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Guidelines for the adaptation of community radio (Business Type) in the age of media convergence and the emergence of digital radio

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Abstract

The purpose of this research is to 1) study the competency of community radio (Business Type) for adaptation in the age of media convergence and the emergence of digital radio 2) study the impact of media convergence and the emergence of digital radio on community radio (Business Type)† 3) recommend preparedness planning for business continuity of community radio (Business Type). This research uses a combination of quantitative and qualitative analysis. The population in this study comprises of Thai citizens at least 18 years of age hailing from five regions, with 400 representing each region for a total of 2,000 persons. Provinces are selected based on the number of community radio stations present and high level of economic activities. Key informants include academics and experts, community radio service operators, policy-level civil servants, and policy-level civil servants with at least 3 years of experience in the field of radio service, for a total of 10 persons. The issue that participants understand the most about community radio (Business Type) is that community radio stations use the same frequencies as FM and AM systems (73.76%). They also perceive the level of impact on community radio (Business Type) to be high ($\bar{x}$=3.65, SD= .761). The research also finds that understanding about community radio (Business Type) influences the impact on community radio service in the age of media convergence and the emergence of digital radio with a significance value of 0.05 (P-value = .000). The research paper concludes with recommendations for business continuity planning for community radio (Business Type) as follows: 1) organizational transformation into convergent media regulator 2) promotion of co-regulation of media content with professional media organizations 3) design regulations that reduce costs and risks for radio station operators and set conditions that assist operators in finding solutions for their business problems 4) cost reduction in radio broadcasting for community radio stations 5) level the playing field for community radio station operators so that they are able to compete with major radio station operators today and in the age of digital radio and 6) enhance competency among community radio station operators for digital radio technology and development of content quality, variety, and presentation that meet the audience' changing behaviors.

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† In Thailand, nowadays, all radio stations both AM and FM are in the hands of National Broadcasting and Telecommunication Commission (NBTC). There are approximately 5,500 AM and FM stations in Thailand. These can be divided as follows 1. The first category is the mainstream Station. There are approximately 193 AM station 313 FM station nationwide. All of them used to belong to the government agencies but now have received temporarily licenses to operate from National Broadcasting and Telecommunication Commission (NBTC). These stations operate for the government communication to Thai, however, they also let to private companies to operate for leisure as well. The money receives from private company will be used for the objective of establishment of the agencies. Out of 193 AM stations, there are approximately 120 stations belong to the armies and 60 stations belong to Department of Public Relation (government agency) and the rest still belong to the different government agencies. For FM stations, there are approximately 313 FM station nationwide. There are approximately 160 stations belong to the armies and 90 stations belong to Department of Public Relation and 80 stations belong to the Mass Communication Organization of Thailand (government agency). 2. The second category is called "Experimental radio service" or this paper would like to call it as a community radio station. Before 2014, there were 10,000 FM community radio stations nationwide which operate without government supervision and authorization. The radio owner set up the station with a radio broadcaster equipment and radio tower. After the Coup d'état in 2014, the government issued a temporary license to this radio and categorize them into three types, Business, Community, and public purposes/ licenses. Nowadays, the number of stations of "Experimental radio service"/ community has reduced to 4,000 for business license and 1,000 for both Community and public licenses. For business license, it means that the station can advertise for business purposes but community and public licenses which usually belong to the temple, foundations cannot advertise and commercialize. These stations "Experimental radio service" or this paper would like to call it as a community radio station can broadcast no longer than 20 Kms radiance.

Keywords: *community radio service (commercial)/ digital radio/ community radio (Business Type) adaptability*

