

# Adaptation of Digital Disruption Sources by News and Non-News Radio in Jakarta

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**Abstract**—The research aims to construct the adaptation of digital disruption sources by the news and non-news radio in Jakarta in acquiring audiences for the sake of business continuity. The research has an interpretive approach, a constructive paradigm, and a qualitative descriptive method. The research objects are two popular news radio stations in Jakarta, namely Elshita FM and RRI, and three non-news radio stations that are widely listened to namely Prambors FM, Hard Rock FM, and Jak FM. Primary data collection was carried out using semi-structured interviews with radio managers who were the object of the research. In addition to primary data, this research also utilizes secondary data such as radio applications, websites, and social media radio which are the object of research. The data analysis technique used follows the six stages of qualitative by Creswell. Data reliability was carried out in four procedures, namely checking the results of interview transcripts, ensuring that there were no floating definitions or meanings, and discussing the codes in the coding process with the research team. The research found that not all sources of digital disruption have been adapted by the news and non-news radio in Jakarta. A source of disruption that has not been adapted is the use of 3D printing. This is because broadcast radio is not a manufacturing company that produces equipment that requires three-dimensional printing.

**Keywords**—adaptation, audiences, digital, disruption, news, radio

## I. INTRODUCTION

The era of technological disruption makes everything instant, easy, and modern. This is certainly in line with the main purpose of the presence of technology, which is to facilitate human activities, such as working, communicating, seeking information, and others.

Moreover, recently there has been a major transformation in people's lifestyles and behaviour as a result of the post-pandemic, both in Indonesia and globally. Disruption is an innovation that replaces all-physical old technology with digital technology that is more efficient and more useful [10][11]. Digital disruption that characterizes the 4.0 industrial revolution has affected various fields of life [8][9] including the management of radio broadcasts, both news and non-news radio. Broadcast radio management must adapt or adjust to continue to get listeners in the midst of changing patterns and the way the audience consumes media [20][21]. The research aims to construct adaptations to sources of digital disruption carried out by news and non-news radio in Jakarta in acquiring audiences for the sake of business continuity.

BBC News Radio in England and Trax FM in Jakarta are two radio stations that stop broadcasting via frequency and switched to digital by broadcasting via the internet in the form of streaming and applications [12][13]. The two radio stations chose to switch to broadcasting via the internet due to the increasingly widespread internet penetration. In Indonesia, internet penetration continues to increase, if 2022 the penetration reaches 77.02% [14], this number will increase in early 2023 to 78.19% of Indonesia's population [15].

Although internet penetration in Indonesia continues to increase, the number of radio listeners has not decreased. The Indonesian National Private Broadcasting Radio Association (PRSSNI) notes that the number of radio listeners in Indonesia has increased by 21% to 31% from 2017 to 2020, with an average daily radio listening duration of 120 minutes or two hours [16][17]. However, the increase in the number of radio listeners is inversely proportional to the advertising spending market for radio, which is getting smaller, only 0.3% in the first half of 2022. This number has decreased by 13% compared to 2021 [19].

It seems that the decision by the BBC and Trax FM to broadcast on the internet is not related to the decrease in the number of audiences, but rather to the smaller advertising spending for radio and the continued increase in digital advertising spending. The advertising spending market for radio in Indonesia in the semester I of 2022 is only 0.3%, down 13% compared to 2021. Meanwhile, digital advertising reaches 15.2% [19]. Global digital advertising growth, according to advertising agency Zenith, is expected to continue to increase to 65.1% in 2024 [18]. Even though radio's audience has not decreased, radio must adapt to developments in communication technology that have led to digital disruption that has changed business models [22][9]. This needs to be done so that the continuity of the radio is maintained while changing listener behaviour. Based on that thought, this research was conducted. The research question is how news and non-news radio in Jakarta adapt to digital disruption sources to acquire audiences for the sake of business continuity.

Research on broadcast radio in Indonesia relates to digital and communication technology, which was carried out by previous research. There are several themes of radio broadcasting research studies conducted before this research, namely adaptation of the 2020 digital broadcasting system by radio in Indonesia [23]; radio organizations adapt to change [24]; convergence by broadcast radio [21][25], and the commodification of celebrities in radio broadcasts [26]. Research on the adaptation of digital disruption sources by radio in Indonesia has so far not been carried out by previous researchers, and this is what our news and the difference between this research and previous research.

