

Financial Feasibility Analysis on Development of Pulses and Mobile Internet Plans Business Based on Technical Configuration

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Abstract— Pulse and mobile internet plans distributor is one of the types of internet-integrated service-based businesses. In the 4.0 era, customer's needs for internet-supported information increasingly grows, leading to an increase in pulse and mobile internet plans use. This condition opens an opportunity to develop a business relating to pulse and mobile internet plans. Business people in this sector faced issues when determining three aspects of this business, namely, price, internet network, and service. The present research aimed to develop three alternative operations (low, medium, and high) integrating these three aspects. These three alternatives will be selected under technical analysis and human resources, which will influence the financial aspect. The financial aspect taken into consideration was the payback period (PBP), net present value (NPV), and internal rate of return (IRR). The research result showed that high alternative brought the highest profit for sixty months.

Keywords—gain profit, payback period, net present value, internal rate of return

I. INTRODUCTION

Rapid technology development delivers a range of helpful devices to fulfill customer's needs. One of the devices a customer nowadays needs is hand phone. The industry supporting the use of hand phone is the telecommunication industry. When a customer uses hand phone, assumed that there is no Wi-Fi, he/she needs pulse and mobile internet plans. [1] conducted a survey finding that in 2018, there were 143 million internet users, it was ten times as many as in 2008, when there were only 25 million users. Viewing this development, there is a business opportunity that can be taken by pulse and mobile internet plans distributor. Although there is a big opportunity here, it should be admitted that the level of competitiveness is quite high to obtain market share. According to the leader of the Indonesian Association of Phone Credit Seller (PPPI / Paguyuban Pedagang Pulsa Indonesia), M Fendri, "there are about 10.000 server providers for national scale". Accordingly, a company should have and maintain its *competitive advantages* in this business. According to [4], *competitive advantages* come from *value advantage* and *cost advantage*. To maintain *competitive advantages*, pulse and mobile internet plans distributor can employ *Cost and Service Leader strategy*. A company that wants to win the competition should optimize its service (technical service) and satisfaction (speed), these points can be addressed through technical improvement.

This paper focused on the development of technical configuration on distributor business. This technical development is expected to enhance customer satisfaction. The actor of this business should perform developments in three aspects, namely server system (internet) and service (transaction). The development a company should do is establish a better server system, a more stable network during

the transaction, and fast customer service in order to maintain the customers' satisfaction. When a company improves its technical aspect, it will affect its financial. Accordingly, it is necessary to conduct a feasibility study on the technical configuration to allow the investors to understand the best alternatives for technical configuration.

This research carried out financial feasibility analysis on the development of the technical configuration of pulse and mobile internet plans distributor. It was done by describing the technical to be developed, calculating the operating cost, and making financial analysis using payback period (PBP), net present value (NPV), and internal rate of return (IRR).

II. RESEARCH METHODOLOGY

The present research was conducted from June to August 2019. The data required by this research were primary and secondary. Primary data refers to the data obtained from interviews with the business owner. The data were utilized to project the demands on pulse and mobile internet plans. The secondary data in this research were the result of a literature study relating to the feasibility of the development of phone credit and data package distributor business. The research applied several basic assumptions referring to the financial aspect. They were:

1. 60-months investment period
2. The estimations of internet package selling in Bandung city that can be acquired by the company for low technical aspect was 30%, for medium technical aspect was 40%, and for high technical aspect was 60%. These estimations were used in cash flow calculation.

The data processing method of the research followed the research procedure in Figure 1.

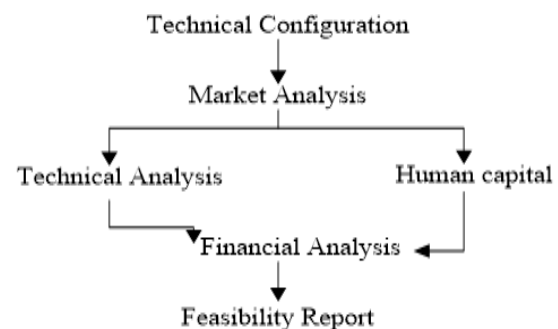


Fig. 1. Research Model

The first step of data processing was to search the technical configuration by viewing the internet package distribution system. There were three alternative configurations used in the present research, low, medium, and high. They would affect the technical aspect (hardware & software) and human resources aspect.

