 'temporarily freeze' in 2005 by means of Decree N° 527 the ten-year period in which licences were to be granted to incumbent operators was supposed to be motivated by the need for certainty before facing the technological upgrade. In June 2006 a working group was created to advise the government on the standard which the nation should adopt, ATSC and DVB being the only options then considered. Nonetheless, by mid-2009 no official announcement had been made. Furthermore, President Fernández (Kirchner's wife) allowed contradictory announcements throughout 2007 and 2008 that fluctuated from suggesting alignment with Brazil to forecasting the adoption of a common standard in association with Chile and Colombia.

In the end, the *Sistema Argentino de Television Digital Terrestre* (SATVD-T), based in ISDB-T, was adopted in September 2009,¹³ while it was announced that first broadcastings would take place by mid-2010 and the whole transition period until the switch-off of the analogue signal would take place within a ten-year period. Even though many agree that the outcome of a coordinated definition with Brazil can certainly be positive, critics remind that the government has not yet defined the DTT model to be implemented. Evidently, Grupo Clarín's interests in cable television, as well as Telefónica's in double/triple-play offerings – apart from their connections with analogue terrestrial channels – have negatively influenced a balanced configuration of the audiovisual market and, as a consequence, a coherent introduction of digital terrestrial television services.

The Chilean experience has also been complicated. In May 2006, the Ministry of Transport and Telecommunications announced that before the end of the year the country would have had chosen a standard. But after three years, many public hearings, lots of

technical tests and some special official reports, Chile had yet to make a decision. Delays raised intense debates, which took place in parallel to the regulatory reform of the audiovisual sector (changes in rules affecting radio, television and public service broadcasting were approved). In November 2008, Bachelet's government even presented a draft law to regulate the introduction of DTT services. But although this recognized the development of regional, local and community television, it was accused of being too generous towards incumbent operators.

Finally, falling in line with Brazil, Peru and Argentina, Chile officially adopted ISDB-T, citing better reception capabilities, given the characteristics of the country, as well as economic reasons (royalty exemptions and a converter around 40 pesos were decisive).¹⁴ Before the 2010 earthquake, it was announced that the migration would cover a period of eight years, giving the population plenty of time to adapt.

Finally, in the case of Venezuela, where a memorandum of understanding was signed with Japan in October 2009, it is expected that within 2010 a ten-year transition strategy will be outlined. The aim would be the promotion of e-government, e-education and e-health services through DTT.

Ten years with DTT: similarities and differences

What are then the lessons that might be deduced from the experiences described above? Before answering that question it is important to understand the main similarities and differences among them. In doing so, it can be said that Argentina and Brazil represent the most different early strategies that could have been adopted in the region. In the case of the former, the initial hurry that led to an authoritarian and conservative policy ended up in an uncertain situation without a transition plan or a solid standard decision until 2009. Brazil tried a totally independent R&D path full of public consultations, although finally opting for

the Japanese standard, modified with a Brazilian flavour, because of technical, financial as well as political reasons.

Although the country generated the most complex decision-making process in the region, it seems that in the end its DTT policy was influenced by those liberalizing measures introduced in the nineties. That is why, even though it can be said that there is room for hope, the fact is that the introduction of the service has not lowered the entrance barriers to the television market (Siqueria Bolaño and Cruz Brittos, 2007).

It remains an open question whether other Latin American countries will follow the Brazilian decision along with Peru, Argentina and Chile, while without this giant the once contemplated possibility of building a new regionally-shared standard was almost lost from the beginning. Mercosur's mechanisms to reach consensus were not enough when faced with national interests.¹⁵ The remaining countries will surely have to limit their decisions to choosing between the Japanese/Brazilian, North American or European standard, as most of them are either too small or too poor to lead alternative strategies.

In relation to this, trade agreements (like the ones many signed with the US), foreign presence in media ownership and the structure of the existing broadcasting and consumer electronics industries will be key elements to take into consideration when analyzing the determining factors. These, together with the political orientation of those in power and the lobby of governments and organizations with a stake in each of the competing systems, go a long way towards explaining the different standards choices across the countries examined in this article.

