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DEVELOPMENT OF A DIGITAL MARKETING MODEL THROUGH E-CATALOGUE BASED ON QR-CODES FOR INCREASING THE COMPETITIVENESS OF SMES WITH DISABILITY IN DENPASAR CITY

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ABSTRACT
This research aims to develop a digital marketing model for E Catalog using a QR Code to create user needs, assessments from expert validators, and participants' understanding and evaluation of their use. In this study, the type of research used is the type of research development Research & Development (R&D) using the ADDIE model. This model consists of four development stages: Analysis, Design, Development, Implementation and Evaluation. This study uses research instrument methods, namely observation, interviews, questionnaires and validation with research subjects of several 12 MSMEs with Deaf Disabilities in Denpasar City with incidental sampling techniques. The e-module for business recording using a QR Code-based digital application is stated to be very good for use as a learning medium, with the results of validation details for material experts of 4.29 and validation for media experts of 4.37 out of a maximum value of 5.00. The results of the response of MSMEs with Deaf Disabilities to E-Modules are 4.1 out of a total maximum value of 5.00, categorized as very good. From these results, it has been shown that developing the E-Module material for business recording using a QR Code-based digital application is feasible to be used in learning material for Deaf Persons in Denpasar City to improve the understanding of MSME actors regarding business recording.

KEY WORDS
E-module, business recording, small medium enterprise, digital application, deaf.

In the current developments and the industrial era 4.0 in the field of digital information technology, it has developed widely so that it indirectly affects several sectors life as well as profitable for the community, one of which is in the economic field [9]. The existence of information technology requires all activities to be carried out with a process skill. The advancement of information technology these days changes the lifestyle, culture and perspective of the community in carrying out Reference material related to the development of skills that exist in the present are undoubtedly different from those in the past. This is due to the rapid development of information technology in today's era of globalization, especially in the existing information and developments. These days, technology enters quickly into the sectors of our life, including micro, small and medium enterprises (MSMEs)[16]. At present, the influence of this technology on the world of MSMEs has changed the lifestyle of business people, both in socializing and in activities in the process of entrepreneurship. Technological developments also make it easy for business people to provide adequate opportunities to develop their businesses creatively to satisfy customers [17]. MSME actors need a business development process through new strategies in marketing its MSME products to attract and it's fun to take advantage of technology, one of which is by developing a marketing strategy that can adapt to the digital times [18]. The marketing system in the current era is very different compared to the past. There needs to be a change in the types of current marketing models to attract the attention of consumers so that they are interested in seeing the products produced by SMEs, of course, this can help MSME business actors know new things. One of the things that

can be developed in presenting attractive marketing amid the digital era is developing an E-Catalogue[7]. E-Catalogue is a digital product data management system that enables businesses to organize, update, and share product information with customers or business partners. E-Catalogue allows businesses to save production costs, increase efficiency, and increase customer satisfaction [1]. Today, E-catalogues are becoming more and more popular in the marketing world because they can provide better user experience and make it easier for businesses to manage their products. E-Catalogue can help micro, small and medium enterprises (MSMEs) improve their efficiency and profits and enable MSMEs to compete with larger businesses [19]. Therefore, E-Catalogue is an important solution for developing marketing in this digital era. With the latest trends in developing E-Catalogues and the widespread adoption of digital technology by businesses and consumers, E-catalogues are becoming an increasingly important solution in this digital era. Adoption of E-Catalogues can help a business actor to improve their performance[6]. Therefore, businesses that want to maintain or improve their position in this digital era must consider adopting E-Catalogue as part of their marketing strategy to increase MSME competitiveness.

With the massive push to adapt to the digital world, there is a risk of groups being left behind, one of which is persons with disabilities. According to data from the Central Statistics Agency (BPS) in 2020 [2], the Number of people with disabilities in Indonesia is 22.5 million or around 5% of Indonesia's population. As well as for the City of Denpasar itself, the latest data from the City Social Service and Manpower Denpasar recorded several 1,301 people with disabilities [2]. Among these, some of them have MSMEs managed by these business actors. In addition, Denpasar City has been named a Disability Friendly City by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) as an inclusion city by jointly signing a partnership agreement to raise awareness for people with special needs. It has issued Mayor Regulation (Perwali) No.35 of 2011 regarding Efforts to Increase accessibility of Persons with Disabilities so that their rights must be considered. Currently, in the era of technological development, business actors with disabilities who have minimal internal ideas get access to promote their MSME products digitally in managing the business. And those ideas need some innovations to improve the business [15]. Bali State Polytechnic is one the best vocational state campuses in Indonesia; it is felt essential to be able to assist in supporting excellence in the digital field for MSMEs specific to Persons with Disabilities in Denpasar City as part of the involvement of educational institutions in advancing resources leading, professional and internationally competitive human beings[14]. In this case, the author wants to develop a Digital Marketing Model through QR Code-Based E-Catalogue in Improving the Competitiveness of MSMEs with Disabilities in Denpasar City to support the delivery of knowledge from the Department of Business Administration, Bali State Polytechnic to the public appropriately channeled, especially in the field of marketing in the Digital Business study program. On the other hand, considering that in the post-COVID-19 period, the condition of the business sector is on the rise, the author wants illustrates that the process of developing a digital marketing model Through this E-Catalogue , it will be able to increase competitiveness in the digital world for MSME actors Persons with Disabilities in the City of Denpasar and can introduce more closely the form of contribution of attention to the scientific development of the Bali State Polytechnic in areas outside the campus.

