

"Hello, is There Anybody Who Reads Me?" Radio Programs and Popular Facebook Posts

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Received 3 March 2019 | Accepted 2 October 2019 | Published 30 October 2019



ABSTRACT

Radio stations are increasingly active on social networks, as radio continues to adjust and adapt to online spaces. This research is intended to conceptualize and characterize the success of radio programs beyond their native FM environment, focusing on their attempts at achieving popularity on social networks. Success on social networks is measured by user involvement and interaction with posted content and comments. This study looked at the activity of leading Israeli radio programs on Facebook pages and user engagement, evaluating highly involved posts by coding. It was found that radio program activity on social networks expands the reach of radio stations and promotes higher levels of interaction with listeners beyond broadcast schedule. In addition, integration of various media forms such as videos or images increases the likelihood of a post becoming popular. This research presents the convergence of radio programs in accordance with the theoretical framework of technological determinism.

KEYWORDS

Convergence, Facebook, Radio, New Media, Social Networks.

DOI: 10.9781/ijimai.2019.10.003

I. INTRODUCTION

RADIO is a traditional media form in the process of coping with recent new media developments. New media has thus emerged as increasingly powerful, even dominant over other forms of media such as radio. One of the most significant new challenges for radio is the rise of social media. Radio now seeks new ways to stay current and relevant. A growing number of radio stations manage a social network presence. They do this to promote the station and reinforce the connection and involvement of listeners. This research tested the activity of Israeli radio program stations on Facebook, focusing on analysis of popular measures of engagement. We thus looked at the following questions in relation to Israeli radio program Facebook pages: How do radio programs exploit the visual aspects of Facebook? Does this exploitation make the content popular on Facebook? What constitutes the most popular posts and is there a correlation between typical subjects that generate engagement (such as celebrities) and those that do the same on Facebook? How do Facebook pages influence viewer/listener behaviors? We will examine the relevance of the theory of technological determinism on the activity of radio programs on Facebook and the convergence of radio stations and the Internet.

II. LITERATURE REVIEW

Unique features characterize radio as a means of communication. As a medium, radio can distribute copious information. But it has also developed vital connections with its listeners. As a result, it provides them with answers to personal cognitive needs. These can be distilled into four fundamental features: intimacy, credibility, authoritativeness,

and accessibility. First, conversations broadcasted on the radio tend to create for the listener a feeling of intimate and personal interaction. McLuhan referred to this as “a private experience” [1]. The technology of broadcasting enables this sense of intimacy. The distance between broadcaster and microphone is heard by the ear of the listener as the distance between one person and another in close conversation. Therefore, radio programs have adopted a culture of speech and manner of language to correlate with their potential target audiences. Secondly, radio tends to be conceived by listeners as reliable and reflecting real social conditions [2]. The feeling of trust translates into a sense of authoritativeness that listeners imbue into radio. Radio capitalizes on this notion of itself as a source of credibility by fostering a variety of opinions, which are intended as for broadening the conversation. As such, persistent recruitment of commentators, specialists, and professionals as well as the audience itself encourages participation in many programs. However, radio is primarily a tool for providing information accessibility to the general population. Listening to the radio does not require special skills needed to navigate other media forms such as written journalism. Finally, traditional radio is usefully described as a secondary medium for accompanying other initial actions. Since radio concentrates entirely on the sense of hearing, simultaneous performance of parallel tasks is facilitated. Radio is thus amenable to being used as a kind of “background” for other activities [1][3][4].

As noted, the language of conversation constitutes a unique quality of radio. Because of its exclusive auditory focus, it is called “a blind medium” [5][6]. As such, it does not require the same level of attention and commitment as visual media. As the listener is free to engage in parallel tasks while listening, the broadcaster is not required to ascribe any importance to physical appearance, much less any other visual element [5].

The traditional features of radio were ultimately confronted by the Internet Era [7][8]. However, radio as an industry is slowly coming to the realization that it must leverage the Internet and multimedia

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in order to survive in a market dominated by digital competition. Traditional radio is now animated by a new purpose to give listeners fresh possibilities. Radio is adapting to digital broadcasting to meet listener needs and attract new audiences. To accomplish this, radio has realized that it must utilize new media tactics. As such, radio has colonized different digital platforms, and is now available today on any computer, smartphone, and mobile device [9].

The Internet offers new options such as streaming established stations while simultaneously broadcasting on traditional radio wavelengths. In addition, users can listen to program fragments, accessing these segments or entire programs on demand – even long since archived content [7].

