

Digital Marketing Strategy Model in Integration of the Industrial Revolution 4.0

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Abstract

In the era of Industrial Revolution 4.0, alternative marketing technologies play a crucial role in determining effective strategies for product marketing. These innovations help business actors better understand, monitor, and respond to consumer needs and preferences. From the consumer perspective, digital platforms provide easier access to product information. However, Radio City Guide FM still faces challenges in developing strategic approaches that align with its performance goals, particularly amid financial constraints. This study aims to examine the implementation of Radio City Guide's management strategies in the context of Industry 4.0. The research employs a purposive sampling method targeting active listeners, with variables measured using a Likert scale. Factors considered include job characteristics, frequency of listening, domicile, and age. A total of 161 respondents were included in the sample. Five key variables were identified as determinants of digital marketing success: knowledge, innovation skills, digital utility, frequency, and demographic factors. The results indicate that knowledge is a particularly influential factor in determining digital marketing effectiveness. Additionally, the study finds that City Guide FM's audience is largely composed of individuals in their productive years who are technologically literate. These insights are expected to support the development of innovative and adaptive marketing strategies for radio broadcasting in the digital era.

Keywords: Digital Marketing, Industrial Revolution 4.0, Marketing, Strategy

Introduction

To participate in supporting transformation is to use the industrial revolution 4.0. This can be an integration of production in the industrial sector with online things. The emergence of this revolution has an impact on multi-sector changes. If previously it required a lot of workers, now it can be replaced with the use of technological machines. In the era of the industrial revolution 4.0, human needs were obtained more quickly because of the role of the internet which had been built before. The 4.0 revolution was the fourth revolution of the journey of the industrial revolution. Launching the history page, the industrial revolution itself began in the 18th century when society was more advanced. Quoted from Encyclopedia Britannica

Industrial Revolution 4.0 marks a series of social, political, cultural and economic changes that will take place during the 21st century. The naming of the Industrial Revolution 4.0 or Four Point Zero (FPZ) started with the internet revolution. The concept of the Industrial Revolution 4.0 was first introduced by Professor Kalus Sewab. Sewab is a well-known economist from Germany as well as the initiator of the World Economic Forum (WEF).

When entering the industrial era 4.0, internet use has become integrated through its production lines. This includes changes in the industrial world, where changes have begun to occur both in the business and industrial world, which have an impact on a more competitive industry. Industry 4.0 is a combination of industries based on automation technology and cyber technology. This is a new trend in terms of automation and the exchange of data needs in business technology. The exchange includes the Internet of Things called IoT, cognitive computing, and cloud, as stated in (Wibowo & Haryokusumo, 2020). UKM get opportunities from this digital marketing trend. This is still a step towards welcoming the industrial era 4.0. Information technology is increasingly advanced and in line with communication in this era of the industrial revolution rapidly causing various aspects of human life to change which is quite significant. One of which is the business activity it is currently entering digital world. According to (Purwana et al., 2017) several indicators are This shows that among others, the increase in digital advertising spending, growth in smartphone ownership that provides you internet access branch, improvement of telecommunications infrastructure in order to improve the quality of data access and launched 4G service. Marketing online or digital marketing more prospective to develop business a know what the community is doing. This is because of digital marketing allows potential prospects to acquire all sorts information about products and transactions via the internet. According to (Wibowo & Haryokusumo, 2020)digital marketing is a promotional activity and market search through digital media online using a variety of tools such as social networking. The existence of social networks is not only able to connect people with the device, but also a can connect many people from various corners of the world. Online media in

Indonesia will have a greater chance of dominating the market. It has been felt for a long time. The media industry using online media must use a creative mind so that products or content can remain superior. To face the Industrial Revolution 4.0, you must prepare for the possibility of failure that will occur with intelligence but still follow the path or flow of the Industrial Revolution 4.0 so that opportunities in the 4.0 Revolution will always be there and not be a threat to those who are ready to accept changes in technology. Digital media or better known as digital marketing as a means to skyrocket business. This marketing is considered superior when compared to conventional systems. Due to the conventional system of time, location and range are limited.

