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# ORGANIZATIONAL FRAMEWORK DEVELOPMENT: FORMULATING STRATEGY TO INCREASE DIGITAL MATURITY

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## Abstrak

*This paper aims to develop an organizational framework for formulating a strategy to increase digital maturity. The research stages consist of: (1) Problem observation, (2) Literature review, (3) Model development, (4) Discussion, and (5) Conclusion. Specifically, the model development stage becomes this research's findings and originality. The results show that the organizational framework proposed in this research can help companies formulate strategies from operational business processes through a structured and systematic organizational framework. This framework consists of four systematic steps: (1) digital maturity assessment, (2) business process mapping, (3) business process characteristic identification, and (4) strategy formulation. Also, the strategy that arises by implementing the proposed organizational framework is obvious and structured because the resulting strategy considers business processes' characteristics. Specifically, this research suggests that the company may develop a web-based knowledge-sharing community for externalizing tacit knowledge into explicit knowledge to solve tacit knowledge needs to be managed. The research does not discuss the suggestion to develop a web-based knowledge-sharing community as a strategy's practical implication in detail. Also, considering the web-based knowledge-sharing community is a strategy designed in this case based on the characteristics and knowledge needs of prioritized business processes, the strategy formulation needs adjustment if the business process has turned into different characteristics. The organizational framework for formulating a strategy to increase digital maturity from the operational business process point of view has not been investigated previously.*
*Keywords : Organization management, digital maturity, business process, knowledge management, strategy.*

## *Abstract*

*Penelitian ini bertujuan untuk mengembangkan kerangka kerja organisasi untuk merumuskan strategi untuk meningkatkan kematangan digital. Tahapan penelitian terdiri dari: (1) Pengamatan masalah, (2) Kajian pustaka, (3) Pengembangan model, (4) Pembahasan, dan (5) Kesimpulan. Secara khusus, tahap pengembangan model menjadi temuan dan orisinalitas penelitian ini. Hasil penelitian menunjukkan bahwa kerangka organisasi yang diajukan dalam penelitian ini dapat membantu perusahaan merumuskan strategi dari proses bisnis operasional melalui kerangka organisasi yang terstruktur dan sistematis. Kerangka kerja ini terdiri dari empat langkah sistematis: (1) penilaian kematangan digital, (2) pemetaan proses bisnis, (3) identifikasi karakteristik proses bisnis, dan (4) perumusan strategi. Juga, strategi yang muncul dengan menerapkan kerangka kerja organisasi yang diusulkan jelas dan terstruktur karena strategi yang dihasilkan mempertimbangkan karakteristik proses bisnis. Secara khusus, penelitian ini menunjukkan bahwa perusahaan dapat mengembangkan komunitas berbagi pengetahuan berbasis web untuk mengeksternalisasi pengetahuan tacit menjadi pengetahuan eksplisit untuk memecahkan kebutuhan pengetahuan tacit untuk dikelola. Penelitian ini tidak membahas saran untuk mengembangkan komunitas berbagi pengetahuan berbasis web sebagai implikasi praktis strategi secara rinci. Selain itu, mengingat komunitas berbagi pengetahuan berbasis web merupakan strategi yang dirancang dalam hal ini berdasarkan karakteristik dan*

*kebutuhan pengetahuan proses bisnis yang diprioritaskan, maka formulasi strategi perlu penyesuaian jika proses bisnis telah berubah menjadi karakteristik yang berbeda. Kerangka kerja organisasi untuk merumuskan strategi peningkatan kematangan digital dari sudut pandang proses bisnis operasional belum pernah diteliti sebelumnya.*
*Kata Kunci : Manajemen organisasi, kematangan digital, proses bisnis, manajemen pengetahuan, strategi.*

## INTRODUCTION

In recent years, digitization has appeared in some information system research as an important phenomenon related to changes in society and industry through digital technology use.[1] Based on earlier research, using digital technology can help improve the effectiveness and efficiency of internal processes at all organizational levels, such as individual, group, and organization, and the creation of customer experiences.[2] Facing global competition and threats in the 21st century, organizations must manage the digitization process or develop digital capabilities to improve operational performance. Moreover, the COVID-19 pandemic has caused dramatic environmental changes that encourage firms to adopt digital technology on a broader scale and under time pressure.

