

Strategic Information System Planning at UMKM in Padalarang Village using Ward and Peppard Methods

Yogi Saputra¹, Aulia Nur Herlita², Ela Siti Nurpajriah³

¹Department information system, Universitas Kebangsaan Republik Indonesia

³Department Perbankan Syariah, STAI Pelita Nusa Kab. Bandung Barat

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ABSTRACT

Currently, the advancement of information systems and technology offers numerous advantages to human existence, encompassing nearly every aspect of life, including strategic planning. Good strategic planning implementation will benefit the organizations that use it as well as commercial entities like small and medium-sized enterprises (UMKM). In Padalarang Village, the industry that can employ the greatest number of specialized workers is UMKM. There is no questioning UMKM's existence because it has demonstrated its ability to endure, act as a catalyst for the local economy, and grow it. One of the communities in the Padalarangs Prefecture is Padalarang Village. West Java's West Bandung district has potential in the UMKM field, and the strategy's village layout supports this idea. The purpose of the research was to develop an information system strategy for Padalarang Village's UMKM, with the goal of motivating UMKM to enhance benefits using information systems. The Ward and Peppard methods were employed, with phases for SWOT, Value Chain, and Five Force analysis. Interviews and questionnaires were sent to pertinent parties throughout the data collecting phase. The study's conclusion is that UMKM needs to be proficient in the use of information technology to become an innovation to develop its business.

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Corresponding Author:

Yogi Saputra

Department Information System, Universitas Kebangsaan Republik Indonesia
Jl. Terusan Halimun No.37, Lkr. Sel., Kec. Lengkong, Bandung.

Email: yogi.saputra@ukri.ac.id

1. INTRODUCTION

In this era of increased sophistication, the use of computers is growing due to the rapid advancements in science and technology. Computers now play a vital role in assisting human labor. Furthermore, when compared to not using technology at all, the use of technology in the workplace can speed up the creative process and yield more effective and efficient outputs. These days, technology is viewed as more than just an operational tool for a company; it is also considered to be a crucial component of strategy planning for achieving organizational objectives. Utilizing technology to facilitate work has become essential, particularly for micro, small, and medium-sized businesses (UMKM) [1]. Utilizing information systems and information technology becomes crucial to the advancement, enhancement of organizational quality, and bolstering of organizational competitiveness. Large corporations are just one type of business organization; there are also micro enterprises, such as Micro, Small, and Medium Enterprises (UMKM). Despite a faltering national economy, UMKM is an essential component of an economy that is constantly expanding [2]. At this time, the village needs to pay attention to technological developments in the digital age, and with the high level of competition, UMKM must be able to face this challenge. One step that needs to be taken is by increasing product and service innovation, developing human and technological resources, and expanding the marketing area [3]. Information system strategy planning is formulated to increase or increase the sales value of UMKM itself, so that it can compete with other products, especially foreign products that are increasingly abundant in

industrial and manufacturing centers in Indonesia [4]. According to the provisions outlined in the Act No. 20 Year 2008 on Micro, Small, and Medium Enterprises, Small and Medium Enterprises, and Micro, also known as UMKM, are categories of businesses owned by individuals or individual enterprises that satisfy the requirements as micro enterprises. UMKM serves as the primary pillar supporting the economy, plays a crucial role in fostering national economic progress, and advances the socioeconomic development of the community. Accordingly, the UMKM plays a significant role in propelling the Indonesian economy through boosting job creation, closing income disparities, assisting those struggling with poverty, promoting regional development, and establishing a fair and balanced national economic framework [5].

According to data from the West Java Province's Central Statistical Authority, there were roughly 22.366 micro, small, and medium-sized businesses (UMKM) in West Bandung in 2021, divided by the city's district and the type of business, including legal organizations and licensing units. The Jabar Dashboard provides further details regarding UMKM, including the total number of UMKMs in West Java. According to a source article from the Disperindagkop UMKM KBB (2016), there were about 437 UMKM in the Padalarang district in 2015. The village community's income and the employment of local labor can both be enhanced by the potential for further development of the UMKM. However, on the other hand, UMKM faces numerous challenges with diverse development concerns, including legality, poor labor capital, low human resources, a lack of scientific and technological proficiency, and marketing, which continues to be a problem for the offenders of UMKM Village Padalarang [6]. The Ward and Peppard [7] methodologies of information system strategy planning was employed in this study. To acquire data, research methodology involves sending out questionnaires to the appropriate parties. Next, the analytical phase applies the Value Chain, Five Force, and SWOT analysis techniques [8]. According to the findings of this information system's strategic planning, UMKM in Padalarang Village ought to be able to apply information technology in a way that makes it an innovation for the growth of its company, a source of competitive advantage, and an improvement in UMKM's competitiveness [9].