## II. LITERATURE REVIEW

### A. Radio Broadcasting and Media Convergence

Broadcast radio operators in Indonesia are currently facing big challenges to be able to survive as a business in the era of social media, the internet, and the industrial revolution 4.0. Radio advertising expenditures are getting smaller, only 0.3%, [21] and the various choices of platforms that can be accessed by the audience to get information, and digitization in various fields, are just a few of the challenges faced by broadcast radio managers.

Media convergence is a necessity for broadcast radio [27] to survive because there have been changes in listener patterns as a result of developments in communication technology and digitalization in various fields. Media convergence refers to a situation where several media run side by side and media content is properly distributed [27]. Burnett and Marshall, as quoted by Hanna [28], stated that convergence is synonymous with digitalization and is the impact of website technology developments. The unification of various media platforms is proof that communication technology can provide convenience for human life, especially to obtain information or entertainment.

Grant and Wilkinson state, the essence of the convergence of digital media technology and computer technology. The development of digital technology has created major changes that have resulted in digitization in many areas of life. Convergence emerges in several forms, namely technology, content, economy, social or organic,

cultural, and global [29][30]. The main characteristics of convergence are multimedia, multichannel, and multiplatform [31].

### B. Radio in the Industrial Revolution 4.0 and Sources of Digital Disruption

Media convergence has changed audience behaviour in listening to the radio. The medium used by the audience to access radio broadcasts is now not single, but various, such as terrestrial, internet, and applications [27]. Media convergence that occurred in the radio broadcasting industry is increasingly accelerated in the era of the industrial revolution 4.0. The industrial revolution 4.0 is marked by the development of digital technology which has changed and disrupted all aspects of people's lives [9] [22]. Disruption is a phenomenon when people shift all their activities into the real world and then switch to cyberspace so that fundamental or basic changes occur in their lives [32]. Disruption also occurs in the field of technology, which Kasali [33] describes as something that comes after the digital era and disrupts the stability of businesses that do not use the internet and digital technology as added value. There are four indicators of technological disruption, namely simple, accessible, faster, and cheaper. All industries, including radio broadcasting, must adapt to digital disruption to survive as a business [8].

To adapt to digital disruption, the first thing radio broadcast managers do is understand the sources of digital disruption, namely grid computing, the widespread use of three-dimensional printing, artificial intelligence, time intelligence, the internet of things (IoT), major changes in demands, and digitalization [22]. By understanding the sources of digital disruption, radio broadcast managers can capture the challenges faced and can adapt to the needs of the audience. The next step is to implement these sources in managing radio broadcasts so that the business can survive and be sustainable.

## III. RESEARCH METHODS

The research uses an interpretive approach [1] with a constructivist paradigm [3] because it wants to construct how news and non-news radio in Jakarta adapt digital disruption sources in broadcasting to acquire audiences. The research method used is descriptive qualitative [2] because researchers are guided by theory or concepts in answering questions. The research objects were two news radio stations, Elshinta FM and RRI, and three non-news radio stations, namely Prambors FM, Jak FM, and Hard Rock FM. Elshinta FM was chosen because it is the only news radio in Jakarta that broadcasts for 24 hours without playing songs [5], while RRI is the most accessed and trusted during 2020-2021 [4]. Prambors FM, Hard Rock FM, and Jak FM are the three most popular non-news radio stations in Jakarta [6].

The research subject is the manager who is the object of research. Primary data collection was carried out by semi structured interviews interviews with radio managers who were the object of the research. In addition to primary data, this research also utilizes secondary data such as radio applications, websites, and social media radio which are the object of research. The data analysis technique used follows the six stages of qualitative data analysis developed by Creswell and Creswell [7]. In the first stage, the researcher prepared all primary and secondary data related

to the adaptation of digital radio disturbance sources which were the object of research. Second, read all the data to find general ideas regarding the adaptation of digital disruption sources by the news and non-news radio in Jakarta. Third, coding or coordinating data into categories and themes according to the source of digital disruption. The fourth step is to describe in detail the application of digital disruption sources by the news and non-news radio in Jakarta. The fifth narrates the results of the complete data analysis, namely the adaptation of digital disruption sources by radio which is the object of research.

The final step is to discuss or interpret data on the adaptation of digital disruption sources by the news and non-news radio in Jakarta and discuss it with literature or theory. Data validation is done by triangulating (sources, data, and methods), member checking, and making a rich and concise description of the research results. Data reliability was carried out in four procedures, namely checking the results of interview transcripts, ensuring that there were no floating definitions or meanings, and discussing the codes in the coding process with the research team.