Introduction

In the age of media convergence and the new media, the media industry has been driven towards significant changes. Presently, media organizations in Thailand have started to adjust to new technologies and changing news consumption behaviors, as well as searched for new business models for the sake of organizational continuity. Each media organization has different concept, policy, and framework for adjustment. Radio broadcasting service, or the radio, is a media channel that plays an important role in social, economic, and political dimensions. Community radio stations have a relationship with the society and public perceptions, especially in times of political crises when they can influence people's awareness about the news (Charoen Pengmoon, 2015). Presently, radio broadcasting is under the supervision of the National Broadcasting and Telecommunications Commission (NBTC) and the Service of the Sound Broadcasting Service and the Television Broadcasting Service Act B.E. 2551 (2008), which have set guidelines for establishing and operating various types of sound broadcasting (Dhanakorn Srisooksai, 2006. p. 125-128). The purpose of the Act is to generate enthusiasm from various sectors of the society for media reform, which has resulted in the creation of several community media organizations according to Article 40 of the Constitution of the Kingdom of Thailand B.E. 2040 (1997) and the Service of the Sound Broadcasting Service and the Television Broadcasting Service Act B.E. 2551 (2008). However, throughout the period of their service the number of public broadcasting and community radio stations have declined continuously since they are subjected to limitations in making income through advertisements and hence lacked clear sources of funding.

Community radio (Business Type) must deal with the impact of media convergence and the transformation from analog audio broadcasting to digital audio broadcasting. Since poor sound quality of AM frequencies and the problem of FM signal does not travel very far, thus, such limitations of analog radio have led to the development of digital radio, or digital audio broadcasting based on DAB+ technology, which is superior in sending and receiving signals and can broadcast over several channels on the same spectrum and network. As such, signal interruptions are less likely to occur in comparison to analog radio system (Warangkana Jantramongkon, 2019). Besides reducing signal interference, digital radio makes it possible to expand the bandwidth for receiving signals to at both community and the national levels, as well as support broadcasting, which is the main service, and sending of information in the form of messages and images. It could also be adapted for other uses such as showing traffic situations and images used for public communications. If Thailand fully adopts digital radio system, the continuity and viability of other types of broadcasting services would be directly affected, especially community radio stations which face more limitations than other types of broadcasting services. Besides signal sharpness, the variety of contents of digital radio would attract a wider audience that includes all groups within the society, surpassing the factor of DJ popularity which is the main attractiveness of community radio stations. Therefore, the rise of digital radio would impact the continuity of analog audio broadcasters, especially community radio stations which would be most affected by the capacity to compete, raise funds, or personnel development as their staff would need to adjust more than those of other radio broadcasting services.

Thus, the continuity of analog audio broadcasting services requires assistance and support from regulatory agencies, both at the policy and operational levels, to create a level playing field for competition through guidelines, provisions for license renewals, or other regulatory policies. Assistance could also be in the form of body of knowledge enhancement for content creation,

program presentation, DAB+ technology or other related digital radio technologies. The aim would be to transform the format of mainstream media while prioritizing the provision of space for alternative media creators, allocating and promoting certain types of content, raising the standard of media professionals, establishing public service media, and creating access for independent media, and promoting media proficiency, self-supervision, and ethics.

The rapid change in consumer behaviors and digital radio trends make the issue of preparedness – that is, encouraging analog audio broadcasters to adapt, very important for maintaining a level playing field of competition among broadcasting services in Thailand. This is true especially for community radio stations which have less capacity to compete than mainstream radio stations. The researchers of this study are interested in the issue of business continuity of community radio service operators in the age of media convergence and the transformation from analog to digital radio. To recommend preparedness planning for business continuity of community radio (Business Type) and other relevant policies, it is essential to study the direction of adjustment among broadcasting service providers in the age of technological integration.

Study Motivation and Study Aims

The article aimed to study the competency for adaptation of community radio (Business Type) in the age of media convergence and the emergence of digital radio, to study the impact on community radio (Business Type), and to recommend preparedness planning for business continuity of community radio (Business Type) in the age of media convergence and the emergence of digital radio.

In this study, the researchers have explored the concept of community radio service in the age of media convergence and the emergence of digital radio, the impact of digital technology, business continuity theory, as well as the present broadcasting environment. They complemented this with an analyze the competency and conclude a plan for business continuity preparedness for community radio service (commercial). The researchers collected data from Thai citizens aged 18 and above, divided into sample groups of 400 from 5 provinces in 4 regions of the country, namely Nonthaburi together with Pathum Thani, Chiang Mai, Nakhon Ratchasima, Surat Thani, and Chonburi, for a total of 2,000 persons. The purpose is to study the competency for adaptation of community radio (Business Type) in the age of media convergence and the emergence of digital radio, as well as the impact on community radio (Business Type).