Mexico is a prime example due to the fact that its decision over ATSC implies a close commercial alignment with his neighbour, as well as being the 'natural' outcome if existing arrangements are to be preserved. Additionally, since Honduras and El Salvador have also chosen to adopt ATSC technology, Mexico's strategy may have set the pattern for much of

Central America. If so, US efforts to lobby for ATSC, which were concentrated mainly on pushing for a continentally-shared standard through CITELE, the Inter-American Telecommunication Commission of the Organization of American States, might end up influencing half of the continent.

The European strategy, coordinated by the EU's Information Society and Media Directorate-General, was meant to support DVB through bilateral cooperation agreements, focused on financial support to help fund digital switchover activities, and benefited from the special role played by the Spanish demonstrations, particularly in the Colombian and Uruguayan cases. Nevertheless, it is pretty clear by now that the Brazilian decision, the consequence of a complex combination of Japanese concessions, pressure from broadcasters and a relatively autonomous industrial policy, is the one currently succeeding in leading South American developments.

In relation to this, further political analysis is necessary to explain whether the Argentinean, Chilean, Peruvian and Venezuelan choices arose from the desire to build a regional approach to the transition of digital television, were agreed upon because of ideological affinities, or simply display a shared desire to express independence from the US and EU in this instance.

To summarize, it can be said that Latin America has had to face the transition to DTT in a global context where the development and diffusion of standards was already in place. Nevertheless, what would have been expected from a technological and even an industrial point of view, that is to say, making digital decisions in accordance with technical aspects and analogue infrastructures, was in fact challenged and overcome by politics. It is obviously hard to tell up to what extent each of the mentioned variables influenced the selection of standards, but, interestingly, neither purely market-based nor completely politically-driven choices were made.

Through the alternation between competition and cooperation among and within stakeholders, governments and standard-setting alliances, on the national as well as regional level and due to the combination of different doses of negotiation, hybrid selection processes emerged. The outcome of different standards choices can only be explained by a complex combination of internal and external forces, as well as political, financial and techno-industrial motivations that crystallized into mixed market and institutional approaches.

These tendencies have also of course been conditioning the policy formation processes around other aspects linked to the digitization of terrestrial television, still barely discussed beyond the experiences already launched and in place (Mexico and Brazil). Little is known, for example, about spectrum management (digital dividend issues, spectrum allocation and refarming), DTT models (architecture, extent of enhanced programming, business models), and transition strategies (cost-effective alternatives, policy levers).

Nonetheless, what has been clear up to now is that the main trade-offs involved in the national decisions were basically focused on which standard to support and when to intervene. Argentina was the only country to pick a standard at a very early stage, since most waited to learn how interstandard rivalry developed. During this approximately five-year process Mexico chose ATSC and Brazil decided to support a standard-setting process that encouraged intersystem and interstandard competition. When the administration of President Lula finally made up its mind, the rest were forced to choose as well. In other words, once Mexico and Brazil were established as dominant players, the bandwagon gathered momentum.

Table 1: DTT in Latin America – Main markets and most advanced experiences						
	<i>Brazil</i>	<i>Mexico</i>	<i>Argentina</i>	<i>Chile</i>	<i>Colombia</i>	<i>Uruguay</i>
General data*						
Inhabitants (000)	184.300	105.100	37.900	16.400	46.600	3.300
TV hhs/ total hhs	98%	96%	98%	96,7%	93,7%	96%
TV sets/ 1.000 hab.	265	333	422	361	321	400
Dominant platform(s)	Terrestrial		Terrestrial (cable 44%)	Terrestrial	Terrestrial (48,8%) and cable (42,9%)	
DTV households (000)	3,222	2,861	1,503	ND		
Rest of region: 425,88 / Latin total: 12,174						
DTT						
Multiplex bandwidth	6 MHz					
Standard adoption	ISDB/SBTVD 06/2006	ATSC 07/2004	ISDB/SATVD 09/2009	ISDB	DVB 08/2008	
Launch	12/2007 San Paulo; 07/2008 Rio de Janeiro	(pilot 1999) 2004	Soft launch 2010		Soft launch 05/2009	Trials since 09/2007
Analogue switch-off	30/06/2016	31/12/2021	No hard date decided yet		01/2020	Not decided yet
Technical aspects privileged	Support for interactivity, interoperability and mobility; MPEG4	Standard & high definition mix (MPEG2)	Reception quality, high definition, interactivity and increase in the number/variety of channels (MPEG4)		Emphasis on increasing the number of channels (MPEG2)	
DTT considered as a substitute of universal analogue terrestrial television → major role in switchover strategy						
DTT model	Free-to-air	Free-to-air (future pay services?)	Unclear		Free-to-air	
Public service	Simulcast + additional frequencies	Simulcast, but under financial pressure			Simulcast; apparently leading role	Allocation will specially consider community/public media

*Source: Informa Telecoms & Media (Sourcebook, 2007; Americas TV 13th Edition, 2009), Fundación Telefónica (Anuario 2006) and regulators.

