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Differences in Radio Broadcasting between Europe and America: two Separate Models and the Advent of the Digital Audio Broadcasting System

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Abstract: *The analog model of RF broadcasts was a domain more or less easily regulated by policy makers and the state authorities involved in the terrestrial range of its service provision. Channels were granted to legal entities or entrepreneurial consortia that were subject to public law applicable in that region. However, the advent of new mobile and digital technologies creates an amalgam of free on-line media providers and expensive, state regulated public goods that attests general state provisions to be scornful to many ambiguities and legislative gaps. Contemporary technology forcibly trends to deregulated models of supply and demand, with mixed results thus far. Diminished entities get, as of now, the better.*

Keywords: *European and American Models of Broadcasting Services, Mobile and Digital Technologies, Radio Frequency Transmissions*

1. INTRODUCTION

Innovations and rapid changes in the whole spectrum of communications technology have somewhat obliterated older media process and have put in affliction the whole traditional (aka "old") media industry.

Ink–on–paper media are in doubt after the digital media explosion and all of its up-to-the-minute contents that are more or less free of charge. They more serve as customary repositories of reportorial psephologists or outlets for acolyte adherents, seen as devotional donors rather than readers.

Devices like the analog radio are now almost extinguished from the households and have been replaced with other hardware devices which the individuals and users need to upgrade frequently. The need to obtain efficient and modern devices has relocated the transfer of funds, from editors and owners of media to manufacturers and hardware developers. Despite the fact that analog radio emissions have survived in style for more than a century, the death seems almost inevitable. The radio industry, however, has its own different story and is surely affected by the digitalization of news and the media sector on the whole.

1.1. A brief story for the Americas and Europe

In 1920's, when the initial broadcasts appeared for first time in human lives, there was not yet shaped a certain opinion in the public about the implications, and moreover, the future of this new medium. Out of nowhere, a new device was entering people's homes, having the prospect to "speak" to them. The public opinion was divided and ready to confront the new medium with suspicion. The first licensed radio station was KDKA in Pittsburgh; it was operating from the top of the Westinghouse Electric factory, which possessed all the links of the chain, from the station up to the constructed radio collectors. For all intents and purposes, however, nobody possessed a radio set on the crucial electing-decision night of that year; KDKA managed, though, to communicate the news of Warren G. Harding's triumph in the presidential race, going along returns called in from the nearby daily paper. The quantity of authorized communicative stations surged from five out of 1921 to 500 by 1924. Radio rapidly turned into a purchaser fever [1].

In Europe, the efforts for establishing radio as a news medium started in England. The first idea was to create a British Broadcasting Company that was able to create a control system for both the

content of the broadcasting and also the equipment. This also reveals why America and Europe created each a very different radio broadcasting system as shown next in the paper. The general idea was that manufacturers were going to create the company to have the "exclusive right to sell radio sets" [2]. Therefore, the well-known BBC started as a non-public company, owned and funded by radio manufacturers who were licensed to exploit the broadcasting system. In this particular group of radio manufacturers was included Markoni himself. People who had owned a radio were paying each year a contribution which was separated in half between the Post Office and BBC.

1.2. American and European Models of Radio

Before indicating the major differences between American and European broadcasting services, it must be noted that both two models had as main target the equal chances to accessibility and the unbiased expression of every single opinion [3]. Furthermore, an alternative goal was to defend and advocate the national interests. This is mainly shown from the fact that during WWI, for security and safety reasons, the management and control of radio industries were undertaken by the American government and only after the war the control was restored to the private sector [4]. Novice stations alongside any business station for which there was no predictable utilization from the Navy forces of America were to be totally closed down, or to be totally disbanded if the radio transmitter of an amateur was in use. Business and private radiophony was consequently totally closed down for the length of the war, and for the main time in American history, a full government imposing business model was exerted.

