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Implementation of Distributed E-Commerce System at Pempek Bismillah Mang Cek Jambi Using Google Sites

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ABSTRACT

Pempek is a traditional food from Palembang made from fish and sago, well-known throughout Indonesia. The sales of pempek experienced a decline during the COVID-19 pandemic, prompting the need for an e-commerce system to enhance marketing and sales. This research aims to develop a distributed e-commerce system using Google Sites, enabling pempek vendors to reach a wider consumer base and facilitate transactions. The methodology employed includes interviews, observations, problem identification and analysis, as well as system implementation. The results indicate that this system improves product accessibility, transaction efficiency, and the sales potential of pempek shops. By leveraging digital technology, vendors can expand their market reach and increase revenue without incurring high costs. This e-commerce system benefits sellers while also providing a better shopping experience for consumers, allowing them to shop anytime and anywhere.

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1. INTRODUCTION

Pempek is a food originating from Palembang, South Sumatra in Indonesia. Pempek is made from fish that is finely ground and mixed with other ingredients such as seasonings, salt, sago, and others before being shaped into various forms like round pempek, lenjer, balok, etc., and then cooked in boiling water. Who doesn't know this popular food from Palembang that has spread throughout Indonesia? It is widely sold by the community in shops, stalls, and tourist spots. With its unique taste, many seek this light dish at various events or festivals[1].

Pempek, commonly referred to by the locals as Empek-empek, is a testament that this traditional food can elevate its image and successfully become a culinary icon from South Sumatra's capital city of Palembang. As a result, it has become widely available across Indonesia—not just in Sumatra. Currently, this traditional food product has vast market potential, reaching consumers from lower to middle-class segments. Toko Pempek Bismillah Mang Cek Jambi is one such business operating in the food sales sector since 2004; it offers a variety of pempek products including tekwan [2][3].

During the COVID-19 pandemic in 2020, many vendors experienced a decline in sales; numerous businesses shut down due to the pandemic's impact. One example affected by COVID-19 is pempek vendors who faced challenges in promoting their products effectively. The limitations of traditional pempek sales highlighted the need for an effective distributed e-commerce system to increase sales and the lack of digital technology utilization in marketing these products. This situation encouraged pempek vendors to promote their goods more actively; in today's technological era, information technology has transformed how businesses market their products and services. E-commerce has become one of the most effective strategies for reaching broader consumers and boosting sales[4].

A distributed system refers to a system that connects and collaborates using various communication technologies to accomplish specific tasks5. E-commerce is an interactive system that enables the exchange of information, goods, and services through electronic means. In this concept, businesses operate within a digital environment rather than physical locations. Interactions between sellers and buyers occur through online platforms that allow transactions without geographical limitations[6]. The creation of distributed e-commerce systems plays a crucial role in this context. One platform that offers ease in managing distributed e-commerce sites is Google Sites. With its user-friendly interface and robust integration with various Google services, this platform allows users—especially small and medium enterprises—to create and manage distributed e-commerce sites without requiring extensive technical skills[7].

Google Sites simplifies human tasks by saving time and reducing expenses incurred. This research aims to demonstrate how technology can enhance sales8. By utilizing Google Sites, all sites collaborate seamlessly using tools like Docs, Sheets, Forms, etc., supporting technological usage.[9].

Conducting buying and selling transactions online using devices allows e-commerce to boost sales at pempek shops while enabling users to purchase products online. Users can learn how to search for product information before engaging in online buying activities. The primary goal of the distributed e-commerce system is to simplify human tasks during transactions. By purchasing online, consumers only need devices such as computers or smartphones along with data connectivity. The distributed e-commerce system provides various conveniences; its impact includes enhancing the sales potential of pempek shops while simplifying consumer access to desired products. Users of Google Sites now find it commonplace to search for product information online so they can conduct transactions more efficiently. Thus, the distributed e-commerce system benefits not only sellers but also offers consumers a better shopping experience by allowing them to shop anytime and anywhere without time or location constraints.[11].

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2. METHOD

The development model employed in this study adopts a Waterfall approach with modifications introduced at the initial stage, specifically by incorporating a more comprehensive problem analysis phase. The Waterfall model was selected due to its systematic and structured characteristics, which allow each stage to be executed sequentially and in a controlled manner. However, to enhance the effectiveness and efficiency of the development process, a deeper and more detailed problem analysis was added at the outset.