Additionally, data was collected from in-depth interviews of academics and experts, community radio operators, and policy-level civil servants. For the interviews, the researchers employed the method of purposive selection. The area considered in this study comprise provinces with the highest numbers of community radio stations and high level of economic activities, for a total of 5 provinces from 4 regions as follows: Nonthaburi together with Pathum Thani, Chiang Mai, Nakhon Ratchasima, Surat Thani, and Chonburi

Methodology Description

This research employs a mixed method of quantitative and qualitative research, as follows:

Quantitative Research

The researchers employed quantitative research to fulfill research objectives number 1 and 2 and to find out the level of competency for adaptation of community radio service and the impact on community radio (Business Type). The population in the study was Thai citizens

aged 18 and above. The sampling population size was determined by Cochran formula as the true number of the population is unknown. The result of the calculation is 384 persons. However, to maximize comprehensiveness and minimize errors, the researchers used the maximum sample size of 400 persons to allow for attrition in survey participants. To enhance research robustness, the researchers expanded the sample group to cover all 4 regions of the country, with a total of 5 provinces (Nonthaburi together with Pathum Thani, Chiang Mai, Nakhon Ratchasima, Surat Thani, and Chonburi). The total number of the population in the study was 2,000 persons. This study uses multi-stage sampling as follows: 1) Random selection in specific areas in each region – the population was classified into 4 regions and selected from provinces with high numbers of community radio stations and high economic activities to represent each region. For example, Surat Thani represented the southern region, Chonburi represented the middle and eastern regions, Nakhon Ratchasima represented the northeastern region, Chiang Mai represented the northern region, and Nonthaburi was combined with Pathum Thani. The sample group from each area was equal to 400 persons, with the overall total of 2,000 persons. 2) Voluntary selection – the sample group was selected from volunteers who participated willingly. The respondents own/ have owned/ work as a DJ in the radio station or are interested in radio business. Researchers recruited volunteers through public announcements. 3) Snowball selection – the sample group was selected based on possession of desirable qualities, through reference from another sample group which could identify the groups with similar qualities. Data collection was concluded once complete and sufficient data was obtained. The tool for quantitative research was the questionnaire, both close ended and open ended, to survey the competency of and the impact on community radio service operators in the age of media convergence and the emergence of digital radio. The validity test, using index of consistency (IOC), found that the questionnaire had the IOC value between 0.66-1.00, which passed the standard. The questionnaire was also subjected to a reliability analysis through a try-out, the result being that the confidence test alpha value was 0.97 and every question had a reliability value within the standard. Therefore, it could be concluded that the questionnaire was a tool fit for the study. For the quantitative analysis, the researchers collected the data and ran an integrity and accuracy test of the questionnaire. Data collected by the questionnaire was coded and then processed by computer using the SPSS program for studying personal factors that influenced the impact on digital radio service (commercial). The researchers employed the analytical method of independent sample t-test and one way ANOVA. For the analysis of competency for adaptation of community radio service (commercial), which influenced the impact on community radio (Business Type), the researchers applied simple linear regression analysis with the significance level of 0.05. The correlation was tested by Pearson's Product Moment Correlation Coefficient.

Qualitative Research

The researcher employed qualitative research to address research objective number 3: to recommend preparedness planning for business continuity of community radio services (commercial) in the age of media convergence and the emergence of digital radio. The researchers used purposive selection method to select the key informants, which consisted of 5 academics, experts, and community radio operators with at least 3 years of experience in radio service; and 5 policy-level civil servants with at least 3 years of knowledge and work experience in radio service. A total of 10 key informants participated. The researchers used interviews as the tool for data collection, which has been subjected to validity testing. The data collected from interviews was subjected to content analysis and classified and categorized before the conclusion was reached. Results from data analysis served as the basis for the recommendations

on business continuity planning for community radio services (commercial) in the age of media convergence and the emergence of digital radio.

