

Media Convergence: Websites of Radio Stations in the Republic of Croatia

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ABSTRACT: The digitization process alters the media landscapes in all developed European countries. This study presents the results of research that was conducted on the sample of active websites of all radio stations based in Croatia. All active websites (n=157) were mapped on the basis of a matrix that included news, communication, and advertising content as well as indicators of media convergence. The results show a marked unevenness in terms of individual websites' offer, especially in

the category of news content. What all sites have in common is a strong reliance on programmes previously broadcast. Reasons for this neglect are lack of money and lack of staff trained to work in a digital environment. Websites are not understood as a step towards a converged media environment, nor is there a clear awareness of their role in the strategic development of the medium of radio in the 21st century.

KEYWORDS:

radio, convergence, radio websites, mapping, audio streaming

INTRODUCTION

Digital technologies have replaced analogue media causing previously separate media forms, such as text, audio content, images, and videos, to be linked into multimedia content.¹ Media convergence is a phenomenon involving the interconnection of computer and information technology companies, telecommunications networks, and content providers of the world's newspaper publishers, magazines, music, radio, television, movies, and entertainment software². Such convergence, as a direct consequence of the digitization of media content and the popularization of the Internet, brings together the "three Cs" – computing, communication and content.³

Today, radio combines three roles, writes Nada Zgrabljic Rotar,⁴ namely (1) the role of a traditional (analogue) medium that communicates in real time to a mass audience, (2) a converged new medium that communicates using websites and mobile applications with each user and (3) a "new new" media that enables users to independently create content on profile radio pages and music platforms. Visitors can become creators and commentators of media content that can be downloaded and distributed.⁵

Thanks to digitization, the Internet primarily abolished the monopoly of the radio frequency spectrum as a key platform for the dissemination of media content. As a matter of fact, Internet distribution has enabled streaming of programme content wherever there is Internet connection. It is worth noting that nowadays the term "streaming" is widely accepted in international professional and scientific circles even out of the English-speaking world. Over time, its terminological versions such as "livestreaming" and "real-audio" emerged, both of them emphasizing the fact that "streaming" takes place in FM radio broadcast real time or in a live broadcast of an event. From the beginning, the source of streaming was the official (corporate) radio website (www), which, in keeping with the dynamic development of digital technology, offered more and more multimedia options. Traditional radio thus got a historic opportunity to offer its listeners texts, videos, photos and continuous interaction 24/7 in addition to audio content and telephone communication. Furthermore, social networks have only further expanded listener/user reach options and provided additional advertising opportunities. In addition to traditional FM, Internet distribution has enabled the establishment of a new type of radio that does not need a license to use the radio frequency spectrum for its broadcasting. Today, Internet radios, i.e., e-radios are a standard part of every Internet (national) area.

¹ MEDIA CONVERGENCE. *Encyclopedia Britannica*. [cit. 21 May 2021]. [online]. Available at: <https://www.britannica.com/topic/media-convergence>.

² MOLLER, C. – RICHTER, A. Internet and new media space. In HULIN, A. – STONE, M. *Guide to Self-Regulation of Online Media*. Wien : OSCE – Organization for Security and Co-operation in Europe, 2013, p. 12.

³ Ibid., p. 13.

⁴ ZGRABLIĆ ROTAR, N. New media of the digital age. In JOSIĆ, Lj. *Information Technology and Media*. Zagreb : Croatian Studies at the University of Zagreb, 2017, p. 63.

⁵ ŠULENTIĆ, A. *Media convergence: Radio in the Republic of Croatia*. [Ph.D. Thesis]. Koprivnica : University North, 2022.

The first research⁶ into the dynamics of the establishment, content and goals of radio websites can be traced back to the last decade of the 20th century, when the first generation of World Wide Web 1.0 began to be commercially exploited. McClung⁷ was the first to note the importance of the first radio websites. In those early days “terrestrial” radio programming was the main motivation for visiting one’s website. Moreover, listeners’ desires went beyond that (voting for charts, interacting with presenters, the ability to download content, etc.). Nevertheless, Verdino and Rossin⁸ concluded that radio stations opted for starting their own websites only with a view to strengthening the radio brand, not in the sense of actually dealing with them.

With the advent of WWW 2.0., and new tools, websites “revived.” Visitors could become creators and commentators of media content that could be downloaded and distributed. It soon became clear that the combination of traditional radio with an accompanying website was very attractive to advertisers, yet few radio stations had clear development plans on how to exploit this potential.⁹ As expected, being appropriate for the digital age, Internet distribution was a logical and simple way of offering audio content, as well as all other types of content. Competition among radio stations was no longer exclusively “terrestrial” but also came from the Internet.

Damir Šimunović, Nikolina Bujić and Siniša Fajt conclude that radio as a medium is not threatened by digital changes.¹⁰ They observe big differences in performance between broadcasters that accepted the obligation to be included in the so-called the digital media world from those who resist it and limit their activities to the classic radio service.

Acquiring and retaining new listeners is crucial for everyone, especially commercial radio stations. The “battle for listeners” also included profile pages on social networks and services for the exchange of multimedia content. In addition to promoting the radio itself, shows and presenters, research findings¹¹ indicate that radio stations actively use their fan pages on social networks to attract younger users.

These major changes for the medium of radio have become the subject of research by numerous scientists and experts around the world. However, in the context of

6 MCCLUNG, S. Who Uses College Radio Stations Web Sites? In *Feedback*, 1999, Vol. 40, Issue 4, p. 27.

DOI:10.1177/107769580105600106; MURPHY, Reginald Edward. *Determining the Value of Radio Station Websites: An Exploratory Study*. (Publication No. 314104799) [cit. 11 May 2021]. [online]. Available at: <https://www.worldcat.org/title/determining-the-value-of-radio-station-web-sites-an-exploratory-study/oclc/42599888>; VERDINO, G. – ROSIN, L. *Arbitron Internet Listening Study*. Second edition. New York: The Arbitron Company, 1999.