Traditional radio stations maximize the internet to widen their target audience, reach new listeners all over the world, and improve interaction quality and rates. Radio content is now creatively combined with varied forms of media – text, audio, and video [9]-[13]. It has been claimed that this fusion of audio, text, and video constitutes an innovative adaptation of radio to new media, perhaps even generating a new model of radio [7] [9]. Even so, this convergence of media in radio represents more than supplementing auditory content (the foundation of traditional radio) with new features [9]. Radio stations add interactive content to their internet sites, including online archives, podcasts, and more [14]. A staple of online presence is a dedicated social media account – sharing platforms such as Facebook and Twitter are practically obligatory. Thus, along with traditional radio transmissions, new patterns and unprecedented modes of listener participation and interaction are developing. Cordeiro refers to this new radio model as *r@dio* – traditional radio that contains internet features and exploits a variety of online platforms [9].

Online radio challenges the received perceptions of its traditional counterpart, which were accepted for almost a hundred years. As noted, Cordeiro sees internet radio as a traditional medium that uses new platforms. However, other researchers question if it can still be referred to as “radio” [15]. Tacchi maintains that the transition from traditional to online transmission problematizes the definition of online radio. However, he notes that throughout history radio was transmitted by different technological means. Thus, the significance of radio is not derived from its transmission platform, but from techniques of disseminating content. Therefore, as long as radio maintains its features and consumers are using it in a consistent way, it can be perceived as the same medium – even if the mechanisms of transmission are different [16]. In contrast, Huong claims that online radio provides an updated definition of radio as a medium and technology. Both online and traditional radio stations share many activities and features. They provide a fusion of interactive and informative content. However, the former is more effective in generating user interaction to develop connections with listeners by means of unique online functions [17].

In sum, there is some scholarly consensus that internet radio does not necessarily constitute the creation of a new medium. Furthermore, radio stations are exploiting different Internet platforms to transmit traditional programs. That is, the Internet serves radio as a content distribution too. It provides related products and added value to the station and its listeners, sustaining a connection between the two that spans traditional medium and online space.

However, the internet today does more than complete the mission and function of traditional radio broadcasts. New media offers new unprecedented content options to radio listeners, precipitating a profound change in the structure of traditional radio and listening habits. As digital trends continue to accelerate, the radio industry is forced to continually reinvent itself to maintain its relevance in a multimedia web-based world [7]-[9][18]-[21]. About 40% of radio users now listen to their favorite programs on a digital platform such as an iPhone [22].

New media offers several significant benefits to radio stations. First, new media extend radio’s listening range, eliminating the constraints of limited frequency reception ranges [23][24]. In this respect, the Internet complements and even replaces FM transmissions [9][21]. For example, in younger radio listener rankings, the preference of digital radio listening over terrestrial signal listening is significant: Digital radio listening is the most preferred method by younger radio listeners, “iPod use” is ranked second, and over-the air radio signals third [25].

This is in line with younger generations, who tend to be more active in digital media and on social networks, to the point of addiction, with a constant need to connect to technology [26].

In addition, the Internet maximizes the fact that radio is a mass media tool whose function is to provide a platform for public exchange of views. Habermas referred to the public sphere as a space where citizens meet to exchange opinions and ideas. In this free market of opinions, people engage in rational discussion on topics of political and social importance. For Habermas, the media is useful for producing the foundation of the public sphere [26]. The growth of commercial mass communication has, however, diminished the media’s function as a tool of public debate and increased its role as a consumer product. As a result, media messaging no longer undergoes a potentially challenging process of deliberative discussion, and its messages are conveyed as matters of fact.

Digital radio can use new media technology to maximize its potential as a multi-platform, interactive broadcaster that offers its audience multiple means to react, respond, and provide content and critique [27]. Digital radio also enhances the accessibility of radio hosts, since listeners are more likely to encounter their personalities on its social media platforms. As a result, social network presence has become a crucial part of audience interaction strategies in radio stations [28]. Web 2.0 interactivity gives an immediate voice to an audience, one of the most important tasks of radio [28] [29].

Social networks thus enable development of a community of listeners related to radio activity [31], characterized by: feelings of membership (belonging to, identifying with); feelings of influence; integration and fulfillment of needs; feelings of being supported by others in the community while also supporting them; and shared emotional connection: relationships, shared history, and a “spirit of community”.

Furthermore, Internet radio also adds a visual dimension to what has traditionally been a “blind” medium for listeners who could only listen to the broadcasters. Digital technologies have transformed radio into a medium both heard and seen, as social media visuals give audiences a real-time glimpse into broadcast operations and talent [32].

Even so, traditional radio stations are only making inroads on the Internet within their comfort zone. They use it as a platform for simultaneously broadening and sending their content. However, they generally do so without producing dedicated content for the new medium. As such, Internet content is practically speaking merely a direct reflection of traditional content, a sort of display window of station transmissions [33][34].