However, the digitization management process is not an easy thing. Based on a survey of several CEOs and senior executives, 70% of digitalization process initiatives in an organization are not successful in achieving the goals set previously.[3] It happens because the organization only focuses on using particular technology without any alignment with other aspects, such as business processes, human resources, and the organization's internal and external knowledge. It means that actions to carry out digital transformation must be based on the organization's needs and goals, not just advanced technology. For example, suppose digital transformation aims to improve customer satisfaction and intimacy. Any effort must be preceded by a diagnostic phase with in-depth customer input.[4] Also, the fact is that digital maturity in an organization does not solely judge the sophistication of the technology used. Organizations need to have and align operational strategies for the business process implementation to support the fulfillment of customer demands through digital technology use.[5]

Also, the COVID-19 pandemic contributes to the adverse impact of the crisis on start-ups' businesses worldwide. It caused 70% of these companies to terminate employment contracts, leaving them with operational resources sufficient to face it for a few more months as

[1] G. Vial, "Understanding Digital Transformation: A Review and a Research Agenda," *Journal of Strategic Information System* 28, no. 2 (2019).

[2] Praveen Sugathan, Alexander Rossmann, and Kumar Rakesh Ranjan, "Toward a Conceptualization of Perceived Complaint Handling Quality in Social Media and Traditional Service Channels," *European Journal of Marketing* 52, no. 5/6 (2018), https://doi.org/10.1108/EJM-04-2016-0228.

[3] Behnam Tabrizi et al., "Digital Transformation Is Not About Technology," *Harvard Business Review*, 2019, https://hbr.org/2019/03/digital-transformation-is-not-about-technology.

[4] Tabrizi et al.

[5] Q. Corver, T. Smeets, and P. Sol, *How to Win with Digital* (Amsterdam: Cognizant, 2019).

of July 2020.[6] Previous research state that the vulnerability of start-ups to internal and external events is mainly due to their size.[7] The smaller the company, the fewer resources it usually controls. According to Stinchcombe, start-ups have a higher risk of failure than older companies because they do not have a well-established business model, have a low level of legitimacy, and rely on foreign cooperation.[8] However, the literature review in this era reveals another exciting concept that can be useful for overcoming crises: digitization is a solution to face and overcome the crisis in the future.[9] Previous research has also shown that digital transformation allows entrepreneurs and start-ups to overcome the crisis and remain active,[10] especially by reconfiguring the business model with the support of digital technologies and increasing digital maturity.

Various scientific studies have discussed assessment models organizations can use to evaluate factors in managing digitization while increasing digital maturity. Some of them are Rossmann, Klötzer, and Schumacher et al..[11,12,13] Those three models' factors in assessing an organization's digital maturity are pretty comprehensive. These factors consist of strategic capability, leadership capability, market capability, operational capability, people and expertise capability, cultural capability, governance capability, and technology capability. However, none of the models provide how to take concrete steps to increase an organization's digital maturity. According to Rodrigues & Noronha, there are three crucial actions related to digitization and increasing digital maturity:[14]

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[6] Oana Bărbulescu et al., "Innovation of Startups, the Key to Unlocking Post-Crisis Sustainable Growth in Romanian Entrepreneurial Ecosystem," *Sustainability* 13, no. 2 (2021), https://doi.org/10.3390/su13020671.

[7] John Freeman, Glenn R. Carroll, and Michael T. Hannan, "The Liability of Newness: Age Dependence in Organizational Death Rates," *American Sociological Review* 48, no. 5 (1983), https://doi.org/10.2307/2094928.

[8] A. Stinchcombe, "Social Structure and Organization," *Scientific Research*, 1965.

[9] Cristina Doritta Rodrigues and Matheus Eurico Soares de Noronha, "What Companies Can Learn From Unicorn Startups to Overcome the COVID-19 Crisis," *Innovation & Management Review*, 2021, https://doi.org/10.1108/INMR-01-2021-0011.

[10] Anjar Priyono, Abdul Moin, and Vera Nur Aini Oktaviani Putri, "Identifying Digital Transformation Paths in the Business Model of SMEs during the COVID-19 Pandemic," *Journal of Open Innovation: Technology, Market, and Complexity* 6, no. 4 (2020), https://doi.org/10.3390/joitmc6040104.

[11] A. Rossmann, *Digital Maturity: Conceptualization and Measurement Model*, Thirty Ninth International Conference on Information Systems (California: International Conference on Information Systems (ICIS), 2018).

[12] Christoph Klötzer and Alexander Pflaum, *Toward the Development of a Maturity Model for Digitalization within the Manufacturing Industry's Supply Chain*, Proceeding of the 50th Hawaii International Conference on System Science (Hawaii: Hawaii International Conference on System Science (HICSS), 2017).