This modification aims to ensure that the actual needs and potential challenges are identified early in the process. The inclusion of this stage is expected to improve the overall quality of the developed system, as the solutions proposed will be more targeted and aligned with the real conditions encountered in the field. Can see figure 1.

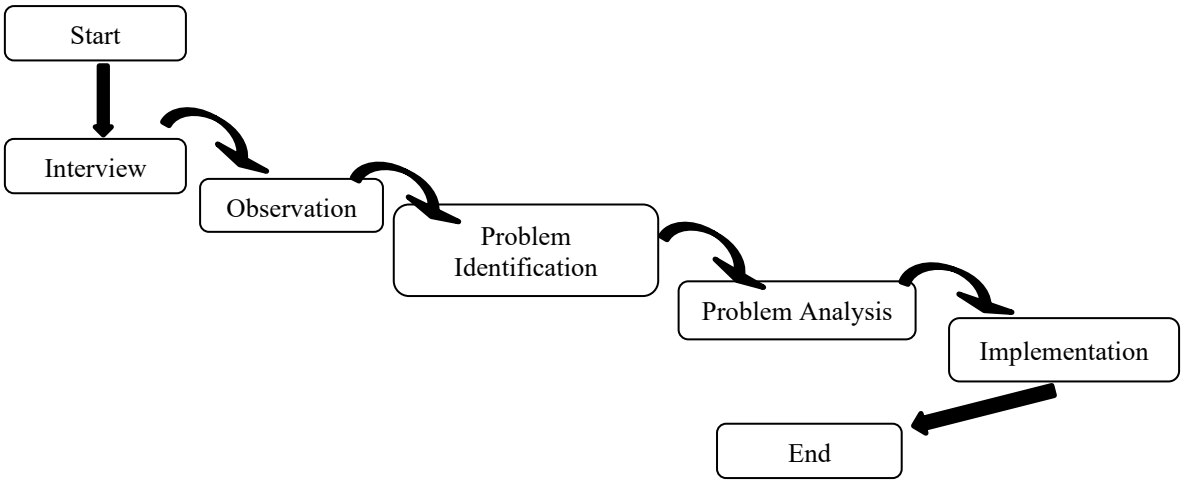

Figure 1. Research Stages

a. Interview

The interview is a qualitative data collection method that involves direct interaction between the researcher and informant to obtain in-depth and subjective insights. In this study, interviews were conducted with the owner of Pempek Bismillah Mang Cek, who served as the primary informant. The purpose of the interview was to explore data related to the ongoing business processes, identify the problems faced, and understand the owner's expectations regarding the implementation of a technology-based system..[12]. This method provides the researcher with the opportunity to gather comprehensive perspectives that are not limited to quantitative

data alone. The information obtained through interviews forms a critical foundation for the problem identification process and the formulation of system requirements. Consequently, the interview stage plays a vital role in ensuring the success of the system development process [13] .

b. Observation

Observation is a data collection method carried out by directly observing the object or phenomenon under study in its natural context. In this research, observations were conducted at the pempek shop to gain first-hand understanding of its operational processes, the interactions between business actors and customers, and the sales and purchasing patterns.[14]. The observation process was implemented using various techniques, including daily activity logs, customer questionnaires, and visual documentation. The objective of this method was to obtain objective and factual data that could complement and validate the findings derived from interviews. Observation also serves as the basis for evaluating the feasibility of implementing a Google Sites-based distributed E-Commerce system at the selected shop.[15].

c. Problem Identification

The problem identification stage aims to determine and formulate the core issues encountered by the business owner in managing the pempek shop. This process was conducted in four sequential phases: (1) understanding the context and scope of the problems, (2) identifying the need for solutions, (3) evaluating the potential impact of preliminary solutions, and (4) performing iterative validation of the identified problems and solutions.[16]. The outcomes of this stage serve as a primary reference for designing the system and determining the features to be implemented. Thorough problem identification ensures that the solutions developed are capable of addressing actual needs and contribute to enhanced productivity and business performance [17].