Results and Discussion

Quantitative Research Results

This questionnaire was conducted in February 2022. Based on the data on personal factors of 2,000 participants in the sample group, the research found that the majority of the sample were female, 1,148 persons or 57.45% of the sample size. The sample group that was male was equivalent to 852 persons, or 42.55%. In terms of age, most of the sample group were of the age between 55-73 years old, numbering 654 persons or 32.70% of the sample population. In terms of marital status, the majority equating 1,241 persons, or 62.05%, were single. In terms of monthly income, the majority of the sample group, equating 811 persons or 40.55%, had more than 10,001-30,000-baht income per month. As for education, most of the sample group or 1,523 persons had a bachelor's degree or the equivalent. The sample population from each region (the northern region, southern region, middle/eastern region, northeastern region, and Bangkok and its vicinity) numbered 400 persons, that is, each region represented 20% of the sample population. In terms of receiving information from the radio, most of the sample group received their information from the radio, equating 1,841 persons or 92.05%. As for the mode of listening to the radio of the aforementioned group that receive their information from the radio, the majority of the group, or 699 persons (37.97%) listened to online radio. In terms of frequency of listening to the radio, the majority of the sample group or 647 persons (35.14%) listened to the radio every day. As for the day of the week for listening to the radio, the majority or 847 persons (46.01%) listened to the radio on Saturday and Sunday. In terms of the time for listening to the radio, the majority or 501 persons (27.21%) listened to the radio during 08.01 – 11.00 hours.

The level of competency for adaptation of community radio (Business Type)

To analyze the level of competency for adaptation of community radio (Business Type) in the age of media convergence and the emergence of digital radio, the researchers focused on the elements of frequency and mean. By demonstrating the mean value of correct and incorrect answers, it was found that most of the sample group were familiar with community radio service (commercial), equating 1,201 persons or 65.24% of the sample population. 640 persons or 34.7% of the sample group were not familiar with community radio service (commercial) especially where the mainstream stations are dominant such as in Bangkok (capital) or among young generation who listen to online radio. The sample group demonstrated the highest competency for the issue regarding how community radio (Business Type) used the same radio frequency as the FM and AM systems, with 1,358 persons or 73.76% of the sample group in agreement. 1,089 persons or 59.15% of the sample group understood that community radio (Business Type) was not affected by online radio or the transition to digital radio. 1,023 persons or 55.57% of the sample group understood that community radio (Business Type) used the analog system same as FM and AM systems. 952 persons or 51.71% believed that community radio (Business Type)was not different from digital radio. 935 persons or 50.79% understood that commercial broadcast radio must make income from advertisements, which could affect the quality of the content. 874 persons or 47.47% understood that the general public could apply for license to operate community radio service (commercial). 852 persons or 46.28% understood that application for radio broadcasting license was regulated by the Announcement

of the National Broadcasting and Telecommunications Commission. Regarding the Criteria for Community Radio Broadcast Service License B.E. 2555 (2012), 745 persons or 40.47% of the sample group understood that community radio operators must apply for extension of community radio broadcast service license at least 120 days in advance before the expiration of the previous license. 641 persons or 34.82% understood that community radio (Business Type)and digital radio could be listened to simultaneously throughout the country. The issues about community radio (Business Type) with the least understanding (541 persons or 29.39% of the sample group) was that radio broadcast operators could apply for community radio operating license, which had a duration of 1 year.