The framework of this information system strategic planning is intended to help UMKM in the face of growing competition. Utilizing the current information system or technology can make an organization successful, particularly for the UMKM sector in Padalarang Village. In addition, the government of the West Bengal district supports UMKM perpetrators in full by demonstrating the existence of various activities like exhibitions, discussions, and seminars on UMKM that can help UMKM perpetrators grow their businesses. Furthermore, the government channels and supplies financial aid, vehicles, and other similar resources to the UMKK perpetrator [10]. This study employs the Ward and Peppard methods of information system strategy planning to design this strategy to optimally exploit the potential of information technology. To acquire data, research methodology involves sending out questionnaires to the appropriate parties. Next, the analytical phase applies the Value Chain, Five Force, and SWOT analysis techniques. According to the findings of this information system's strategic planning, UMKM in Padalarang Village ought to be able to apply information technology in a way that makes it an innovation for the growth of its company, a source of competitive advantage, and an improvement in UMKM's competitiveness [11].

2. METHOD

The research method used in the preparation of this article, refers to the strategic planning concept proposed by Ward and Peppard, the object studied is UMKM. This method is chosen because the analysis process applied includes internal and external analysis that is realized in the form of SWOT analysis, Value Chain analysis [12], Five Force analysis [13]. The Ward & Peppard methodology is also a complete methodology as it is structured in several diagrams that will help how to understand an organization further, before making a IT/IS strategy plan, thus affecting its future. In defining a strategic IT/IS plan this is not a blank thing, here is the procedure for creating a IT/IS strategic plan using Ward & Peppard Method in the figure 1:

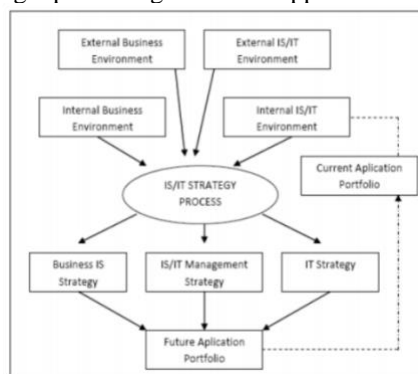


Figure 1. Strategic Information System Planning Ward and Peppard Method

The use of the Ward and Peppards Method is chosen because this method is assessed can improve competitiveness or increase competitive advantage by changing the style and way of doing business of the organization [10]. Interviews and questionnaires will be given to UMKM offenders in Padalarang Village as the technique of data collection used in this study. The Ward and Peppard technique split the phases in large lines into the input stages based on the strategy canvas shown in the above picture:

- a. Examination of the internal business environment, encompassing elements of the present company plan.
- b. examination of the external business environment, encompassing features of the industrial, competitive, and economic domains.
- c. An organization's internal IT/IS environment analysis examines its status from a business standpoint and includes an examination of its current portfolio.
- d. Technology developments and potential for application by users, rivals, and suppliers are part of the external IT/IS ecosystem.

The process of creating a IT/IS strategic planning document, known as the output phase, includes the following steps: [5]

- a. The business SI strategy includes application portfolios, an overview of information architecture, and how each business unit or function will use IT/IS to achieve its business goals.
- b. IT strategy, which includes guidelines and plans for overseeing IT/IS technological and human resource management.
- c. The overall components of the IT/IS Management Strategy are applied across the entire organization to guarantee uniform application of the necessary IT/IS policies.

3. RESULTS AND DISCUSSION

UMKM, which can be done by people or organizations, has the power to advance the local economy in Padalarang Village. It can be developed as an analysis concept for Strategic Information System Planning at UMKM in Padalarang Village utilizing SWOT, Value Chain, and Five Force analysis approaches based on the findings of interviews and questionnaires given to UMKM culprits.

3.1 Interviews Date

There are many kinds of enterprises carried out by UMKM perpetrators, these are very varied, there are culinary fields, materials, handicrafts, material products, trade enterprises.

