

Samudera Ports Digital Transformation Development Strategy Through the Implementation of ETOS (Electronic Terminal Operating System)

Riezka Sekartaji Nabiela^{1*}, Dodie Tricahyono^{1*}, Siska Noviaristanti^{1*},
Rina D. Pasaribu^{1*}

¹ Faculty of Economic and Business, Telkom University, Bandung, Indonesia

*Corresponding Author: riezkaSekartaji@student.telkomuniversity.ac.id,
dodietricahyono@telkomuniversity.ac.id, siskamarhen@telkomuniversity.ac.id,
rinadpasaribu@telkomuniversity.ac.id

Accepted: 15 February 2023 | Published: 1 March 2023

DOI: <https://doi.org/10.55057/ajrbm.2023.5.1.12>

Abstract: *Samudera Indonesia is a shipping and logistic company in Indonesia that actively engaged in adapting digitalization in its various business activities. One of the digitalization efforts carried out is by implementing ETOS (Electronic Terminal Operating System) in Samudera Ports business line. This study aims to study the Samudera Ports business model, analyze the business model change approach strategy and develop a digital transformation roadmap on the Samudera Ports business model. This qualitative research contains 5 variables: Digital Reality, Digital Ambition, Digital Potential, Digital Fit, and Digital Implementation. Digital transformation process started by the phase when Samudera Ports is still running a manual business model. Digitalization through the implementation of ETOS is able to increase the effectiveness and efficiency of the four core terminal activities: Receiving, Delivering, Loading and Discharge. Changes in the business model with ETOS affect the Customer Dimension, Benefit Dimension, Value Added Dimension, Partner Dimension, and Financial Dimension. The main objective of digital transformation is to achieve a more effective, efficient and environmentally friendly business model. Digital transformation begins with problems that occurred in port operational activities and benchmarking to overseas modern ports. Digitization is adjusted to each port's capability. The management of Samudera Ports directly handles system education for both internal and external parties. This is intended to create an ideal reciprocal relationship and minimize errors or failures in the implementation of ETOS. Samudera Ports management implements the changes approach strategy with 3 stages of changing management: Unfreeze stage where Samudera Ports realizes the need for a system to overcome the problems, the second stage is Change, where Samudera Ports establishes the policies in the implementation of ETOS. Next, the Refreeze stage where the ETOS-based business model is standardized and used as the standard for Samudera Ports port business.*

Keywords: Shipping Industry, Samudera Indonesia, Digital Transformation, Digital transformation roadmap

1. Introduction

Prior to digitization, Samudera Ports' business model was manual with the potential for errors, discrepancies and much longer time on every process. The implementation of digital transformation is carried out with the aim of achieving effectiveness and efficiency in four main port activities: Receiving, Delivering, Loading and Discharge. Digital Transformation is carried out by implementing ETOS (Electronic Terminal Operating System) which is a digitalization innovation implemented by Samudera Ports in its business model. ETOS provides one integrated and real-time view of all operational activities from upstream to downstream. ETOS is specifically designed to meet the operational needs of the terminal, ensuring Electronic Data Exchange compliance, integrated with customs systems, shipping lines, logistics and Inaportnet. ETOS is scalable and configurable and flexible for each terminal business.

Through five phases, namely Digital Reality which includes the existing business model, Digital Ambition which explains the main objectives of digital transformation, Digital Potential which includes the digitized business model, Digital Fit which relates to customer requirements and objectives achievements, Digital Implementation which is the stage of implementing digitization with changing management in the previous business model.

2. Literature Review

Strategic Management

According to David (2010:6), the strategic management process is divided into several stages as follows:

1) Strategy Formulation

Vision and mission development, identification of external opportunities and threats, awareness of internal strengths and weaknesses, setting long-term goals, disbursing alternative strategies, and selecting specific strategies to achieve goals.

2) Strategy Implementation

The company sets annual goals, makes policies, motivates employees, and allocates resources so that the formulated strategies can be implemented.