Perception about the impact on radio

To understand the level of perception about the impact, the researchers analyzed the data by concluding its mean and standard deviation, as well as evaluated the level of perception by demonstrating the overall mean and the mean of each topic. The researchers found that the perception of respondents about the impact on community radio was at a high level ($\bar{x}$=3.65, SD= .761). When evaluating each topic, the researchers found that respondents agreed with the statement "community radio (Business Type) must understand the context of online radio and digital radio in order to gain advantage in terms of operating space" with demonstrated perception at the highest level ($\bar{x}$=3.90, SD= .801). In second place, respondents agreed with the statement "revenue from radio/community radio (Business Type) advertisement will decrease," with demonstrated a high level of perception ($\bar{x}$=3.87, SD= .658). The statement "community radio (Business Type) may have to reduce staff for the sake of continuity" also demonstrated a high level of perception ($\bar{x}$=3.81, SD= .698). The statement "community radio (Business Type) must raise the standard of the station" demonstrated a high level of perception ($\bar{x}$=3.79, SD= .725). The statement "the difficulty in accessing funding resources is an important obstacle for community radio service (commercial)" demonstrated a high level of perception ($\bar{x}$=3.74, SD= .811). The statement "community radio (Business Type) must adjust to increase the variety of content" demonstrated a high level of perception ($\bar{x}$=3.71, SD= .674). The statement "community radio (Business Type) may lack cash flow" demonstrated a high level of perception ($\bar{x}$=3.69, SD= .841). The statement "the number of listeners of community radio (Business Type) will decrease" demonstrated a high level of perception ($\bar{x}$=3.65, SD= .814). The statement "community radio (Business Type) must promote greater access" demonstrated a high level of perception ($\bar{x}$=3.65, SD= .881). The statement "new technology could be considered as risk if community radio (Business Type) fails to adapt in time" demonstrated a high level of perception ($\bar{x}$=3.62, SD= .774). The statement "legal limitations were an important obstacle for community radio service (commercial)" demonstrated a high level of perception ($\bar{x}$=3.59, SD= .841. The statement "community radio (Business Type) must lessen the possibility for outsiders to dictate the media" demonstrated a high level of perception ($\bar{x}$=3.41, SD= .741). The statement "changes affect the management of the work environment for community radio (Business Type) demonstrated a high level of perception ($\bar{x}$=3.41, SD= .675). The issue which demonstrated the lowest level of perception was "community radio (Business Type) has improved the quality of content and provides content which is accessible to the public," which demonstrated medium level of perception ($\bar{x}$=3.34, SD= .765).

The influence of personal factors and radio listening behaviors on the impact on community radio (Business Type) in the age of media convergence and the emergence of digital radio

This section used the personal factors and radio listening behaviors to understand the impact of radio business. For the analysis of the influence of personal factors and radio listening behaviors, the researchers employed the methodology of Independent Sample T-test and One Way Analysis of Variance (ANOVA). The personal factors and radio listening behaviors that were analyzed included gender, age, marital status, monthly income, educational level, occupation, region, method of radio listening, channel of radio listening, frequency of radio listening, days in the week for radio listening, time of the day for radio listening. The influence of personal factors and radio listening behaviors could be elaborated as follows:

The Independent Sample T-test analysis of the influence of gender found that people of different genders held varying perceptions, with the level of significance of 0.05 (Sig. =.000). One Way Analysis of Variance (ANOVA) of the influence of age found that people of different years of age held varying perceptions, with the level of significance of 0.05 (P-value =.000). Comparative analysis using LSD statistics was applied. When testing the comparative differences in pairs using the LSD method, according to age range, it was found that the sample group in every age range held varying perceptions. One Way Analysis of Variance (ANOVA) of the influence of marital status found that people of different marital status hold the same perceptions with the level of significance of 0.05 (P-value =.678) One Way Analysis of Variance (ANOVA) of the influence of monthly income found that people of differing monthly income held varying perceptions, with the level of significance of 0.05 (P-value =.000).

Comparative analysis using LSD statistics was applied. When testing the comparative differences in pairs using the LSD method, according to monthly income range, it was found that the sample group with 10,001 – 30,000-baht monthly income held varying perceptions from the sample group with 50,001 – 70,000-baht monthly income. The sample group with 30,001 – 50,000-baht monthly income held varying perceptions from the group with monthly income of 75,001 – 100,000 baht, as well as the sample group with monthly income of 70,001 and above. Furthermore, the sample group with monthly income of 50,001 – 70,000 baht held varying perceptions from the group with monthly income of 100,000 and above.

Analysis of the influence of education level, using One Way Analysis of Variance (ANOVA), found that people of different levels of education did not have varying perceptions about the impact on community radio (Business Type) in the age of digital integration and the emergence of digital radio, with a level of significance of 0.05 (P-value =.078).

Analysis of the influence of region, using One Way Analysis of Variance (ANOVA), found that people from different regions did not have varying perceptions about the impact on community radio (Business Type) in the age of digital integration and the emergence of digital radio, with a level of significance of 0.05 (P-value =.170).