Table 1. Interviews Date UMKM

No	Question	Answer	Reference
1	Is UMKM prepared to implement cutting-edge information systems and new technologies?	Because of the current demands, the UMKM culprits are prepared with technology to ensure that their products remain competitive in the market.	
2	Talk about the difficulties or barriers Padalarang Village residents face when using technology tools!	The absence of sufficient internet resources, such WiFi, infrastructure, or sufficient electronic devices, as well as a deficiency in digital competencies, such as a shortage of SDMs with information technology expertise.	UMKM perpetrator
3	Does UMKM have to utilize a forum run by the village or its own website that is administered by the village?	If not assisted by the appropriate authorities, using the UMKM website run by the village may be your best bet. Each UMKM's demands and commercial goals determine how this website is used, but UMKMs need to market their goods.	

No	Question	Answer	Reference
4	Talk about the benefits of having an information system website for UMKM!	May overcome geographic limitations because they are always accessible and places, can boost their local identity, can improve their market share by showcasing products online, and their online presence.	

3.2 Questioner Data

Administered these questionnaires to a few UMKM offenders in Padalarang Village by asking them straight questions via Google forms. The offenders engage in a wide range of business activities, including trade, materials, handicrafts, culinary, and material product industries. These are some survey results from UMKM offenders who completed the questionnaire in table 2:

Table 2. Questioner Data UMKM perpetrator

No	Question	Answer
1	Does your UMKM currently have a website or use information system technology?	The majority of UMKM offenders don't have a website or if they do, it hasn't been updated in three years.
2	Does your UMKM have a challenge in managing a business efficiently and effectively?	All the respondents said "yes" due to the numerous difficulties he had in managing and running his company.
3	How prepared is your UMKM in adopting new technologies and more advanced information systems?	Considering that many people who are eager to adopt technology are also unprepared for the Internet and its human resources.
4	What are the main obstacles or challenges you encounter in adopting or implementing information systems in your UMKM?	Most people answer that because there is no SDM that supports current technology and no adequate internet access like WiFi. There is also UMKM that does not have computer hardware.
5	Does your UMKM currently have a planned marketing strategy?	In addition, those without a marketing plan intend to make use of technological advancements. Their responses are typically highly deliberate and thoughtful.
6	Are you as a UMKM owner aware of the importance of online presence and website use for your business?	Many of them gave quite thoughtful answers, most likely because of technological advancements forcing them to acknowledge the need of having an online presence.
7	Do you believe that websites for UMKM villages can help promote products or services to local communities and tourists?	Most of them answered very trusting and trusting, because the benefits of the website for business development were quite effective.
8	To what extent do you think a village website can help UMKMs in the village collaborate and network for business?	Many of them responded with assurance, citing the possibility of a village website or government support allowing them to host a discussion forum beneficial to their endeavors.
9	How successful, in your opinion, is it for your company to reach a wider audience and gain a larger portion of the market in the village by using a dedicated UMKM website?	They responded very efficiently, quite effectively, and less effectively because they were tailored to their needs and to their type of business. In every UMKM not everyone can use the information system website.
10	Do you believe that to assist the development of UMKM in the village, the village government or a	Most of the respondents agreed strongly because they would be facilitated by the website in running their business.

No	Question	Answer
	related body has a duty to operate the website?	
11	How much would you be willing to help UMKM by managing the village website in conjunction with the village authority or other relevant agencies?	They answered very willing and willing, possibly to increase the promotion and sales.
12	What are the benefits of using the village's UMKM website? (such as boosting sales and advertising, enhancing local marketing and village identity, having government assistance, and having a robust business network amongst UMKM in the village).	They reacted to boost sales, marketing, and promotion, gain more government backing, maintain the distinctive character of their own village, make it easier for customers to shop there, and raise awareness of and pride in the village's goods among the local populace.