So, even though official interest in DTT was born a decade ago, it is still difficult to point out similarities and differences. Nonetheless, the strategies to introduce the service share – from a general point of view and beyond national specificities – the following elements:

- The introduction of DTT services is being made in direct relation with the complete migration to digital broadcasting. As a consequence, no country has launched digital terrestrial television without considering universal access issues and adopting an analogue switch-off timetable.

- In a context where pay-TV services have a low penetration, free-to-air options prevail.
- The decisions made by the pioneering countries were motivated by the condition of major markets in terms of size and influence (Mexico, Argentina and Brazil; TV receiver manufacturing is an important industry in both Mexico and Brazil).

- Therefore, technological and industrial development and economic advantages, rather than the promotion of social inclusion and cultural diversity, were the motives for the introduction of digital terrestrial television.

- That is why Siqueira Bolaño and Cruz Brittos' conclusion about the Brazilian example (2007) might be applicable to the rest of the most advanced experiences: DTT models under construction do not present real and in-depth changes in important matters, such as pluralism or social participation, that could lead to social inclusion. The digitization of universal and 'free' terrestrial television has until now only accelerated existing inequalities.

- This explains the fact that public service broadcasting, already marginal and weak in most countries, is not being considered for taking on a leading role.

- Finally, it is interesting to point out the existence of public debates through consultations and hearings and the formation of commissions/study groups, despite their heterogeneous means and scopes. The path initiated by Chile and Colombia is encouraging. In Brazil, civil society has been organized to defend the democratization of communications, while the government even made a self-development attempt supporting research around a Brazilian standard. By contrast, the Mexican and Argentinean committees were mere masquerades.

The fact that all decisions about the introduction of DTT are being taken in parallel to crucial regulatory debates about the future of communications (laws and rules being under revision) is also a relevant element to point out.

Lessons from divergent approaches

Therefore, as regards the lessons which the introduction of DTT in Latin America has provided, the following stand out. To begin with, it must be said that the predominantly supported DTT models clearly draw from free-to-air options and traditions and at the same

time tend to preserve existing audiovisual arrangements. It is evident that analogue architectures are determining factors that influence policy options.

Nevertheless, the outcome is far from clear since, generally speaking, the main alternatives seem to be:

- Support for high definition alternatives, though partially and with expensive migration costs for the complete value chain (Mexico).
- Trust in the introduction of interactive value-added services as drivers for consumption and free-pay business models (Brazilian plans).
- Or emphasis on the increase of the number of channels, multiplying the standard definition offering (Uruguay, Colombia), with the risk of putting too much future pressure on business models basically dependent on advertising (small or even turbulent markets).

Secondly, it emerges as evident that where consensus is not stable and the introduction of DTT services is decided unilaterally – by political motives or through purely market-driven approaches – and without every stakeholder’s involvement, tendency to disruption is higher, leading to delays and periods of uncertainty. Similarly, official decisions and announcements with little or no connection with market conditions and consumer needs tend to fail. This is the case with analogue switch-off dates set politically, aggressive migration plans or even naive policies.

Thirdly, due to supranational logics embodied in regional policies and trade agreements, different public policy traditions and styles or financial limitations, public intervention is only shyly or non-explicitly displayed (in which case the reason is usually partisan interference). The problem is that this state of affairs makes it more difficult to break the typical vicious cycle that has negatively influenced the introduction of the service in other parts of the world.

From the relatively successful experiences of those countries that started upon the digital switchover journey earlier (United Kingdom, France, Italy), it has been learned that consumers need to be offered a good quality free-to-view option with receivers available at affordable prices in the open market as key elements to gain rapid take-up and pursue equalitarian access.