7 See MCCLUNG, S. Who Uses College Radio Stations Web Sites?, p. 34.

8 See VERDINO, G. – ROSIN, L. *The Arbitron Internet Listening Study*, p. 381.

9 SCOTT, H. – WENMOUTH, W. Jr. The Internet as a Small-Market Radio Station Promotional Tool. In *Journal of Radio Studies*, 2009, Vol. 10, Issue 2, p. 262. DOI:10.1207/s15506843jrs1002_10.

10 ŠIMUNOVIĆ, D. – BUJIĆ, N. – FAJT, S. Technical Development of Public Radio in Croatia. In *Yearbook 2019 of the Croatian Academy of Technical Sciences*, 2019, Vol. 1, Issue 1, p. 392.

11 FREEMAN, B. C. – KLAPCZYNSKI, J. – WOOD, E. Radio and Facebook: The relationship between broadcast and social media software in the U.S., Germany, and Singapore. In *First Monday*, 2021, Vol. 17, Issue 4. DOI:10.5210/fm.v17i4.3768.

the Croatian radio scene, the situation is much more modest. Despite its tradition, audience and influence, the medium of radio in Croatia has rarely been the subject of autonomous, independent and scientifically based research.

AN OVERVIEW OF PREVIOUS RESEARCH ON RADIO WEBSITES

A brief overview of the first research and classification of the content of radio websites takes us back to the end of the 20th century. It can be traced back to one of the earliest works by Rebecca Ann Lind and Norman J. Meddoff,¹² which covers 900 radio websites worldwide. Six types of website content were recorded, namely: (1) existence of audio streaming, (2) commercial content, (3) photo and video content, (4) advertising content, (5) news content, and (6) communication possibilities. Streaming was considered the most important content of that time because the distribution via the Internet enabled the radio signal to cross the limits of traditional (analogue) broadcasting.

That year, another similar survey was conducted on a sample of 365 randomly selected radio websites.¹³ The content analysis revealed 33 different types of content grouped into four thematic units: (1) contact with the radio, (2) information about the radio and the programme, (3) news and entertaining content, and (4) other content. The results indicated that the most common content amounted to details about radio events, biographies of radio presenters and radio contacts, while less than 30% of websites had programme streaming. The research also showed that the radio station literally copies the content from the air to its website.

One of the first studies that included 176 FM and e-radios with the aim of determining the differences in the content of their websites was conducted by Wen Ren and Sylvia M. Chan-Olmsted.¹⁴ They identified 11 thematic units that contained 48 different types of content. Here, too, the conclusion was similar: FM radio stations mostly transfer content from the air to their websites. However, the founders of e-radio were well aware that the Internet is their only platform for communication, branding and generating income, so their websites were more innovative, with more interactive content.

Websites quickly became an integral part of all FM radio stations' business. According to Sherwood,¹⁵ 96% of radio stations based in New York had their own website, of which 91% offered programme audio streaming. A significant step forward has been made towards connecting with social networks, so radio profile pages on Facebook have a similar share.

¹² LIND, R. A. – MEDOFF, N. J. Radio Stations and the World Wide Web. In *Journal of Radio Studies*, 2009, Vol. 6, Issue 2, p. 217. DOI: 10.1080/19376529909391723.

¹³ POTTER, R. F. Give the People What They Want: A Content Analysis of FM Radio Station Home Pages. In *Journal of Broadcasting & Electronic Media*, 2009, Vol. 46, Issue 3, p. 376. DOI:10.1207/s15506878jobem4603_4.

¹⁴ REN, W. – CHAN-OLMSTED, S. M. Radio Content on the World Wide Web: Comparing Streaming Radio Stations in the United States. In *Journal of Radio Studies*, 2004, Vol. 11, Issue 1, p. 22. DOI:10.1207/s15506843jrs1101_3.

¹⁵ SHERWOOD, S. (Re)Connecting with Listeners: How Radio Stations are Reaching Beyond the Dial (and Their Competitors) to Connect with Their Audience. [Ph.D. Thesis]. Rochester: Institute of Technology RIT Scholar Works, 2015, p. 48.

Scientific research into the dynamics of the development of radio station websites in the Republic of Croatia is extremely rare.¹⁶ One of the first (or perhaps the very first) dates back to 2000¹⁷ when less than 10% of the population of the Republic of Croatia used the Internet. The subject of the research were all radio broadcasters (n=126), out of which only 50 had their own websites. Many were inactive and neglected, and some had only a home page. Only four of them offered audio streaming and music or some other type of data in mp3 format. The author concludes that websites were not of particular importance to the radio broadcasters of that time, and their entry into the cyber space was limited to including their web and e-mail addresses on their classic advertising materials. "Slow computerization and connection to the Internet (...) are delaying investment in radio Web editions. Nevertheless, there are many reasons for the cooperation of these two media and it is only a matter of time before all the prerequisites necessary for it will be realized in Croatia."¹⁸

The next similar analysis of radio websites was made ten years later.¹⁹ The progress is noticeable because of all radio broadcasters (FM and e-radio) and all Croatian Radio channels (n=160), as many as 126 (79%) had an active website. The research identified and distinguished four groups of shared website content, namely: (1) information about the radio, (2) information about the channel and staff, (3) programme content, and (4) online content and formats.²⁰ The authors conclude that it is a conventional website offer without particularly innovative solutions²¹. The most common website content was identification information about the frequency on which traditional radio broadcasts, contact with the radio, programme streaming and price lists of marketing services. Furthermore, only 21 websites had daily updates of news content. On the other hand, the websites of non-profit FM radios were characterized by strong interaction with users as well as by the offer of content on demand (audio podcast, video). In this research, e-radios whose websites were characterized by audio and video streaming, news content, daily updates and intensive contact with users were included for the first time.

