Dynamic capability and disruptive innovation within perspectives of industry 4.0, research result and innovation on people’s prosperity

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Abstract. This paper elaborates the theoretical view of sustainable industrial systems within one of state owned enterprise (SOE) in banking industry. The primary theory for this paper elaborates the sources of dynamism in dynamic capability. This paper provides a multi-level theory of dynamic capabilities (DCs) that explains resource dynamics by conveying a primary role to persons and interpersonal interactions in lieu of abstract, which is company-level entities. This paper describes banking industry in term of dynamic capabilities to navigate change when employees are connected. The mentioned connection is bridged through high-quality relationships, empowering innovative aspects. Strategic adaptation is feasible when people are provided the opportunity to act, think, and feel creatively. Eventually that performance envisions opportunities to enhance how the company operates. Precisely, this paper depicts situation on PT Bank Mandiri (Persero) Tbk. Structural Equation Modelling (SEM) is capitalized to proceed to data processing. The objective of this paper is to enhance the ways how the company operates in dynamic capability through disruptive innovation toward sustainable industrial system. The dynamism of dynamic capability is believed to provide adequate foundations toward disruptive innovation. Quantitative approach constitutes the research methodology through the usage of Analytical Hierarchy Process (AHP) Ishikawa method. To conclude, by AHP Method and Ishikawa, PT. WijayaKarya is the chosen contractor that has superior value of 49%, among contractors. Ultimately, Ishikawa method conveys its criteria of quality, time, cost, and personal that require minimum 60% service level.

1. Introduction
The notion of sources of dynamism refers to the criticism of dynamic capabilities in order to convey indispensable insights [1]. Eventually, it is indicated that the assumptions on which the DC framework is currently premised represent merely a part of a bigger complex process. Thus, it is likely to underestimate the adaptive potential of dynamic capabilities. By addressing the theoretical problems in related assumptions, an ultimate version DC framework would be able of coherently incorporating segregated degrees of change and resource dynamization in environments identified by different and shifting levels of dynamism [2], [3]. This paper proposes extended perspective that allows the concept of DCs to embark the envisioned early perspectives by Nelson and Winter—as a set of “routines which operate to revamp during assorted aspects of company’s operating characteristics” [4]. Ultimately, as conclusion, it is suggested a comprehensive conceptualization of dynamic capabilities, in which they are able of determining change at different levels of intensity and in different contexts. Subsequently, it requires a better specification of the sources of their dynamism.
Posterior to disruptive Innovation Theory of Christensen is applied and coined toward the entrant companies; concept of Industry 4.0 is coined since 2017 through World Economic Forum and by Klaus Schwab. This Christensen theory causes a disruption that could outperform incumbent banks. The original theory and its revamped versions [5], [6] indicate that disruption is applicable during the situation: a) entrants establish new markets and market channels, b) entrant companies’ value proposition is unique and novel vis-à-vis incumbents, c) the innovation is originated from down-market. The sustainable industrial systems and its theories are elaborated by several scholars. The sustainability debate constitutes an beneficial central role in theory contribution within managerial perspectives [7] in search of world-class, sustainable organizations [8].

A number of scholars have endeavors to comprehend how sustainability can transform into capability, enabling an organization to adapt, change, and innovate toward new, sustainable paradigms [11], [12], [13], [14], [15].

2. Method and Materials

2.1. Sample Preparation

This session elaborates information on how to collect data within process of data collection and its sample preparation. The data are collected randomly, as elaborated in the following stages. Prior to begin the research, observation and interviews are conducted toward the unit analysis. In this paper, the unit analysis is selected from respondent within company, according to research methodology [16].

The objective of this paper is to dedicate on how to troubleshoot the problem formulations, as the following:

1. What are the frequent problems with the contractor using fishbone diagram according to the owner of PT Bank Mandiri (Persero) Tbk? The mentioned problems are influencing to improve the quality of contractor's assessment on the company by 60%.
2. Which prospective contractor is superior with the percentage of priority value above 40%? The mentioned priority values are selected by PT Bank Mandiri (Persero) Tbk by using Analytical Hierarchy Process (AHP) Method. The result is using the applicable method in Real Estate Optimization.

2.2. Method

Based on the Method and formulation of predetermined problem, the objectives in this paper are identified as the following:

1. To be able to know what are the frequent problems with the contractor using fishbone diagram according to the owner of PT Bank Mandiri (Persero) Tbk. The mentioned problems are influencing to improve the quality of contractor's assessment on the company by 60%.
2. To be able to know which prospective contractor is superior with the percentage of priority value above 40%. The mentioned priority values are selected by PT Bank Mandiri (Persero) Tbk by using Analytical Hierarchy Process (AHP) Method. The result is having difference of result method with the system used in Real Estate Optimization.

The data processing in this paper is using software known as structural equation modelling (PLS-SEM). This PLS-SEM is also knownas Partial Least Square Path Modelling (PLS-PM). It provides confirmation of the empirical indicators in the research model. Eventually, it confirms the construct of the measurement model and depicts the structure of causality among variables in the structural measurement [17], [18].

3. Results and Discussion

This paper elaborates discussion about Bank Mandiri. Similar works in other papers constitute merely financial performance indicators, such as ratio of ROI, ROE and ROA. Precisely, those other papers don’t elaborate the dynamic capability and disruptive innovation.