The second step was to view market chance by forecasting demands and estimating the share for pulse and mobile internet plans in Bandung City. The forecasting method employed in this research was linear regression because the relational data pattern draws a straight line between demands and time [5]. This method was considered variable by viewing the increase of internet users toward time. The data that were used were data from June-December 2018. Formula 1 to 3 were used to forecast the demand. The market share was estimated by viewing the result of the forecast and determining the estimation of demands in each alternative configurations. Based on the interview with the business owner, it was justified that the estimation of market demand for low configuration was 30%, for medium configuration was 40%, and for high configuration was 60% of the total demand.

$$F_t = a + bt \tag{1}$$

The a and b constant could be determined using the following formula:

$$\beta = \frac{n \sum x_t t - \sum x_t \sum t}{n(\sum t^2) - (\sum t)^2} \tag{2}$$

$$\alpha = \frac{\sum x_t}{n} - b \frac{\sum t}{n} \tag{3}$$

The third step was to determine the distribution system (software) that was used, the network used for distribution (internet), and service (hardware and human resources). Human resources were needed for each configuration. The human resources were determined by considering the need for Job Description for each alternative configuration. This is necessary so that the worker can work following the duty, authority, and responsibility, and to establish a good relationship among workers.

The fourth step was to determine the financial aspect. It began by planning the capital, operating cost, depreciation, and cash flow for each configuration.

The fifth step was to analyze the financial feasibility using the payback period (PBP), net present value (NPV), and internal rate of return (IRR) for each configuration. According to [3], PBP refers to a period required to equalize the profit gained from an investment to the cost expended for the investment. According to [2] IRR is an interest rate (i) causing NPV equals to zero so that the present value of the cash inflow equals to the present value of the outflow. Investment financial feasibility study employs three criteria of the NPV method, namely:

- If the value of NPV > 0, it indicates that the project or industry is profitable and feasible.
- If the value of NPV = 0, it indicates that the project or industry is neither loss nor profit, so it depends on the subjective views of the decision-maker.
- If the value of NPV < 0, it indicates that the project or industry suffers losses, meaning that it is better not to continue.

III. RESULT AND DISCUSSION

The research began by viewing data of demands in the past. The data used in this research were that from June-December 2018, as shown in Table 1. Based on the data, the

demands for the next sixty months were forecasted using linear regression. The share estimation was made with the proportion for low, medium, and high configuration of 30%, 40%, and 60% of the demand, respectively. This assumption was obtained from the interview with the business owner. Table 2 shows the data of market estimation.

TABLE I. DEMANDS ON JULY-DECEMBER 2018.

Period	Sale (transaction)
Jul-18	1,575,888
Aug-18	1,682,713
Sep-18	1,684,227
Oct-18	1,650,162
Nov-18	1,665,773
Dec-18	1,679,356

TABLE II. FORECASTED DEMANDS FOR JANUARY 2019-2024 AND ESTIMATION OF MARKET ACCEPTANCE FOR LOW, MEDIUM, & HIGH CONFIGURATION

Period	Demand Forecasting (transaction)	Market estimation (transaction)		
		Low	Medium	High
Jan-19	1,663,329	498,999	665,332	997,998
Feb-19	1,665,322	499,597	666,129	999,194
:	:	:	:	:
Dec-23	1,780,916	534,275	712,367	1,068,550

Regarding the required technical aspect, it required computer, software, modem pool/wavecom, Stabilizer, UPS (Power Supply), SIM card (Telkomsel, XL, IM3, etc.) Internet. Table 3 shows the cost required for the technical aspect of each configuration. *Otomax software* used for the configurations is different from one another between low, medium, and high configuration. The difference would influence the price, terminal, IM hybrid H2H, Client's IP, and annual fee.