METHODS OF RESEARCH

The stage in this research is to use the ADDIE development model. The development steps in the ADDIE model include the Analysis, the Design stage (Design), the Development stage (Development), the Implementation stage (Implementation), and the evaluation stage (Evaluation). The ADDIE development model was developed to be able to design a system. ADDIE development model chart shown in Figure 1.

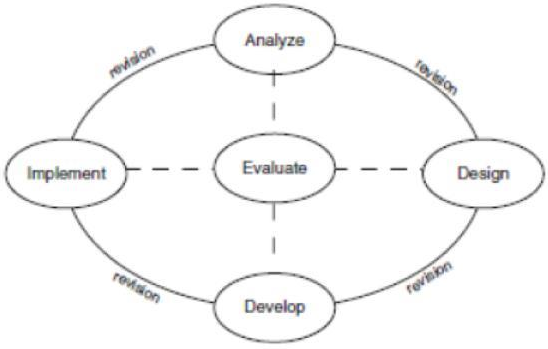

Figure 1 – Stages in the ADDIE Model (Branch in [5], 2016)

In the analysis stage, the researcher observed the activities of MSMEs with Disabilities in Denpasar City. Observation activities were carried out using incidental sampling techniques due to the lack of specific data related to SME. The interview process was also conducted with other disability activists and observers. At this stage, the analysis carried out by the researcher is through 1) analysis of needs, 2) analysis of materials and 3) analysis of the characteristics of SMEs. Furthermore, the design stage is one of the next process stages after the previous analysis stage. Also at this stage, the researcher designed the instrument to measure the feasibility of the E-Catalogue that the researcher had developed. This design stage consists of several designs, including 1) QR code access, 2) MSME information, 3) access to product/sales info, and 4) product/sales order barcodes. In this development stage, the researcher carried out several steps development of the E-Catalogue which is structured as 1) QR-Code Design, 2) Information Cover , 3) List of UMKM with Disabilities, 4) List of UMKM with Disabilities in Each District, 5) E-Catalogue of MSME Products and 6) Product Order Barcodes In the next stage, namely the implementation stage, carried out after the E-Catalogue assessed by the validators both from material experts and also media expert validators. In addition, there is an improvement process from the suggestions given. Furthermore, the E-Catalogue was then tested on MSMEs with Disabilities in Denpasar City with a total of 20 (twenty) Persons with Disabilities who are involved in the MSME sector for further testing of materials in digital marketing activities. The results of this trial are used as a reference for researchers in improving the E-Catalogue that researchers have developed. Assessments are based on several aspects, namely: 1) content feasibility, 2) language, 3) usefulness, and 4) graphics.

The researcher carries out the evaluation stage after going through the process from the stages - previous stages. In developing this E-Catalogue, evaluation was carried out after obtaining some input from experts in the form of improvements that must be made by researchers based on the results of suggestions and responses from MSMEs with Disabilities to the development of the E-Catalogue, as well as evaluations of product development.

Responses from online questionnaire instruments aimed at media expert validators, material experts and evaluations of MSMEs with Disabilities are processed directly via the responses tab on the Google Form in tabular form. The Next results spreadsheet generated from the Google Form is downloaded directly and then processed by further researchers towards an average process. The following formula then calculates this quantitative data:

$$R = \sum_{i=1}^{n} V_i \ / \ n$$

Where: R = average score; Vi = Sum of assessor scores; n = Number of appraisers.