[13] Andreas Schumacher, Selim Erol, and Wilfried Sihn, "A Maturity Model for Assessing Industry 4.0 Readiness and Maturity of Manufacturing Enterprises," *Procedia CIRP*, The Sixth International Conference on Changeable, Agile, Reconfigurable and Virtual Production (CARV2016), 52 (2016), https://doi.org/10.1016/j.procir.2016.07.040.

[14] Rodrigues and Noronha, "What Companies Can Learn From Unicorn Startups to Overcome the COVID-19 Crisis."

1. Adopting new digital communication platforms accelerates the information flow.
2. Formulating strategies to increase the network of partners, meeting logistics and execution demands.
3. Adapting to the provision of payment services.

Unfortunately, these suggestions are not accompanied by a framework for achieving these actions. So far, none of the previous studies have developed an operational framework for digital maturity enhancement. Therefore, based on this gap, this study aims to develop an organizational framework for formulating a strategy to increase digital maturity.

## LITERATURE REVIEW

### A. Digital Maturity Model

Digitization can be interpreted by dividing the company's business processes into two parts. The first part is the market model, which is related to the products or services offered to customers, whether they have used digital technology. The second part is the operating model, which is related to the company's business process that must prepare to support the fulfillment of customer demands through digital technology.[15] There are several models to assess digital maturity from previous studies, as shown in Table 1.

**Table 1** Digital Maturity Assessment Model from Previous Studies

| | **Rossmann (2018)** | **Klötzer (2017)** | **Schumacher, et al. (2016)** |
|---|---|---|---|
| **Purpose of Use** | To analyze the company's existing digital maturity and provide recommendations related to the dimensions need to be focused on controlling the digitization process. | To evaluate the maturity of IoT utilization in the company. | To evaluate industry 4.0 maturity in the manufacturing industry. |
| **Dimension** | • Strategic capability<br>• Leadership capability<br>• Market capability<br>• Operational capability<br>• People and expertise capability | • Strategy development<br>• Offering to the customer<br>• Smart product / smart factory | • Strategy<br>• Leadership<br>• Customers<br>• Products<br>• Operations<br>• Culture |

[15] Corver, Smeets, and Sol, *How to Win with Digital*.

| | Rossmann (2018) | Klötzer (2017) | Schumacher, et al. (2016) |
|---|---|---|---|
| | • Cultural capability<br>• Governance capability<br>• Technology capability | • Complementary IT System<br>• Cooperation<br>• Structural organization<br>• Process Organization<br>• Competencies<br>• Innovation culture | • People<br>• Governance<br>• Technology |
| **Context** | Cover the whole company's internal functions that run the business processes. | Cover the company's internal functions related to production, especially in supply chain activities. | Cover how collaboration in the internal company uses information systems and technology to develop intelligent products. |
| **Application Industry** | • Automotive<br>• Manufacture<br>• Banking<br>• Insurance<br>• Retail<br>• Pharmacy<br>• Consulting<br>• Utilities | Manufacture | Manufacture |

## B. Indonesia's Start Up Logistic Issue

As stated in the introduction section, the literature review in this era reveals another exciting concept that can be useful for overcoming crises: digitization is a solution to face the crisis and overcome it in the future.[16] Previous research has also shown that digital

[16] Rodrigues and Noronha, "What Companies Can Learn From Unicorn Startups to Overcome the COVID-19 Crisis."

transformation allows entrepreneurs and start-ups to overcome the crisis and remain active,[17] especially by reconfiguring the business model with the support of digital technologies and increasing digital maturity. Digital transformation also applies to one of the logistic start-ups in Indonesia, named PT X. As a technology-based company aware of the importance of digitization, PT X still has problems managing its business processes. This obstacle is about the coordination process within the company that takes a long time when trying to achieve business targets. On the other hand, in carrying out business processes, PT X has utilized information systems and technology to store data on daily shipments. This issue raises concerns for PT X regarding its digital maturity, considering that it has value as a digital technology-based company.

After further analysis of PT X's problems, problems related to inefficient coordination were not caused by the lack of sophisticated information systems and technology. Nevertheless, employees have knowledge needs related to management issues that have not been met in the company's current knowledge base. The knowledge obtained from the knowledge base does not invite employees to be able to communicate or interact with each other because the knowledge base does not contain management issues that can be discussed in the decision-making process. This problem causes the coordination process to fulfill business processes to take a long time. Based on identifying the root problem, improvements in knowledge management by utilizing digital technology need to be made to improve the performance of PT X's business processes.