#### IV. RESEARCH FINDINGS AND DISCUSSION

##### A. Implementation of Grid Computing in Radio Stations

News and non-news radio managers in Jakarta who are the object of research have used grid computing in their broadcast management. The form is in the form of using a single server to store data related to broadcast material and broadcast processes. The single server that is used is cloud-based because of the amount of data stored to support the work process in radio broadcasts. HardRock FM, Elshint FM, Prambors FM, and RRI, which broadcast on a network, use grid computing to store broadcast material so that it can be accessed from various areas where radio network members broadcast. In addition to network radio broadcasts, grid computing is used for streaming radio broadcasts over the internet which is part of its technological convergence. In addition to storing broadcast material, cloud-based grid computing is also used to store radio company data. The use of grid computing is the main choice because it is more efficient and effective in managing networked radio and streaming, due to easy access, durability, and inexpensive [22]. Storing data in a cloud-based server can be done because radio companies have converged technology [29].

##### B. 3D printing technology

The source of digital disruption in the form of three-dimensional printing has not been used in broadcast radio management. Three-dimensional printing technology is related to the manufacture and distribution of equipment or spare parts so that it is easier and cheaper [22][9]. This source of disruption is not related to the radio company's business but is more related to manufacturing companies that produce equipment and spare parts, such as hardware for broadcasting. Meanwhile, broadcast radio companies are users of hardware for broadcasting produced by manufacturing companies.

##### C. Application of Artificial Intelligence in Radio Stations

Not all radios that are the object of research apply artificial intelligence in their broadcasts. One radio that has

implemented artificial intelligence is Hard Rock FM. Artificial intelligence can be understood as computer science that focuses on creating intelligent machines that work and react like humans in the era of the industrial revolution 4.0 which is developing very rapidly [32]. Hard Rock FM, which is under the auspices of MRA Media, has created an artificial intelligence-based service called Q Research. Q Research is used as a tool that can automatically detect the data of all radios under MRA Media regarding the number of advertisements, types of advertisements, types of advertisements, and the number of songs. The data is provided to clients for consideration in placing advertisements on MRA Media, including Hard Roc FM. The use of this intelligence technology makes it easier for MRA Media as the owner of Hard Rock FM to know all the radio data they have quickly and accurately.

##### D. Application of Time Intelligence in Radio Stations

Daniel Bells argues, there are two main factors in the development of information technology. First, there is an acceleration of the flow of information through the network using fiber optics. Second, there is an integrated combination of computer technology and telecommunication. These two factors make it easy for people to access various information by utilizing information technology that can penetrate the limitations of space and time so that people can receive information in real-time [33]. The speed of information in online media is a challenge for conventional media such as radio so that it is not left behind. There are several ways to take advantage of time intelligence by radio broadcast managers so that the information conveyed is not too left behind by social media. First, making information that is trending, viral and much sought after on social media as broadcast material so that it is relevant to the needs of the audience. Second, using the RCS application for radio programs that are broadcast live delay. This means that the program to be broadcast is recorded in advance and the results are played according to the specified time. RCS is used to be able to schedule or schedule songs to be played at the desired time, scheduling bumpers, scheduling jingles, and others. Use of RCS.

##### E. Application of the Internet of Things in Radio Stations

The use of the internet is inherent in the work process and the broadcasting process on broadcast radio which is the object of research. The Internet of Things has the concept that objects can transmit data over a network without having to go through human-to-human or human-to-computer interaction [22]. The internet is very influential in the way radio broadcasts are the object of research. Broadcast content production processes, broadcast processes both live and live delay, broadcast monitoring, and advertisement search have all taken advantage of the internet. Radio broadcasts via streaming, broadcasts via applications, broadcasts via social media, and broadcasts via other platforms are forms of using IoT by broadcast radio managers as a form of media convergence to reach a wider and more diverse audience [27].

"All of us have also entered digital because whatever is in an on-air is also digital. So keep up with digital developments as well. Most of us are just streaming right now" (Informant TY).

"The most crucial thing is how to distribute content on air using the internet so that it can be received and listened to by streaming. Radio that is transmitted via the internet finally has a dependency on the internet in how the internet does not become an obstacle so that people can listen to radio anytime and anywhere," (Informant MA).

