Analysis of online market system design strategy based on external and internal factor evaluation matrix

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Abstract. The development of e-commerce or e-Market technology today creates a culture of Smartphone usage as the main media in communicating and doing business so it makes the opportunity to be utilized in overcoming every conventional issues in doing business. One of the issues in Tanah Abang Market is the congestion due to the large number of visitors coming from outside Jakarta. Therefore, a proper market development strategy is needed. The method used in this research was SWOT (Strengths, Weaknesses, Opportunities & Threats). The strategy is composed of the calculations described in the EFE (External Factor Evaluation) and IFE Matrix (Internal Factor Evaluation). The result of internal factor analysis from IFE matrix obtained value equal to 3.27, while result of External factor analysis from EFE matrix obtained score equal to 3.35. Based on the data, the strategy of market development by designing the Online Market application is legally specific for the official seller in Tanah Abang Market is one of the right strategy in overcoming the issues in Tanah Abang Market. Furthermore, the design of Online Market System application for Tanah Abang Market (Blok F) produced in this research is part of the implementation of market development strategy.

1. Introduction
Development and diffusion of the Internet, information and communication technology (ICT) have made a significant impact on many areas [1]. Started from the emergence of sell and buy online forum such as tokobagus.com (now changed to olx.com), bukalapak.com, tokopedia.com and others. Furthermore, the role of social networks like Facebook, Instagram, Twitter whose function is transformed into a marketing medium of a product [2]. Not only social networking but also instant messenger services like BBM, WhatsApp, Line and so on become a communication tool between sellers and buyers.

Based on the mentioned, the issues of congestion in Tanah Abang Market should be reduced by utilizing E-Commerce by designing an E-Market system (Electronic Market) specifically for Tanah Abang Market. Here in after, the expected output of a Web-based Online Market System that can play a more effective in the process of buying and selling in Tanah Abang Market Blok F. However, strategy analysis is needed to support the design of Web-based Online Market System as one of the right strategies.

One of the Market Development Strategy is expansion (Expansion Strategy) that is by expanding new business by adding new function, product and or new market [3]. This strategy should be implemented by the Tanah Abang Market manager. Therefore, a strategy analysis is required in the
development of Tanah Abang Market (in this case, specifically for Block F). Strategy analysis will be the basis, whether the design of Online Market System Tanah Abang Market is the right solution.

1.1. E-Commerce/E-Marketing

Lestarini and Handayani [4] state that the implementation of e-Commerce is one of the B2C strategy or that we know Business To Customer and able to increase the world's income from 53 to 238 trillion dollars in 2004 to 428 to 2134 million dollars, therefore in Indonesia a lot of B2C performance that utilizes the internet with information technology in marketing its products such as online ticket sales, online book ordering, etc. This concept is usually implemented through the design of e-Commerce or e-Marketing website used as a liaison system for direct transactions with consumers.

E-commerce websites has an important role in the sustainability of online sales or marketing systems in the world of commerce or industry, not only large-scale business but also in small and medium enterprises in activities between stakeholders with their customers [5]. While Internet Marketing is a process of establishing and maintaining relationships with consumers through online activities by facilitating the exchange of ideas, products and services that satisfy both parties [6]

1.2. IT Strategy (Information Technology)

Information technology strategy is a process of designing computer-based information system applications to support the implementation of business plans and achieve all business objectives. Information technology strategies are analyzed to aim for good opportunities through the adoption of innovative technologies [7].