3.3 SWOT Analysis

A company, project, or initiative's success can be influenced by both external (threats and opportunities) and internal (strengths and weaknesses) elements. These aspects are analyzed using the SWOT analysis method. Strength, Weakness, Opportunities, and Threats is shortened to SWOT. SWOT analysis classifies an organization's external influences as opportunities and threats, while internal aspects that impact performance and competitiveness are referred to as strengths and vulnerabilities. Organizations can better recognize and comprehend their internal and external environments by using SWOT analysis. Organizations may create more successful strategies, take advantage of current opportunities and strengths, overcome weaknesses, and confront possible dangers by combining knowledge about strengths, weaknesses, opportunities, and threats. An identification of a situation that is categorized as strengths, weaknesses, opportunities, and threats is done in this study. The table 3 following conclusions are drawn from the analysis of the usage of a web information system for UMKM and the results of the interviews:

Table 3. Result SWOT Analysis

SWOT ANALYSIS	Strength: <ol style="list-style-type: none"> Wide reach (available at any time) Promotion of products and services Easy delivery of information UMKM community involvement Local product identity, unique and diverse 	Weakness: <ol style="list-style-type: none"> Restrictions on resources, including knowledge and abilities. Technical aptitude Infrastructure and restrictions on accessibility
Opportunity: <ol style="list-style-type: none"> Expanding market share. Increased Customer Engagement. Support from government or organization. Collaboration between UMKM perpetrators. 	Strategy SO <ol style="list-style-type: none"> Use local items' distinctiveness as a selling point for internet marketing. Use the UMKM website to maximize prospects in a broad market. Create an e-commerce platform or UMKM forum with an emphasis on regional goods to boost sales. 	Strategy WO <ol style="list-style-type: none"> Provide instruction and assistance to enhance UMKM's comprehension and proficiency in website administration and electronic commerce. To overcome the limitations of resources and infrastructure, use government or non-governmental organization programs and assistance in the development of UMKM in rural regions.
Threats: <ol style="list-style-type: none"> Online Competition Security and Privacy 	Strategy ST <ol style="list-style-type: none"> Develop your knowledge and abilities in digital marketing and website administration to compete with big online and 	Strategy WT <ol style="list-style-type: none"> Establishing collaboration with the UMKM community and rural-focused digital platforms

3. Changing Trends and Technologies	UMKMs that have embraced digital technologies. 2. Work together with IT consultants or cyber security authorities to solve online security threats and safeguard data.	to create networks and acquire common resources. 2. To overcome Padalarang Village's infrastructure limitations, collaborating with reputable logistics would strengthen the delivery and logistics systems.
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In the table 3, The outcomes of a SWOT analysis can aid in strategic decision-making, improve understanding of the organization's situation, and serve as a foundation for developing appropriate action plans or strategies to meet current obstacles and maximize organizational potential.

3.4 Analysis Value Chain

Organizational activities are identified and classified by Value Chain into two broad categories: primary activities and support activities. Five fundamental components make up primary activities: marketing and sales (marketing and sales), operations (operational), outgoing logistics (outcoming logistics), inbound logistics (incoming logistics), and customer support (customer service). (Business Infrastructure). Value chain analysis applied to information technology in micro, small, and medium-sized enterprises (MSMEs) can aid in comprehending and streamlining business processes from beginning to end as well as pinpointing value addition points. This maximizes profitability and identifies areas that can be improved to boost business success and competitiveness [14]. The value chain analysis is as follows:

Table 4. Analysis Value Chain Result

Support Activity	Firm Infrastructure: Use of information systems in the management of administrative, financial, and corporate assets/UMKM system.				
	Human Resource Management: Implementation of information systems in SDM management, such as employee performance tracking, skills development, or training.				
	Technology Development: Identification of information technology needs corresponding to UMKM in Padalarang Village.				
	Procurement: Use of information systems to manage purchases, orders, and payments of raw materials or services required in UMKM operations.				
Main Activity	Inbound Logistic	Operational	Outbound Logistic	Marketing and Sales	Service
	Identification and acquisition of raw materials or products from local suppliers necessary for UMKM enterprise in Padalarang Village.	Identify operational processes involving the use of information systems, such as production, processing of products, or provision of services.	Using information systems to track shipments, manage product supplies, and optimize distribution.	Using information systems to identify target markets, conduct digital product marketing, and expand reach.	Using information systems to identify target markets, conduct digital product marketing, and expand reach.

Among the additional benefits of using information technology as a UMKM website in Padalarang Village are the following:

- a. **Accessibility:** Customers may readily obtain product details, make purchases, and communicate with UMKM through the website without needing to visit the company's physical location.
- b. **Operational efficiency:** The efficiency of marketing, production, and procurement procedures can all be increased with a website. UMKM can enhance mistake reduction, inventory management, and order response times.
- c. **Greater Accessibility and Market Promotion:** UMKM can reach clients both inside and outside Padalarang Village, grow its market share, and boost sales and revenue by using the website.