3) Strategy Assessment

- i. Review of external and internal factors that form the basis for the strategies that have been implemented previously,
- ii. Performance measurement, and
- iii. Taking corrective steps

Business Model

Schallmo, 2013 defines a business model as the company's basic logic that describes what benefits are provided to customers and partners. The business model includes 5 dimensions:

- 1) The customer dimension contains customer segments, customer channels, and customer relationships.
- 2) The benefits dimension includes products, services, and value.
- 3) The value-added dimension includes resources, skills, and processes.
- 4) The partner dimension includes partners, partner channels, and partner relationships.

- 5) The financial dimension includes income and expenses.

Change Management

The change management model according to Kurt Lewin consists of 3 stages:

- 1) Unfreeze

Initially, organizational members become aware of the need for change and the reasons that make it necessary; the balance in favor of changing behavior and attitudes exists: the inherent threats people may associate with changing and the need to motivate those who will be affected must be considered in this step.

- 2) Change

Organizational, departmental, or individual behavior shifts to a new level. It involves intervening in the system to develop new behaviors, values, and attitudes through changes in organizational structures and processes; As resistance from employees may begin to emerge, it is important for organizational leaders to explain to all members, directly or indirectly involved, the reasons for the change, the nature of the change, and the expected benefits.

- 3) Refreeze

In this step the organization is stabilized into a new state of equilibrium; the new procedures and behaviors introduced in the previous step are consolidated and incorporated into the organization. Individuals feel confident and comfortable with the new way of working.

Digital Transformation

Verhoef et al. (2021), defines digital transformation as “a change in the way” companies use digital technology, to develop new digital business models that help create more value-added fit for the enterprise”.

Business Model Digital Transformation

The business model DT relates to the elements of the individual business model, the entire business model, the value-added chain, as well as the network of various actors in the value-added network. The DT level includes both incremental (marginal) and radical (fundamental) business model changes. The unit of reference concerned with novelty is primarily the customer, but DT can also affect its own business, partners, industry and competitors (Schallmo, 2016).

Digital Transformation Roadmap

Schallmo et al. (2017) developed a roadmap for digital transformation for the I4.0 transition consisting of the following five phases:

- 1) Digital Reality

The company's existing business model is sketched along with related stakeholder value added analysis and customer needs surveys.

- 2) Digital Ambition

The goal of digital transformation is defined. These objectives relate to time, finances, space, and quality. Objectives and business model dimensions are prioritized.

- 3) Digital Potential
 starting point in terms of Digital Potential and the design of a future digital business model.
- 4) Digital Fit (Digital Fit)
 which are evaluated to determine Digital Fit with the existing business model. This ensures that one fulfills customer requirements and that business objectives are achieved. The evaluated combinations are then prioritized.
- 5) Digital Implementation (Digital implementation).
 Finalization and implementation of digital business models; this phase also includes the design of digital customer experiences and digital value creation networks illustrating integration with partners. In addition, resources and capabilities are also identified in this phase.