The use of internet technology in the broadcast audio transmission process following Preston's expression is part of convergence which causes massive changes in the handling, supply, distribution, and processing of all forms of information in the form of visual, audio, data and so on [35].

#### *F. Big Changes in Demand*

Big Changes in demand in requests in the context of radio broadcasts are interpreted as changes or shifts in listener access to radio. Grant and Wilkinson in [34][27] stated, media convergence has caused people to have many choices of media as a source of information and entertainment with very varied content. There is a change in the way people seek and receive information, making radio a conventional media must carry out media convergence. All informants stated that the radio they manage uses various platforms to broadcast. The platforms are web streaming services, radio broadcast applications, and social media.

"We move content on radio to social media. Right now, what we use is IG and YouTube, as well as TikTok, but now IG and YouTube are more intense," (Informant HR).

"We try to be present on all platforms, because of course people's characters are different. Some I only play on Facebook; I don't play on Instagram. I only play on Twitter; I don't play on YouTube. So we are present on all platforms," (AP informant).

Prambors FM, Hard Rock FM, and RRI via RRI Play Go are radio broadcasts via applications that can be downloaded via Android and iOS. Meanwhile, Jak FM and Elshinta broadcast on the NOICE Radio Podcast application.

#### *G. Digitalization in Radio Broadcasts.*

Digitization is a source of digital disruption and smartphones make everything easier, lighter, and can be carried anywhere. Broadcasting through applications, web streaming, and social media that can be accessed via smartphones is a form of adaptation of digital disruption sources carried out by radio which is the object of research. Digitization allows companies that have earned the trust of their users to easily enter into various other forms of business [22]. Radio has used the trust of its listeners to enter other businesses that sometimes have nothing to do with radio broadcasting. Research informants revealed that they have not entered any other business outside of radio broadcasting as their core business. The trust given by the new audience is used to hold off air activities, the aim of which is to build increased interaction between listeners and broadcasters. Digitalization, according to the informant, is not only related to equipment that is

increasingly concise and easy but also concerns the mindset of human resources (HR) who work in broadcast radio. Human resources in radio broadcasting must also have a digital mindset, namely the emergence of awareness that the output of radio broadcasts is not only terrestrial but also on various platforms. As a result, the human resources in radio must improve their ability to lead to multi-skills.

"When the mindset changes, the human resources in it inevitably have to improve their skills, for example before the skill was only limited to an analogue radio, now we have to start thinking that when making a product there must be visuals for it. We have started to think about Hard Rock FM's brand image on social media because the product produced is not merely analogue radio," (Informant MA).

#### IV. CONCLUSION

The research concludes that news and non-news radio in Jakarta, which are the object of research, have adapted digital disruption sources to acquire audiences in the era of the industrial revolution 4.0. Utilization of digital disruption sources is carried out as part of media convergence which must be carried out amid developments in communication technology that have caused changes in listeners' access to radio broadcasts.

Not all sources of digital disruption have been utilized by the news and non-news radio in Jakarta in their radio management. An untapped source of digital disruption is the use of 3D printing because broadcast radio is not a manufacturing industry that produces equipment and parts that can take advantage of 3D printing. The sources of disruption that have been adapted are grid computing in the form of using a cloud-based single server; not all radio broadcasts use artificial intelligence, only Hard Rock FM uses artificial intelligence to collect radio data used for advertising purposes; real-time intelligence in the form of using applications for broadcasting; all radios are already dependent on the internet in managing radio broadcasts as a manifestation of IoT. Adaptation of Changes in demand is realized by broadcasting on various media platforms and at the same time as part of the adaptation of digitalization.

The results of this study also provide suggestions for news and non-news radio stations that can be adjusted according to mood and trends, this will be a plus point that will help attract listeners' attention. The role of the music director is to prepare songs according to the target market. In addition, in each broadcast program, the topic of the discussion must always be up to date. Adjusting to events or a trend at that time. Radio stations can provide opportunities for listeners to interact, such as ordering songs, sharing confessions, just sharing experiences or stories from the themes being discussed. So, as listeners, you can also share your experiences, via direct telephone or social media, considering that radio can still be a means of entertainment as well as up-to-date information.

The suggestions that can be given to future researchers are that future researchers can develop research related to not only innovation changes because disruption has changed business models and media that cannot survive because they cannot keep up with changes in business models. In addition, further researchers can develop from a performance standpoint, such as the quality of coverage,

but the media must change the conventional business model.

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