1.3. SWOT Strategy Analysis

To solve the problem and a recommendation to the company then the problem found will be analyzed by using SWOT method [8]. SWOT is a strategy analysis obtained from internal and external factors of the company. There are 4 quadrants that compile the SWOT analysis model i.e. is Strengths, Weaknesses, Opportunities and Threats [9]. It helps organizations to gain a better insight of their internal and external business environment when making strategic plans and decisions by analysing and positioning an organization’s resources and environment in four regions: Strengths, Weaknesses, Opportunities and Threats.[10]

2. Methods

SWOT factors in each region are either not measurable or ranked by the significance towards an organization’s performance [10]. The method used in this research was SWOT (Strengths, Weaknesses, Opportunities & Threats). IFE matrix (Internal Factors Evaluations) is used to collect data and EFE matrix (External Factors Evaluation) to determine internal and external factors. Based on the EFE and IFE further compile the SWOT matrix to develop strategies based on internal and external factors [11]. SWOT analysis results can be traced strengths, weaknesses, opportunities and threats that exist in the company that will be the basis to find strategies that can be applied company [12].

3. Results and Discussion

3.1. SWOT Analysis

3.1.1. Internal Factor Evaluation Matrix (IFE). Results obtained from questionnaire for IFE can be seen in Table 1.
Table 1. IFE Matrix

| No | Dominant internal factors                                           | Rating | Percentage (%) | Score |
|----|---------------------------------------------------------------------|--------|----------------|-------|
| 1  | Has a quality local apparel product                                 | 4      | 0.09           | 0.32  |
| 2  | The company has a good security system                             | 3      | 0.06           | 0.16  |
| 3  | Competitive wholesale price                                         | 4      | 0.09           | 0.32  |
| 4  | Good organization and management arrangements                      | 2      | 0.09           | 0.21  |
| 5  | Many consumers come from outside Jakarta                            | 4      | 0.06           | 0.22  |
| 6  | Increased profit growth and sales                                  | 3      | 0.10           | 0.30  |

| No | Weaknesses                                                          | Rating | Percentage (%) | Score |
|----|---------------------------------------------------------------------|--------|----------------|-------|
| 1  | There is no legality online system development                       | 3      | 0.08           | 0.27  |
| 2  | Less promotion                                                       | 4      | 0.09           | 0.30  |
| 3  | Limited market segment                                               | 3      | 0.09           | 0.26  |
| 4  | Sales targets are not achieved at the moments after the holiday      | 4      | 0.07           | 0.29  |
| 5  | Employees education level is relatively low                          | 4      | 0.10           | 0.36  |
| 6  | No computerized system yet                                          | 3      | 0.09           | 0.24  |

TOTAL 3.27

3.1.2. External Factor Evaluation Matrix (EFE). Results obtained from questionnaire for EFE can be seen in Table 2.

Table 2. EFE Matrix

| No | Dominant External Factors                                           | Rating | Percentage (%) | Score |
|----|---------------------------------------------------------------------|--------|----------------|-------|
| 1  | Improved economic growth                                            | 3      | 0.09           | 0.28  |
| 2  | The development of Online Market technology                         | 4      | 0.10           | 0.34  |
| 3  | Government policies that support the development of market management| 2      | 0.06           | 0.11  |
| 4  | The existence of a potential market share                           | 3      | 0.09           | 0.31  |
| 5  | Consumer confidence in Tanah Abang Market                           | 4      | 0.10           | 0.37  |
| 6  | Increased smartphone users                                          | 4      | 0.11           | 0.44  |

| No | Threats                                                              | Rating | Percentage (%) | Score |
|----|                                                                     |--------|----------------|-------|
| 1  | Conventional culture has been attached to the society               | 3      | 0.07           | 0.20  |
| 2  | Government policies that change every time that is affected by congestion in Tanah Abang Market area | 4      | 0.10           | 0.34  |
| 3  | Congestion is the reason for consumers to prefer to visit department store or shopping online by using a trusted online application | 3      | 0.09           | 0.28  |
| 4  | The existence of a department store or luxury market with a competitive price that provides convenience in shopping | 3      | 0.09           | 0.31  |
| 5  | Consumers are increasingly price sensitive                          | 4      | 0.10           | 0.37  |

TOTAL 3.35
### 3.1.3. SWOT Matrix

Table 3 provides some strategy solutions obtained from the SWOT matrix.