In Israel, however, most radio stations have websites that listeners can access in order to listen to station broadcasts and avail themselves of various content services [7]. One-third of Israelis use such digital radio services [20]. Slightly over 50% of all traditional radio stations have a mobile app [7], and 18% of Israelis consume radio contents on a station app [35].

The ascent of social networks as the main activity of many Internet users has also influenced mass media. Now it is understood that every form of media ought to have a presence on social networks. Interestingly, research conducted in recent years has pointed out that despite the great popularity of social media, the popularity level

of traditional communications channels is unrelated to number of followers or level of engagement between users and these channels [36][37].

Only a few studies have focused on the activity of traditional communications media on social networks. Nevertheless, social media offers many advantages such as free advertisement, global sharing of content, and more [37]. For example, Facebook has been shown to be one of the most popular means for people to access news sites [39][40], particularly among younger users [40]. Social networks especially dominate in the culture and entertainment sector, where most content is still consumed via traditional media. Many news sites have quickly assimilated the best qualities of social networks on their websites. In the near future, home pages of news websites may well no longer be relevant. Users will simply be exposed to curated and customized news and information through social networks and other technologies [40].

III. RADIO ON SOCIAL MEDIA

As noted, television and radio use social media primarily to increase the popularity of their transmitted programs and promote them among listeners and viewers [8][38][41]. In studies on the activity of television stations on the social networks in the United States, it was found that Twitter was particularly used to raise and promote the content popularity. Public stations tended to engage in this publicity more heavily, also promoting their web site. However, commercial stations tended to favor tweets focusing on news [36][37][41]. In addition, television stations used Twitter more as a platform for calls to action (for example, eliciting user opinion or calling on users to watch a particular show). They engaged in this activity on Twitter more than sending out social tweets that convey feelings [41]. Relatedly, research on US television station social media activity on Pinterest showed a marked avoidance for sharing station content and promotional posts. Instead, TV stations increased sharing of images related to lifestyle such as food, design, clothing, and more [36].

As mentioned, the number of studies that have focused on the activity of radio stations on social networks is limited. In Spain, half of radio stations maintain an active Facebook page. Even so, they do not yet optimize the full advantages that social networks offer. A more detailed study on radio station activity on Facebook mostly looked at promotion of station products and isolated three types of major posts: 1) posts designed to create involvement, 2) posts designed to promote the station and listening to it, and 3) posts designed to promote the station broadcasters. The authors noticed that often questions and general comments were designed to produce a conversation with listeners (for example, “Who plans to watch the Opera show today?”). Yet these did not achieve the desired effect and generate meaningful feedback. On the other hand, content dealing with relevant artists gained higher number of “likes” and comments. These posts tended to more involve users, with the content unique from one station to another and from one program to another [38].

Therefore, a major conclusion is that there is as of yet no organized plan of action or grand strategy for radio stations on Facebook [41].

In Israel, it was found that the radio stations use their Facebook pages mostly to promote the products of the station. An analysis of activity on Israeli radio stations with active Facebook pages revealed that these stations experience difficulties in generating and sustaining high levels of listener engagement in the comments section, “likes,” and sharing [8].

Different kinds of posts on Twitter were found to be connected to the particular identity of the station. For example, music radio stations tweeted more self-promotional content, while non-music talk stations tweeted more news-related tweets. In general, radio stations with a

focus on news tended to tweet more than their music counterparts [37].

Even though social networks are powerful communications tools, Facebook was found to not solidify stronger connections between listeners and radio broadcasters. Greater connectivity results from when broadcasters demonstrate clarity, resonate with, and are appreciated by listeners. Exposure on Facebook may actually cause a decrease in this sense of connection and erode the credibility of the broadcaster in the eyes of listeners [42].

As noted, social media managers of commercial pages on Facebook are tasked with driving up user interest in the product, brand, or company. As such, the question of which features make a post go viral is urgent and consequential [43]. Virality causes spikes in people sharing popular content to the extent that it even crosses social networks. This represents the focus of our research – testing the features of the most popular content on Israeli radio program Facebook pages. Some work has already analyzed the ingredients of a viral post. It was found that a significant predictor for initiating virality is the measure of positivity of the content [43]-[45]. Emotion thus constitutes an important factor in determining content popularity on social networks. In a study on viral tweets, it was found that a range of emotions – positive or negative – influences level of virality [41][46].

A connection was also drawn between physiological situations and virality: content that causes physiological arousal, characterized by stimulation of the autonomic nervous system and leading to bodily state of readiness for action such as anger, anxiety, and revulsion, tends to increase the likelihood of content going viral – even if negative. That is, content that provokes negative emotions that are not physiologically stimulating such as sadness will be less viral [43]-[45].