## C. Proposed Model

The strategy proposed in the digital maturity model of Rossmann, Klötzer, and Schumacher et al. does not provide concrete recommendations on how organizations can improve digital maturity, both in terms of market models and operating models.[18,19,20] Therefore, this study aims to develop an organizational framework for formulating a strategy to increase digital maturity and provide an overview of improvement opportunities that are obvious, structured, and can be validated. Table 2 clarifies the difference between the proposed and previous models.

[17] Priyono, Moin, and Putri, "Identifying Digital Transformation Paths in the Business Model of SMEs during the COVID-19 Pandemic."

[18] Rossmann, *Digital Maturity: Conceptualization and Measurement Model*.

[19] Klötzer and Pflaum, *Toward the Development of a Maturity Model for Digitalization within the Manufacturing Industry's Supply Chain*.

[20] Schumacher, Erol, and Sihn, "A Maturity Model for Assessing Industry 4.0 Readiness and Maturity of Manufacturing Enterprises."

**Table 2 Proposed Model**

| | Rossmann (2018) | Klötzer (2017) | Schumacher, et al. (2016) | This Research (2022) |
|---|---|---|---|---|
| **Recommendation Strategy to Increase Digital Maturity** | Focus on improving the low-rated indicator. However, the model does not provide a detailed step for the company to reach a higher level of digital maturity. | The model does not provide a detailed strategy for the company to reach a higher level of digital maturity. | The model does not provide a detailed strategy for the company to reach a higher level of digital maturity. | Focus on improving digital maturity from an operating model point of view through a structured and systematic organizational framework. |

## RESEARCH METHOD

### A. Research Stages

The following sections are the stages of research which consist of problem observation, literature review, model development, discussion, and conclusion. The research stage starts with understanding the problems that commonly occur in an organization, especially start-ups, facing the 21st century's global competition and threats and overcoming crises caused by COVID-19 pandemic through problem observation and literature review. The result of this stages is presented in the introduction and literature review sections. A literature review also helped to find the foundation of a proper conceptual model development according to the research context. After that, the research model was developed and will describe in section B Model Development.

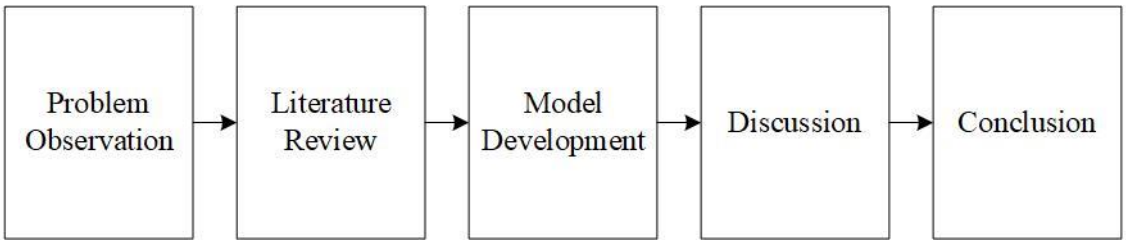


**Figure 1** Research stage

### B. Model Development

The following section describes the development of the research model: an organizational framework for formulating a strategy to increase digital maturity. Specifically, the process of development consists of four stages illustrated in Figure 2: (1) digital maturity

assessment, (2) business process mapping, (3) business process characteristic identification, and (4) strategy formulation. This systematic process is become the originality of this research.

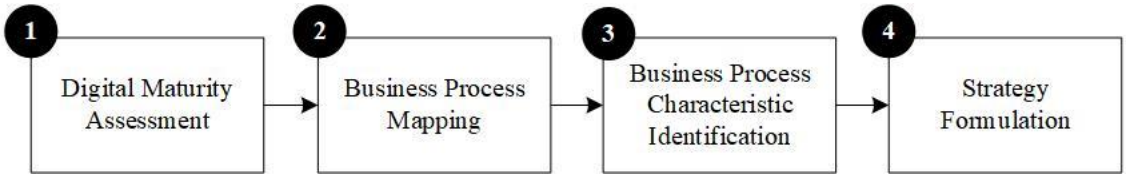


**Figure 2** Research model

The first stage in the developed organizational framework is to evaluate the organization's digital maturity, which results in low-rated indicators. The second stage is to map business processes related to low-rated indicators. The third stage is to identify the business process characteristic. The fourth stage is to formulate strategy to increase digital maturity based on the business process characteristic.

