APC ISSUE PAPERS

DIGITAL TELEVISION AND RADIO

DEMOCRATISATION OR GREATER CONCENTRATION?[1]

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THE DIGITISATION OF RADIO AND TELEVISION BROADCASTING IS ON THE PUBLIC AGENDA WORLDWIDE. WHILE MOST COUNTRIES IN LATIN AMERICA AND THE CARIBBEAN HAVE YET TO ADOPT DECISIONS REGARDING THIS TECHNOLOGICAL SHIFT, CIVIL SOCIETY NEEDS TO TAKE A POSITION ON THE ISSUE NOW.

THIS PAPER ANALYSES THE IMPORTANCE OF DIGITISATION AND THE OPPORTUNITIES, RISKS AND CHALLENGES IT REPRESENTS, TO HELP US TAKE AN ACTIVE STANCE TOWARDS THE DEFINITIONS THAT OUR COUNTRIES SHOULD ADOPT.

IN ADDITION TO PROVIDING INFORMATION ON THE TECHNOLOGICAL, POLITICAL AND REGULATORY ASPECTS OF THIS ISSUE, THIS PAPER ADDRESSES THE FOLLOWING QUESTION: WILL DIGITISATION BE AN OPPORTUNITY FOR MEDIA DEMOCRATISATION, OR WILL IT INSTEAD FURTHER CONSOLIDATE MEDIA CONCENTRATION?

Current trends in technological convergence, based on digitisation, indicate that communications media as we know them today will be available on a single multipurpose device or platform in the future.

There will not be much difference between what we call radio and television today, whether the signals are received by air (terrestrial or satellite transmission) or by cable, and computers, telephones and other devices. While today's analogue receivers will not completely disappear, there is no doubt that the current concept of communications media will be redefined.

There are those who believe that the «victorious» device or platform will be the good old television set, because of both the strong market penetration it has already achieved, and the fact that the majority of the population can access and use it. In the context of this paper, however, it is not really important to define the «winner».

More important is the question of whether the digitisation of radio and television signals, along with the choice of a technological standard, the model for transition from analogue to digital broadcasting, and the regulatory framework adopted, will allow for the democratisation of communications or deepen the current processes of concentration.

To analyse possible future scenarios, we must take into account the current situation and the predominant market trends in broadcasting at the national, regional and global

1 This paper is a summary of a report written by the author with the support of the Friedrich Ebert Foundation's Centre for Communication Competencies (C3 – Centro de Competencia en Comunicación).

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levels. This allows us to identify aspects that will shape possible scenarios, and can help us define the objectives that our countries should pursue when formulating policies for radio and television digitisation.

One of the greatest threats to diversity and pluralism is the growth and consolidation of concentration in the production and distribution of cultural goods and services, including the media. In Latin America and the Caribbean, this concentration of goods and services is currently undergoing consolidation and expansion.

This process is a reflection of global dynamics in the concentration of economic and political power, which is becoming an ever greater obstacle in attempts to establish national cultural policies guided by the public interest. It is demonstrated, in particular, by:

- The control and accumulation of ownership
- The growing share of foreign capital in national media
- The centralisation and homogenisation of content
- The convergence of different technological platforms (e.g. between telecommunications and the media; new technologies and traditional technologies)
- The weakening and privatisation of public services
- The globalisation of media markets and industries.

These processes have brought about the consolidation of big multimedia conglomerates that control both entire chains of production and distribution (vertical integration) and the different markets that make up the sector (horizontal integration).

Motivated by such benefits as reduced costs for production and distribution, the possibility of cross-subsidising, and the growth in profit margins offered by economies of scale, control and concentration of ownership has increased significantly over recent decades. This process has occurred on both the international and national levels, and in rich and poor countries alike.

Added to this is the growing foreign control and ownership of the media, the entry of big telephone companies into the field, and the heavy centralisation and homogenisation of content, directed from abroad towards domestic markets in the case of small countries, and from capital cities and urban conglomerates towards the rest of the national territory in all countries.[2]

There is also a «flip side» to this situation: discrimination, which often translates into outright exclusion of non-profit social organisations from access to radio frequencies.