RESULTS AND DISCUSSION

From this stage of analysis, researchers used an analysis process with the observation method in MSME activities, especially for Persons with Disabilities in Denpasar City, by researchers both individually and in groups through an interview process. Researchers also conducted interviews with MSMEs activists and observers with disabilities. Observations and interview processes conducted by researchers were carried out to find out how the materials were used, digital marketing activities for MSMEs with Disabilities and the use of creative ideas used to increase competitiveness in marketing by these MSMEs. The analysis carried out in this study was needs analysis, material analysis and also analysis on the characteristics of MSMEs with Disabilities. So far, MSMEs with disabilities still rely on references related to marketing through direct visualization obtained from several activities that they carry out from activities - sales activities carried out. In addition, some of them need help developing product/ service promotions so they can reach a wider market. Several references are used in developing the marketing process, but most are still trying to adapt to existing sources. As for the efforts made by the government to accommodate MSMEs with Disabilities to increase their competitiveness through an integrated MSME development center, there are several places to empower persons with disabilities to be creative and create new product innovations to the existence of facilities assistance in the form of Corporate Social Responsibility to support the competency development process, but there are still some in its implementation, there are several MSMEs that have not utilized digital marketing so that the competitiveness possessed by these MSMEs is still minimal.

At the design process stage, the next steps are carried out after going through the analysis stage by designing a digital marketing model through a QR Code-based E-Catalogue to increase the competitiveness of MSMEs with Disabilities in Denpasar City[10]. At this stage, the researcher designed the instrument to measure the E-Catalogue's feasibility. Design what was carried out included first compiling an outline of the contents of the E-Catalogue by setting 4 points, including QR Code Access, MSME Information, Product/Sell Information Access and Product/Sales Order Barcodes. At a later stage in compiling the framework of this E-Catalogue in general, it consists of two sections contained in the E-Catalogue. The first in the QR Code section, which in this section is formed into 2 sections for the profile of MSMEs in Denpasar City and MSMEs Products per MSMEs; the second part is information on MSMEs with disabilities in the form of Linktree; the first part is on access to product/sales info in digital form[4]. Enter the Disabled MSME product section, this section consists of information on product names, menus sold, prices, and visualization of images of these products. The next stage is the process of compiling the contents of the contents of the E-Catalogue. In this E-Catalogue, digital marketing content is first arranged in a link tree where consumers who attend or visit the MSMEs with Disabilities scan the available QR code. The process is easy but requires assistance accessing the QR code so that the QR Code reader system can read it. After that, the researchers sorted out the MSMEs with disabilities based on the area they were selling, the researchers divided them into four zones, namely North Denpasar, South Denpasar, West Denpasar and East Denpasar. After dividing it into each sub-district, the researcher drafted a list of MSME names complete with picture profiles, product names and addresses in each MSME profile[8]. This name can be accessed directly and goes directly to the E-Catalogue Menu, which is even more complete where there is a complete product menu, prices, explanations and access to orders[3]. The final step is to design an instrument that is designed using a Likert scale 5 questionnaire with answers ranging from Strongly Agree (SS), Agree (s), Neutral (N) and Disagree (TS) to Strongly Disagree (STS). The answers are then converted into a score of 1-5 according to the order of the statements from the answers.

In the initial development of this e-catalogue, the e-catalogue was developed using Microsoft Office Word to collect and compile material, questions for quizzes, and the summary

component[12]. In making the initial design for MSMEs with Disabilities, researchers used the Linktree application which contains various types of MSMEs with Disabilities in Denpasar City. In making the background design and cover of the e-catalogue, researchers used the Canva digital application to make evaluations using the Google form and barcodes using the QR Code Generator application [13]. Next, the e-catalog data file is moved in the design that was previously made through the Canva application, adding components in the form of ordering barcodes uploaded to the drive in the form of QR Barcodes. All of them are made into one file in the form of an e-catalogue which has been compiled in the Canva design and downloaded in pdf-format.

Figure 2 – E-Catalogue and QR-codes interface

From the results of the development of the E-Catalogue that has been made, the feasibility instrument is developed by experts. The instruments in the E-Catalogue were previously discussed with observers, activists, and the research team. Repairs were also carried out, then validation was carried out by a team of material experts and media experts using the E-Catalogue assessment sheet previously made by the researcher. In this case, the results of the E-Catalogue validation from the material expert validator are as follows:

Table 1 – Results of E-Module Validation by Material Experts

No.	Assessment Aspect	Average Assessment Score for Each Aspect	Category
1	Contents	4,46	Very Good
2	Language	4,33	
3	Presentation	4,66	
Average		4,48	

In this case, the E-Catalogue's assessment by the material expert validator on the material in the E-Catalogue assessed in terms of content aspects, linguistic aspects, and presentation aspects resulting in an overall average rating score of 4.48 out of a maximum score of 5.00 with outstanding category. Then the next stage of validation by media experts includes aspects of the screen design display, aspects of ease of use, aspects of consistency, aspects of usability, and also graphical aspects.