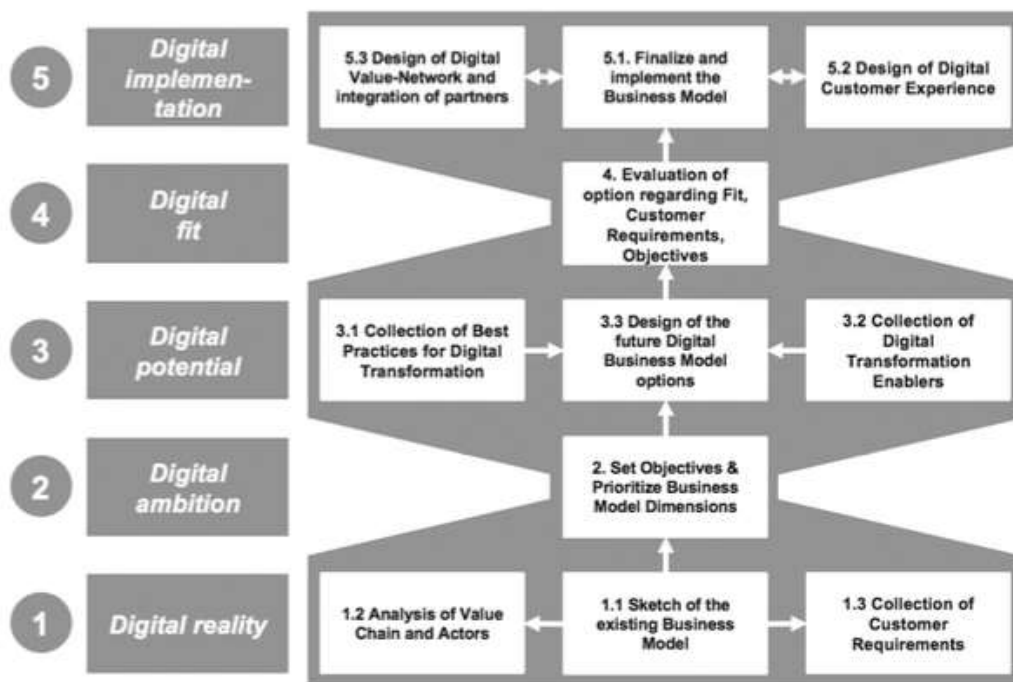


Figure 1: Digital Transformation Roadmap (Schallmo, 2016)

3. Methodology

According to the type, source of data and the level of analysis, this research is qualitative research. The data collection strategy in this research is case study. In this research, the authors wanted to find out how digital transformation can be applied to business models in all ports managed by Samudera Ports. So, in this case, the unit of analysis is an organization.

4. Conclusion

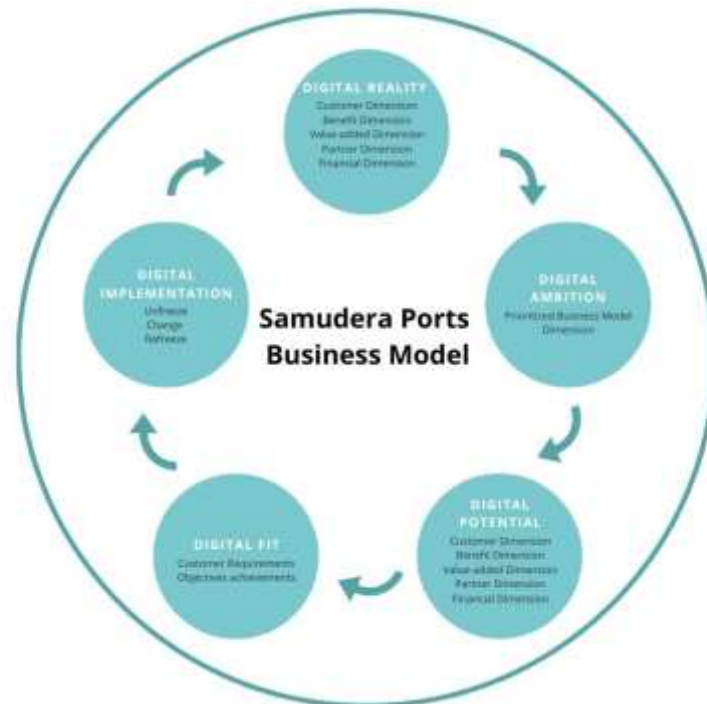


Figure 2: Research Framework

In implementing the digital transformation, Samudera Ports went through 5 phases starting from Digital Reality, this phase was passed by Samudera Ports while still doing business with a manual model, both in terms of customer service as well as data processing and internal coordination. The business model includes 5 dimensions, namely Customer Dimension, Benefit Dimension, Value-Added Dimension, Partner Dimension and Financial Dimension. In the previous business model, the Customer Dimension was where the customer had to physically go to the counter to process documents, make payments through the bank, undergo long queues with long and complex export-import procedures. In Benefit Dimension, the benefits felt by customers are only limited to physical export-import transactions. The Value-Added Dimension in the previous business model was only limited to complete facilities and customer service who was on standby at the service counter. Partner Dimensions tend to be limited and not well integrated. Financial Dimension, Samudera Ports revenue comes from manual port operations which still require high costs.

Digital Ambition in digital transformation at Samudera Ports is the achievement of a more effective, efficient, and environmentally friendly business model in supporting four core terminal activities, namely: Receiving, Delivering, Loading and Discharge. It aims to improve port performance so that it can serve customers better.