The community sector, and the non-commercial sector in general, tend to arrive late and be poorly positioned when new digital frequencies are distributed. This threatens their capacity to reach public spaces, and even their very existence. Will it be possible to make progress in closing the digital divide without closing the analogue divide first? Will it be possible to take advantage of this digital migration as an opportunity to rectify these errors?

2 See Amenazas y oportunidades para la diversidad cultural: La CMSI entre la OMC y UNESCO, Gustavo Gómez, ITeM, 2005. (wsispapers.choike.org//papers/esp/gustavo_omc_cmsi_unesco.pdf)

WHAT'S HAPPENING AT THE REGIONAL LEVEL

As an example, we can analyse the situation in four countries in the region.

In Brazil, communities and social organisations cannot freely express themselves beyond a one-kilometre radius from where they broadcast. They cannot support themselves financially because they are prohibited from selling advertising time on their stations. They are exclusively limited to using the FM band, and within this band, to only one channel among all of those available in each location or region.

In Paraguay, indigenous and rural small-holder communities are only allowed to use FM frequencies with a power output of up to 50 watts, when the areas they occupy often far exceed this limited coverage range. They are also prohibited from supporting themselves through advertising revenue, which effectively condemns them to financial asphyxiation, although they are legally recognised.

In Argentina, there have been promising signs since 2005, when the Congress amended article 45 of the Broadcasting Law, which had prevented non-commercial organisations from obtaining radio or television licences. A spectrum normalisation process is currently underway, and 126 non-commercial stations have been recognised and are seeking legal status. No limits are foreseen on advertising or power output.

In Uruguay, efforts continue in the struggle for legislation that recognises the community sector in both radio and analogue television broadcasting. In the meantime, although they are not prohibited by current legislation, there are no public or private university radio or television stations, no municipal or educational media of any kind, and no licences for any type of non-commercial media, whether for social, trade union, professional, neighbourhood or cultural organisations.

This snapshot taken in mid-2007 demonstrates that in all four countries, the main challenge with regard to public policy on broadcasting is to guarantee greater media diversity and achieve an equal balance among the different radio and television models (commercial, public and community). This conclusion could easily be extrapolated to the rest of Latin America and the Caribbean.

DIGITAL STANDARDS AND SPECTRUM MANAGEMENT

Digitisation is a technological process in which data, graphics, sounds and images are turned into bits through the codification and compression of the original signals. This allows for the convergence of content and also of platforms, since the digital signals can now be retransmitted via common infrastructures, whether based on radio waves, optical cables or satellite broadcasts.

When digitisation is applied to information and communications technologies (ICTs) that use the radio spectrum, compression optimises the use of this limited resource. For example, in the case of digital terrestrial television (DTT), digital compression makes it possible to use much less bandwidth to receive the same analogue television signal we currently see on our sets.

Different standards take advantage of this spectrum space-saving in a variety of ways, depending upon the different implementation models – which in turn correspond to different business models. Some offer high-definition service that achieves a better image definition (more pixels per area unit) by allowing a greater volume of information to be sent over the same channel. Others divide up the current bandwidth to broadcast four to six signals with the same definition as the former analogue signal.

Let us take a closer look at the opportunities offered by this optimisation of spectrum usage, its consequences for radio spectrum management, and the prospects for the democratisation of communications – a strategic objective for our countries.

Because free-to-air radio and television use a finite natural resource, its use must be regulated. While everyone has the right to start up a radio or television station, there are not enough frequencies for everyone to exercise this right without causing interference to the others and thus preventing effective communication.[3]

Due to this limitation, the International Telecommunication Union (ITU) tasks member states with the management of a package of frequencies for distribution. The radio spectrum is a public good belonging to all of humanity. It is not the property of the state, which means that governments are merely responsible for managing spectrum frequencies in accordance with national and public interests. At the same time, radio frequencies are not subject to private ownership.[4]

As the finite nature of this resource justifies state regulation in order to prevent harmful interference, the procedures for allocating frequencies become a key issue, particularly since this power could potentially be abused to reward or punish certain individuals, groups or sectors in accordance with the agenda of the government of the day.[5]

Unfortunately, this power has in fact been misused in most of our countries, resulting in the concentration of media control among determined social or economic groups or leaders of ruling political parties, while the majority of people are either fully excluded or have very limited access.