Additionally, the need for cooperation is significant. The region suffers from a historical lack of a coordinated approach to the audiovisual sector. Therefore, there has not been up to now a common position towards the digitization of terrestrial networks. Any original intention of full-scale harmonization efforts for the region vanished as each country started adopting its own policies. In other words, while Latin America has its own regional trade agreements (Mercosur, Andean Community, CARICOM), decision-making processes have to date remained with the individual nations.

Finally, international pressure from governments and agencies with a stake in the three main digital TV standards has also played a role. However, fierce lobbying has increasingly and interestingly had to face ‘flirting’ processes during the last few years. Many South American countries have realized that even though they might not be able to support an independent development of a separate standard they can negotiate at least some benefits (free technical support, exemptions from royalty payments, financial aid, etc.)

Lessons from the developed world?

Following Starks (2007), who contemplates digital switchover strategies in countries that launched DTT around the turn of the century, the question raised in this article is whether learning points that help reduce risks and foster success can be identified for Latin America. Useful lessons gathered from the experience of more developed nations would include the following (Spectrum and Value Partners, 2007; García Leiva and Starks, 2009).

Digital frequencies need to be allocated to incumbent operators to facilitate the transition to DTT (though not necessarily exclusively). Where additional capacity exists frequencies have been awarded mainly through ‘beauty contests’, with the exception of public service broadcasting, and spectrum has been reserved for local and regional channels. In most cases, licensing, usually for 10/15 years, makes distinctions between authorisations for transmission service providers (networks), multiplex operators and content providers (stations).

As has already been mentioned, a solid free-to-air option, accompanied by affordable receivers in the open market, is behind the highest penetrations. And in countries where pay-DTT services exist, the requirement of sharing common access technology is central to ensuring that receivers can support different competitive pay-TV channels.

More specifically, where terrestrial reception is dominant, the transition does not have to rely solely on digital terrestrial transmissions, since other platforms might contribute more cost-effectively to offering universal services. Whereas all countries have set a hard date for the switch-off of analogue signals, transition periods vary widely, as do approaches to switchover (national scale, region-by-region, by ‘islands’).

Subsidies can certainly play a role, especially in the closing stage of mandatory switchover and with helping vulnerable groups, such as the elderly or the unemployed. They can be introduced for the supply and/or the demand side. Nevertheless, in any case, switchover cannot be implemented without high public awareness. Consequently, campaigns must be in place well in advance.

Finally, smooth and close cooperation between the main stakeholders has proven essential. That is why many countries have suggested or facilitated the creation of consortiums/associations to support the introduction of the service (e.g. Digital UK, Impulsa TDT, DGTVi).

In other words, ‘no country has attempted to achieve an entirely “hands-off” digital switchover process. Government and regulators have accordingly been involved in a range of interventions: from cajoling, facilitating industry bodies, formalising standard-setting, licensing new spectrum allocations, planning the practicalities of switchover and protecting the interests of the consumer. Where there is a major national public service broadcaster, it has generally taken a central role, though this role varies’ (García Leiva et al, 2006: 44).

To conclude: opportunities and challenges

Due to the fact that it might be too soon to deduce conclusive tendencies and define the DTT models that will emerge in Latin America, an approach that takes into consideration the negative and positive characteristics which the case studies are providing could for the moment be more useful. That is why the aim is to point out the most evident challenges and opportunities through the six dimensions mentioned below, with the intention of clarifying the possibilities that DTT could enable.

- Discourse

Apart from the fact that, generally speaking, promises and ideal models for what DTT should bring about are currently facing a complicated translation into reality, priorities and goals established in official programmes and reports show the discursive dominance of economic-industrial logics and the side-stepping of social, cultural and educative concerns. Danger lies, therefore, in the sole consideration of criteria such as spectrum efficiency or the pursuit of new business opportunities for the audiovisual sector, while objectives like diversity and quality of contents or pluralism are left behind.

- Regulators and regulation

In a region where during the last few years decisive though intense debates about the future and regulation of communications have been taking place, the creation or development

of independent and transparent regulatory agencies has still to materialize. At the same time, the difficulties with forming coherent and integral legal frameworks constitute an important threat as well. In both cases, at least two variables are currently significantly influencing the outcome: the juridical and geographical nature of regulation and regulators. In other words, national and public dimensions are nowadays insufficient to explain complex interactions and multiple relationships, because frontiers are blurred (national/local, global/regional blocs, public/private).

