

Data Integration Project

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Data Integration Project in Robologee

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Abstract

Robologee is a sub-unit of PT. Bangun Satya Wacana is part of Kompas Gramedia which is focused in Education section for ages 7 to 12 years. Robologee is a diversification of the existing sub-units in PT. Bangun Satya Wacana. Robologee has branches located at Gramedia World so it is expected that it will have an impact on Gramedia traffic. Currently, Robologee is transforming in order to integrate data that will be stored in the cloud by Amazon Web Service.

The goal of this project is that data can be accessed by various users and stored in one platform. In the analysis of the digital transformation project, 15 respondents have been determined who are parents as external customers. Based on the indicators used in DMM. It was found that Robologee's current condition is at the Advancing level. Based on the Roadmap this project is implemented for 1 year and consists of four stages. In the Budgeting analysis, Robologee has payback period of 1.7 years with an IRR of 7.512% greater than the expected return of 5% by the company. Then the NVP is in a positive number, so this project is feasible to implement.

Keywords: Data Integration, Amazon Web Service, Advancing

I. INTRODUCTION

The education industry has opportunity of success in 2021 [3].1945 Constitution, CHAPTER XA Article 28 C para.1 Everyone has the right to develop themselves through fulfilling basic needs, have the right to education and benefit from science and technology, art and culture, in order to improve the quality of life and for the welfare of mankind [4]. The Course and Training Institute (LKP) has challenges in providing technology-based services [5]. The process of combining data from different sources in order to support information management and support users to view data unity [8]. Data integration is useful when data in the system is also needed by

other systems or the output of a system is obtained interconnected and can be accessed as needed [9]. The threats and challenges of digital transformation, which are divided into 2 threats active and passive [7]. Robologe is a brand that is in PT. Bangun Satya Wacana which focuses on education and is a Sub Unit at Kompas Gramedia. The company has several programs for children such as Coding Course, Holiday Program, and Creative Class. Problems statement for the project are Various Data and Access Time Efficiency. The limitation of the project is focused on parents as customers. The project does not discuss about data cleansing. The benefit of technology use Data Integration Encrypt The Data and Security [1].

II. LITERATURE REVIEW

A digital maturity in an enterprise as measured by the Deloitte Digital Maturity Model (DMM) Framework – TM Forum 2020. According to [10] there are 6 main dimensions divided into 25 sub-dimensions and there are 139 Criteria for measuring digital maturity.

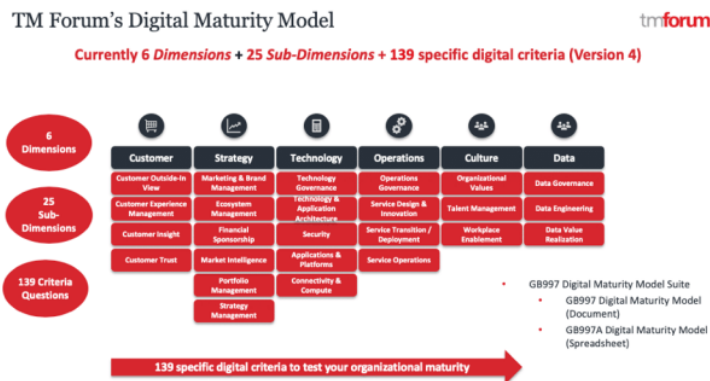


Figure 3.1 Digital Maturity Model Source: TM Forum (2020)

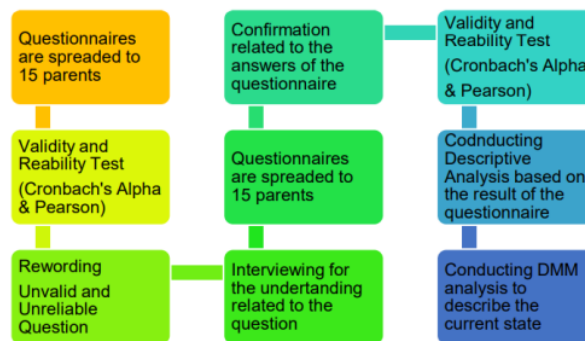
The DMM TM Forum 2020 includes questions asked to optimize strategic management and aims to increase digital maturity and generate a large impact for various divisions of the company in carrying out digital transformation. Based on [6], "Digital transformation is not just about implementing more and better technology. It involves aligning tasks, people and culture." This digital transformation project aims to combine diverse data through one platform so that data is integrated. When the data is integrated, it is expected to be able to improve the performance of business processes from stakeholders, parents, and teachers.

There are 5 stages in the Digital Maturity Model 2020, namely

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1. Initiating example early stage formulation and start to incorporate into some business operations.
2. Emerging, namely the stage of digital transformation initiatives aimed at certain improvements.
3. Performing is an effective leadership strategy that provides a coordinated and innovative approach to simplification led by digital transformation in various business areas.
4. Advancing, namely the advantages of digital transformation providing coherent change throughout the organization and strategic competitive advantage in various business areas.
5. Leasing is a best-in-class digital transformation capability, optimized for agility, widely embedded in the organizational culture, processes and trusted partner ecosystem.