| Internal                              | Strengths (S)                                      | Weaknesses (W)                                   |
|---------------------------------------|---------------------------------------------------|--------------------------------------------------|
|                                       | 1. Has a quality local apparel product.            | 1. There is no legality online system development.|
|                                       | 2. The company has a good security system.         | 2. Less promotion.                               |
|                                       | 3. Competitive wholesale price.                     | 3. Limited market segment.                       |
|                                       | 4. Good organization and management arrangements.  | 4. Sales targets are not achieved at the moments after the holiday. |
|                                       | 5. Many consumers come from outside Jakarta.       | 5. Employees education level is relatively low.  |
|                                       | 6. Increased profit growth and sales.              | 6. No computerized system yet.                   |
| External                              |                                                   |                                                  |
|                                       |                                                   |                                                  |
| Opportunities (O)                     |                                                   |                                                  |
|                                       | 1. Improved economic growth.                       |                                                  |
|                                       | 2. The development of Online Market technology.    |                                                  |
|                                       | 3. Government policies that support the development of market management. | |
|                                       | 4. The existence of a potential market share.      |                                                  |
|                                       | 5. Consumer confidence in Tanah Abang Market.      |                                                  |
|                                       | 6. Increased smartphone users.                     |                                                  |
| SO Strategy:                          | 1. Utilization of internet technology for promotion or marketing. | 1. Creates a computerized system to handling the markets. |
|                                       | 2. Simplify sales transactions from outside Jakarta using smartphone. | 2. Creates an online based computerized system to be used as a media campaign. |
|                                       | 3. Establish management to manage the market system online. | 3. Designing an Online Market application for authorized sellers of Tanah Abang Market. |
|                                       | 4. Design a Smartphone or Web-based Online Market application. | 4. Held employees training in the use of technology. |
| Threats (T)                           | 1. Conventional culture has been attached to the society. |                                                  |
|                                       | 2. Government policies that change every time that is affected by congestion in Tanah Abang Market area. | |
|                                       | 3. Congestion is the reason for consumers to prefer to visit department store or shopping online by using a trusted online application. | |
|                                       | 4. The existence of a department store or luxury market with a competitive price that provides convenience in shopping. | |
|                                       | 5. Consumers are increasingly price sensitive       |                                                  |
| ST Strategy:                          | 1. Promoting Smartphone or Web-based Online Market applications by utilizing social media so that application usage gains the trust of consumers outside Jakarta and it is possible to reduce vehicle density. | 1. Optimize the design of Online Market System by utilizing Internet Technology. |
|                                       | 2. Provide counselling to Tanah Abang traders to remain open to the price information that is located outside Tanah Abang Market so the price remains cheap but competitive. | 2. Creates a user friendly application so user becomes comfortable. |
|                                       | 3. Renovated a part of Tanah Abang Market building that has been damaged so it can appear as a semi modern market. | 3. Creates a good governance system in online transaction. |
| WT Strategy:                          | 1.                                                  | 4. Starts training for employees to improve services and market management. |
3.1.4. **IE Matrix.** The IE matrix is based on the results of internal and external factors combined from the EFE and IFE matrix. The result of internal factor analysis from IFE matrix obtained value equal to 3,27, while result of External factor analysis from EFE matrix obtained score equal to 3,35, as illustrated in Table 4.

| Total IFE Score | Strong 3,0 – 4,0 | Medium 2,0 – 2,99 | Weak 1,0 – 1,99 |
|-----------------|------------------|-------------------|-----------------|
| Total EFE Score |                  |                   |                 |
| 0,4             | 0,3              | 0,2               | 0,1             |
| 0,3             | I                | II                | III             |
| 0,2             | IV               | V                 | VI              |
| 0,1             | VII              | VIII              | IX              |
|                 | High 3,0 – 4,0   | Medium 2,0 – 2,99 | Weak 1,0 – 1,99 |

3.2. **Discussion**

Based on the results of IE Matrix, Tanah Abang Market block F is in cell I. Markets in block F have high internal factors and strong external factors. So the application of SWOT analysis results will be very appropriate. One of the results of SWOT analysis is market development strategy by utilizing the development of Information Technology, Internet, Smartphone and Social Media by designing Online Market System Application for every official transaction between authorized merchant of Tanah Abang Market Blok F and consumer. Through the app is expected in its application will reduce congestion and other problems in market management.