d. Problem Analysis

Problem analysis is a follow-up phase to identification, aimed at understanding the root causes of the issues in a systematic and structured manner. The analysis was conducted by reviewing data collected from both interviews and observations to identify patterns and factors contributing to inefficiencies in the shop's operational systems. Key aspects analyzed include manual sales recording processes, limited market reach, and underutilization of information technology in marketing activities. Through the analysis of these factors, the researcher was able to formulate practical and context-appropriate solutions. This analytical phase also provided the basis for evaluating and refining the proposed information technology-based system, thereby ensuring its effectiveness in addressing the identified problems[18].

e. Implementation

The implementation phase represents the final stage in the system development process, wherein the system design is applied within the operational environment of the business. In this study, implementation involved the development and deployment of a Google Sites-based E-Commerce system at Pempek Bismillah Mang Cek. This process encompassed several key activities, including the design of a user-friendly interface, integration of ordering and product information features, and user training to ensure smooth adoption of the system. Initial evaluations were carried out to assess user responses and determine the effectiveness of the system in supporting business operations. This stage also served as an opportunity to test the alignment between the system and user needs. The ultimate goal of implementation is to expand market reach, streamline transaction processes, and drive revenue growth through optimal utilization of digital technology.[19].

3. RESULT AND DISCUSSION

The results presented here focus on implementing the distributed e-commerce system based on knowledge gained from the developed system as follows:

Through addressing issues identified during system development, it has become possible to meet consumer needs by facilitating customer transactions. Online purchasing provides various conveniences; furthermore, the impact of the distributed e-commerce system includes enhancing the sales potential of pempek shops while simplifying consumer access to products. A technical feasibility study shows that Google Sites does not require complex programming or substantial costs while saving significant design time.

In project planning, budget requirements are minimal; design usage can be tailored according to preferences such as selecting colors, fonts, styles or choosing desired templates. The database design used on Google Sites integrates with Google Forms or Sheets.

a. Homepage
The homepage serves as an interactive area for users containing the store name and a brief description..

Figure 1. Homepage

b. Menu Page
This menu page displays products sold at the store so users can view available items..

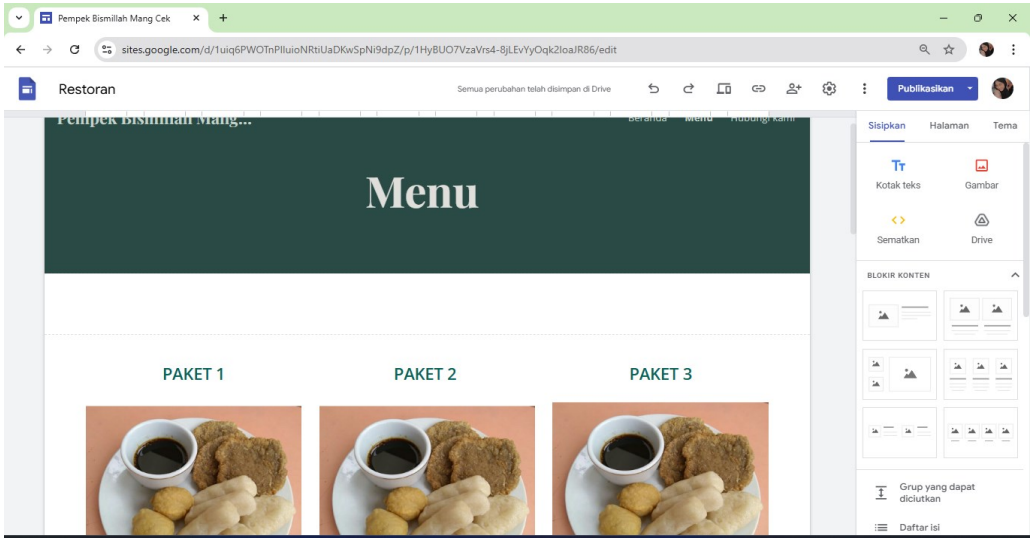

Figure 2. Menu Page

c. Store Information Page
This page provides information about address details, contact information, and operational hours.