III. RESEARCH METHODS



Picture 3.2 Questionnaire Flow
Source: Writers (2021)

This research uses quantitative analysis, also the implementation of digital transformation began with distributing questionnaires to measure the maturity level of digital companies based on the Deloitte DMM and TM Forum 2020 models. Questionnaires were distributed to 15 parents and measured using five levels, namely initiating, emerging, doing, advancing, and leading. The 15 parents were chosen because they represented the current total of students and were willing to fill out the questionnaire. The DMM measurement stage is carried out in three stages, namely measuring the current condition, future conditions, and finally doing a Gap Analysis.

IV.FINDINGS AND RESULTS

The results of the questionnaire were tested for validity and reliability using Cornbach's alpha. Ghozali cited in [2] states that a question will be valid if the question is able to represent something that will be measured through a questionnaire. Pearson's method issued in testing the validity of the data. If r-count is smaller than r-table, then the question or indicator is not valid. However, according to Ghazali, if the r-count is greater than the r-table and the value is positive,

then the questions and indicators are considered valid. There are 36 valid indicators in determining the current state in Robologee. This indicates that the indicators used are correct

Table 3.7 Validity and Reliability Table

No	Kode	Nilai	Validitas	No	Kode Variable	Nilai	Reabilitas
1	CT111	0,9	Valid	1	CT111	1	Reliabile
2	CT112	0,811	Valid	2	CT112	0,807	Reliabile
3	CT116	0,9	Valid	3	CT116	1	Reliabile
4	CT141	0,9	Valid	4	CT141	1	Reliabile
5	CT142	0,811	Valid	5	CT142	0,807	Reliabile
6	CT143	0,9	Valid	6	CT143	1	Reliabile
7	ST211	0,9	Valid	7	ST211	1	Reliabile
8	ST212	0,999	Valid	8	ST212	1	Reliabile
9	ST213	0,999	Valid	9	ST213	1	Reliabile
10	ST241	0,999	Valid	10	ST241	1	Reliabile
11	ST242	0,999	Valid	11	ST242	1	Reliabile
12	ST243	0,999	Valid	12	ST243	1	Reliabile
13	TE311	0,999	Valid	13	TE311	1	Reliabile
14	TE312	0,999	Valid	14	TE312	1	Reliabile
15	TE313	0,999	Valid	15	TE313	1	Reliabile
16	TE352	0,999	Valid	16	TE352	1	Reliabile
17	TE353	0,999	Valid	17	TE353	1	Reliabile
18	TE359	0,999	Valid	18	TE359	1	Reliabile
19	OP411	0,999	Valid	19	OP411	1	Reliabile
20	OP412	0,999	Valid	20	OP412	1	Reliabile
21	OP413	0,999	Valid	21	OP413	1	Reliabile
22	OP423	0,999	Valid	22	OP423	1	Reliabile
23	OP425	0,999	Valid	23	OP425	1	Reliabile
24	OP426	0,919	Valid	24	OP426	1	Reliabile
25	CU512	0,999	Valid	25	CU512	1	Reliabile
26	CU513	0,927	Valid	26	CU513	0,917	Reliabile
27	CU515	0,999	Valid	27	CU515	1	Reliabile
28	CU522	0,999	Valid	28	CU522	1	Reliabile
29	CU526	0,999	Valid	29	CU526	0,922	Reliabile
30	CU527	0,999	Valid	30	CU527	1	Reliabile
31	DT612	0,93	Valid	31	DT612	0,926	Reliabile
32	DT614	0,999	Valid	32	DT614	1	Reliabile
33	DT615	0,943	Valid	33	DT615	0,945	Reliabile
34	DT617	0,927	Valid	34	DT617	0,922	Reliabile
35	DT623	0,977	Valid	35	DT623	0,979	Reliabile
36	DT624	0,153	Tidak	36	DT624	0,146	Tidak Reliabile
37	DT626	1	Valid	37	DT626	0,998	Reliabile

Source: Writers (2021)

In the variables used, 36 indicators describe the respondents answering consistently so that the data can be used in projecting digital transformation plans.

Based on the results of in-depth interviews with top management, the Key Performance Indicator of all Kompas Gramedia sub-units is 4,1 from a scale interval of 1 - 5. On the digital maturity interval scale 4,1 is in Advancing. Although it is at the same stage as the current state, the numbers are expected by stakeholders. So, there is a need for digital innovation from these six dimensions.