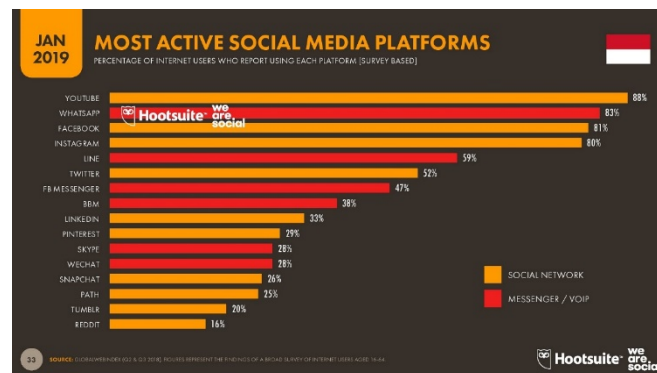


Figure 1. Social Media Platform Activities

Source : (hotsuite.com, 2019)

Examples of the application of industry 4.0 in Indonesia itself can be found in various industries such as textiles, automotive, electronics, chemicals, to food and beverages. The aim of the industrial revolution 4.0 program is to push Indonesia's economy into the top 10 in the world in 2030 by increasing export activities. Launching the Kominfo page, in Indonesia the development of industry 4.0 was very encouraged by the Ministry of Industry. One of the things that must be prepared by the Government of Indonesia to welcome industry 4.0 is through the preparation for the presence of a fifth generation network or 5G network.

In Industry 4.0, there is a technological merger between automation and cyber technology. This can become a trend in automation and the need for data exchange in the business world. This trend can also be an opportunity for SMEs to welcome the industrial era 4.0. The American

Marketing Association says that digital marketing includes activities, industries, and even processes facilitated by digital technology. This facility includes creation, communication, and service to consumers and other necessary parties (Purwana et al., 2017).

The advantages of marketing through the use of digital have certain advantages, not forgetting the advantages in making decisions whether it is successful or not and indirectly influence marketing behavioral intentions (Fu et al., 2024). The strategy used by City Guide FM radio cannot meet the specified target, so it can have an unfavorable impact on the revenue sector also proposed a new network security protection system framework (Hu et al., 2023). It is necessary to innovate strategic models using digital marketing that is integrated with the industrial revolution 4.0. Digital marketing strategy is one of the factors to determine the success or failure of a company, and reach a better market. So it is necessary to use and design a new model so that advertisers in Radio City Guide GM can increase. All industrial revolutions actually have positive and negative impacts on different stakeholders. However, the inability to achieve the industrial revolution must also be anticipated in efforts to deal with global challenges.

Methods

This research method is quantitative. The Quantitative Method is a research method which deals with numbers, which are analyzed using statistics starting from the data collection process to its interpretation. According to (Sugiyono, 2013) research that uses quantitative methods can be called research based on theory, then determining the population or sample. This randomly taken sample produces a collection of quantitative data. The goal is still to test the researcher's hypothesis :

1. Population and Sampel

According to (Arfani & Sugiyono, 2014) the population is the generalization region that consists of objects or subject that has the quality and certain characteristics that are applied by researchers to study and then withdraw in conclusion. Respondents as well as the population in this study were City Guide 9.11 FM Arema Media Group radio media listeners who were active during the period March, April, and May 2020 totaling 259 people due to the application of speculative or trial and error digital marketing modeling solutions.

According to (Arfani & Sugiyono, 2014) Sample is part of the number of characteristics that owned by this population. Size sample or the number of samples taken is important for researchers do research using quantitative analysis (Sujarweni, 2015) . The samples in this study were City Guide 9.11 Fm Arema Media Group radio listeners who joined to deliver information on the radio more than once a day. The sampling was carried out randomly with the assistance of the radio city guide. The sampling size used refers to the Issac and Michael formulas, which are contained in the 3-1 formula. Sampling technique with probability sampling. Namely the sample approach that uses probability theory and statistics which analyzes in the population every member has the same chance of being selected as a sample.