On top of this, the authorities claim that there is no room left for new operators because the spectrum is saturated, and will remain so as long as the current map of frequency allocations and analogue technology are maintained. This argument is generally used as yet another pretext to deny access, but it is also quite plausible that years of irrational allocation of frequencies have genuinely limited the possibilities for greater diversity and free competition in our capital cities.

How much of an impact can digitisation have on this situation? Quite a lot, since saving on spectrum usage makes it less «finite». In countries where there are problems around access for new operators and competitors in capital cities and other large metropolitan areas and a high concentration of media control in a small number of hands, this technological advance could open up space for a wider diversity of voices and images. It could also lead to the opposite outcome. This potential opening would

3 This is unlike cable television, which depends on the capacity for investment (the cost of the cable itself, as well as laying and maintaining it), and to a lesser degree, on municipal regulations regarding the use of public space where the cable is laid.

4 However, the internal legislation in some countries and the practice of governments and the media industry violate these principles, establishing de facto private ownership of a common public good.

5 It can therefore be used as a mechanism for «indirect censorship», violating the freedom of expression and information.

not be achieved by taking frequencies away from those already using them, but rather by making more efficient use of the spectrum to allow for the entry of more stations and more varied content.

One of the most important variables for determining whether this «possibility» becomes an «opportunity» therefore has to do with the technological model or standard ultimately adopted in our countries.

The case of digital television

With regard to free-to-air television, the main opportunities opened up by DTT are the optimisation of bandwidth, which allows for a greater amount of content and/or better image quality (high definition television, or HDTV); the possibility of adding complementary services (internet, programming information, language selection, and others); and viewer interactivity through a return channel (via telephone line or broadband internet, making it possible to select movies on demand or purchase a product being displayed).

There are currently three digital standards vying for international markets: the European Digital Video Broadcasting (DVB) standard, adopted by around 100 countries, including the European Union; the Advanced Television Systems Committee (ATSC) standard, developed by the US and adopted there and in four other countries; and the Japanese Integrated Services Digital Broadcasting (ISDB) standard, adopted by two countries.

The US approach focused on seeking higher definition television, while the European system opted to take advantage of the optimisation of spectrum space to offer multi-programming capability, supplying more signals (or programmes, in the new terminology) in the same bandwidth. The Japanese standard facilitates access to the growing market for mobile services (on mobile phones and in motor vehicles) through a single digital transmitter.

Experts believe that in the medium term all three systems will essentially offer the same features.

The case of digital radio

Although there are a number of digital radio standards, so far only one is being tested in our region: in-band on-channel (IBOC). Created and promoted by US industry, it offers zero risk to operators who already have radio licences. There is no risk because they can undertake the transition from analogue to digital transmission using the same channel they always have, but with better signal quality (very noticeable in AM) and new associated services.

While the population gradually switches from analogue to digital receivers, station owners will neither lose their audience nor be forced to contend with a change in frequency number, which would imply positioning a new «brand» on the market. Instead, they can transmit both analogue and digital broadcast signals over the same channel – with the same frequency number – that they have always used.

A rival European standard, Digital Audio Broadcasting (DAB), formerly known as Eureka-147, involves maintaining the current 88 to 108 MHz band for analogue transmission and using a new spectrum band for digital radio (VHF or L band). When the analogue «switch-off» occurs, the entire current FM spectrum will be freed up for other services.