1. *Digital Maturity Assessment*

The digital maturity assessment in this study adopts the Rossmann assessment model because this model can be implemented in a more general industry, not only in the manufacturing industry. Rossmann's digital maturity model involves eight dimensions that represent a theoretical understanding of the digital maturity concept and the driving factors for digitalization initiatives in the company.[21] These dimensions consist of strategic capability, leadership capability, market capability, operational capability, people and expertise capability, cultural capability, governance capability, and technology capability. In the assessment process, the eight dimensions are represented by indicators in the form of questions that will be distributed through a questionnaire using a Likert scale with seven answer choices.

The questionnaire was distributed to collect empirical data using an online method. The respondents were all object company employees. Respondents divide into two strata, managers and staff. The scale used in the questionnaire is a Likert scale with seven answer choices. Likert is the most suitable scale for independent survey management and data collection through online methods.[22] Several studies consider using seven (7) scales to provide more reliable results.[23] It is also supported by another study that shows that human thought has a range of understanding that can distinguish seven different categories or items.[24]

[21] Rossmann, *Digital Maturity: Conceptualization and Measurement Model*.

[22] J. F. Hair, R. P. Bush, and D. J. Ortinau, *Marketing Research* (New York: The McGraw-Hill Companies, 2003).

[23] P. M. Symonds, "On the Loss of Reliability in Ratings Due to Coarseness of the Scale," *Journal of Experimental Psychology* 7, no. 6 (1924), https://doi.org/10.1037/h0074469.

[24] George A. Miller, "The Magical Number Seven, Plus or Minus Two: Some Limits on Our Capacity for Processing Information," *Psychological Review* 63, no. 2 (1956), https://doi.org/10.1037/h0043158.

The data collection process begins with distributing questionnaires to 30 respondents to test the validity and reliability of the questionnaire. Validity and reliability testing was carried out to ensure that the questionnaire was valid and reliable to be used as a digital maturity assessment tool for the research object. After the questionnaire had been proven valid and reliable, data were collected from 80 respondents, eight managers, and 72 staff. The data collection results at this stage will produce low-rated indicators related to the company's digitization process and will be a basis for business process mapping.

*2. Business Process Mapping*

The process of business process mapping breaks into two specific process, business process mapping and prioritized business process determination.

a. Business Process Mapping

Business processes are mapped based on the low-rated digital maturity indicators evaluation. This process aims to operationalize the low-rated indicators into a process within the organization so that it is easier to provide an overview of proposed obvious improvements. Business process mapping is carried out through an interview process with the HR Manager of the research object using the PCF approach with the guidelines as shown in **Error! Reference source not found.**.

**Table 3** Business process mapping guide

| **Business Process (Related to the low-rated digital maturity indicators)** |
|---|
| 1.0. Core Business Processes (Level 1) |
| 1.1. Process group (Level 2) |
| 1.2. |
| 2.0. Supporting Business Process (Level 1) |
| 2.1. Process group (Level 2) |
| 2.2. |

b. Determination of Prioritized Business Process

Determination of prioritized business processes is carried out qualitatively by the HR Manager of the research object through an interview process. Prioritized business processes will be determined to be used as the basis for identifying the characteristics of business processes and formulating a strategy to increase digital maturity.

*3. Business Process Characteristic Identification*

At this stage, characteristics of prioritized business processes will be identified. Two

dimensions represent these characteristics.[25] The first dimension is the level of interdependence which represents the level of interaction required to fulfill activities in related business processes, whether it does not require interaction (individual actors) or cross-functional collaboration (collaborative groups). If cross-functional collaboration is required, the functions and the parties involved in the decision-making process must also be identified. The second dimension is the complexity of work which represents how the knowledge is required from activities in related business processes, whether it depends on formal procedures (routine work) or requires expertise, experience, or judgment from certain people (interpretation). After all, the results will show the type of knowledge needed, explicit or tacit. Business processes that rely on formal procedures (routine work) require explicit knowledge. In contrast, business processes that rely on expertise, experience, or judgment from certain people (interpretation) require tacit knowledge.[26]

## C. Strategy Formulation

The strategy formulation process is carried out based on the characteristics of prioritized business processes. As stated in previous sections, Indonesia's Start Up Logistic Issue, one of Indonesia's logistic start-ups needs improvements in knowledge management by utilizing digital technology to improve its business processes and increase digital maturity. Therefore, the process of strategy formulation needs to begin with needed knowledge identification in order to formulate a strategy that is obvious, structured, and can be validated. Further explanation will be presented in section Result and Discussion. Figure 3 illustrates the proposed conceptual model development: an organizational framework for formulating a strategy to increase digital maturity.