- Offering

If DTT is considered to be the perfect substitute for universal analogue terrestrial networks, the advantages it presents might as well be dilemmas. Depending on the model to be promoted, existing architectures with better quality pictures might be preserved or, to the contrary, challenged, resulting in potential repercussions for funding options, implicated stakeholders and reception alternatives. There are obviously no pre-designed customizable solutions but, beyond the selection of technical standards, the opportunity to forge a more consistent regional approach is still possible as regards audiovisual cooperation through exchange, coproduction and distribution.

- Stakeholders

DTT could certainly help reconfigure the audiovisual sector democratizing existing ownership structures, hand in hand with civil society, public service broadcasting and local level authorities, as a non-negotiable starting point for the promotion of competition and pluralism. Such a development would certainly have to challenge the *statu quo* and the role played by new agents (gatekeepers such as EPG and CAS providers or multiplex operators), not necessarily belonging to the traditional audiovisual world (receiver industry, network operators) and sometimes historically ‘foreign’ to it (telecommunication operators).

- Geographical levels/markets

Regional blocks and international logics permanently influence the national level, which is why markets cannot be considered any more without taking this element into consideration. It is essential to understand that DTT in Latin America is affected on the one hand by its own audiovisual history and national policies and, on the other hand, by agreements reached within and between regional blocks (Mercosur, Andean Community, CARICOM, NAFTA; EU), as well as on the global level (WTO, ITU). The consideration of the region as one of the fields where the global battle over standards has been taking place is an overwhelming geopolitical example.

- Audiences

Finally, as regards the status audiences can acquire, it is important to point out the possibility that the client might gain priority over the citizen if DTT is understood as another possibility for audiovisual consumption instead of (or in addition to) a new opportunity for participation. Efforts should be directed not only at promoting the representation and presence of citizens in broadcasting activities, but also in the policy debates and decision-making processes. In this sense, some of the experiences described are, at least, encouraging.

To conclude, it must be said that the biggest challenge DTT poses in a region where terrestrial television is the most important means of delivery of information and entertainment has to do with building balanced public policies that are up to the expectations of the audiovisual sector, while also taking citizens' rights into consideration. In doing so, the challenges mentioned could be turned into a unique opportunity: strengthening universal and democratic access to audiovisual services in the digital era.

References

- Albornoz, L., Hernández, P. & Postolski, G. (2000) 'La televisión digital en la Argentina: aproximaciones a un proceso incipiente' in Albornoz, L. (Coord.), *Al fin solos... La nueva televisión del MERCOSUR*, Buenos Aires: Ediciones Ciccus-La Crujía, pp. 269-290.
- Bernier, I. (2004), 'Análisis comparativo de los tratados de libre comercio Chile – Estados Unidos y Singapur – Estados Unidos, con un enfoque particular en su impacto sobre el sector cultural', <http://www.diversite-culturelle.qc.ca/fileadmin/documents/pdf/cronica03-04.pdf>. Accessed March 2009.
- Bustamante, E. (2008), 'Modelos internacionales de TDT. La política y los lobbies pueden frustrar las expectativas de diversidad', *Diálogos de la Comunicación*, July-December, 77, pp. 1-23.
- Brown, A. & Picard, R. (Eds.) (2005), *Digital Terrestrial Television in Europe*, Hillsdale, NJ: Lawrence Erlbaum Associates.
- Cave, M. & Nakamura K. (Eds.) (2006), *Digital Broadcasting: Policy and Practice in the Americas, Europe and Japan*, Cheltenham: Edward Elgar.
- Cepeda, D. (2008), 'La Televisión Digital Terrestre en México', *Diálogos de la Comunicación*, July-December, 77, pp. 1-10.
- CITEL (2005), *Digital Terrestrial Television Broadcasting Implementation Guide*, Permanent Consultative Committee II: Radiocommunication including Broadcasting, October, Washington: CITEL.
- CITEL (2007), *Digital Terrestrial Television Broadcasting Implementation Guide*, Permanent Consultative Committee II: Radiocommunication including Broadcasting, August, Washington: CITEL.