Analysis of the influence of education level, using One Way Analysis of Variance (ANOVA), found that people of different levels of education do not have varying perceptions about the impact on community radio (Business Type) in the age of digital integration and the emergence of digital radio, with a level of significance of 0.05 (P-value =.078).

Analysis of the influence of the influence of the channel for receiving information through the radio, using One Way Analysis of Variance (ANOVA), found that people who have different channels for receiving information through the radio have varying perceptions about the impact on community radio (Business Type) in the age of digital integration and the emergence of digital radio, with a level of significance of 0.05 (P-value =.078). It was possible to do paired comparative analysis using LSD statistics. The result of the test of variance of the pair using LSD method, differentiating the channels for receiving information through the radio, found that the all-sample groups, which had all available channels for receiving information through the radio, had different perception.

Analysis of the influence of the frequency of listening to the radio, using One Way Analysis of Variance (ANOVA), found that people with different frequency of listening to the radio did not have varying perceptions about the impact on community radio (Business Type) in the age of digital integration and the emergence of digital radio, with a level of significance of 0.05 (P-value =.061).

The influence of understanding about community radio (Business Type) on the impact community radio (Business Type) in the age of digital integration and the emergence of digital radio, and the impact of the COVID-19 pandemic

Analysis about the influence of understanding about community radio (Business Type) on the impact on community radio (Business Type) in the age of digital integration and the emergence of digital radio used Stepwise Multiple Regression Analysis at a level of significance of 0.05. This was previously tested by analyzing every independent variable, which was the forecast variable, for correlation using the Pearson Product Moment Correlation Coefficient method. The analysis of the correlation and multiple regression analysis on the influence of understanding about community radio (Business Type) on the impact community radio (Business Type) in the age of digital integration and the emergence of digital radio found that:

1) Result of the analysis on the correlation of the understanding about community radio (Business Type)which influenced the impact on community radio (Business Type)in the age of digital integration and the emergence of digital radio

The correlation of the understanding about community radio (Business Type) which influenced the impact on community radio (Business Type) in the age of digital integration and the emergence of digital radio concerned understanding about community radio (Business Type) (X) which influenced the impact on community radio (Business Type) in the age of media convergence and the emergence of digital radio (Y). The correlation test between the independent variable, which was the understanding about community radio (Business Type) (X) and the dependent variable, which was the impact on community radio (Business Type) in the age of media convergence and the emergence of digital radio (Y), found that every independent variable was correlated with a level of statistical significance at 0.01 and had a correlation value of 0.069. Hence, no pairs of independent variables had a high level of correlation, that is, having a correlation value of no greater than 0.80 ($r = 0.80$). Therefore, it could be concluded that all the independent variables could be used for the analysis and in the forecasting equation.

2) Result of the stepwise multiple regression analysis on the understanding about community radio (Business Type)which influenced the impact on community radio (Business Type)in the age of digital integration and the emergence of digital radio

The researchers took the variable, which was for the understanding about community radio (Business Type) (X) and analyzed it using the stepwise multiple regression analysis against the impact on community radio (Business Type) in the age of media convergence and the emergence of digital radio (Y). It is an explanation of how to find out how "digital transactions affect the effects of community radio operators". (Business type) in the media convergence era and the emergence of digital radio" will be done using Stepwise Multiple Regression Analysis. The result of the analysis showed that the level of understanding influenced the impact on community radio (Business Type) in the age of media convergence and the emergence of digital radio at a level of statistical significance of 0.05. It also found that the understanding about community radio (Business Type) (X) as a variable was able to forecast the impact on community radio (Business Type) in the age of media convergence and the emergence of digital radio at 40.7% ($R^2 \times 100$). The value of the coefficient of multiple determination was equal to 0.327 and the standard deviation of the forecast (S.E.est) was equal to 0.108. The correlation equation could be written as follows: - forecasting equation in the form of nstandardized score $\hat{Y} = 4.549 - .098x$ - forecasting equation in the form of standardized score $\hat{Z} = -.320x$