During the process of mapping of the Croatian media carried out by Viktorija Car and Ivana Andrijašević²², the authors noticed and emphasized the value of the programme audio streaming, pointing out its accessibility through websites and mobile applications for listening to the radio. However, they warned that radio websites must stop copying content from the air, that is, they must start

¹⁶ CAR, V. – ANDRIJAŠEVIĆ, I. *Mapping Digital Media: Croatia*. Open Society Foundation. [online]. [cit. 27 December 2021]. Available at: <https://www.opensocietyfoundations.org/publications/mapping-digital-media-croatia>; MUČALO, M. – FRTALIĆ, A. Internet Radio: Fashion or Necessity? In *Medianali*, 2011, Vol. 5, Issue 10, p. 21; MUČALO, M. Web Editions of Radio Stations in Croatia. In *Medijska istraživanja*, 2000, Vol. 6, Issue 2, p. 25.

¹⁷ See MUČALO, M. Web Editions of Radio Stations in Croatia, p. 38.

¹⁸ Ibid., p. 37, 38.

¹⁹ See MUČALO, M. – FRTALIĆ, A. Internet Radio: Fashion or Necessity?, p. 33.

²⁰ Ibid., p. 30.

²¹ Ibid., p. 41, 42, 43.

²² See CAR, V. – ANDRIJAŠEVIĆ, I. *Mapping Digital Media: Croatia*. Open Society Foundation, p. 95.

developing in the direction of becoming multimedia and interactive creative content providers.

After almost a decade of research hiatus, in 2021, the first mapping of the radio websites of all actors in Croatian broadcasting was carried out. The term “mapping” is most often used as a word denoting recording (determining, finding) all the parts (elements) that together form a whole (in a given time frame). Precisely because of this, it proved to be suitable for this quantitative research, the subject of which are the websites of all actors of Croatian radio broadcasting and e-radio.

RESEARCH SUBJECT AND METHODOLOGY

The general objectives of the mapping were: (1) to determine the existence and status of the websites (active/inactive) of all radio stations, (2) to determine the basic thematic categories on the website, (3) to register the types of content within the thematic categories on each active website, and (4) to rank the websites covered by this research (from above average downwards) with explanations.

The specific goals of the mapping were: (1) to observe possible content breakthroughs in various types of content, and (2) to determine the differences in the number and types of content depending on the size of the radio concession.

The subjects of the research were (a) the websites of FM broadcasters, (b) the websites of e-radios based in the Republic of Croatia, and (c) the websites of Hrvatski radio (Croatian Radio), the only public radio service in Croatia. The following two hypotheses were put forward:

H1: Programme streaming on online radio websites makes up less than 10% of the total content offer of each radio website.

H2: The websites of national, regional and county radio stations offer more types of content than the websites of city and municipal radio stations.

After two test mappings, the final mapping was carried out in the second half of June 2021. The test mappings were aimed at checking the publicly available and searchable data that the Agency of Electronic Media (AEM) has on its official website. Among other things, it is a list of all radio broadcasters titled “Book of Radio Media Service Providers.”²³ The tests showed incomplete and/or incorrect data. After determining the actual situation, the research set included 157 active radio websites (T1) whose founders are based in the Republic of Croatia (n=157).

During the test mapping, more than a hundred different types of content were registered on all websites, many of which appeared under different names. Some of them were easily grouped into clear thematic units (e.g., radio identification data), while some of them defied easy classification. Similar procedures were used in previous research.²⁴

²³ Agency for Electronic Media (AEM). *Book of Radio Media Service Providers*. [online]. Zagreb : AEM, 2021a. [cit. 17 June 2021]. Available at: <https://pmu.e-mediji.hr/Public/PregledRadioNakladnici.aspx>.

²⁴ See LIND, R. A. – MEDOFF, N. J. Radio Stations and the World Wide Web; MUČALO, M. – FRTALIĆ, A. Radio na internetu: moda ili potreba?; MUČALO, M. Web Editions of Radio Stations in Croatia; POTTER, R. F. Give the People What They Want: A Content Analysis of FM Radio Station Home Pages; REN, W. – CHAN-OLMSTED, S. M. Radio Content on the World Wide Web: Comparing Streaming Radio Stations in the United States.

Table 1: Active websites of radio stations in Croatia (2021)

Broadcasters				
National level 3	Regional level 4	County level 21	City level 98	Municipal level 7
Croatian Radio Television – Croatian Radio				
National stations 3	Regional stations 8		Satellite channel 1	
E-radio 12				

Source: AEM, 2021a and Author

The test mappings therefore served to create a matrix suitable for the subject of the research. The initial basis comprised four fundamental units, namely: (1) news content, (2) communication content, (3) advertising content, and (4) indicators of media convergence (IMC). Each of them contained 50 additional (specific) types of content (T2).

Table 2: Presentation of the basic thematic categories

News content (22) Identification content (13) Daily news content (4) Notification content (5)	Communication content (9)	Advertising content (9)	Media convergence indicators (10)
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Source: Author

Ad 1) The first basic thematic category named “News content” contains 22 most common types of content, namely: (a) identification content (13 types), (b) daily news content (4), and (c) notification content (5). In point of fact, the joint representation used by authors of previous mappings²⁵ cannot give an adequate picture of the informativeness of the website as this approach blends various types of content, thus tending to distort research insight into the website’s informativeness.

a) Identification content includes all types of content that is closely related to the identity of the radio station and is not subject to frequent changes. This is typified content whose source is the media outlet itself and it is (usually) about the media outlet itself (T3).