The American broadcasting companies had the privilege since their birth to be funded by sponsorships and commercials. That was the main keystone for broadcasting enterprises to expand and establish a normal route through recognized news and entertainment media peers. Moreover, American broadcast companies were mainly broadcasting in local frequencies and also the content transmitted had primarily an entertaining character because the main pecuniary resources, the advertisers, wanted to produce a pleasant feeling to the audiences. This light atmosphere produced by the entertaining character would allow commercials to appear in a more regular way into the broadcasting programs. That was the main goal of the premature broadcasting enterprises in America: to gain attention through entertaining programs and then to produce advertisements and commercials for the audiences. For that particular reason, a listener of the first radio shows can observe major differences in the language and the shape of the radio-shows. American radio was mainly commercial whereas European had a more direct and strict direction to news, alone. Despite the pathway of radio broadcasts in America, Europe had created and established a somewhat very different model of functioning in broadcasts. The differences were not just in technical issues (American radio was transmitting in restricted locations when European was transmitting in national level). The content of the European radio was regulated by the principles of social public services whereas in the American radio the nature of the programs was basically entertainment [3]. This specific process that the European radio stations engulfed promoted one-way communication from the transmitter (radio station) to the receiver (the audiences, the public). The way that BBC was established in England, albeit being considered a non-public company, was ensuring that the state and government would have the major share of "cultural and political control over broadcast content" [2]. As stated before, American radio was lead (in a way) according to the preferences of the public. On the other hand, European radio was directed by the leaders of the social public services [5]. In other words, the state or even the government was deciding what was important the public to hear. In the European pathway of radio broadcasting the key stone of national radiophony was the product of the nation itself [3]. Finally, it must be noted that, in the first attempt of European major powers to own a radio broadcasting company (BBC, England), there was a clear control system over the content and the distribution not only from the monitoring system of the company itself, but also from sub-committees appointed by the British Government. As pointed in Tworek's "The Savior of the Nation? Regulating Radio in the Interwar Period" [2] in p.470 "…the control of such a potential power over public opinion and the life of the nation ought to remain with the State." (Sykes Broadcasting Committee)

2. DIGITAL AUDIO BROADCASTING

The digital radio and all of its aspects have changed radiophony, concerning its analog form. Based on that belief, the communities involved in the broadcasting enterprises and their corresponding audiences have established a new way of interacting with the phenomenon of digital radio. The usage of digital broadcasts can be made through the receivers of digital television (so the user has to open a TV connected by satellite or in cable with the digital transmissions and listen the radio with that current way) or to connect to the Internet via several ways (through desktop, laptop, mobile phones etc.). The augmentation of digitalization to radio was

guaranteed to finish a procedure which had been entrenched in different parts of the varying media creation chain, which included advanced sound generation, recording and mixing procedures [6]. By the mid-1980s, the pervasiveness of computerized innovation in proficient radio generation conditions, supplanted more established sound generation procedures, and in addition to wide infiltration of advanced buyer organizations, for example, mp3 and the Compact Disc design, had made the idea of computerized sound and its related advantages generally known in both regular and expert settings for radio and sound media [7]. At the midpoint of the 1980s, given the instigating force for digitalization in various regions, for example, media communications (Integrated Services Digital Network, ISDN), capacity media for sound (Compact Disc), etc., it was broadly contended in industry circles that radio sound telecom had a promising potential for additional development [8]. The digitalization of communicative transmission frameworks, commencing from radiophony, had been vital for furthering scientific knowledge and technical design issues for a broad timeframe. In the domain of sound transmission, improvements, for example, Near Instantaneous Companded Audio Multiplex (NICAM) stereo sound for TV in the mid 1970's and computerized transmission advancements for satellite radio in the mid 1980's, produced a critical force in the look for substitution advancements for customary AM and FM broadcast services [9]. The more noteworthy the effectiveness of transmission, reducing costs for telecasters and transmission arrangement, the more noteworthy recurrence productivity occurs, permitting better use of range and the capacity to cover more administrations; as a result, the objective of computerized broadcasting foreshadows as essential and appealing for both controlling authorities and governments [7]. There was additionally promoted (and keeps on being so) a solid business model for radio to end up as an advanced medium, which however is only a part of the pattern, i.e. the fully computerized assembly within the media market. As noted in a later European Commission investigation for the advanced media industry, radio is ignored regularly when contemplating intuitive media (Screen Digest et al., 2006, retrieved from [7]).