In the same way, we find that certain conversational elements of Israeli radio station Facebook pages lead to higher engagement. For example, video segments and images were shown to produce more comments and “likes” as compared to exclusively textual posts. However, posts with some text garner more comments than other kinds of posts [8].

Radio stations understand that to stay relevant, they must leverage and optimize social networks. As noted, this understanding is only partial for stations continue to use these platforms mainly for promoting programs and broadcasters. Yet, as mentioned, this promotion can degrade the credibility bond between broadcaster and audience. Social media emphasis should be on encouraging user engagement with the station and its online contents. This research shows that the radio industry lacks a guiding social media strategy. Instead, it operates through trial and error, although tactics do exist. Advertising positive contents and content generating physiologically stimulating emotions should be key parts of its social media strategy.

IV. TECHNOLOGIC DETERMINISM

The theory of technologic determinism sees technological developments as determining the conduct of society. Accordingly, technology is not only a tool for transmitting messages, but, as McLuhan famously claimed, is the message itself. Technologies are the ones that influence the social and historical processes of the world [1]. In his words: “We are not paying attention to the fact that the medium is really the influencing factor, and not the content [...] ‘content’ of every medium is another medium. Talking is the content of writing, as much as written word is the content of printing and printing is the content of the telegraph” [47].

Technologies create new situations and thus change society and its modes of thinking. Any medium functions in such a way as to widen one of the senses. Each use of another medium affects the senses and its inter-dynamics. Thus, a person who uses the medium will have her

perception changed by the particular medium. For McLuhan, every historical period must be approached through its dominant medium and its various effects on the sensory system [1]. For example, in a literate society the book is usually the dominant medium. However, in a colloquial society, it is often radio that is the most important. A colloquial society will also favor the Internet as a dominant medium. Technologic determinism emphasizes that there is no substantial meaning to the essence of content transmitted on the Internet – only the fact that it was transmitted through the Internet. Therefore, if a certain content is transmitted both on FM radio and the Internet – such that the content is the same, but the medium is different – theoretical implications follow from a technologic deterministic standpoint.

V. RESEARCH HYPOTHESES

As noted, this research focuses on social media patterns of traditional Israeli radio stations, with emphasis on Facebook as the dominant platform. This study looks at popular content dedicated to the creation of interaction and user engagement. These activities can be assessed by closely tracking engagement measures such as comments, “likes,” and sharing.

The research hypotheses are based on how radio programs influence consumers to be involved in Facebook post content. Thus, consistent with the notion that viral posts contain informative-rich elements of visibility, informality, and emotionality, resulting in popularity and high user engagement, the following can be hypothesized:

Hypothesis 1: As combinations of media (video and images photos) add to the listener’s experience and lead to higher engagement, it can be posited that posts which include various media elements will be more popular than other posts that do not contain a combination of media elements.

Hypothesis 2: Since user visits to Facebook are particularly motivated by entertainment and information, it can be posited that informative posts and/or posts that combine celebrity news and images will garner higher popularity than content lacking such elements.

Hypothesis 3: As radio programs try to engage listeners in activities and transmit content in different ways, interactivity is a central component in the strategy of creating the perception of a directly experienced relationship. Therefore, we claim that posts that include a call for on/offline action and/or posts that contain greetings will be more popular.

Hypothesis 4: Based on research demonstrating that virality is connected to user emotions, we posit the posts that integrate emotional and informal language will gain a higher measure of popularity and user engagement.

VI. METHODOLOGY

This current study examines Facebook pages of Israeli radio programs. Data was collected between January and May of 2015. At the time of compiling the data, 145 Israeli radio programs had an active Facebook page. During the study’s first stage, the two most popular Facebook pages from each station’s latest posts were scraped (two programs with the highest number of “likes”). Then, 1,000 posts from each program’s Facebook page were scraped. Data was collected via ‘Netvizz’, an application which allows scholars to extract posts from official Facebook pages along with relevant data, e.g. number of ‘Likes’, comments and shares per-post, author-identity (i.e. user or station), post format (i.e. image, video, link, or textual status update) and the post-text.¹

For the next stage, and in order to offer an in-depth analysis of the

most popular posts on the programs’ Facebook pages, the leading posts for each week were sampled out of each program’s page according to the following four indexes – most-‘Liked’ post; most commented-on post; most-shared post; and lastly, the post whose user-comments received the highest number of ‘Likes’ for that week. And so, per each station page, up to four weekly posts were sampled (in some instances where a certain post was at the top of several indexes for that week, it was only sampled once). All in all, a total of 876 posts were sampled and manually coded.