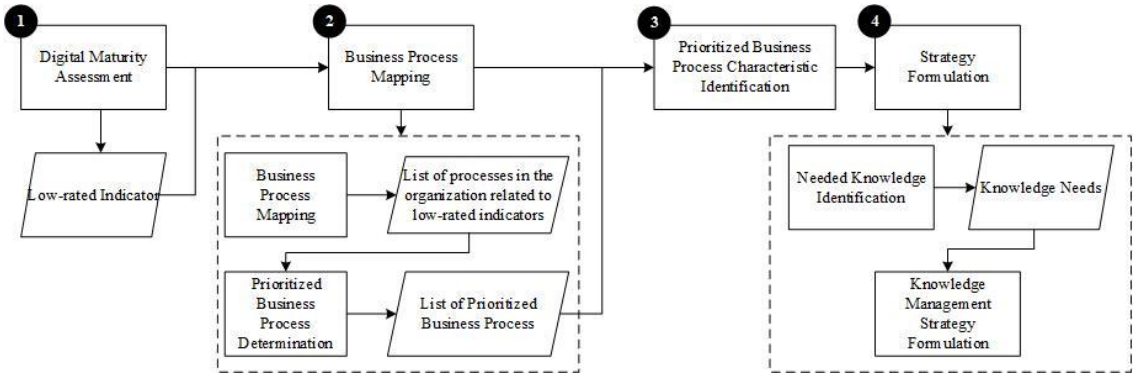


***Figure 3*** *Proposed organizational framework*

[25] Leigh P Donoghue, Jeanne G Harris, and Bruce A Weitzman, "Knowledge Management Strategies That Create Value," *Accenture Institute*, no. 1 (1999).

[26] Donoghue, Harris, and Weitzman.

## RESULTS AND DISCUSSION

This section describes how the proposed organizational framework in Figure 3 is applied empirically at one of Indonesia's logistic start-ups, PT X. This company was founded in 2017 and is committed to solving long-distance challenges in Indonesia using digital technology.

### A. Result of Digital Maturity Evaluation

The digital maturity assessment indicator will be considered low if it has a value below a scale of 5, where a scale of 5 means "somewhat agree." In other words, an indicator with a value below a scale of 5 indicates that respondents are hesitant to give their agreement (in a positive sense) to the indicator. The digital maturity assessment results show that PT X considers six indicators low, as seen in Table 4.

**Table 4 Digital Maturity Evaluation's Results**

| Code | Items |
|---|---|
| O1 | There are sufficient resources (such as time, human resources, and finance) to implement the digital strategy within the company. |
| P1 | There are sufficient experts on digital core issues within the company. |
| P2 | There are further education opportunities within the company. |
| P3 | Comprehensive measures to strengthen digital literacy development are implemented within the company. |
| P4 | New job profiles have been created for employees with expertise in the digital core. |
| G2 | A holistic management model is applied for the digital strategy implementation. |

### B. Result of Business Process Mapping and Determination of Business Process Priority

As stated in the previous section, this stage aims to operationalize the low-rated indicators into a process within the organization so that it is easier to provide an overview of proposed obvious improvements. In this research, business process mapping is done through interviews based on the PCF approach. Based on the interview results, two business processes were obtained: (1) The digital strategy management process as the core business process and (2) The human resource management process as a supporting business process. After mapping the first level of business processes, the second level (process group) business process mapping is carried out. A summary of interview results in business process mapping related to considered low indicators can be seen in Table 5.

Overall, PT X prioritizes the core business processes of digital strategy management, including planning, managing implementation, and controlling the implementation of digital

strategies. The consideration is because the digital strategy management business process is the primary business process and includes strategic objectives that must be achieved.