This bank Mandiri is deemed as a state-owned bank with the largest amount of assets in Indonesia. This bank envisions and improves the services of Bank Mandiri customers. The mentioned vision is expected to meet the needs of financial services customers. The financial sector is deemed as important aspects vis-à-vis development of the current economy, interchangeably because of systemic nature. However, conventional banking is becoming a thing of the past as significant changes in demographic,
societal, technological, economic, regulatory and legitimacy-related aspects of banking reality change feasibility of present business models, pressuring for radical adjustments [19].

This purpose is in accordance with the vision. Precisely, Bank Mandiri has the mission to be Indonesia's Best ASEAN's Prominent. The location for the construction of Mandiri Tower Medan is located at JalanPulau Pinang no. 1 Medan with a land area of 3,797 m2 and built 11 floors along with a parking lot that can accommodate 132 lots of cars. The partners who carry out the stages of construction of the building include:

1. PT AirmasAsri (Architectural Planner)
2. PT Atelier 6 (Structure Planner)
3. PT SigmatechTatakarsa (Electrical and Mechanical Planner)
4. PT Reynolds Partnership (Quantity Surveyor)
5. PT Virama Karya (Construction Management)
6. PT Dalika Maju Mandiri (Foundation Contractor)
7. PT Formasi Empat Pola Selaras (Interior Floor 1-5)

In determining the contractor for the construction of the building of Bank Mandiri (Persero) Tbk, the owners are complying prequalification. This prequalification has the aim to assess each contractor candidate from the criteria that have been made. The contractor is very important in the construction of the building so the company must choose good criteria from contractor candidates.

In selecting contractor criteria, the data processing is made using Analytical Hierarchy Process to distribute criteria and sub criteria, as illustrated in Table 1,2,3,and 4.

The names of prospective contractors are given the name of initials of processing such as PT Wijaya Karya (PT A), PT Total Bangun Persada (PT B), PT NindyaKarya (PT C) and PT Wijaya Kusuma Contractor (PT D).

### Table 1. Priority Value Result Based on Document Evaluation

| Priority Value of Technical Evaluation Result Based on Overall Document | PP 1 | PP 2 | TA 1 | TA 2 | PK 1 | PK 2 | Total | Percentage |
|---|---|---|---|---|---|---|---|---|
| PT A | 0.169 | 0.088 | 0.015 | 0.060 | 0.009 | 0.051 | 0.391 | 39% |
| PT B | 0.099 | 0.023 | 0.054 | 0.028 | 0.016 | 0.030 | 0.249 | 25% |
| PT C | 0.033 | 0.055 | 0.024 | 0.096 | 0.026 | 0.018 | 0.251 | 25% |
| PT D | 0.059 | 0.014 | 0.007 | 0.014 | 0.004 | 0.010 | 0.109 | 11% |

TOTAL 100%

### Table 2. Results of Priority Score by Evaluation (Project Complete - Owner)

| Priority Value of Technical Evaluation Result Based on Overall Document | ARS | ST | MEP | INT | PCO 1 |
|---|---|---|---|---|---|
| PT A | 0.052 | 0.025 | 0.102 | 0.012 | 0.024 |
| PT B | 0.025 | 0.008 | 0.021 | 0.007 | 0.014 |
| PT C | 0.088 | 0.048 | 0.172 | 0.035 | 0.069 |
| PT D | 0.012 | 0.015 | 0.043 | 0.004 | 0.041 |

### Table 3. Results of Priority Score by Evaluation (Project Complete - Owner) (Continued)

| Priority Value of Technical Evaluation Result Based on Overall Document | PCO 2 | PCO 3 | PCO 4 | Total | Percentage |
|---|---|---|---|---|---|
| PT A | 0.059 | 0.025 | 0.004 | 0.301 | 30% |
| PT B | 0.009 | 0.003 | 0.002 | 0.089 | 9% |
| PT C | 0.030 | 0.011 | 0.012 | 0.465 | 46% |
| PT D | 0.014 | 0.007 | 0.009 | 0.145 | 15% |

### Table 4. Priority Value Result Based on Evaluation (Project Complete - Committee)

| Priority Value of Technical Evaluation Result Based on Overall Document | PCO 2 | PCO 3 | PCO 4 | Total | Percentage |
|---|---|---|---|---|---|
| PT A | 0.059 | 0.025 | 0.004 | 0.301 | 30% |
| PT B | 0.009 | 0.003 | 0.002 | 0.089 | 9% |
| PT C | 0.030 | 0.011 | 0.012 | 0.465 | 46% |
| PT D | 0.014 | 0.007 | 0.009 | 0.145 | 15% |
4. Conclusion

There are several recommendations in term of both theoretical and empirical perspectives. Precisely, those recommendations are indispensable to apply sustainability in term of sustainable industrial systems. Furthermore, new theory in strategic management is indispensable to be applied within its managerial implication. Precisely, the managerial implication is indispensable to be implemented in one of state owned enterprise (SOE) banks in Indonesia banking industry, that similarly require the adaptability toward Industry 4.0.

The notion of sources of dynamism refers to the criticism of dynamic capabilities in order to convey indispensable insights. Eventually, it is indicated that the assumptions on which the DC framework is currently premised represent merely a part of a bigger complex process. Thus, it is likely to underestimate the adaptive potential of dynamic capabilities.

Discussion in this paper about new theory in strategic management is viewed from perspectives of trilogy of: First, the inputs in term of strategy research question; Second, the levers of theorizing process; and, Third, the outputs in term of explanation, predictions and prescriptions [20].

5. References

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