Coding was done according to an elaborate coding book which included the following categories:

Automatic categories – information received via Netvizz from Facebook’s API and saved automatically by the tool:

- Post format: the format of the post. Could be audio, video, image-based, a status update or a hyperlink.
- Post-author identity: Is the author a user or the page administrator, representing the station?
- Number of ‘Likes’ the post received.
- Number of user-comments on the post.
- Number of times the post was shared.

The following categories relate to the post’s text (in the cases of image/video-based posts, the text accompanying the post was analyzed) and were manually coded.

- **Emotionality:** Did the post contain strictly rational or emotional language or did elements of both recur? Emotional elements could come in the form of interjections such as “so fun!” or “must share!”, as well as subjective descriptions and figures-of-speech betraying the author’s sentiments. Rational elements offer an objective account of facts or certain messages in a manner that neither attests to the author’s emotional state nor reflects on the post’s theme.
- **Formality:** Is the text’s tone formal or informal? A text may be deemed ‘formal’ if phrased officially and grammatically, e.g. “Do write to us and you may enter the draw.” Informal text, on the other hand, will use colloquial language or “web-speak”, as well as humorous elements or syntax more typical of spoken language, e.g. “We wanna pamper ya’ll” or “Cold day innit?”
- **Information:** Does the text feature information of any sort on certain events and news items, as well as station-related information such as a program’s timeslot? A binary yes/no category. An example of an informative text can be, “Did you know that today is the birthday of the first transgender singer?” but also, “On today’s show, so-and-so will tell us exactly what puts a spring in his step every morning”.
- **Call-to-action:** Online – Is the text attempting to elicit some online action on Facebook, e.g., ‘Liking’, “Take pictures and send to us”, etc. A binary category.
- **Call-to-action:** Offline – Is the text attempting to elicit some offline action off Facebook, e.g., “Listen on frequency X”, “Call the number Y”, etc. A binary category.
- **Object of text:** A multiple-choice category. Is the text about a celebrity, a non-public person, an in-house station event or an event unrelated to the station?

Content coding was carried out by two coders, who serve as research assistants at the School of Communications and have taken courses related to radio and its role and on social and new media networks, as well as received training in quantitative and qualitative research methods.

The coding process began only after completing their training

¹ The author would like to thank Digital Methods Initiative and app-developer Bernhard Rieder for their permission to use the application.

during which all coding categories were thoroughly explained and illustrated to each coder. All the posts taken from one of the sampled radio programs, which make up 10 percent of the sum total of posts in the study, were analyzed by the two coders as part of a reliability test.

VII. RESEARCH FINDINGS

Every popular post garnered on average 232 “Likes” and engagement of 377. It should be noted that for this data, high standard deviations were found (823 and 1632, respectively).

A. Type of Media and Engagement

The first research hypothesis claimed differences in “Likes” and engagement between different varieties of posts: media (image and video), status (wording), link, survey, and audio. Therefore, two one-way analyses of variance were conducted.

TABLE I. MEANS AND STANDARD DEVIATIONS OF “LIKES” QUANTITY AND ENGAGEMENT

Media Type	Engagement		Likes Quantity	
	Standard Deviation	Mean	Standard Deviation	Mean
Video	3229.54	625.35	1528.48	390.67
Picture	923.90	416.55	600.38	285.83
Link	149.13	138.50	90.20	84.463
Status	232.41	165.17	39.15	41.14
Audio	12.88	12.00	11.09	10.50

Table I shows the sample means and standard deviations of each category, and we can see there are differences between the different categories. Posts that included video received the highest average quantity of “Likes” and Engagements, followed by post that included a picture. Next, but separated by a major gap, follow posts that included links (for “Likes”) and statuses (for Engagement), and last were posts that included audio, which received the lowest average quantity of “Likes” and Engagements.

In order to check whether these differences are significant, we used a one-way variance analysis (anova), since this kind of statistical analyses test the hypothesis that the true means of the categories are different (when the dependent variable is continuous, of course).

The first one-way anova was carried out with a dependent variable of measure of “Likes” and the independent variable of Media type. As $F(4,870)=5.67$, $p=0.0001$, which is less than the standard thresholds for the F test- 0.05, we can conclude that a there is a significant difference in “Likes” between different media types of posts.

Then, a Post hoc analysis using Scheffe’s test was conducted. Post hoc analysis of that kind is used in order to find the source of the significant difference that was revealed in the one-way anova analysis (i.e. to find the sub-group of categories that their true means are different from each other). The post hoc analysis found that posts that included a video or an image received significantly more “likes” with $p.value=0.001$ and $p.value=0.015$ accordingly, both below the standard thresholds for this test- 0.05). Thus, we can conclude that posts that included a video or an image are significantly more popular than statuses. All other Scheffe’s test differences produced p.values that were higher than 0.05, thus we concluded that all other differences between different post types are not significant.