TABLE III. TECHNICAL ASPECT REQUIREMENTS FOR LOW, MEDIUM, & HIGH CONFIGURATION

No.	Description	Low	medium	High
1	Top up Software	1 (standard)	1 (advanced)	1 (ultimate)
2	generator	1	1	1
3	PC	2	3	5
4	Modem Pool	1 (8 ports)	1 (8 ports)	1 (16 ports)
5	UPS	1	1	1
6	AKI	5	8	10
7	Desk accessories, Printer	1	1	1

The required human resources are affected by the needs of the technical aspect and its job descriptions. The identified needs for human resources consisted of General Manager, Operator division head, Operating staff, technical staff, marketing, and finance. Table 4 exhibits the amount should be met to be pulse and mobile internet plans distributor. The operating staffs have duties to perform the transaction, report transaction-related activities to the direct supervisor, provide excellent services to the customer, and ensure the fail/success of the transactions of the day. The higher the configuration,

more workers are needed, this concerns with the proposition of the expected sale increase, i.e., 30% increase for low configuration, 40% increase for medium configuration, and 60% increase for high configuration.

The cost of pulse and mobile internet plans business begins by determining the capital. The capital used for improving the technical aspect is personal fund and bank loan. For a bank loan, there is 0.96% monthly interest. The capital was used as an investment to buy Software, Power Generatore, PC, Modem pool, UPS, battery, desk accessories, printer, and expenditures. Operating costs consist of direct and indirect operating costs. Direct operating cost consists of internet payment, stationary, software fee, maintenance, workers' salary, and Sender's credit. Indirect operating cost consists of workers' salary and marketing. Figure 2 shows the detail of the cost.

TABLE IV. TOTAL OF REQUIRED HUMAN RESOURCES FOR EACH CONFIGURATION

Types of configuration	Number of workers
Low	7
Medium	8
High	10

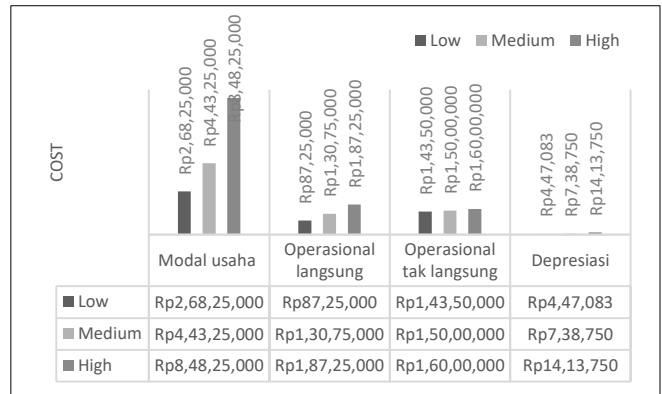


Fig. 2. Outline Of Business Capital, Direct Operating Cost, Indirect Operating Cost, and Depreciation.

As shown in Figure 3, the higher configuration requires more capital and brings more profit. Figure 4 shows the total amount of investment and operating costs. Out of the three configurations, the alternatives with high specification brings the hugest profit of IDR 3,638,792,472 for 60 months. While the low and medium specifications gains IDR1540,614,789 and IDR1,865,706,444 for 60 months, respectively. It is shown in Figure 3.

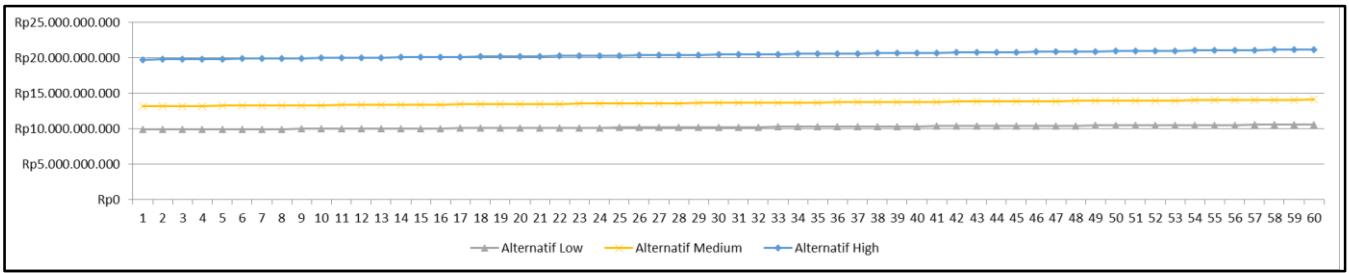


Fig. 3. Chart of Revenue in January 2019 (1st Month) - December 2023 (60th Month)