CNTV (2006), 'Situación de la televisión digital en el mundo e implicancia en Chile'

Departamento de Estudios, June,

<http://www.cntv.cl/medios/Publicaciones/TVDigitalmundo052006DEF.pdf>. Accessed

February 2009.

Comisión Nacional de Televisión (2008), *República de Colombia. Televisión Digital*

Terrestre, Bogotá: CNTV.

Fernández Alonso, I., Capurro Robles, M., Sanmartín Navarro, J. and Blasco Gil, J. (2008),

'Implantation Policies in Europe and the Transformation of the Television Landscape.

Analysis of Five Experiences: the United Kingdom, Germany, France, Italy and

Spain' in Fernández Alonso, I. & Moragas, M. (Eds.), *Communication and Cultural*

Policies in Europe, Barcelona: Generalitat de Catalunya.

Fox, E. & Waisbord, S. (Eds.) (2008), *Latin Politics, Global Media*, Austin: University of

Texas Press.

Frezza, G. & Sorice M. (Eds.) (2004), *La TV che non c'è: scenari dell'innovazione televisiva*

in Europa en el Mediterraneo, Salerno: Edizioni 10/17.

Galperin, H. (2003), 'Comunicación e integración en la era digital. La transición hacia la

televisión digital en Brasil y Argentina', *Telos*, April-June, 55, pp. 24-32.

Galperin, H. (2004), *New Television Old Politics: The Transition to Digital TV in the United*

States and Britain, Cambridge: Cambridge University Press.

Galperin, H. (2007), 'Digital Broadcasting in the Developing World: a Latin American

Perspective' In Cave, M. & Nakamura, K. (Eds.), *Digital Broadcasting. Policy and*

practice in the Americas, Europe and Japan, Cheltenham, UK, Northampton, MA,

USA: Edward Elgar, pp. 39-53.

García Leiva, M. T. (2008), *Políticas públicas y televisión digital. El caso de la TDT en*

España y el Reino Unido, Madrid: CSIC.

- García Leiva, M. T., Starks, M. & Tambini, D. (2006), 'Overview of Digital Television Switchover Policy in Europe, the United States and Japan' *Info*, 8:3, pp. 32-46.
- García Leiva, M. T. & Starks, M. (2009), 'Digital Switchover across the Globe: the Emergence of Complex Regional Patterns' *Media, Culture & Society*, 31: 5, pp. 787-806.
- Gómez Germano, G. (2007), '*La radio y la televisión en la era digital. Oportunidades, desafíos y propuestas para garantizar la diversidad y el pluralismo en los medios*', C3, Centro de Competencias en Comunicación, Fundación Friedrich Ebert, February, http://www.amarc.org/index.php?p=Articles_Reports&l=EN. Accessed September, 2009.
- Hernández, P. & Postolski, G. (2003), '¿Ser digital? El dilema de la televisión digital terrestre en América Latina', *Telos*, October-December, 57, pp. 62-70.
- Intervozes (2006), '*TV Digital: princípios e propostas para uma transição baseada no interesse público*', <http://www.intervozes.org.br/publicacoes/documentos/TVDigital.pdf>. Accessed February 2009.
- Kaplún, G. (2008), 'Uruguay y la televisión digital: decisiones técnicas, (in)decisiones políticas', *Diálogos de la Comunicación*, July-December, 77, pp. 1-10.
- Mastrini, G. & Becerra, M. (2001), 'Cincuenta años de concentración de medios en América Latina: del patriarcado artesanal a la valorización en escala' in Quirós Fernández, F. & Sierra Caballero, F. (Dirs.), *Comunicación, Globalización y Democracia. Crítica de la Economía Política de la Comunicación y la Cultura*, Sevilla: Comunicación Social, pp. 179-208.
- Mastrini, G. & Becerra, M. (2004), 'Las industrias info-comunicacionales ante la SI', *Telos*, October-December, 61, pp- 90-94.