In addition, a one-way anova was conducted with the dependent variable of engagement (and the same independent variable as before). It has revealed a significant difference between the different categories. Thus, this research hypothesis was reinforced ($F(4,870)=2.46$, $p=0.04$,

which is less than the standard thresholds for the F test- 0.05).

The post hoc analysis found that posts that included a video received more engagement, and as $p.value=0.097$, which is higher than the standard thresholds for this test (0.05), we can conclude that posts that included a video are borderline significantly more popular than statuses. All other Scheffe’s test differences produced p.values that were higher than 0.05, thus we concluded that all other differences between different post types are not significant.

In conclusion, the results shown during this section, in table I and in particular in the significant results from the statistical test that were carried, support the claim that the media type of a post affects its user “Likes” and engagement. Specifically, posts that include a video generate higher user “Likes” and engagement.

B. Information and Engagement

The second research hypothesis posited differences in “Likes,” engagement, and sharing of posts based on presence of information and celebrity media in posts.

TABLE II. MEANS AND STANDARD DEVIATIONS OF “LIKES” QUANTITY AND ENGAGEMENT

Information and Celebrity Media	Engagement		Likes Quantity	
	Mean	Standard Deviation	Mean	Standard Deviation
Famous figure in the picture	675.10	1268.29	439.82	728.89
No picture	344.17	2067.91	187.80	985.08
No famous figure in the picture	281.32	639.91	202.65	498.312

First, we tested for differences in “Likes” quantity and engagement between posts with and without images, and between images with and without celebrity content. Table II shows the sample means and standard deviations of each category, and we can see there are differences between the different categories. Posts that included a famous figure in a picture received the highest average quantity of “Likes” and Engagements. Surprisingly, posts that included no picture at all received the second high average quantity of Engagements, higher than posts that included an image, but without a famous figure. Nevertheless, posts that included an image, but without a famous figure received a higher average quantity of “Likes” compared to posts that included no picture at all.

In order to check whether these differences are significant, we used a one-way variance analysis (anova). The first one-way anova was carried out with a dependent variable of measure of “Likes” and the independent variable of information and celebrity image category. As $F(2,873)=5.34$, $p.value=0.005$, which is less than the standard threshold for this test- 0.05, we can deduce that there is a significant difference in “Likes” between the different categories.

A Post hoc analysis, using Sheffe’s test, confirmed that the average quantity of “Likes” was significantly higher when posts contained celebrity media – more than posts without images and posts with images that contained no celebrity content ($p.value=0.006$ and $p.value=0.021$ accordingly, both below the standard thresholds for this test).

In addition, a second one-way anova was conducted with the dependent variable of engagement (and the same independent variable as before). It was found that there is a borderline significant difference in engagement among posts containing celebrity images ($F(4,873)=2.94$, $p.value=0.02$, which is again lower than the standard thresholds for this test).

A Post hoc analysis, using Scheffe’s test, confirmed that the

average quantity of Engagement was borderline significantly higher when posts that contained celebrity media, compared to posts that did not contain celebrity content (p.value=0.064, which is very close to the standard thresholds for this test- 0.05). However, the difference between posts that contained celebrity media and posts that did not include a picture was not significant (p.value=.107, which is above the standard thresholds for this test).

TABLE III. MEANS AND STANDARD DEVIATIONS OF “LIKES” QUANTITY AND ENGAGEMENT

Post Type	Engagement		Likes Quantity	
	Standard Deviation	Mean	Standard Deviation	Mean
Famous figure in a video	6236.45	2019.21	2880.62	1231.06
No video	737.84	310.45	477.54	188.85
No famous figure in a video	222.01	155.03	184.48	114.43

Second, we tested for differences in “Likes” quantity and engagement between posts with and without celebrity video content. Table III shows the sample means and standard deviations of each category, and we can see there are differences between the different categories. Posts that included a famous figure in a video received the highest average number of “Likes” and Engagements, followed, interestingly, by posts with no video at all, and last were posts that included a video, but without a famous figure.

In order to check whether these differences are significant, a one-way variance analysis (anova) was carried out with a dependent variable of measure of “Likes” and the independent variable of information and celebrity video category. It has revealed a significant difference in “Likes” between the different categories, as $F(2,873)=40.29$, p.value= $1*(10^{-16})$, which is way less than the standard thresholds for this test. Thus, the research hypothesis was reinforced

A Post hoc analysis, using Scheffe’s test, produced a very low p.value (less than 0.0001), and thus confirmed that the average quantity of “Likes” was significantly higher for posts the contained celebrity videos – more than posts without videos, or with video, but no celebrity content. In addition, a second one-way anova was conducted with the dependent variable of engagement (and the same independent variable as before). As $F(2,873)=27.50$, p.value= $1*(10^{-12})$, which is way less than the standard thresholds for this test, we can deduce that there is a significant difference in engagement among posts containing celebrity images.