Other standards being developed are the Digital Radio Mondiale (DRM), designed for frequencies below 30 MHz (long wave, medium wave and short wave), and the South Korean Digital Multimedia Broadcasting (DMB) system, which uses the same transmission mechanism as DAB but with some differences in terms of multimedia signals. Newer improved versions of both DAB and DRM are currently under development.

While different digital television standards influence but do not guarantee greater democratisation, the experience of IBOC digital radio broadcasting in the US confirms that it is an abysmal standard for rational and optimal use of the radio spectrum. It is also a threat to small local stations, whether they are community, public or commercial stations.

Testing has shown that the interference caused by IBOC digital signals seriously affects the broadcasts of small, analogue stations on adjacent channels. In addition, AM IBOC transmission is so unstable at night, because

of the particular radio wave propagation conditions during these hours, that night-time listening is almost impossible.

Furthermore, IBOC is a privately owned technology. This means that in addition to purchasing new transmitters, operators will also have to contend with annual licence fees. Operators in the United States currently pay USD 10,000 per year in royalties, which will gradually rise to USD 25,000 annually over the coming years. While the current costs might not be out of reach for certain media conglomerates, for local and regional stations, both commercial and community-based, they are simply impossible to cover.

THE DIGITAL TRANSITION PARADOX

The information provided up to this point refers to the possibilities offered by digitisation in its final stage, when the system is fully developed and the analogue switch-off is complete. But during the transition from analogue to digital systems, digitisation could bring about the opposite of these hoped for effects.

This issue takes on particular importance for broadcasting regulators and policy makers, since the transition could be very lengthy in the countries of the South. In other words, it could take much longer than in developed countries for the entire population to purchase new television sets with digital tuners, or at least the set-top boxes needed to view digital broadcasting on conventional sets.

During the transition, a paradox emerges: instead of optimising and freeing up spectrum space, even more space is needed for station owners who already have frequencies to use them.

With the US-developed IBOC digital radio system, the same station can be heard on both analogue and digital radio receivers, which is a major advantage for broadcasters. But it also means that they must broadcast in both systems using the same transmitter. In order to do this, they not only do not free up spectrum space, but actually use more of it, with the same licence.

To make this double transmission (analogue and digital) possible, the system in fact uses a triple transmission: it maintains the old signal for analogue receivers and places two equal signals for digital receivers on each side of it.

Currently an FM station uses 200 KHz of bandwidth to transmit the signal for an analogue broadcasting channel. In addition, as a protective measure, the radio spectrum regulators reserve space on both sides of this signal to prevent harmful interference to adjacent channels. The space left aside is approximately 100 KHz on either side of the signal's bandwidth. As a result, in most countries, the minimum separation between FM stations in the same location is 400 KHz.

The problem is that the two digital signals occupy the protective space on both sides of the analogue channel, and actually use 400 KHz instead of the 200 KHz initially authorised. In other words, IBOC uses double the spectrum space, and comes dangerously close to the frequencies of stations that are nearby or on adjacent channels.[7] This is what leads to the above-mentioned interference suffered by nearby and smaller stations. Does digital radio free up spectrum space? Quite the opposite.

The foregoing observations do not apply to other systems such as DAB, which use a whole other band of the spectrum (L band) for digital transmissions.

In fact, reorganising a segment of the spectrum starting from «zero» would make it possible to revise the unjust policies that states have implemented up to now for allocating radio frequencies, based on more democratic and equitable criteria.

Unlike the IBOC radio system, digital television standards require an additional channel for digital broadcasting while the previous frequency or frequencies continue to be used for analogue broadcasting. Due to the virtual saturation of VHF frequencies in large cities, UHF channels or bands are allocated for this purpose, when they could also be used for free-to-air television services.

This situation will become more widespread throughout the transition period, until the policies to be adopted are defined, a date is set for analogue switch-off, and the frequencies used for analogue broadcasting are finally freed up for reuse.

Debate is now focused on the «acquired rights» of current broadcasters, who are demanding that the space «freed up» be reserved for them.