**Table 5** Results of business process mapping and determination of prioritized business processes

| **Business Process** | **Dictionary** | **Linkages with** |
|---|---|---|
| **1.0. Digital Strategy Management** | | |
| 1.1. Digital Strategy Planning | Identify strengths, weaknesses, opportunities, and challenges currently and will be faced by the company related to digitalization and determine strategic goals for the next three months. | G2 (1st Priority) |
| 1.2. Digital Strategy Implementation | Identify functional goals based on strategic goals and ensure the resources available such as time, human resources, and financial to meet business needs or run operations. | O1, G2 (2nd Priority) |
| 1.3. Digital Strategy Implementation Control | Identify objective key results (OKR) and review OKR regularly. | G2 (5th Priority) |
| **2.0. Human Resource Management** | | |
| 2.1. Recruitment Process Management | Identify business processes or jobs to be digitized, compiling requirements or qualifications that must be met related to the work process, and also carrying out the recruitment process to acceptance process from partners (couriers) to top management. | P1 (6th Priority) |
| 2.2. Human Resource Skill Development | Develop human resource expertise, both from a technical and non-technical perspective. The development of human resource expertise is carried out through training and the provision of courses or e-learning facilities for all employees. | P1, P2, P3 (4th Priority) |
| 2.3. Orientation and Placement Management | Regulate the placement and changes in the placement of employees, increase employee participation in the company's business processes, and carry out organizational restructuration if necessary. | P4 (3rd Priority) |

## C. Result of Prioritized Business Process Characteristic Identification

After determining the prioritized business process, which is the digital strategy management process, identification of the job characteristics of the process is carried out, as seen in

Table **6**. Furthermore, the data in

Table **6** is mapped into the work model matrix, as shown in Figure 4. The overall digital strategy management process at PT X belongs to the collaboration model.

The collaboration model is a process that does not use formal procedures but requires collaboration within a group by involving people with different or various expertise. Then, based on the results of mapping business processes into the work model matrix, it also can be concluded that the strategic management process that includes planning, managing implementation, and controlling the implementation of digital strategies requires tacit knowledge.

**Table 6** Characteristics of business process priority

| Business Process | Level of Interdependence | Complexity of Work |
|---|---|---|
| **1.1. Digital Strategy Planning** | **[Collaborative Groups]** This process requires collaboration among C-levels and managers from various functions, such as IT, operations, customer service, human resources, general functions, and finance. | **[Interpretation / Judgment]** This process requires experience and consideration from certain people, especially C-level. |
| **1.2. Digital Strategy Implementation** | **[Collaborative Groups]** This process requires collaboration among managers from various functions, such as IT, operations, customer service, human resources, general affairs, and finance. | **[Interpretation / Judgment]** This process requires managers' consideration of each function's capabilities and limitations to achieve the strategic objectives set. |
| **1.3. Digital Strategy Implementation Control** | **[Collaborative Groups]** This process requires collaboration among managers from various functions, such as IT, operations, customer service, human resources, general affairs, and finance. | **[Interpretation / Judgment]** This process requires managers' consideration of each function to identify root causes and determine solutions if a strategic goal in a certain |

| Business Process | Level of Interdependence | Complexity of Work |
|---|---|---|
| | | period is not achieved. |