Qualitative Research Results

To propose a preparedness plan for business continuity of community radio (Business Type) in the age of media convergence and the emergence of digital radio, the researchers compiled results from in-depth interviews of academics and experts, businesspeople, and policy-level civil servants who were selected using purposive selection method, for a total of 10 persons. The researchers applied content analysis of the interviews to construct a preparedness plan for business continuity of community radio (Business Type) in the age of media convergence and the emergence of digital radio. The results of the analysis could be differentiated according to the following topics about business continuity:

1) Organizational transformation into convergent media regulator (convergent regulator)

Media convergence has faded the division between broadcasting and telecommunications such that it has become difficult to distinguish one from another. Hence, regulations that distinguishes broadcasting and telecommunications would not be able to regulate convergent media services effectively, which could result in unequal competition across platforms. Organizational transformation into a regulator of convergent media system (convergent regulator) is a goal consistent with technological development and the changing market structure and could promote a level-playing field and reduce regulatory uncertainties. Organizational transformation into a regulator of convergent media system (convergent regulator) requires legal amendment, particularly the Organizations for Wave Frequencies Allocation and Supervision or Radio Broadcasting Business, Television Broadcasting Business and Telecommunications Business Act B.E. 2553 (2010) (NBTC Act). Presently, the working mechanism of NBTC is divided into two sub-commissions: the Radio Broadcasting and Television Broadcasting Commission and the Telecommunications Commission. The present structure does not correspond to advancement in digital technology which has led to the convergence of radio spectrum usage for various purposes.

2) Promotion of co-regulation of media content with professional media organizations

The current regulation of media content was designed when there were few operators in the media market, which had a high barrier of entry. Technological development and the liberalization the media market have weakened the conditions for market entry. As such, new platforms for television broadcasting such as cable TV, satellite TV, and digital TV, as well as

present day new media, have emerged resulting in the exponential increase in the number of media operators. Old regulatory mechanisms for media content therefore could not effectively and comprehensively function. In the age of media convergence, governmental agencies do not only face the problem of insufficient supervision of the media due to the rapid rise of new operators, but also must deal with the challenge of slow adjustment of regulations to technological changes. As such, regulations could become an obstacle for media development. Meanwhile, self-regulation of professional media organizations may not be effective since it is on a voluntary basis and hence penalties could not be enforced or could be used to excuse the wrongdoers. For this reason, promotion of coregulation with professional media organizations could enhance the effectiveness of supervision. This would combine the positive aspect of governmental regulations, which embody effective enforcement mechanism with the power to enforce penalties as provided under the law, with self-regulation by professional media organizations which maintains media independence free from government interference and meets practical journalistic ethical standard. The appropriate supervision would have the capacity to promote quality and responsible media.

3) Design regulations that reduce costs and risks for radio station operators and set conditions that assist operators in finding solutions for their business problems

Technological development, including the transition from analog system to digital system, has created opportunities for numerous entrepreneurs. However, the opportunity for new media to enter to market comes with risks. These could take the form of normal business risks, or regulatory risks which could stem from uncertain or unclear rules and regulations. Designing clear regulations and having a mechanism to assess their impact (Regulatory Impact Assessment: RIA) would help reduce both regulatory costs and risks for operators. Moreover, cost reduction during the transition to digital radio for community radio operators, through support in the form of subsidies and/or provision broadcasting equipment for both analog and digital radio, would enable them to compete on a level playing field with new generation mainstream radio operators.

4) Cost reduction in radio broadcasting for community radio stations During the transition period towards digital broadcasting, agencies responsible for regulating radio broadcast spectrum capitalize on auctioning the radio spectrum. However, small operators could not submit a bid that is competitive with large-scale operators. A prominent example is the auctioning of television broadcasting license, whereby large operators outbid small operators by a large margin. Therefore, to build the capacity of small community radio operators to be able to access radio spectrum for commercial broadcasting, the line agencies should annul or reduce the price of auctioning of radio spectrum which causes fierce competition. Instead, they should reserve and allocate radio spectrum for community radio stations. Doing so would assist small community radio operators in their business continuity amidst fierce competition and the transition from analog to digital radio broadcasting.