The entry of the changing form of radio was first introduced with a European research project that ended up with the form of DAB (Digital Audio Broadcasting) [6][7][8]. The basic project was called "Eureka" and under this program the system of DAB was developed. The initial project had several parties involved along with radio producers, broadcasting staff and a variety of developers working for manufacturers. The first pilot DAB channel was launched in Norway in September 1995 from the Norwegian Broadcasting Corporation (NRK). Few months later, in September 1995, BBC and the Swedish Radio (SR) launched the first digital radio broadcasts for these countries. Digital Audio Broadcasting was envisaged as the modern and the advanced alternative system for the analog FM transmissions of the radio industry. FM transmissions had major advantages in the sound quality and were preferred by audiences, when compared to AM transmissions, albeit the latter having much longer ranges. The new Digital Audio Broadcasting system had the same and even better technical characteristics in the quality of sound and furthermore, the length and the range of the signals that could be sent from stations could reach both national and local locations. The development of the signal process would allow the audio-user to read basic information displaying on his/her screen of the device, easier way to adjust to setting of tune and mainly to have access to a wider and larger number of radio stations.

The prospect was that, while DAB would remain essentially an innovation for the conveyance of radio services, the information carried on by DAB transmissions could likewise incorporate mixed media information, and that the radio would turn into a more refined device, capable of getting graphics data and the capacity to store and replay communicative sound [10].

3. NEGATIVE POINTS OF DIGITAL RADIO

Despite the opportunity presented with receivers of digital TV or even the Internet and mobile phones, digital radio is not one of the first choices for the audiences. The public is preferring to make use of other possibilities when in front of a TV screen or a smartphone and surely not just listen to a radio station. The era of a wide range of multimedia apps, more friendly-to-users, like screens with video, commenting online, etc. has been inaugurated, and activities that put the digital radio in a concessive position are put aside.

Furthermore, digital radio has some disadvantages as far as the portability factor is concerned [10]. It is not easy to stream online in order to get a chance for a clear and crystal sound through a connection with a digital station. Especially when mobile companies, in Greece particularly, do not support bulky enough data connections through a mobile phone. Therefore, there is still a problem existing when trying to web-stream a digital station through mobile devices.

4. DISCUSSION

4.1. Web, Satellite and Digital Radio: impact on individual users

Concerning the listener, the immediate relation with the local point of RF broadcasts is quite

disappearing with usage of digital radio. When there is a huge variety of stations around the world to listen, the listener is most likely to stick to something different and not a local station or a local news outlet. Otherwise, the user wouldn't probably use the digital broadcasting services at all. The incentive for going digital is to hear something else than local radio stations.

This may lead to the expansion for the phenomenon of citizens absenting not only from the political life but also from issues that are in more direct affect to their daily life. Like the matters of their municipality, or even affairs related to daily traffic protests on the street etc. This will make the individual overall far more absent from the public issues of his/her society. Moreover, not listening co-citizens through a local radio station will gradually cause the problem of not hearing the public opinion at all. Then, the individual for a variety of social themes will not have a formed opinion or idea. On the other hand, listening broadcast services around the globe will make the auditor to hear and learn issues with an international perspective. This may be a decisive step regarding globalization. Digital radio is a key factor when heading full steam towards ecumenical perspectives. Hearing and learning issues from every single spot of the planet will make the auditor more sensible to international matters and affairs. Every single listener can transform himself/herself into a capable administrator of international affairs and good policies.