25 See LIND, R. A. – MEDOFF, N. J. Radio Stations and the World Wide Web; MUČALO, M. – FRTALIĆ, A. Internet Radio: Fashion or Necessity?; POTTER, R. F. Give the People What They Want: A Content Analysis of FM Radio Station Home Pages; REN, W. – CHAN-OLMSTED, S. M. Radio Content on the World Wide Web: Comparing Streaming Radio Stations in the United States.

Table 3: Identification content

ID of the radio*	"You missed it" (programme/show/topic)
Impressum	Photo gallery
Information about the radio	Visitor counter
Information about the radio staff	Privacy statement
Programming scheme	GDPR (General Data Protection Regulation)
Information about programmes	Offer in foreign languages
Information about listening figures	

*Sub-content: radio name, logo, FM radio broadcast frequency and slogan

Source: Author

b) Daily news content includes daily news from various areas. Since the research did not deal with content analysis, the thematic division was reduced to politics (external and internal), economy, culture, sports, and entertainment. Additional content that was identified during mapping was registered separately. The criterion of territoriality was added, that is, content was classified according to the criteria of local, national, European and world current events.

c) Notification content is characteristic of radio as the (formerly) fastest medium. It was distinguished from the group of daily news content because it is information that thematically does not correspond to the division mentioned under a) and b), and whose sources are not journalists or media houses, yet it is disseminated through the media. Notification content includes public notices, traffic information, weather information, local notices and announcements.

Ad 2) Communication content was an important part of all previous similar research,²⁶ whereby they changed in accordance with the dynamics of technological advances in terms of creation of websites. The most common types of communication content (9) are listed in Table 4.

Table 4: Communication content

Contact of the radio*	Voting
Contact of the Sales Department	Newsletter
Survey	Forum
Comments and compliments (like)	Chat
Vox populi	

*Sub-content: phone number, e-mail address, WhatsApp, and Viber

Source: Author

26 See LIND, R. A. – MEDOFF, N. J. Radio Stations and the World Wide Web; MUČALO, M. – FRTALIĆ, A. Internet Radio: Fashion or Necessity?; POTTER, R. F. Give the People What They Want: A Content Analysis of FM Radio Station Home Pages; REN, W. – CHAN-OLMSTED, S. M. Radio Content on the World Wide Web: Comparing Streaming Radio Stations in the United States.

Ad 3) Advertising content is characteristic of commercially oriented media: for a certain fee, a media outlet intermediates in the dissemination of advertising of goods and services. The test mapping identified the most common types of advertising content (T5). A similar approach to advertising content was used in some similar previous research.²⁷

Table 5: Advertising content

Advertising price list	List of sales content items
Prize game	Special occasion price list
Prize game rules	Small ads on the website (text or audio)
Advertisements*	"Why advertise on this radio"
List of advertisers	

*Sub-content: banners, ads on the website, ads out of the home page, advertising articles

Source: Author

Ad 4) Indicators of media convergence (IMC) are those types of content that do not have their "predecessors" in the analogue age. Instead, they arise out of digitization. They are typical of media convergence as a synergy of Internet distribution with multimedia possibilities for creating, communicating and linking content (T6).

Table 6: Indicators of media convergence

Audio streaming	Video streaming
Content search	Links**
Networking*	Podcast
RSS	Blog
Applications for listening to the radio	User registration

*Sub-content: links to the radio's profile pages (or programmes) on social media links to additional music channels on the websites and/or mobile applications

**Sub-content: links to the news media in the territory of the concession; links to the key institutions in the territory of the concession

Source: Author

The limitations of this research are based on the advantages of the convergence process. Namely, the digital world is very fast, and websites, just like their contents, change on a daily basis. For this reason, the obtained results must be observed in a given time frame, but at the same time, the research can be repeated and the researched contents can be expanded. Apart from mapping as a quantitative research

²⁷ See LIND, R. A. – MEDOFF, N. J. Radio Stations and the World Wide Web; MUČALO, M. – FRTALIĆ, A. Internet Radio: Fashion or Necessity?; REN, W. – CHAN-OLMSTED, S. M. Radio Content on the World Wide Web: Comparing Streaming Radio Stations in the United States.

method, a qualitative survey was also conducted. Methodologically, we are talking about in-depth semi-structured interviews with 11 editors-in-chief of FM radios who, based on the mapping results, are positioned at the top, bottom and middle of a kind of “scale” that emerged from mapping. Actually, the interlocutors were selected according to the criteria of registered website contents, namely: (1) websites with the most online content (three editors), (2) websites with the least amount of online content (four editors), and (3) websites with an average amount of online content (four editors).

Therefore, the sampling was purposive in the sense that the respondents were experts, i.e., chief editors of radio stations who were in charge of the issues of functioning of the radio website (content selection, updating, and improvement).

When selecting respondents and conducting interviews, care was taken about the point of theoretical saturation, scientific responsibility and informed consent to interviews. The interviews were conducted in the period from 5 to 14 July 2021, during the Covid-19 pandemic, by phone or online. For the purposes of this research, only questions that were aimed at editorial explanations of good/poor quality of their websites were used.

RESULTS

The first group of radio channels consists of radio broadcasters with the concession for radio frequency in a certain area and in a certain period. In the first test search (1 – 10 March 2021), it was shown that out of 137 registered FM radio broadcasters, i.e., 141 radio channels, six radios (Ultra Split, Bijelo plavi radio 92.7, Gradski radio Virovitica, Radio Blato, Radio Grubišno Polje and Radio Senj) do not have their own websites, while four of them have specific situations such as the (non)existence or (in)activity of the domain (Radio Biokovo, Radio Jug, Radio Nautic and Radio Bljesak). The test mapping was repeated in the first half of June of the same year. It showed a slightly better situation than the one recorded in March (websites of Ultra Split and Bijelo plavi radio had been established). In conclusion, out of 141 radio stations, eight did not have an active website at the time of the research ($n=133$). All FM broadcasters at the national (3), regional (4) and county (21) levels of broadcasting have active websites. Among local broadcasters (105), 98 of them broadcast at the city level, and 7 at the municipal and lower level (part of the city). As far as the number of types of content is concerned, out of a total of 133 active websites of FM broadcasters, only 6 websites (1%) have more than 40 types of content (out of a total of 50 researched), 49 websites (around 50%) have fewer than 20 types of content, while all the rest ($n=78$; 59%) are in the middle, that is, they have between 20 and 40 types of content.