3.2.1. **Online Market System Application Design.** Based on the results of strategy analysis by using SWOT, the design plan of Online Market System for Tanah Abang Market based on website is one of market development strategy. Strategy analysis based on SWOT is one of decision support in planning of Online Market System Application for Tanah Abang Market Blok F (see Figure 1 and 2). Application design is made based on the results of previous research that is e-commerce system analysis in the form of Online Market System for traders and buyers in Tanah Abang Market especially Block F [13].

![Figure 1. Display Home from Online Market System Website of Tanah Abang Market Blok F](image-url)
4. Conclusion
One of the strategies of SWOT analysis is Designing Online Market applications that are legally specific to official sellers in Tanah Abang Market. The results of SWOT analysis are reinforced by EFE and IFE matrix results so that it can be a reference in further decision making for the development of traditional markets such as Tanah Abang Market. Further application design can be developed into mobile based applications.

5. Reference
[1] Skudiene V, Auruskeviciene V and Sukveiciute L 2015 Internationalization model revisited: e-marketing approach Procedia - Soc. Behav. Sci. 213 918–924
[2] Saragih H and Ramdhany R 2012 Pengaruh Intensi Pelanggan dalam Berbelanja Online Kembali melalui Teknologi Informasi Forum Jual Beli (FJB) Kaskus J. Inf. Syst. 8 2 100-112
[3] Juwarta 2015 Strategi Bisnis Guna Mengembangkan Kewirausahaan Orbith 11 1 53–59
[4] Lestarini S and Handayani P 2012 Pendefinisian Instrumen Evaluasi Website E-COMMERCE Business to Consumer J. Sist. Inf. 6 1 10-19.
[5] Van Der Merwe R and Bekker J 2003 A framework and methodology for evaluating e-commerce Web sites Internet Research 13 5 330-341
[6] Lu X, Ye L, Yang C and Yu J 2009 Embedded XML data exchange for asynchronous communication between e-commerce systems 2009 International Conference on Management of e-Commerce and e-Government, ICMeCG 2009 164-167
[7] Ward J and Peppard J 2002 Strategic planning for information systems
[8] Mustari D and Primawati A 2014 Pemetaan Strategic Management Dengan Balanced Scorecard Pada Pt . a SEMNASTEKNOMEDIA ONLINE 2 10 1 2.08-1.2.08-6
[9] Setiawan A and Ilham B 2012 Perencanaan Strategik Sistem Informasi pada Perusahaan Penerbitan dengan Metode Ward and Preppard: Studi Kasus pada Penerbit Rekayasa Sains Bandung J. Manaj. Teknologi vol. 11 3 308–325
[10] Phadermrod B, Crowder R M and Wills G B 2019 International Journal of Information Management Importance-Performance Analysis based SWOT analysis Int. J. Inf. Manage., 44 194–203
[11] Saputro A S, Hidayat K and Yulianto E 2016 Perencanaan Strategi Pemasaran Paket Data Kampus Dalam Persaingan Di Bidang Paket Data Internet (Studi Kasus Pada Pt. Telkomsel Cabang Malang) J. Adm. Bisnis
[12] Primawati A 2015 Usulan Perencanaan Strategi Teknologi Informasi: Studi Kasus: Pasar X PT Factor Exacta 5 3 228–236

[13] Paramita A, Primawati A and Lukman 2018 Analisis Rancangan Online Market System Pasar Tanah Abang (Studi Kasus Blok F) STRING 3 1 66–75