This stance was clearly stated by Joaquín Vargas Guajardo, former president of the powerful National Chamber of the Radio and Television Industry (CIRT – Cámara de la Industria de la Radio y la Televisión) of Mexico: «We will demand automatic and long-term renewals; we will defend our legitimately earned right to direct access, without competition, to the new technologies. Let it be made very clear: the new technologies are for us, the current broadcasters.»[8]

7 In 2006, iBiquity, the company that owns the IBOC digital radio technology under the trademark HD Radio, asked the Federal Communications Commission (FCC) of the United States to expand the bandwidth for the transmission of digital signals from 200 to 250 KHz, which entails even more intensive use of spectrum space.

8 59th National Meeting of the CIRT Consultative Board, Mexico.

Radio and television industry associations are demanding that they be automatically granted another 6 MHz of spectrum, the same amount they currently use for analogue broadcasting. If this happens, station owners will double their current spectrum space at no additional cost, based on an unjust situation of privileged access.

If acquired rights actually existed, they would only apply to the maintenance of a signal on the air, and not to the entire bandwidth. The state can guarantee that current operators will be able to maintain their signals, but if technological advances make it possible to use less bandwidth (one quarter of the amount currently used), it has a responsibility to make rational and efficient use of the bandwidth available and allocate only the minimum amount necessary for their continued operation.

Accepting the reasoning of the station owners would be tantamount to accepting that they have acquired rights over the spectrum, as if they were the owners of the frequencies they use, when in fact they are merely the users of a public good for which they are granted a concession. The state must be able to use the surplus spectrum for other purposes based on public policy objectives.

TRANSITION AND REGULATION MODELS

There is a hegemonic discourse that associates digitisation with greater democratisation of the media and content. It holds that digitisation is a natural process, and that by enabling interactivity with the media and multiplying sources of information, and thus incorporating everyone into the information society, it will inherently expand citizens' rights.

This «manifest destiny», however, is the subject of debate. There are a number of possible scenarios, and the one that actually becomes a reality will depend on the decisions and policies adopted now, and on the way that the analogue to digital transition unfolds. In other words, it is crucial for civil society organisations to intervene as soon as possible in order to influence these processes.

It may seem that the only issue of importance is the technological standard or system to be adopted as the norm. But there are other aspects that need to be taken into account, which will be developed and defined on the basis of other decisions, such as the definition of a regulatory framework, the model and public policies adopted for the analogue to digital transition, and the way these relate to commercial and industry considerations.[9]

This is why it is particularly important to consider issues such as regulatory frameworks. These frameworks should be revised on the basis of technological convergence, as well as the model and policies for the transition from analogue to digital standards, to guarantee media diversity and pluralism of opinion and information.

The adoption of certain standards does not in itself ensure that their implementation will lead in the desired direction, nor will the market alone enable this technological advance to be used to the greatest possible advantage.

One example is the possibility of multi-programming, which could provide an excellent opportunity for the diversification of operators and content. But choosing a standard because it allows for a larger number of signals does not automatically ensure greater diversity, or even a greater variety of local or national content. In fact, a number of telecommunications transnationals are pushing for these changes so that they can compete in the television market.

There is nothing to be gained by having four digital signals where there used to be only one analogue signal if those signals are used by the same owner to broadcast four times as much canned foreign programming as before.

The adoption of a technological standard and associated public policies must take into account that the democratisation of access also involves dealing with the difficulty of purchasing transmitters (in the case of community and public broadcasters) and the ability of the poorest sectors to purchase digital radios and television sets and/or set-top boxes. Otherwise, the promise of high definition television will only be for those who have more money and can afford to buy the required equipment, a situation that recreates or deepens existing inequalities.

Who will take advantage of the benefits of digitisation, what will they be used for, what services will be offered, who will provide the content, who will be able to use the new channels for distributing that content, and how will free competition be ensured? These and other related questions require more than the opinions of telecommunications engineers and the positions of the business community in the sector regarding the standards to be used. They must be answered with the full participation of universities, civil society organisations, listeners and viewers, and not just the government and private sector.