2. *Research Instrument*

(Arikunto, 2010) explained that the data collection step was a tool that was used through UHI selection in research; this was done to make data collection more accessible and more systematic. Meanwhile, *instruments* can be defined as measuring tools to explore quantitative information. This information explains the characteristic variations of a variable use. (Hadjar, 1999) .The research instruments used were interview stationery and questionnaires via google form due to the COVID-19 pandemic and no direct physical contact with respondents was allowed. Researchers communicate through social media applications.

This research instrument is arranged based on the indicators of each variable. To get the validity of the construct is done through definition and literature study as well as discussions

with supervisors. Based on this description, the research instrument was then arranged in the form of question items. The research instruments that have been prepared are tested beforehand to determine the validity and reliability of the procedure. This trial is intended to find out the weaknesses and deficiencies that may occur in the questionnaire items, both in terms of editorial, available alternative answers, as well as in the statements and answers.

Based on the data collected and processed, a model trial was made as follows:

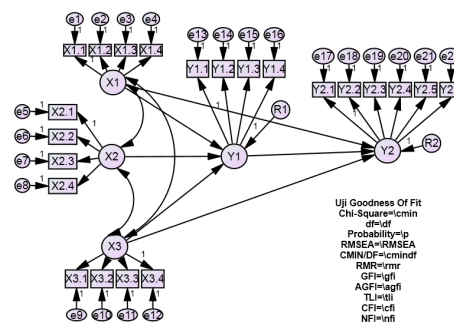


Figure 2. Early model in CB SEM Amos 20

Descriptive statistical analysis provides a general picture of the characteristics of each research variable as seen from the average, maximum, and minimum values as well as statistical analysis that focuses on data management, presentation, and classification. By using this process, the data presented will be easy to understand. This method focuses on describing data conditions at the central point. This makes it possible to analyze how far the data is scattered from its center. The results of the field study research starting from descriptive statistics related to research data (covering the general description of respondents, research variables, data quality tests, normality tests, and classical assumptions test), hypothesis testing results and discussion of statistically tested hypothesis tests.

3. Data collection procedures

The type of data used in this research is quantitative data. The research carried out is a research in the form of survey research, namely research that takes samples from a population

by distributing questionnaires to respondents as a method for collecting data. Based on the source, the research data is divided into 2, namely:

1. Primary data. Primary data is data that is directly on the object or company where the author conducts research by means of direct/field research.
2. Secondary Data. Secondary data is data obtained indirectly or through other sources that were already available before the authors conducted the research such as books, notes, and others.

According to (Suwardi et al., 2020) Data collection techniques are a technique or methods that can be used by researchers to collect data. Data collection techniques were carried out through Preliminary Information, namely a questionnaire with a linkert scale based on the characteristics of interviews, observations, and Questionnaire .

Based on the technique, research data uses 3 ways:

1. Interview

The interview method is used in almost all quantitative research. Interviews are conversations with a specific purpose. The conversation is carried out by both parties, namely the interviewer who asks questions and someone who gives answers or is commonly called a resource person. In conducting interviews between interviewers and sources must trust each other and there is no lie. The answers given by the informant can be accounted for for the truth and the answers from the informant are useful information for the interviewer.

2. Observation

Observation is an activity of collecting data in research on research objects that support research activities so that more specific information is obtained. According to (Suwardi et al., 2020), observation is a complex process, a process composed of various things biological and psychological processes.

3. Questionnaire

4. Data collection was carried out by presenting a questionnaire. The questionnaire distributed contains questions that respondents must answer. The questionnaire itself is one of the steps used to collect measurable data. Apart from being measured, the data obtained from the questionnaire is expected to represent the respondents. (Haddy, 2017) stated that the questionnaire consists of a series of questions that respondents are required to answer and is presented in sheet form.

4. *Data Analysis Technique*

One of the activities in research is data analysis, which is done by compiling and processing data. After compiling and processing the data, the results are used to interpret the data by grouping the data. This grouping is done based on variables; target respondents tabulate data based on variables, display data, and perform calculations to see results, and perform calculations. All of this is done to see the research hypothesis that the researcher has determined.