The second group of radios included in the mapping consisted of Internet radios based in Croatia. According to the available AEM's Book of Internet Radio Providers,²⁸ there were 17 e-radios. The first test mapping showed that each had its own website,

28 Agency for Electronic Media (AEM). *Book of Internet Radio Providers*. [online].

five of which were inactive. The finding was confirmed by the second round of test mapping, so only 12 e-radios were included in the research, out of which nine were non-profit and three had commercial programming.

The third group of radio channels consisted of the channels of Hrvatski Radio (*Croatian Radio*), the public radio service in Croatia. According to the Contract between Croatian Radiotelevision (HRT) and the Government of the Republic of Croatia for the period from 2018 to 2022,²⁹ the HRT portal is the initial electronic outlet that contains the total offer of non-linear multimedia services (Contract between HRT and the Government of the Republic of Croatia 2018-2022, Article 30). Apart from television channels, all radio channels have their website share: national (n=3) and regional (n=8). They share a common domain (<https://radio.hrt.hr/>) where each of them has its own subpage, typified in its graphic design solutions. The same is the case with the Glas Hrvatske (The Voice of Croatia) website, an international satellite channel intended for the Croatian diaspora and the interested international public. Test mappings of the HRT website gave homogeneous results: all radio websites were active and maintained (n=12).

RESULTS OF MAPPING OF FM BROADCASTERS' WEBSITES

The most diverse websites with the greatest number of types of content were identified for Radio Mrežnica (38 content types, city concession, and commercial orientation), Radio Student (32 content types, city concession, non-profit orientation) and Otvoreni radio (31 content types, national concession, commercial orientation).

Radio Mrežnica has the greatest amount of notification and communication content. In the category of advertising content and indicators of media convergence, the Radio Mrežnica website is second in terms of the total number of content types. The largest number of types of daily news content and indicators of media convergence was identified on the website of Radio Student, while there are significantly fewer types of advertising and communication content (25th and 24th place in the ranking). Otvoreni radio has the greatest amount of identification content, while in the remaining categories it ranks 5th (communication), 7th (advertising) and 16th (IMC).

Ad a) News content

There is not a single website without any news content, but most radios are grouped around the average of eight news content types per website. Table 7 provides the data of the frequency of certain types of identification content.

²⁹ Contract between HRT and the Government of the Republic of Croatia 2018-2022. Zagreb : Ministry of Culture and Media, 2021. [cit. 22 August 2022]. Available at: www.hrt.hr/408136/organizacija/ugovor-izmeu-vlade-republike-hrvatske-i-hrt-a-za-razdoblje-od-1-sijecnja-do-31-prosinca-2022.

Table 7: Identification content by frequency

Content name	Total
Name of the radio	133
Logo of the radio	127
ID of the radio	113
Frequency	57
Slogan	
Impressum	95
Information about the radio	70
Programming scheme	64
Information about the programmes	48
Information about the radio staff	29
Photo gallery	23
Privacy statement	20
Information about rating figures	19
Visitor counter	6
"You missed it" (programmes/shows/topic)	4
GDPR (General Data Protection Regulation)	1
Offer in foreign languages	1

Source: Author

Daily news content is mostly focused on covering local topics relevant to the area of the radio concession. No daily news content was found on 44 radio websites. The largest number (4) of daily news content types is provided by non-profit (and local) Radio Student and commercial Radio Banovina. Content related to the local area (concession area) was found on 76 radio websites. Broader territorial covering of topics outside the local community, related to the entire Republic of Croatia, was found on 45 websites, while 10 websites dealt with topics of global importance. There are few daily news topics related to the European Union (3). Topics related to politics and economy, culture, sports and entertainment are registered within the field of daily news content. During the mapping, additional (then current) topics such as earthquakes (in the areas of Zagreb and Banija), health (Covid-19 pandemic and epidemiological measures), religion, education, tourism, technology, and agriculture (T8) were identified.

Notification content is very little present among daily news content. More than half of radio websites do not have any notification content. The largest number of notification content (3) was found on the website of the city radio – Radio Mrežnica, which is commercially oriented.

The most common content refers to notifying of some local information, the source of which is the local administration (24). Announcements are the second most common notification content offered by 24 websites. Programme announcements are offered by 20 websites, and local event announcements by only 4 websites. Weather information is offered on 20 websites. Notices and traffic information are extremely rare website content.

Table 8: Daily news content by topic

Content name		Local	Croatia	World	EU
Politics and economy		54	16	4	2
Culture		60	7	1	0
Sport		45	10	2	0
Entertainment		44	16	7	0
Other	Earthquake	43	34	0	0
	Health	55	17	0	0
	Religion	13	0	0	0
	Education	15	0	0	0
	Tourism	3	0	0	0
	Technology	1	0	0	0
	Agriculture	1	0	0	0

Source: Author

Ad b) Communication content

The commercial city radio – Radio Mrežnica has the largest amount of communication content (9). No communication content was found on the websites of 18 radio stations. The largest number of radio stations (87) offers 3 (out of a total of 14) communication content types and sub-content on their websites. The data of frequency of communication content types is provided in Table 9.