- Mastrini, G. & Becerra, M. (2009), *Los dueños de la palabra. Acceso, estructura y concentración de los medios en la América latina del siglo XXI*, Buenos Aires: Prometeo.
- Siqueira Bolaño, C. & Cruz Brittos, V. (2003), 'Capitalismo, esfera pública global y la televisión digital terrestre', *Iscibanía*, Universidad de Manizales, N° 11, July-December.
- Siqueira Bolaño, C. & Cruz Brittos, V. (2007), 'Políticas de comunicação, governo Lula e TV digital', *Liinc em Revista*, 3:2, pp. 91-101.
- Siqueira Bolaño, C. & Rodrigues, V. (2004), 'TV digital no Brasil e no mundo: estado da arte', *Eptic Online*, VI: 2, pp.102-134.
- Spectrum & Value Partners (2007), '*Supporting Subtel in developing a regulatory framework for the launch of DTT services in Chile. Final report*', Santiago de Chile: Subtel.
- Starks, M. (2007), 'Digital Switchover: Learning From the Pioneers', *Journal of the Institute of International Communications*, 35:4, pp. 3-9.

Endnotes

¹ Examples would include Canal 13 and Telefé in Argentina, Televisa and TV Azteca in Mexico and the virtual monopoly of Red O’Globo in Brazil, imperfect due to the presence of SBT, Record and Bandeirantes.

² Honduras adopted the ATSC standard on January 2007 thanks to a decision made by the Comisión Nacional de Telecomunicaciones. El Salvador adopted it in April 2009, based on a technical report issued by the Telecommunications Bureau of SIGET (which in turn relied on recommendations issued by the Central American Regional Technical Commission of Telecommunications).

³ *Acuerdo por el que se Adopta el Estándar Tecnológico de Televisión Digital Terrestre y se Establece la Política para la Transición a la Televisión Digital Terrestre*. Retrieved from http://dgsrt.sct.gob.mx/fileadmin/TDT/Pol_tica_de_la_TDT_01.pdf (February, 2009).

⁴ ATSC press release, ‘Mexico adopts the ATSC DTV standard’, (07/07/04). Retrieved from <http://www.atsc.org/communications/press/> (February, 2009).

⁵ Modifications to the Telecommunications Law and Radio and Television Law were passed by Congress in the midst of presidential election campaigns.

⁶ Japan agreed to support those companies willing to invest in the Brazilian semiconductor industry, which is why a joint working group has been established, but few advances have been registered. Toshiba might lead the way through the collaboration that is taking place with CEITIC in microelectronics design and production.

⁷ It should be noted that these movements were mainly gathered around the FNDC (Forum for the Democratization of Communication) (<http://www.fndc.org.br>).

⁸ <http://www.forumsbtvd.org.br>.

⁹ <http://www.forumsbtvd.org.br/materias.asp?id=55>;

http://www.teleco.com.br/tvdigital_cronog.asp.

¹⁰ Regulation was approved in February 2009 to specify the access to such a platform (a national digital communication public network) that would be comprised of at least six stations: TV Brasil, TV Senado, TV Câmara, TV Justiça and the new Canal de Cidadania and Canal da Educação (*Norma Geral para Execução dos Serviços de Televisão Pública Digital* N° 01/2009).

¹¹ Panama also adopted DVB-T in May 2009 and free-to-air services were launched by the public service broadcaster SERTV by the end of that year.

¹² *Resolución Suprema N° 019-2009-MTC, de 23 de abril de 2009, por la que se adopta el estándar de televisión digital terrestre para el Perú*. Details available at <http://www.mtc.gob.pe/portal/tdt/tdt.html> (September, 2009). By the end of March 2010 Ecuador also announced the ISDB-T/SBTVD would be chosen. The rest of the countries that are in the process of evaluating systems are Costa Rica, Cuba, Nicaragua, Paraguay and Dominican Republic.

¹³ *Decreto 1148/09, de 31 de agosto de 2009, por el que se crea el Sistema Argentino de Televisión Digital Terrestre*.

¹⁴ *Decreto Supremo N° 136 de 2009*. Details in http://www.subtel.cl/prontus_tvd/site/edic/base/port/inicio.html (September, 2009).

¹⁵ Something similar happened with the introduction of colour TV, which created fragmented markets: whereas Argentina, Paraguay and Uruguay opted for a unique standard that was an adaptation of the European PAL system to the 6 MHz channel scheme established by the ITU for the region (PAL-N), most other countries chose the American NTSC (already designed for 6 MHz) and Brazil created yet another PAL adaptation (PAL-M).