Analysis of data derived from online questionnaires was tested with SPSS 20, namely testing the validity and reliability of the instrument and path analysis with SEM (Structural Equation Modeling) with AMOS 20.0 for Windows tools. Validity test is used to determine whether it is valid in testing the items in the statement. The reliability index of valid statement items for research respondents will be calculated using the internal consistency method, a valid or legitimate instrument has high validity while the less valid instrument means it has validity low (Arikunto, 2010). Testing using the classic assumption test and hypothesis testing.

Results and Discussion

The path diagram in this study is described as follows:

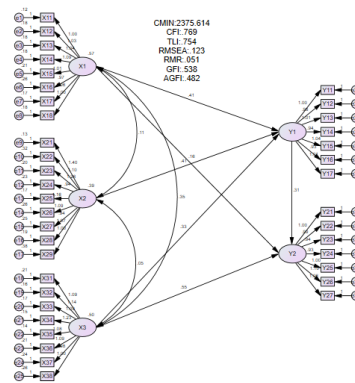


Figure 3. Research Path Chart

Based on the results of linearity testing, it can be formulated that the relationship between all exogenous and endogenous variables has $\alpha = 5\%$, which means that the relationship between the two is directly proportional or commonly called linear.

The multivariate CR value in this study was 10.488. This indicates that the value is not included in the z crisis value, with a value of ± 2.58 . Seeing these results, it can be said that the research conducted is included in the normally distributed category. The results of other analyses show that the results of P1 and P2 have a value that is greater than the significance value of 5%; this can be interpreted that there are no outlier data in this study.

From the validity test conducted, it is known that all variable indicators have a value of more than 0.5. This is an initiation that the research is valid or has a measurable capability on the variable.

The reliability test illustrates that all variables have a value of more than 0.7. This declares that all variables are reliable or can be a research benchmark. Based on the goodness of fit summary, it can be seen that the CMIN/DF, CFI, TLI, RMSEA, and RMR indexes are following their cut-off values. However, GFI and AGFI are included in the marginal fit category. Seeing this, it can be declared that the model is feasible. The modification model stated in the path diagram can be seen as follows:

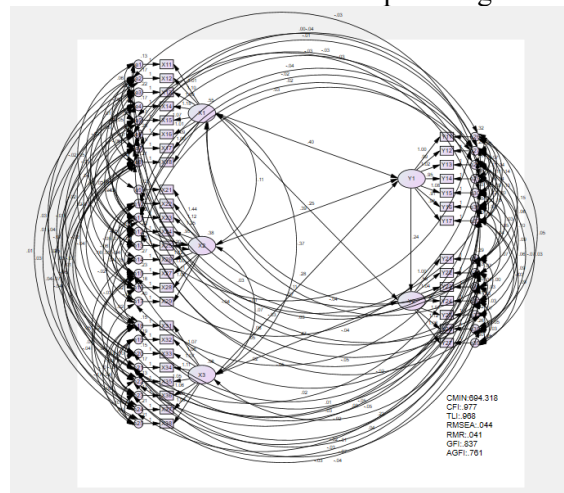


Figure 4. Path Diagram after Modification of the Model

Hypothesis test

Equation 1

$$Y1 = 0.516X1 + 0.427 X2 + 0.387 X3$$

Equation one states that:

1. The coefficient is one of the factors that influences 0.516 of digital marketing. This influence has a positive value, which explains that if the knowledge is getting better then it is in line with the use of marketing
2. The coefficient of innovation that has benefits is 0.427, which explains that the effect is positive. This positive influence is carried out when compared with digital benefits. If innovation has a large position then it is in line with increasing marketing benefits
3. Organizations have an influence of 0.387. This declares that it has a positive influence on digital marketing. If the organization is said to be stable then it is in line with increasing marketing

Equation 2

$$Y2 = 0.184 X1 + 0.609 X2 + 0.289 Y1$$

From equation 2 can be informed that:

1. The direct effect coefficient of knowledge on the profits of the industrial revolution 4.0 of 0.184 states that knowledge has a positive and significant effect on the profits of the industrial revolution 4.0. This means that the better the knowledge, the more likely it is to be able to increase the profits of the industrial revolution 4.0.
2. The direct effect coefficient of the organization on the profits of the industrial revolution 4.0 of 0.609 states that the organization has a positive and significant effect on the profits of the industrial revolution 4.0. This means that the better the organizational variables, the more likely they are to increase the profits of the industrial revolution 4.0.
3. The direct effect coefficient of the benefits of digital marketing on the benefits of the industrial revolution 4.0 of 0.289 states that the benefits of digital marketing have a positive and significant impact on the benefits of the industrial revolution 4.0. This means that the better the benefits of digital marketing, the more likely it is to be able to increase the profits of the industrial revolution 4.0.

Eksogen	Endogen	Total Coefficient
Knowledge	Benefits of Digital Marketing	0.516
Innovativeness	Benefits of Digital Marketing	0.427
Organization	Benefits of Digital Marketing	0.387
Knowledge	Advantages of the Industrial Revolution 4.0	0.333
Organization	Advantages of the Industrial Revolution 4.0	0.732
Innovativeness	Advantages of the Industrial Revolution 4.0	0.112
Benefits of Digital Marketing	Advantages of the Industrial Revolution 4.0	0.289

Table 1. Exogenous Variable

The table above informs that the variable that has the largest total coefficient on the benefits of digital marketing is knowledge with a total coefficient of 0.516. Thus knowledge is the most influential variable or has the most dominant influence on the benefits of digital marketing. The next variable that has the largest total coefficient on the profits of the industrial revolution 4.0 is the organization with a total coefficient of 0.732. Thus the organization is the most influential variable or has the most dominant influence on the profits of the industrial revolution 4.0.

Digital marketing is a marketing activity which then involves the use of networks and digital technology to achieve marketing goals. By using digital marketing it will also be easier to do research. Like researching what keywords are most searched for according to your product or business. By getting to know the market better, of course, it will be easier to formulate a more precise marketing strategy so that sales will increase. The aim of this marketing is to reach as many customers as possible in an efficient, relevant and efficient manner, improve the quality of relationships and communication between business owners and consumers or potential customers. Product visibility in the online world will increase consumer confidence in the brand.

Those are some of the benefits and advantages of digital marketing. Actually there is still a lot that we can get from this digital marketing. The advantages of using digital marketing are cost-effective, scalable, wider market reach, more interactive marketing, wider level of involvement. There are 6 types of digital marketing including Search Engine Marketing (SEM), Influencer/ Affiliate Marketing, Content Marketing, Email Marketing, Social Media Marketing, TV Advertising. Digital marketing can be done through various channels, but it

cannot be denied that currently the website is the most ideal and more professional means for doing digital marketing. This is because the website will make it easier for potential consumers to find our brand, view catalogs, buy products, and submit complaints. The website can also be accessed 24 hours a day so consumers can make purchases anytime and anywhere

Conclusion

The findings of this study indicate that Knowledge, Innovativeness, and Organizational factors positively influence the Benefits of Digital Marketing (Y1), suggesting that Radio City Guide 9.11 FM, when characterized by optimism, innovation, and strong organizational capabilities, is better positioned to leverage the advantages of the Industrial Revolution 4.0. This supports previous research by Rachael Abigail Saveria and Mokhtar et al. Additionally, the station's listeners are predominantly over the age of 26, falling within a productive age group that is technologically responsive and familiar with Internet of Things (IoT) technologies. Innovativeness in particular has a significant and positive effect on digital marketing benefits, especially in terms of enhancing revenue and brand visibility. The practical implications of this research highlight the importance of fostering knowledge, innovation, and organizational strength to address challenges in the digital landscape. The presence of tech-literate, engaged listeners accelerates management maturity and supports more adaptive strategies in digital broadcasting.

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