It's crucial to remember that UMKM website implementation can present certain difficulties, including the need to expand the village's internet infrastructure, train staff members in website management, protect customer data, update content, and maintain functionality. Value chain analysis allows UMKM to pinpoint areas that require optimization or improvement when implementing the website in the village. This will contribute value to UMKM's business processes, enhance operational efficiency, and handle marketing and sales materials better. UMKM could use the advantages of utilizing websites or information systems to enhance their business growth and competitiveness.

3.5 Analysis Five Force

Companies can gain a deeper understanding of industry rivalry dynamics and critical elements that can impact a business strategy's success by utilizing the Five Forces study. Businesses can build competitive advantages and effective strategies to overcome obstacles by analyzing their current competitive strengths. A framework for assessing the level of attractiveness and intensity of rivalry in a sector is Porter's Five-Forces study. The utilization of information technology, as exemplified by the Padalarang Village website run by UMKM, can aid in comprehending industry dynamics, competition-affecting aspects, and prospects for information system implementation [15]. The five-force analysis is as follows:

- a. Dangers from Current Competition:
 - 1) Inter-UMKM Competition: The launch of a UMKM website in Padalarang Village may lead to increased competition among UMKMs that provide comparable goods and services. To draw in and keep consumers, UMKM must compete with nearby businesses by providing an alluring array of goods and services.
 - 2) Competition from UMKM in Other Villages: To reach clients in Padalarang areas, UMKM in Padalarang Village must contend with competition from UMKM outside the area. UMKM must contend with competition from UMKM outside the village, which might provide comparable goods or services.
- b. Threats from Newcomers:
 - 1) Identify potential threats from new UMKMs in Padalarang Village who want to use the website as a marketing channel.
 - 2) Evaluate entry barriers, such as regulations, capital, or special skills, website development costs, effective promotion, brand reputation, and product or service quality.
 - 3) Implement information systems to optimize business processes, improve efficiency, and create competitive advantages that are difficult to imitate by new competitors.
- c. Threats from Replacement Products or Services:
 - 1) Offline products or services: UMKM who uses the UMKM website in Padalarang Village should be aware that there are still customers who prefer to shop offline. Products and services offered by UMKM offline in Padalarang Village may be a substitute for customers who do not use the website.
 - 2) Online products and services: In addition, UMKM should also be aware of the existence of products or service offered by other UMKM or e-commerce platforms outside of Padalarang Village or similar products and/or services online.
- d. Negotiating Buyer Power:
 - 1) More Choices: Through the village UMKM website, buyers have access to a variety of UMKM and products. This can increase the bidding power of buyers as they have more choices.
 - 2) Transparency Price and Information: With the presence of the UMKM site in the village, buyer can easily compare prices and product information from various UMKM. This may increase pressure on UMKM to offer competitive prices and better value.
- e. Discussions about Supplier Strength:
 - 1) Dependency on Website Provider/Service Provider: UMKM will be dependent on the website service provider to use the village website. The provider may establish higher terms and fees for UMKM if they have significant bidding power.
 - 2) Provider Option Limits: UMKM must consider the options for website service providers that are available.

UMKM can determine elements that may have an impact on the implementation of the village website by examining the Five Forces. To effectively boost their success and competitiveness in the Padalarang Village market, UMKM must think about ways to get over current obstacles and seize potential chances.

4. CONCLUSION

The analysis's findings indicate that UMKM in Padalarang Village could raise the community's economic standing. Consequently, to make it happen, they need a container that will enable them to create and promote their items. One such approach is the requirement for an IT-based support system, like a website,

which can be accessible by UMKMs at any time and from any location. The use of these systems can be customized to the kind of product and business goal that each UMKM has, even though not all of them require it. UMKM can optimize their business potential by utilizing a website in the village. They can create new avenues for more successfully and economically marketing and promoting their goods, and they can raise the income of Village Padalarang, the UMKM culprits. Infrastructure for information technology can also be enhanced, and human resources can be made more proficient. Moreover, strategic information system planning can boost UMKM, enhance the company's business quality, and support current business procedures, all of which contribute to increased business efficiency through the deployment of appropriate information technology.

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