In the Digital Potential process, the company has standardization for digital-based operations obtained from benchmarking to overseas international modern ports and developing solutions to problems that occur at ports. The changing business model also affects the Customer Dimension, which gets convenience from digitization which is applied to the process of managing documentation, payments, monitoring, etc. At Benefit Dimension, customers and Samudera Ports get many benefits from the effectiveness and efficiency in terms of operations, costs, and resources for the automation that is applied. The application of digitization to the

business model produces Value-Added Dimensions which include speed of service, data accuracy, transparency, etc. In a digital-based business model, Partner Dimension has increased in terms of partner involvement, network development, and integration between parties involved. Financial Dimension on a digital-based business model, revenue still comes from port operations, but it is more efficient and profitable.

Digital Fit focuses on digitizing the priority of customer requirements and achievement objectives. So that the digitization carried out is right on target and can be implemented according to the needs and capabilities of customers and Samudera Ports.

Digital Implementation Samudera Ports is aware that the big failure of a digitalization innovation is during implementation, so that Samudera Ports management directly goes down to handle system education both within the Samudera Ports internal team with affirmations and regulations for employees to participate in change, as well as external parties such as partners, customers etc.

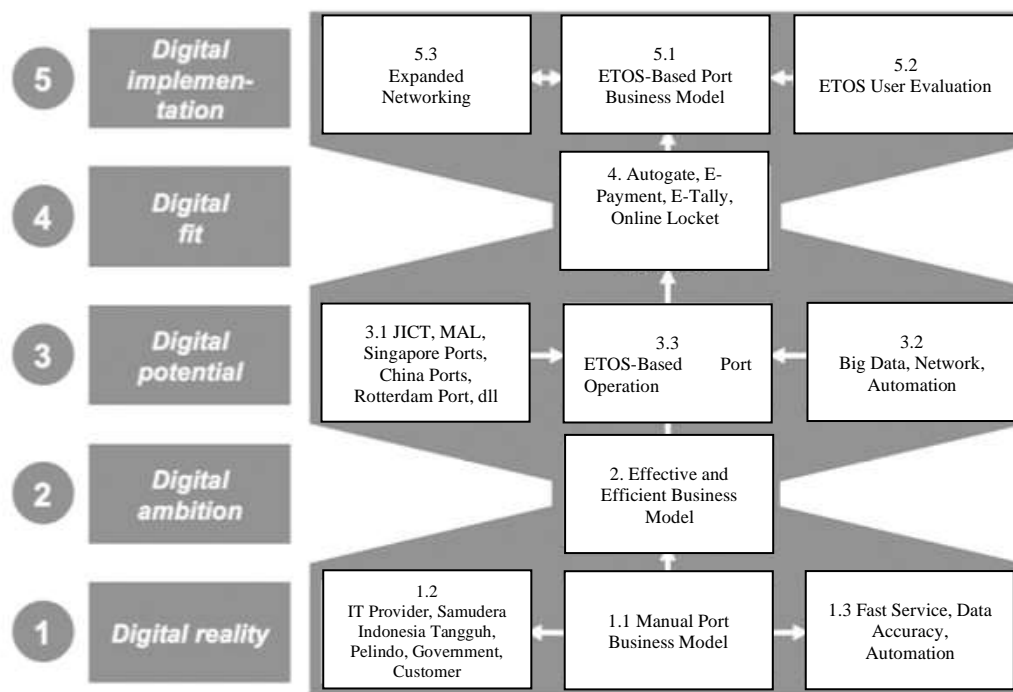


Figure 3: Samudera Ports Digital Transformation Roadmap. Based on Schallmo, 2016

References

- David, Fred R. dan David, Forest R. (2017). Strategic Management concepts and cases A Competitive Advantage Approach. Sixteenth Edition. England. Pearson Education Limited
- K. Lewin, (1947). Lewin's Change Management Model. Understanding Three Stages of Change
- Schallmo, D., Williams, C. A., & Boardman, L. (2017). Digital Transformation of Business Models-Best Practice, Enablers, And Roadmap. International Journal of Innovation Management, 21(8). <https://doi.org/10.1142/S136391961740014X>
- Verhoef, P. C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Qi Dong, J., Fabian, N., Dan Haenlein, M. (2019). Digital Transformation: A Multidisciplinary Reflection and Research Agenda. Journal Of Business Research, July 2018.