5) Level the playing field for community radio station operators to be able to compete with major radio station operators today and in the age of digital radio. Amidst all the changes as discussed above, small radio operators or community radio operators without the capacity or readiness to adjust to change, especially at the cusp of the digital radio age, may not be able to survive. Therefore, the relevant agencies, especially NTBC, should act as the core agencies that promote preparedness among community radio operators so that they become ready and gain the capacity as well as technological competency for broadcasting with digital radio. Another solution is to specify, via regulations or guidelines for extension of radio license, the reservation

of specific airtime for small or community radio operators. Airtime for community radio stations could alternate with mainstream radio operators. Such efforts could level the playing field of competition for radio broadcasting in Thailand.

6) Enhance competency among community radio station operators for digital radio technology and development of content quality, variety, and presentation that meet the audience' changing behaviors During the transition to digital radio broadcasting, digital radio operators still lack the understanding and know-how for technology used in digital radio broadcasting. Moreover, they lack the capacity to develop quality and diverse content of interest for all age groups. Therefore, the relevant line agencies at both the regional and central levels must assist in the promotion of competency for community radio operators. This could take the form of short-term online training sessions on digital technology organized for community radio operators, or in-person short-term training at the site. Moreover, they should offer continuous courses on content development to improve its quality and diversity, making it palatable to all groups in the society. This should help prepare the capacity of community radio operators and enhance their ability to raise funds that could be invested in transitioning to digital community radio.

Recommendations

NTBC as the supervisory agency for all types of broadcasting should design regulations for supervision and promotion of competition among community radio operators, especially small-scale businesses, and entrepreneurs. It is also necessary for operators at the regional level to be able to manage and raise funds independently. However, they are still not prepared to drive their business or locate funding sources which would help them become more competitive. To reduce costs and risks for operators, in addition to specifying rules and regulations that assist operators undergoing business hardship in solving their problems and prepare them for the transition from analog to digital broadcasting, NBTC should provide budgetary support for setting up digital radio stations for community radio operators. This should take place with the appropriate guidelines that complement NBTC's overall approach for broadcasting service.

NBTC must reduce costs relating to broadcasting service during the transition period toward digital radio for community radio operators or individual community radio service (commercial), the auctioning of radio spectrum. NBTC must allocate parts of the spectrum for community radio operators to support communication within the community. Moreover, NBTC should terminate or reduce yearly fees such that community radio or community radio operators could have enough funding for managing their stations and maintain an income that would allow for their continuity in a period of fierce competition.

NBTC and other line agencies must support and prepare radio broadcasters to be ready for operating digital radio systems (DAB/DAB+). It is essential to develop personnel with knowledge of DAB/DAB+ technology as well as competency about producing and presenting programs in a system that can send images and other information. They should also study technical aspects about the functioning of DAB/DAB+ system, both at the central and regional levels. Radio broadcasting personnel of all types of radio service should be well-prepared to adapt for continuity of their services. As such, it is also necessary to reduce conditions for personnel development, especially for community radio stations which have budgetary constraints due to limitations on their ability to advertise and hence their income.

NBTC should specify guidelines or standards for promoting fairness in competition among large

and small broadcasting operators, especially in the age of digital radio. The solution could take the form of scheduling of programs and splitting broadcasting time between large/national radio stations which have high capacity and readiness, and small/community radio stations that need access for broadcasting. It is also possible to designate community broadcasting airtime as a way to create opportunities for community radio stations to broadcast their programs. Moreover, people in the community would have better access to local information.

Community radio (commercial) operators must adjust their management style and present more creative content and presentation of their programs that would be of more value and benefit to the society. As consumers today prefer to access content from various platforms more than just listening to the radio, the preparation of data or content is an important aspect of business continuity and competitiveness. Radio operators may study how to develop new content which is more diverse and exclusive to the identity of their locality or represents their radio station. They should take training courses for broadcasters offered by NTBC or other line agencies, as well as those offered publicly.

Enhance the ability of community radio (commercial) operators to manage their income so that they can efficiently manage their stations. For community radio (commercial) operators, making income from commercial advertisements is subjected to several limitations. As such, they could not rely on advertisements as a source of income and hence cannot compete and grow their radio stations. Therefore, the relevant governmental agencies must establish the appropriate regulations and guidelines that would help community radio (commercial) operators find income and efficiently manage their station for business continuity under fierce competition from other media in the age of media convergence.

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