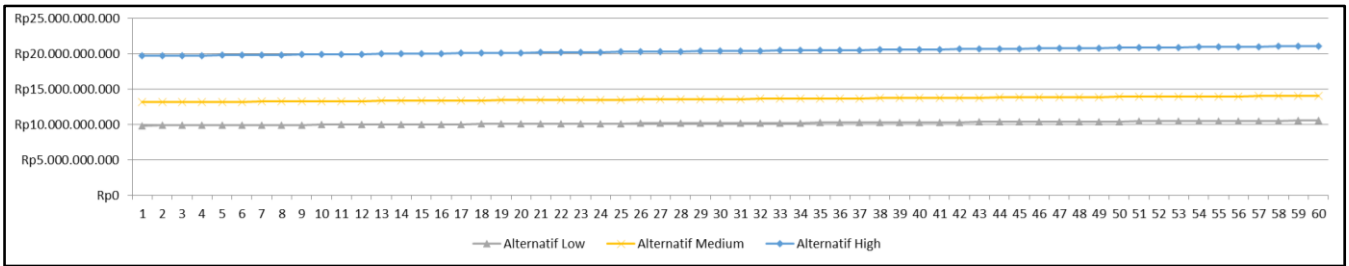


Fig. 4. Chart of Expense in January 2019 (1st Month) - December 2023 (60th Month)

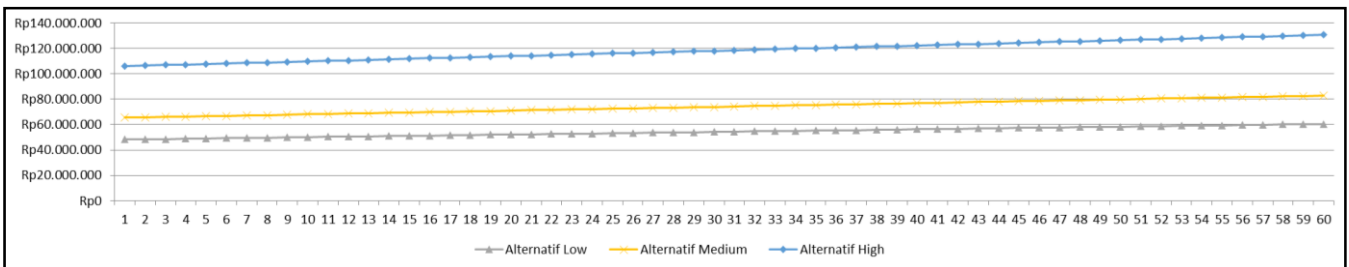


Fig. 5. Chart of Profit in January 2019 (1st Month) - December 2023 (60th Month)

Table 5 shows the calculation result of investment criteria on the feasibility study of pulse and mobile internet plans distribution business. Based on the PBP calculation, the return of investment is more than the business period, i.e., sixty months. If NPV is larger than zero, it can be stated that the

project has a money value increase. To determine the feasibility, IRR is compared to the interest rate set by the financial institutions. The monthly interest was assumed to be 0.96%. When it is compared to the IRR of the three

configurations, this business is considered feasible. Based on the result, all alternatives were considered feasible.

TABLE V. FINANCIAL ANALYSIS BASED ON PBP, NPV, AND IRR.

Types of configuration	Payback Period (PBP)	Net Present Value (NPV)	Internal Rate of Return (monthly)
<i>Low</i>	26 months 4 days	882,751,830.65	3.46%
<i>Medium</i>	29 months 15 days	991,005,891.57	2.88%
<i>High</i>	23 months 22 days	2,175,896,494.57	3.93%

IV. CONCLUSION

The development of internet package business can be done by using low, medium, and high configuration. Based on the calculation result, all configurations were considered feasible

to continue. However, the investor may select high technical configuration if they want to gain a maximum profit of IDR 3,638,792,472 for 60 months.

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