9 It should be remembered that these standards were developed for and by industry, as representatives of the ATSC, DVB and ISDB standards themselves acknowledge in their public statements.

DIGITISATION: FOR WHAT PURPOSE?

What will we do in our own countries? Will we take advantage of this freeing up of spectrum space to permit the entry of new operators to expand competition, or will we see the same television channels just with better definition? Will it be possible to develop a radio and television system that serves as a platform for both the legitimate business interests of commercial stations and the widest possible freedom of expression and information through radio and television? Will the growth in the number of signals lead to four times as many channels with the same foreign programming, or will it create new spaces for local and national productions, and for community and public media?

There are a series of even more basic questions that need to be asked. For what purpose do we want digitisation? What are the objectives of digitisation in relation to the economic and social development of our countries, and our democracies? How can we ensure that this technological shift leads to greater cultural diversity? How can we ensure that digitisation increases and reinforces freedom of expression, and not the opposite? And more specifically: what kind of radio and television system do we want, and why? And what problems and weaknesses could digitisation help to overcome?

The solution is not to achieve a higher definition image for those who can afford a television set capable of processing it. The problems that we must resolve are media concentration, through which we are offered a single discourse, perspective and source of information, and its correlate, the lack of cultural and media diversity and of a pluralistic range of sources and protagonists. Our problem is that we have a radio and television system geared overwhelmingly to commercial, for-profit broadcasters, which we must rebalance by opening up opportunities for the emergence of public and community media, as well as more independent commercial media with a local or regional scope.

The challenge is to construct a more pluralistic, diverse and democratic radio and television system.[10] We should look at digitisation as an opportunity to rectify the errors in the current system. We need increased competition and the production of more local and national content. This will create more employment opportunities and help to develop different sectors of our cultural industries.

There is also an urgent need to promote the adoption of active public policies by the state in order to protect the public interest versus the corporate interests of powerful multimedia conglomerates. History has shown that the particular interests of certain corporations are not always compatible with the general interest of the population.

Decisions regarding the technological standards for digital radio and television, the regulatory framework and the model of transition to be adopted in our countries should be taken on the basis of our answers to these questions, and not the other way around, which is what is happening now.

10 *TV Digital: princípios e propostas para uma transição baseada no interesse público*, Intervozes, Brazil, January 2006.

WHAT SHOULD BE DONE?

To take advantage of the opportunity for democratising communications and guaranteeing open access and digital inclusion, the choice of technological standards and other decisions related to the digitisation of radio and television should incorporate the following principles and policies:

NATIONAL AND PUBLIC INTEREST. Serve national interests and the public interest of all citizens in the construction of a diverse and democratic radio and television system.

OPTIMISATION. Permit the optimal and efficient use of the radio spectrum for the entry of new operators.

ACCESS AND DIGITAL INCLUSION. Promote and guarantee access to radio and television frequencies for all social sectors, and especially non-profit sectors, for both the management of stations and the production and dissemination of self-generated and relevant content.

UNIVERSALITY. Ensure universal access to free-to-air national radio and television services throughout the national territory and to all of the country's inhabitants. Guarantee a minimum package of free services through national free-to-air signals in areas where the only option is subscription service.

FREE SERVICE. Keep free-to-air radio and television services free of charge, refrain from transferring the costs of digital migration to users and profiting from the new services available.

INTERACTIVITY. Permit the widest possible development of interactivity between individuals and digital media to promote the development of citizenship.

DEVELOPMENT. Promote the development of national industry, stimulating the emergence of new media, the creation of associated employment, and the development of appropriate technology. Trade agreements with representatives of the standard chosen should include technology transfer.

COSTS. Establish mechanisms such as state funds for the digital migration of public, community and other non-commercial media, as well as independent local media, and reduce or eliminate the payment of national or international royalties to suppliers.

CITIZEN PARTICIPATION. Enable and promote the widest possible citizen participation in the elaboration, definition, implementation and follow-up of decisions and policies for the sector.

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