Table 9: Communication content by frequency

Content name		Total
Contact of the radio	e-mail	126
	Phone number	126
	Address	95
	Viber	5
	WhatsApp	1
Voting	Top list	7
	Music survey	6
Contact of the sales department		108
Comments and compliments		18
Survey		10
Newsletter		2
Vox populi		1
Chat		0
Forum		0

Source: Author

Contact of the radio is the most common communication content type. As many as 126 radio stations have an e-mail address and a telephone number on their websites, and slightly fewer radios have the address of the radio station.

Ad c) Advertising content

The largest number of researched websites offers two (35 radios) or one (30 radios) advertising content types. Out of a total of 12 possible advertising types of content and sub-content, not a single one was found on the websites of 30 radio stations.

Table 10: Advertising content by frequency

Content name	Total
Advertisements	Advertisement on the home page
	Advertisement out of the home page
	Banner
	Advertising text
Advertising price list	
Special occasion price list	
Why advertise on this radio	
Small advertisements (text/audio)	
Prize game	
Prize game rules	
List of sales content items	
List of advertisers	

Source: Author

The advertising price list is the most present content, and can be found on 95 radio websites, while advertisements (in various versions) are offered by 88 websites. All other advertising website content found (or expected to be found) is noticeably less frequent.

Ad d) Indicators of media convergence

The radio with the largest number of indicators is the city radio – Radio Student (11), a non-profit channel. The remaining stations ranked highest by the number of content and sub-content are commercial radios with city concessions: Radio Mrežnica (10), Ovdje Radio Jaska (9) and Radio Labin (9).

Table 11: Indicators of media convergence by frequency

Content name	Total
Networking	Link to Facebook
	Link to YouTube
	Link to Instagram
	Link to Twitter
	Link to Soundcloud
	Stream+
	Link to LinkedIn
	Link to Pinterest
	Link to Mixcloud
	Link to TikTok
	Link to Snapchat

Links to the institutions and media outlets	Institutions (in the territory of the concession) Other media	24 19
Audio streaming		124
Content search		38
Application for receiving radio content		16
RSS		14
Podcast		7
User registration		7
Video streaming		6*
Blog		5

*Only four of them are active.

Source: Author

The most common indicator of convergence on radio websites is audio streaming, which can be found on as many as 124 websites, out of which 15 websites were inactive. As far as networking is concerned, the most common are links to Facebook (89), YouTube (42), Instagram (38), and Twitter (35).

RESULTS OF MAPPING OF E-RADIO WEBSITES

The websites with the greatest amount of content are the websites of Radio Roža, Internet radio Srijem, Radio ROJC, Radio 808 and Radio DeeJay HR (the only one among them that is commercially oriented). Non-profit Radio Skaut and commercial Radio 051 and Vedri radio have radio websites with the least content. The ranking of the websites according to number of content types represented is provided in Table 12.

Table 12: E-radio websites with the greatest number of content types

Name of the radio	Total content (75)	News (28)	Communication (14)	Advertising (12)	IMC (21)
Radio Roža	15	9	2	0	4
Internet radio Srijem	13	6	3	0	4
Radio ROJC	13	5	3	0	5
Radio 808	13	4	2	0	7
Radio DeeJay HR	12	2	2	1	7
Domoljubni radio	10	4	2	0	4
Radio GAV	7	3	3	0	1
UNITAS WebRadio	7	3	0	0	4
Rock & OFF Radio	7	3	0	0	4
Radio 051	6	0	2	0	4
Radio Skaut	5	3	0	0	2
Vedri radio	4	0	0	0	4

Source: Author

The websites of e-radios focus on identification content, with very little daily news content and no notification content. Despite the legal obligation, five e-radios do not have the Impressum, which is actually supposed to be obligatory. Radio Roža, Radio ROJC and Domoljubni radio have daily news content focus on the local community on their websites. Communication content is used to a much lesser extent. The maximum registered number is three, on the websites of the e-radio Srijem, Radio ROJC, and Radio GAV. Contact of the radio is the most common communication content: eight e-radios use it on their websites. As far as sub-content is concerned, Viber and WhatsApp are not used. Of the advertising content, only one radio station, the commercial Radio DeeJay HR, has an advertising price list. Indicators of media convergence is the thematic category of content most frequently used e-radios on their websites. Audio streaming content, which is the basis of every e-radio's programme broadcast, is available on all 12 websites, yet it is not active on the Radio GAV and Radio Skaut websites. When it comes to website sub-content, the most common are links to the social media, namely Facebook (8), Instagram (5), Twitter (4) and the music platform YouTube (4). Only two radios offer search options and blogs, while podcast content is available only on the website of one radio.

RESULTS OF THE HRVATSKI RADIO (CROATIAN RADIO) WEBSITE MAPPING

Mapping of all 12 home pages showed (expected) similarity in content and graphic solutions (T13). Daily news content is the most represented, while communication content and advertising content are the least. Indicators of media convergence also proved to be deficient.

Table 13: Hrvatski Radio (Croatian Radio)'s web pages according to content

Name of the radio	Total content (75)	News (28)	Communication (14)	Advertising (12)	IMC (21)
RC Dubrovnik	22	14	3	1	4
RC Osijek	22	14	3	1	4
RC Pula	22	15	3	0	4
RC Knin	21	14	3	1	3
RC Rijeka	21	14	3	0	4
RC Sljeme	21	14	3	0	4
RC Split	21	14	3	0	4
RC Zadar	21	14	3	0	4
Hrvatski radio 2	20	12	3	1	4
Hrvatski radio 1	16	8	3	0	5
Hrvatski radio 3	16	8	3	1	4
Glas Hrvatske	13	7	0	0	6