A Post hoc analysis, using Scheffe’s test, produces a very low p.value (again, less than 0.0001), and thus confirmed that the average quantity of Engagement was significantly higher for posts the contained celebrity videos – more than posts without videos, or with video, but no celebrity content.

In conclusion, the results shown during this section, in tables II-III and in particular in the significant results from the statistical test that were carried, support the claim that the inclusion of a famous figure within the media (video or picture) of a post affects its user “Likes” and engagement. Specifically, posts with media (video or picture) that includes a celebrity generates higher user “Likes” and engagement.

C. Calls for Action and Integration of Greetings

The third research hypothesis claims that posts that include a call for online and/or offline action or greetings will be more popular.

TABLE IV. MEANS AND STANDARD DEVIATIONS OF QUANTITY OF “LIKES” AND ENGAGEMENT IN POSTS THAT INTEGRATE GREETINGS

Post Type	Engagement		Likes Quantity	
	Standard Deviation	Mean	Standard Deviation	Mean
Greetings	2514.99	580.77	1193.20	337.26
No greetings	903.55	277.87	554.48	181.88

We tested for differences in “Likes” quantity and Engagement between posts with and without greetings content. Table VI shows that there is a difference in “Likes” and Engagement between the two categories, posts that included greetings received, in average, more “Likes” and engagement than posts without greetings.

In order to check whether this difference is significant, a t-test for independent samples analysis, which is the equivalent of the one-way anova for 2 categories, was carried. The dependent variable was the measure of “Likes” and the independent variable was the type of the post, with/without greetings (which are 2 independent groups). The t-test analysis produced a test statistic of $t(347.71)=2.1$, and p.value=0.02, which is less than the standard threshold for t-test- 0.05. Thus, we concluded that there is a significant difference in average quantity of “Likes” between the two categories. Thus, “Likes” quantity of greeting posts was shown to be significantly higher.

In addition, another t-test for independent samples analysis was conducted with the dependent variable quantity of engagement (and the same independent variable as before). Again, the t-test analysis produced a test statistic of $t(322.48)=1.98$, and p.value=0.02, which is less than the standard threshold for this test. Thus, we concluded that there is a significant difference in average quantity of engagement between greeting and non-greeting posts. Thus, this part of the research hypothesis was confirmed.

In conclusion, the results shown during this section, in table IV and in particular in the significant results from the statistical test that were carried, support the claim that integrating greeting in a post affects its user “Likes” and engagement. Specifically, it was found that radio stations posts that integrate greetings manage to engage more listeners and produce more “Likes”.

D. Formal and Rational Language

The fourth research hypothesis maintains that differences will be found in “Likes” and engagement between formal and informal posts. In addition, our claim is that differences in posts will be measurable based on use of emotional or rational language. To test this hypothesis, a one-way analysis of variance was conducted.

TABLE V. Means and Standard Deviations of “Likes” Quantity and Engagement.

Formal/Informal Posts	Engagement		Likes quantity	
	Standard Deviation	Mean	Standard Deviation	Mean
Formality	563.54	249.45	474.91	175.02
Informal and rational	642.80	300.22	425.55	190.75
Informal and emotional	3385.10	822.82	1567.12	433.21

First, we tested for differences in “Likes” quantity and engagement between formal and informal posts. Table V shows that there are differences between the different categories. Informal and emotional posts received the highest average number of “Likes” and Engagements, followed by informal and rational posts, and last were formal posts.

In order to check whether these differences are significant, we used a one-way anova. The first one-way anova was carried out with a dependent variable of measure of “Likes” and the independent variable of post formality. The test produces a test statistic of $F(3,868)=4.47$, and $p.value=0.004$, which is less than the standard threshold for this test. Thus, we concluded that there is a significant difference in “Likes” between the different categories.

A Post hoc analysis using Scheffe’s test revealed that the average quantity of “Likes” for informal emotional posts was significantly higher compared to the average quantity of “Likes” for non-emotional formal and informal posts ($p.value=0.005$ and $p.value=0.06$, which are below and very close to the standard threshold for this test, accordingly).