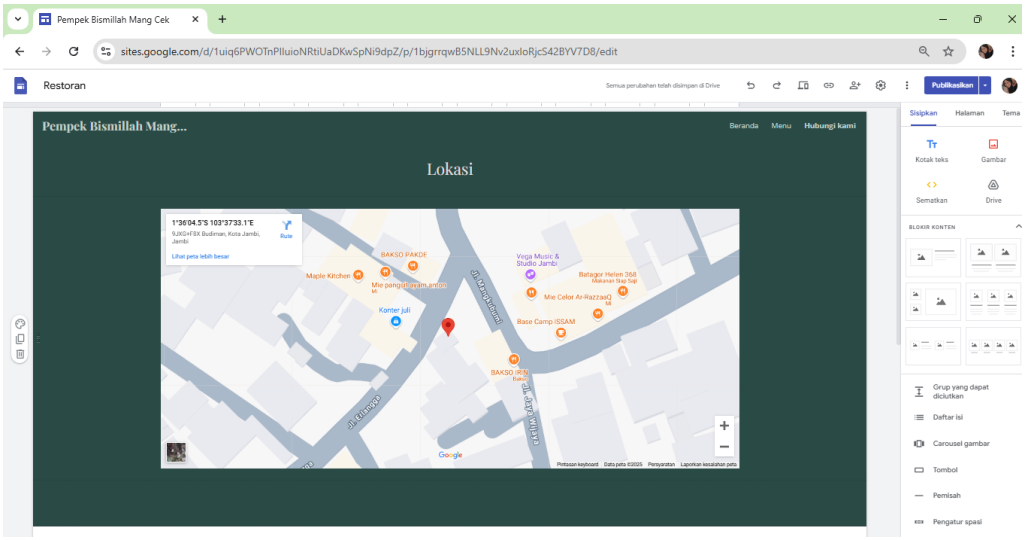

Figure 3: Store Information

d. Contact Information

This section allows consumers to fill out data for delivery regarding their orders using Google Forms.

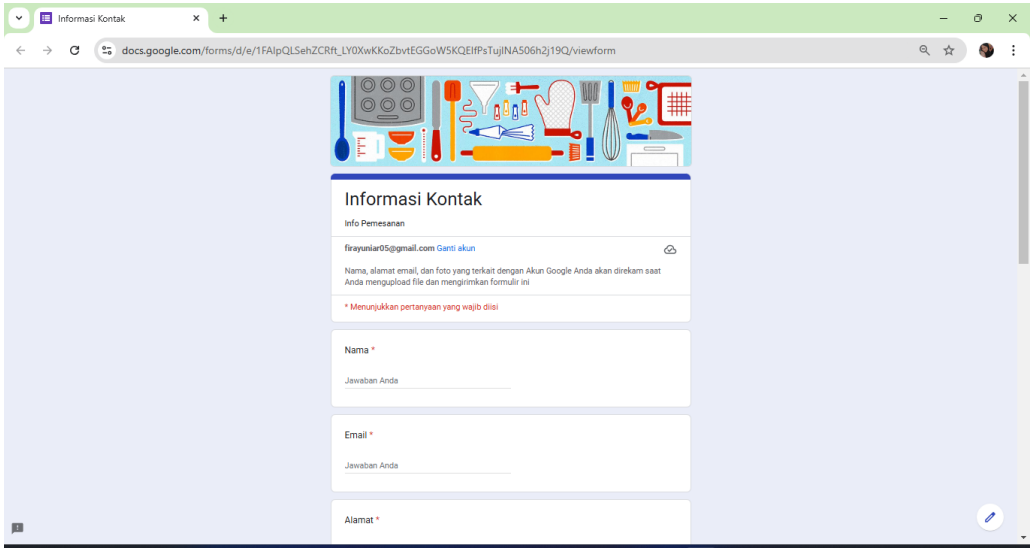

Figure 4. Contact Information

4. CONCLUSION

This research indicates that implementing a distributed e-commerce system using Google Sites significantly enhances pempek sales especially for small and medium enterprises in Palembang. By leveraging digital technology, pempek vendors can reach broader consumer bases while facilitating transactions and reducing operational costs. This study also identifies that utilizing an e-commerce platform benefits sellers while providing consumers with improved shopping experiences, allowing them to shop anytime and anywhere.

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