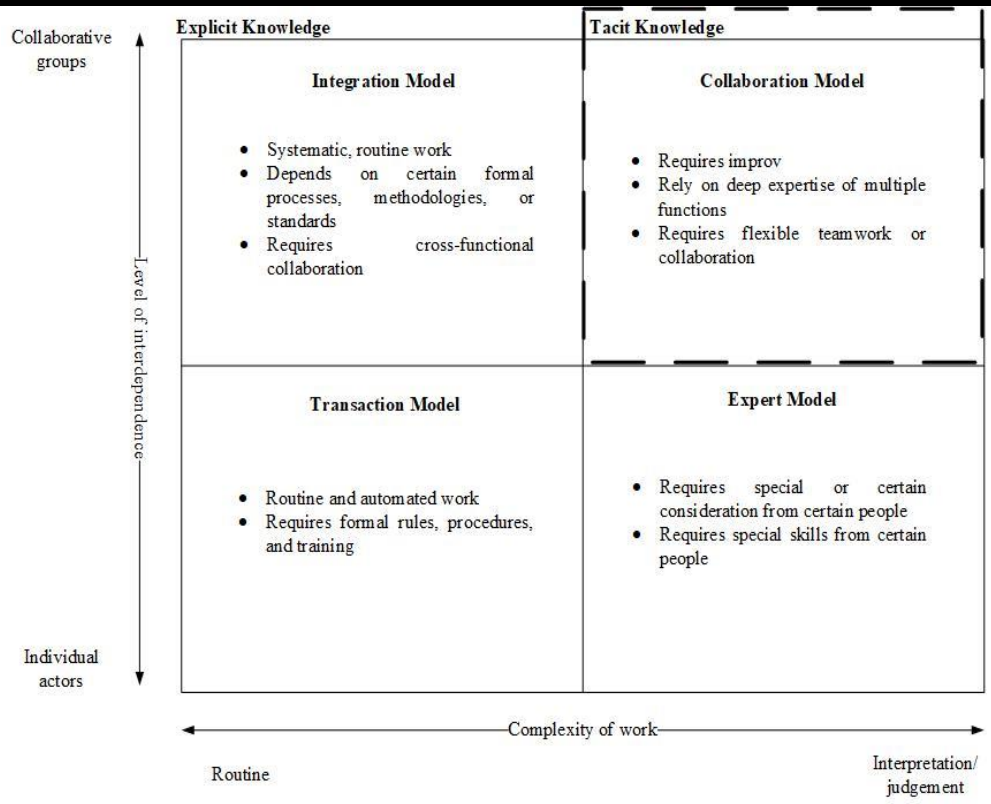


**Figure 4** Matrix work models

## D. Result of Strategy Formulation

Based on the prioritized business process characteristic identification, it can be concluded that the strategic management process that includes planning, managing implementation, and controlling the implementation of digital strategies belong to the collaboration model and requires tacit knowledge. So, to make a detailed strategy, the strategy formulation begins with needed knowledge identification and ends with an obvious, structured, and validated strategy. Specifically, the detailed tacit knowledge required for the business process is presented in Table 7.

**Table 7** Needed knowledge identification

| Business Process | Internal Knowledge Needs | External Knowledge Needs |
|---|---|---|
| 1.1. Digital strategy planning | Strengths and weaknesses of each function | External environmental conditions such as technological developments, changing customer needs, and competition with |

| Business Process | Internal Knowledge Needs | External Knowledge Needs |
|---|---|---|
| | | competitors. |
| 1.2. Digital strategy implementation<br>1.3. Digital strategy implementation control | 1. Strengths and weaknesses of each function<br>2. The functional purpose of each function<br>3. Analysis of the progress of functional purpose achievement | 1. Information system (IT function)<br>2. Government policy (Operational function)<br>3. Labor Incentives (HR function)<br>4. Characteristics of customer reviews on various social media (Customer Service Function) |

Based on Table 7, two crucial tacit knowledge needs to be managed to meet the needs of internal and external knowledge. The first thing is related to cognitive thinking and C-level interpretation in observing the external and internal business environment and defining it as an opportunity, threat, strength, and weakness of the company. The second thing is related to the interpretation of functional goals achievement progress.

This research proposes a mechanism for cross-functional collaboration in managing the tacit knowledge mentioned above. This mechanism takes advantage of digital technology to shorten communication lines, minimize the possibility of misunderstandings, and simplify the process of identifying root causes to determine the right solution to achieve the strategic goals that have already been determined. In other words, this research suggests that the company develop a web-based knowledge-sharing community for externalizing tacit knowledge into explicit knowledge to solve two crucial tacit knowledge needs to be managed.

## E. Summary of the Proposed Organizational Framework Utilization

Based on all the stages passed, the organizational framework proposed in this research can be used to help companies to formulate strategies from operational business processes. This idea has not been investigated previously. This research has already validated this framework at one of the start-up companies in Indonesia.

Furthermore, applying this organizational framework at one of the start-up companies in Indonesia shows that the strategy that arises from the proposed organizational framework implementation becomes obvious and structured because this strategy considers business

processes' characteristics. Table 8 Summarizes this research's proposed organizational framework to increase digital maturity.

**Table 8** Summary of proposed organizational framework

| Steps | Proposed Organizational Framework Steps | Purposes |
|---|---|---|
| | Digital Maturity Assessment | To obtain indicators representing an organization's digital maturity and find which indicators need improvement. |
| | Business Process Mapping and Prioritized Business Process Determination | To operationalize the low-rated indicators into a process within the organization. This process helps stakeholders to decide the area in the organization's process that needs an overview of an obvious improvement. |
| | Business Process Characteristic Identification | To identify the characteristics of business processes as the basis for formulating improvement proposals. This process helps stakeholders to design or formulate a detailed, obvious, structured, and validated strategy. |
| | Strategy Formulation | To formulate or create a specific, suitable, and obvious strategy based on the characteristics of its business processes so that the company can implement the proposed strategy. |

## CONCLUSION

The research does not discuss the suggestion to develop a web-based knowledge-sharing community in detail. Another research related to information systems may be more suitable to show the development of the web-based knowledge-sharing community. Also, considering the web-based knowledge-sharing community is a strategy designed in this case based on the characteristics and knowledge needs of prioritized business processes, the strategy formulation needs adjustment if the business process has turned into different characteristics.

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