In addition, a second one-way anova was conducted with the dependent variable of engagement (and the same independent variable as before). The test produces a test statistic of $F(3,868)=5.69$, and $p.value=0.001$, which is less than the standard threshold for this test. Thus, we concluded that there is a significant difference in engagement between the different categories. A Post hoc analysis, using Scheffe’s test, confirmed that the average quantity of Engagement for informal emotional posts was significantly higher compared to the average quantity of Engagement for non-emotional formal and informal posts ($p.value=0.01$ and $p.value=0.03$, accordingly, which are below the standard threshold for this test). In conclusion, the results shown during this section, in table V and in particular in the significant results from the statistical tests that were carried, support the claim that the formulation of a post (formally/informally and emotionally/unemotionally) affects its user “Likes” and engagement. Specifically, it was found that a post formulated informally and emotionally receives more “Likes” and engagement compared to other kind of formulations.

VIII. DISCUSSION AND CONCLUSIONS

Radio stations are active on social media and still adjusting to the realities of the Internet [8]. This research looks at the success of radio programs on Facebook as primarily measured through user engagement. We show how radio programs use technological tools to expand their capabilities, producing more developed interaction with listeners and transmission of information in a variety of modes. Moreover, radio programs increase social networking. That is, the medium (i.e. the platform) is critical in order to realize their goal of maximizing popularity with consumers.

In this way, social networks enable radio to maintain an online community with all its characteristics [30, 48], once again a powerful platform for development and exchange of opinions and public involvement in public discourse [27].

It was found that integration of media (video or image) will generate more popular – even viral – content. In addition, audio posts proved less popular, even though 30 % of analyzed programs were music oriented. These findings correlate with research on radio stations on Facebook, which found visual posts are the most popular form of content [8]. As such, a blurring of media boundaries can be seen, and this enhances possibilities of user engagement.

As noted, radio is characterized as a “blind” medium due to its exclusive auditory focus [5][6]. However, radio has increasingly leveraged Facebook, which exploits visual resources such as text, image, and video.

It was found that radio station posts integrating celebrities in image or video garner higher rates of popularity. These findings match the notion that celebrity posts represent a salient factor in driving up content popularity, as found in previous research [8]. Even programs based on raising awareness and engagement can improve their message dissemination by making some reference to celebrity, especially when

linked in some direct or indirect way to the program. The audience appetite for this type of content only gains in popularity through such forms of association.

The finding support previous research, which found that Radio Facebook pages with formal posts tend to exploit calls for action [8][41], and these are successful in generating substantial listener reactions, as was found in the current study [8].

Radio has always been perceived as a medium that personally appeals to its listeners [1]. For instance, most programs contain personalized broadcaster greetings and exhortations such as “good morning,” “drive carefully,” “enjoy the songs,” “thanks to the listeners,” and “have a good week!” This convention has proved successful in the past for radio, and has been translated onto Facebook posts. Even more, in the FM-medium, no capability exists for easy audience responses. But Facebook is based on instant messaging, and so radio is suddenly turned into a two-way channel of communication.

As noted, previous research has pointed out that emotional messaging leads to higher engagement and virality of posts [8][41][46]. This study found that posts integrating emotional, informal, and supportive appeals achieved an extremely high quantity of “Likes” and user engagement. Facebook in general is more characterized by a culture of informal activity such that radio programs are intentionally channeling this cultural preference into their messaging.

Radio programs are thus adjusting to the digital world, in an attempt to access the full potential of new platforms and tools. They use social networks to raise levels of popularity, online as well as offline. Using Facebook, traditional radio has broadened its reach and appeal in music and talk-based programs. This is also comprises an opportunity to reconnect with a younger audience that has long been active on social networks [26]

By developing content channels on Facebook, radio programs are using novel strategies for promoting and integrating audience reaction and listener interaction. This activity is continuous and ongoing – 24 hours, seven days a week. This messaging is not constrained in time like programs and live content on FM. The latter are restricted to specific scheduling hours or the time of live transmission. More importantly, radio programs are now utilizing visual elements to promote content and popularize the station/program – a relatively unprecedented development for the medium. Radio is thus merging with the Internet, especially with social networks such as Facebook. Therefore, radio professionals who are also media specialists need to recognize this convergence. They then need to adapt new media strategies in more fluent, consistent, and professional ways. As noted, critical elements in any coherent strategy should include: 1) integration of media types in all social media; 2) maximum reference to celebrity culture in linked content; and 3) supportive messaging characterized by personal, informal, and emotional wording.

However, as a dominant player in social media, Facebook may sometimes appear to be on the verge of coopting and assimilating traditional radio. As such, radio’s unique character may end up being threatened by such a powerful iteration of new media. Users may start forgetting radio’s special qualities: 1) exclusive auditory appeal (a single sense) and 2) usefulness in secondary tasks [3][4][6].

In conclusion, this research continues to confirm McLuhan’s powerful medium-is-the-message claim [1]. Radio has successfully adjusted to new media, even if it has yet to maximize the latter’s full potential. Radio should be seen as creatively adapting itself to suit its activity for Internet ecosystems, especially for social networks.

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