In the *Customer* dimension, it is expected that there will be an automation system in the

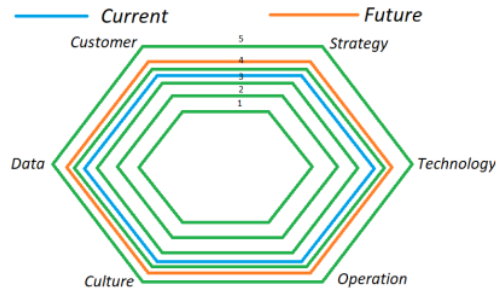


Figure 4.1 Digital Maturity Interval Scale
Source: Author (2021)

service so that customer needs can be met in real time or directly. The *Strategy* dimension is expected to have data integration so that the information provided by Robologee can be immediately known by parents. Dimension *Technology* is expected to have automated payments. The *Operation* dimension is expected to have supporting facilities to store ongoing class recording data and can be accessed by parents. In the *Culture* dimension, it is expected that the parent account has a history of referrals so that data on parental activity is recorded in disseminating the Robologee information program. The *Data* dimension is expected to have all data integrated so that it makes it easier for all users to access and store data in one platform.

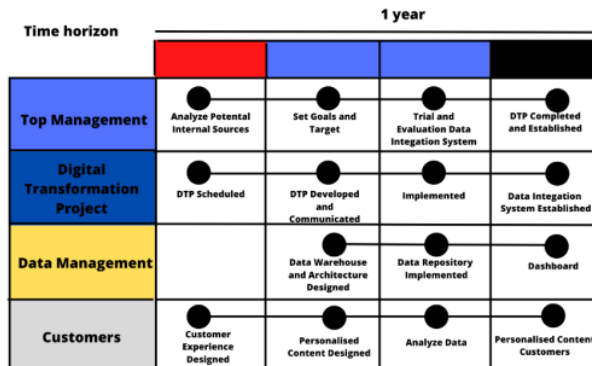


Figure 4.2 Roadmap Digital Transformation
Source: Authors (2021)

The DTP roadmap begins with Top Management as a stakeholder decision. Then, the preparation of DTP strategies and management data. After that, Insight Customer is analysed in the design of data integration in Robologee. There are four stages in the implementation of digital transformation in one year, namely the initial stage, the planning stage, the project execution stage, and the monitoring stage.

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A. Early stage (3 months)

Top management analyses and appoints a project management team to provide solutions to issues that occur in Robologee. The initial stage is important because it serves as a reference for digital transformation.

B. Planning stage (4 months)

The planning stage has a duration of approximately five months. At this stage, Top Management determines goals and targets.

C. Project execution stage (4 months)

D. Monitoring stage (1 month)

The digital transformation project has been implemented, parents access the data through the website, after that the project team ensures that the DTP product can function as a solution for Robologee's pain points.

V. DISCUSSION

Data integration on Robologee as a solution to issues related to different platforms in accessing data and making it easier for stakeholders to analyze data. In its use, data integration using AWS is integrated on the Robologee website. So that every parent who wants to access the class can visit the Robologee website. In addition, it is hoped that the data stored by Robologee can be integrated so that the need for asset data can be easily found in one door. Furthermore, there are several additional features in the form of payment transaction history data and student profiles.

After carrying out the digital transformation, it is expected that there will be an increase in sales of the Robologee course by 5%. Based on the 2020 financial report, Robologee has an Average Revenue of Rp. 32.364.318. In addition to financial benefits, non-financial benefits in the form of customer satisfaction because data is integrated through one platform so that it can save time, then staff technology capabilities related to data integration develop due to digital transformation socialization and top management gets integrated data efficiently and effectively so that data analysis can be done optimally.

This digital transformation costs IDR 254.4 million to recruit 1 technician and 100 users. The number of users is the average student per month plus employees at Robologee. It is assumed that the terminal value of the project's average cash flow will be Rp 1.015.606.116 then divided by the company's expected return of 5%.

IRR= IRR (1.645.873.226, 2.121.698.496, 725.515.885, 734.452.302)

IRR= 7,512% (more than 5% of the company's expected return)

NPV= 1.645.873.226 + NPV (2.121.698.496, 725.515.885, 734.452.302)

NPV = IDR 222.905.017 (Positive)

The Robologee digital transformation project took 1,7 years to return the initial project capital of IDR 254.4 million. The initial payback for the Robologee digital transformation project was faster than the company expected and the project is possible to be implemented.

VI. CONCLUSION

This digital transformation project report is related to efforts to reduce the bounce rate on the website, integrating all Robologee data with the use of data integration. In analyzing the potential of the company using TOWS, using TOWS, PESTSLE, Model Canvas, Value Proposition, Five Porter's Forces and Resource Analysis. In the preparation of digital project transformation using the Digital Maturity Model (DMM). The Digital Maturity Model consists of dimensions of Customer, Strategy, Technology, Operation, Culture, Data. Meanwhile, the current condition experienced by Robologee is in the Advancing stage. Expectations from stakeholders are 4.1 on a scale of 1 to 5. The cost of this digital transformation project is estimated to cost Rp. 254.4 million. Meanwhile, the company's expected return is 5%. This figure is smaller than the IRR of the data integration project of 7,512%. The resulting positive NVP is Rp. 222.905.017. Thus, Robologee digital transformation project is feasible. However, there are several potential failures such as the need for socialization to all stakeholders and a change in culture to become a digital culture.

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