Source: Author

Undoubtedly, all web pages of Croatian Radio at the time of the research had an emphasis on informativeness and daily updates. Topics from the field of politics and economy were mostly followed at the level of the European Union, and then at the

local and national levels. Topics from the field of culture were most represented on the websites of regional centres, in contrast to sports topics, which were most represented on general channels. There is very little entertainment content. Identification content is frequent and consists of graphically recognizable and permanent elements that do not require special engagement (radio name, information about programmes and the radio). Notification content is extremely rare. It was found on the websites of only some regional centres, mainly as announcements of shows, local events and weather information. Communication content is almost not represented at all. On all websites, only the contact of the radio was found, that is, the address, e-mail and phone number. The situation is similar with advertising content, of which only the advertising price list was found on some websites. Indicators of media convergence are present through the content types available on all websites: audio streaming, links to Facebook and content search options. Podcasts were found only on the websites of the national channels, and the blog on the websites of Hrvatski radio 1 (The First Channel) and Glas Hrvatske (The Voice of Croatia). Video streaming is available on Glas Hrvatske. There are no any other indicators of convergence (applications, links to key institutions and other news media outlets, user registration, RSS, etc.).

DISCUSSION

Most of the researched websites of radio FM broadcasters appear static and neglected, offering content that were uploaded when the website was first established and then remained untouched for years (identification, communication).

The mapping showed that the majority of radio websites (44 FM and seven e-radios) do not have any daily news content at all. According to the findings, daily news content is rare, out-of-date and often reduced to “copy-paste” press releases (mainly on the current topics of the Covid-19 pandemic and the consequences of the earthquakes in Zagreb and Banija).

Then, what kind of content do the websites offer? Identification, communication, advertising or some of the convergence indicators? All of them (n=133) have in common only the presence of the name of the radio station, which indicates a direct and close connection of the website with FM radio. The remaining identification content, such as impressum and information about the radio, about the presenters and/or the programme, was found only on half of the researched websites, while all other types of identification content were completely omitted.

Communication content is somewhat more frequent, yet types of this kind of content are limited to a simple and typified offer of the contact with the editorial office and the sales department. All other types of communication content (surveys, chat, forum, voting for the top list, the option of liking and commenting) are extremely deficient and were found on less than 7% of the researched websites.

The same situation was found with advertising content. The mapping registered an extremely small share of advertisements, most of which were posted on home

pages (31%). Banners were found on only 14% of web pages. All the remaining possibilities of promotion and earnings from the website as part of the media mix are not used.

Indicators of media convergence follow the scarcity of basic content and are reduced to the most basic (and cheapest) elements. These are audio streaming and links to social networks, most often Facebook, while Snapchat is not present on any website, although this service is significantly present on radio channels. Video streaming, networking, links to other digital radio platforms, podcasts and blogs are used by less than 5% of all radio stations. Additional engagement in the form of proactive multimedia content is visible only on several websites.

Programme audio streaming, which in all previous research, regardless of the period research was conducted³⁰ was confirmed as one of the key reasons for the development of the website and, accordingly, as one of the first website content types that users want, was found on 124 (93%) of the broadcasters' 133 websites, of which the stream icon was active on 109 websites (82%).

In terms of the concession level, all national (n=3) and regional (n=4) radios have active streaming. Of the county-level radio stations (n=21), 5 of them do not have the option of listening to live programmes on their website. These are: ICV Radio Virovitica, Radio Quirinus, Radio Ragusa, Laganini FM Požega and Laganini FM Rijeka. A total of 19 local radio stations (out of 105) have an inactive streaming icon: Radio Mali Lošinj, Radio Belišće, Petrinjski radio, Megamix radio Hvar, Radio Daruvar, Radio Sjeverozapad, Radio Borovo, Radio Val, Sjeverni FM, Radio Sunce, Radio Banska Kosa, Laganini FM Osijek, Zagreb, Brod and Virovitica and Radio Marija Vukovar, Virovitica, Rijeka and Split.

Table 14 shows the share of programme streaming in the broadcaster's website content³¹ by broadcast level (national, regional, county and local). At the national level, the share of streams (n=3) in relation to the total number of all basic types of content registered by mapping (n=72) is 4%.

The same result was obtained with county radio stations. A slightly higher percentage (5%) was recorded in the case of regional and local radio stations. The share of programme streaming in the website content of all broadcasters is on average 4.5%, that is, streaming occupies only one-twentieth of the content of the radio's website.

30 Edison Media Research. Radio Station Website Content: An In-depth Look. [online]. New Jersey : Edison Media Research, 2000. [cit. 22 January 2022]. Available at: https://www.edisonresearch.com/radio_station_w/;

LIND, R. A. – MEDOFF, N. J. Radio Stations and the World Wide Web; MUČALO, M. – FRTALIĆ, A. Internet Radio: Fashion or Necessity?; SHERWOOD, A. (Re)Connecting with Listeners: How Radio Stations are Reaching Beyond the Dial (and Their Competitors) to Connect with Their Audience.

31 The table does not include e-radios and Hrvatski radio (*Croatian Radio*) as Croatia's public service.

Table 14: The share of programme streaming in the broadcaster's website content

	National level	Regional level	County level	Local levels
Number of researched stations	3	4	21	105
Basic content (total)	72	81	359	1663
Existence of active streaming	3	4	16	86

Source: Author

Since programme streaming on radio websites makes up less than 10% of the total content offer of each radio site, the first hypothesis is confirmed.

The second hypothesis claimed that the websites of national, regional and county radio stations offer more types of content than the websites of city and municipal radio stations. It was based on the assumption that a larger concession area (national, regional, and county broadcasting level) has a potentially wider selection of news and notifications than local levels (city and municipal).

According to the findings of the mapping, all national and regional radios have at least one content type from all four categories on their websites, which is not the case with the websites of county, city and municipal radios (T15).