4.2. Community Radio

Another positive outcome that the digital broadcasting experience may provide to the listener is the higher access to community radios. Community radio is a radio administration offering a third model of radio telecom, notwithstanding business dependencies and ferventing open broadcasting. In general, community radios serve geographic groups and groups of common interests. They communicate content that is mainstream and important to a neighborhood or small community whose gatherings under normal circumstances would pass unnoticed by businesses or broad communications schemes. Group radio stations are tuned-up, claimed, and impacted by the groups they serve. They are for the most part non-profit organizations and give a component to empowering people, gatherings, and groups to recount their own particular stories, to share encounters and, in a media-rich world, to end up makers, benefactors and owners of media. In numerous parts of the world, community radio goes about as a vehicle for a group and an associated with it willful area, a common society, offices, NGOs and subjects working within an organization to assist group improvement points, notwithstanding its communicating channels. It is legitimately characterized group radio (as a particular broadcasting division) in numerous nations, for example France, Argentina, South Africa, Australia and Ireland [11]. A great part of the enactment has included expressions like "social advantage", "social destinations" and "social pick-ups" as a feature of the definition. Group radio has grown distinctively in various nations, and the term has fairly unique implications in the United Kingdom, Ireland, the United States, Canada and Australia, where the right to speak freely under common law, jurisprudence and case law is subject to varying interpretations. From this perspective, the listener is able now, in the digital age, to get informed, to be motivated and to react in various situations concerning social issues through the usage of community outlets and their digital radio streams (Figure 1).

Figure 1. *Community radio in Israel*

The millions of short-staying visitors, alongside permanent residents, all using low cost mobile phone broadcasting services, are serviced based on their national, religious or cultural characteristics.

4.3. "Our own show"

Moreover, there is another positive outcome that may rise, if not already popular through the usage of digital audio broadcasting systems. Using the techniques and the freedom the Internet world provides to every single person, there is an obvious chance to enhance Internet radio to the level of each one individual communication system. Meaning in practice, there is no need for creating a show from scratch and seeking for the appropriate spokesperson to guest and host or even attracting commercials and income. Through digital radio, there is an opportunity to create your own show using the appropriate tools.

There is plenty of expertise and many special platforms readily demonstrate how this is achieved under the most stringent circumstances. Supporting a "show" is financially savvy; what's more, contemporary communication platforms

may incorporate one's dialogues, either with speech communication or in textual form (i.e. SMS, mail, messages, etc.) with its guests or his hosts. Making and facilitating your own show is likely the most intriguing choice to consider.

Most Web radio portals that provide adequate "Radio 101" training materials and expenses are by any means insignificant. BlogTalkRadio offers a 30-day trial and its most advanced production bundle is $99 every month or $999 yearly. An almost free choice to communicate outside prime time is likewise accessible.

As radiophony experts assess Web radio's potential, amazed by its versatility and polyploidy, they seek to divert its scalability towards new interaction schemes that will make listening to the radio a completely new experience, in terms of Human-Computer Interaction metrics.

Setting customers, guests and listeners on interactive programs allows radio producers to shape their personal broadcasting style and their emission's communicative profile [12].

5. CONCLUSION

New technologies and new broadcasting models create rifts in the equilibrium of established, well balanced, thus far, news and entertainment RF based broadcasting outlets. The advent of innovative "on air" activities that use mobile, landline, Internet and IPTV multinational communication schemes seems to be bringing to surface new trends in listening to radio emissions.

However, some countries still employ obsolete and general provisions in their attempts to regulate by means of their public law arsenal the RF broadcasts within their jurisdiction, not consolidating the global footprint of corporate social responsibility. While most European countries still comply with the conformative model for state regulated goods, contemporary technology leads to new ways for exploiting communal, educational or entertainment schemes with radio emissions.

The hypotheses of this survey and its extrapolations for modern societies were cross-examined in the oasis of Deir Hajla, Israel. It is a predominantly Arab speaking region close to "the most ancient city of the world", Jericho, near the border with Jordan, just a few km away from the northern bank of the Dead Sea. The classic model of RF broadcasts used in Europe and the Americas fails to provide FM regional coverage, since within this plain three jurisdictions mingle together, two interstate and two international. Even further, the steep inequalities within the financial, linguistic, cultural and religious background of the people frequenting in this region proved to be inhibitory of a viable solution in RF broadcasting terms.

However, the advent of digital communication, combined with the extensive use of affordable mobile devices, has provided the general public of the region and the millions of its tourists with new means for conveying multimedia content either of "aired" broadcasts or "on demand" multicasts of interactive educational, informative or recreational content, cropped out of vast web based repositories.

It has proved to be a tolerant, co-existential melting point for a cradle of civilizations that suffered thus far from a biased partitioning of its analog resources.

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