Table 2 – Results of E-Module Validation by Media Experts

No.	Assessment Aspect	Average Assessment Score for Each Aspect	Category
1	Screen Design	4,57	Very Good
2	Ease of Use	4,57	
3	Consistency	4,66	
4	Usability	4,5	
5	Graphics	4,57	
Overall Average		4,57	

In the E-Catalogue assessment conducted by the media expert validator on the material contained in the E-Catalogue, the overall average rating score was 4.57 out of a maximum score of 5.00 in the very good product category. Furthermore, from the assessment results by the media expert validator, it can also be seen that this product is good based on the media. In general, the quality of this E-Catalogue has been said to be suitable for use in the material process at the implementation stage.

During the implementation of the E-Catalogue, at each meeting conducted by researchers, at the beginning of the implementation meeting, MSME actors were given a brief explanation of the development goals of developing the E-Catalogue QR Code digital marketing model for MSMEs. Persons with Disabilities in Denpasar City and initial explanation regarding the introduction of Digital Marketing. In the following week, the researchers introduced what activities related to the marketing of MSMEs engaged in the digital era connected with their daily activities. Furthermore, at the next meeting, it was explained briefly about how to market creative products/services in the digital world. From some of the activities above, researchers are trying to understand the desires of MSME actors who are constrained by their limitations. The following week, starting at the introduction stage of the E-Catalogue based on the QR Code, MSME players were introduced to how to put product photos, make them attractive so that in marketing them in a digital environment, they can invite buyers to be interested in buying to use accessibility for consumers in the form of barcodes which makes it easier for consumers to reach the MSME catalog. The results of evaluating responses to the E-Catalogue can be seen in the following table.

Table 3 – Results of the Assessment of MSME Actors' Responses to the E-Module

No.	Assessment Aspect	Average Assessment Score for Each Aspect	Category
1	Feasibility	4,51	Very Good
2	Linguistic	4,48	
3	Usability	4,51	
4	Graphics	3,98	
Overall Average		4,37	

The assessment results of the response of MSME actors with disabilities to the development of the E-Catalogue have obtained an overall average score of 4.37 out of a maximum value of 5.00 in the very good product category.

Results from filling in the instrument and complete calculations are attached. Based on the results of this assessment, this e-catalogue is included in the outstanding category so that it can be used as one of the materials in implementation in the field.

After going through the previous process stages, the development of the E-Catalogue received several inputs from several experts and the response of MSMEs with Disabilities in the form of improvements. The evaluation is in the form of suggestions and follow-up, including writing in the E-Module justification should be made, there are naming mistakes in existing quotations, there is an entry in the title in one of the E-Modules, as well as adding additional colors to the E-Module so that it is not monotonous.

CONCLUSION

Research on developing this E-Catalogue produces a product in the form of a digital marketing model in the form of a QR code-based E-Catalogue to increase the Competitiveness of MSMEs with Disabilities in the City of Denpasar. The reference in this study is the ADDIE development model with details of the stages, namely 1) Analysis, 2) Design, 3) Development, 4) Implementation, and 5) Evaluation. The e-Catalogue was developed by adding digital features based on QR-Code, which is divided into two parts: a QR Code with the overall profile of MSMEs with Disabilities and a QR code that leads directly to MSMEs with disabilities. Furthermore, the data is organized in a Linktree divided according to the area where the MSME is located. MSMEs are divided into 4 sub-district locations in Denpasar City: North Denpasar, South Denpasar, West Denpasar and East Denpasar.

Furthermore, when selected in each of these areas, it directly leads to a list of existing MSMEs and can be accessed by clicking on their business profile. Next, you will enter the E-Catalogue in .pdf format, which contains sales menus and access to orders in the form of available barcodes. E-Catalogue is also very interactive with its users, especially MSMEs with Disabilities. From the research results obtained, it can be seen that the E-digital marketing model in the form of a QR Code- based E Catalog to increase the competitiveness of MSMEs with Disabilities in Denpasar City is feasible to be used as a digital marketing model. Based on the results obtained from the average value of the overall score, it can be seen that the total score on aspects by material experts is 4.48 in the very good category, and the overall average aspect score by media experts is 4.57 in the very good category. As well as the total average score of all aspect scores from the response of MSMEs with Disabilities to this E-Catalogue a number of 4.37 with very good category. The future is expected E-Catalogue This can be used for MSME activities with disabilities with more complete material content. As well as in research conducted has yet to reach the test the effectiveness of the E-Catalogue in everyday learning. Therefore, future researchers can examine further the testing of the effectiveness of the E-Catalogue in understanding learning

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