Table 15: Basic content of websites according to concession areas

Basic content	National concession	Regional concession	County concession	Local concessions
News	34	31	170	807
Communication	12	16	71	303
Advertising	8	11	45	195
IMC	18	23	73	358
Total	72	81	359	1663
Average per radio	24	20	17	15

Source: Author

When it comes to the websites of national radios ($n=3$), there are 34 news, 12 communication and 8 advertising content types and 18 indicators of media convergence. That is, a total of 72 content types were found on the websites of three national radio stations. On the other hand, regional radios have an average of 20 content types per website, county radios 17, and local only 15 content types per website. Since the websites of national, regional and county radio stations offer more types of content than the websites of city and municipal radio stations, the second hypothesis is also confirmed. However, it should be emphasized that individual analysis of websites (especially of local radio stations) gives a different picture.

In Croatian broadcasting (commercial and non-profit), the editors are well aware of the competition in terms of the great number of radio channels. This was confirmed by the editors of FM broadcasters, who were selected for a semi-structured interview according to the criteria of variety and quantity of found website content

(the greatest offer, the most modest offer and medium content offer). Most of them (but not all) believe that the radio's website contributes greatly to the popularization and listening figures of FM, with the note that this still does not mean that the websites are as important as FM programme nor that they are the starting point of the new development phase of the medium of radio. There is a noticeable mismatch in the understanding of the role and value of websites, including general digital competitiveness. In the perception of some of them, the website is just an additional expense, and often "nobody's" or "everyone's" job. Table 16 shows the main points from the interviewed editors' answers about (non)maintenance of the websites.

Table 16: Key findings of (non)maintenance of radio websites

The best websites	It is known who is in charge of maintaining the website. Content is updated on a daily basis. The radio editor is extremely motivated to enhance the radio's online visibility.
Medium quality websites	The website is maintained by "anybody." There are no rules in the dynamics of content updating ("done by anybody"). The reasons for neglect are lack of money, motivation and competent employees.
Neglected quality websites	No one maintains the website. No interest in content updating. The reasons for the neglect are lack of money and lack of awareness of radio owners.

Source: Author

Among the best-ranked websites, Otvoreni radio (which is also the only such example in the overall survey) has a full-time employee whose job it is to maintain and manage the content of the website. On the other hand, the websites of Radio Student and Radio Mrežnica are regularly maintained by the chief editors and journalists of these radio stations. In the case of medium quality websites, the content is prepared by an employee who has time (and knowledge) at that moment, while neglected websites are not actually handled by anyone. The personal motivation of editors-in-chief (and radio staff) is often crucial for the appearance and offer of the website, i.e., lack of motivation is a frequent reason for their abandonment.

In the context of e-radio, there is a noticeable decline in quality compared to the mapping done ten years ago³², especially in terms of daily update of news content. The websites are mainly focused on identification elements, daily news content is rare, and the website offer favours streaming and links to social networks. Website content of most e-radios is extremely modest and reduced to an elementary offer, which raises the question of their real role, especially if it is about commercially oriented radios. In point of fact, the costs of programme production, equipment maintenance, payment of copyrights, and possibly royalties, still require certain financial stability.

32 See MUČALO, M. – FRTALIĆ, A. Internet Radio: Fashion or Necessity?

While this research was conducted, Hrvatski radio's (*Croatian Radio's*) website was about to undergo redesign. The mapping findings indicate that it is a standardized design used by three national channels, eight regional channels and one international channel. The website's focus is on daily news and notification content, with a chronic lack of advertising and communication content. Particularly intriguing is the lack of indicators of media convergence, which were not found on any of the websites of Hrvatski radio (Croatian Radio) at the time of the mapping.

CONCLUSION

Research has shown that almost all FM radio stations in Croatia have active websites. However, it turned out that many of them are visually and functionally outdated, static and rarely updated. The most common content is dominated by static elements that do not require frequent updating. Daily news content is rare and for most broadcasters it is limited to announcements sent by public relations services or companies. There is little original news content, and similar neglect is shared by advertising and communication website options. Jobs related to online visibility of traditional radio (corporate and profile pages) are mostly perceived as incidental and non-binding, without deeper understanding and are often subject to personal beliefs (positive and negative) of radio owners, editors and employees.

Strong content dependence of websites on radio (FM) programme is noticeable: what is on the air, is also on the website. This is often the dominant perception of the role of a website in the activity of a radio broadcaster.

In conclusion, the multimedia potential of websites has not yet been fully used, the same as other communication, advertising and participatory options. Websites are not understood as a step towards a converged media environment, nor is there a clear awareness of their role in the strategic development of radio in the 21st century. The convergence of the medium of radio in Croatia is still at the beginning. It can be identified only in a formal sense (number of websites), yet not in a substantial sense. We can evaluate the current situation as a conscious unwillingness to change.

Due to too many small and local commercial FM radios, consolidation is expected in the future in accordance with the provisions of the Croatian Law on the Protection of Market Competition. Consolidation will probably result in a few strong commercial companies that will take care of the radios in their composition and thus of their network contents. Technology (program streaming and music streaming channels) will have a particularly prominent place, which will make FM slowly die out. This claim is supported by the recent launch of commercial DAB+ radio programs in Croatia, following the example of other developed European countries.

The scientific contribution of this work, the first of its kind in the last decade in Croatian science and the science of the countries of the region, is manifested in new knowledge in the field of information and communication sciences in a theoretical and practical sense. In the theoretical part, it is likely to be expected that the findings contribute to the expansion of general knowledge and knowledge about the degree of (found) convergence of the entire radio landscape of the Republic of Croatia. Since

the population of radio stations is covered, it is likely to be expected that it could represent a starting point for future comparative research and longitudinal studies by future media researchers. Given the scope of the research, part of the findings could be useful to institutions in charge of, especially in the areas of strategic reflection of new knowledge and skills in the field of education of current and future media workers. In a practical sense, this paper provides know-how recommendations for media business in the digital age, with a special emphasis on the business penetration of traditional FM radios and their websites.

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