

## START-UP VALUATION IN A LOGISTICS AGGREGATOR (CASE STUDY AT PT LINKNAU)

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### Abstract

Many start-ups in Indonesia are supported by an increase in internet user penetration, reaching 64.8% of the Indonesian population or 171.17 million users (APJII 2019). The potential of Indonesia's creative economy and start-ups is very large, supported by abundant natural resources, local cultural diversity spread throughout the archipelago, and diversity of human resources. The objectives of this study are as follows Describe the financial performance of start-ups in logistics aggregators at PT Linknau. Analyzing company size, profitability, economic growth rate, market traction, and competitive advantage against start-up valuation in logistics aggregators (Case Study at PT Linknau). The data used in this study are primary data and secondary data. Primary data is in the form of interviews conducted in-depth interviews with the CEO of PT Linknau, and secondary data is in the form of financial statements of start-up Companies PT Linknau from 2019-2022. The results show that *The First Chicago Method's* valuation is the most suitable for assessing PT Linknau's company valuation. The main reason this method is the most suitable method is that currently, the company is already generating operating income, according to Damiano et al. (2020).

**Keywords:** start-up; innovative start-up valuation methods; start-up's value; aggregator logistics;

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### INTRODUCTION

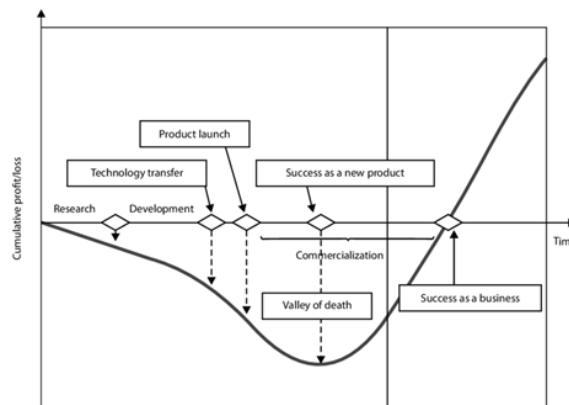
Today's technological developments are increasingly sophisticated, and Indonesia has become a thriving start-up ecosystem; based on the start-up ranking database (2020), Indonesia has 2,217 start-ups. Many start-ups in Indonesia are supported by an increase in internet user penetration, reaching 64.8% of the Indonesian population or 171.17 million users (Bowdish et al., 2020; Handayani et al., 2021) . From these data, the number of internet users is increasing over time, and it has become common among Internet users to use the Internet as a forum for online transactions.

According to Moore, (2014) the change in economic patterns is known as the economic wave, and the creative economy is the fourth wave in economic orientation after the agricultural economy, industrial economy, and information economy. Based on the results of creative economy potential mapping conducted by the Indonesian Creative Economy Agency in 2016, 16 creative economy subsectors consisting of (1) architecture; (2) interior

design; (3) visual communication design; (4) product design; (5) films, animations, and videos; (6) photography; (7) crafts; (8) culinary; (9) music; (10) fashion; (11) app and game developers; (12) publishing; (13) advertising; (14) television and radio; (15) performing arts; and (16) fine arts.

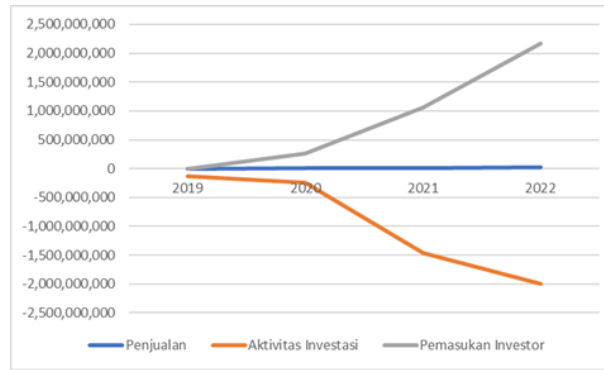
The potential of Indonesia's creative economy and start-ups is very large, supported by abundant natural resources, local cultural diversity spread throughout the archipelago, and diversity of human resources (Irjayanti, 2020). With the addition of the value of creativity and innovation to the creative economy, it will have the opportunity to become a driver of national development and economic growth (Simatupang et al., 2012).

At first, start-ups receive government and external agency support to help kick-start the business stages, for example, producing prototypes, writing business plans, leasing facilities, and other activities involved in creating the organization. External agencies' support guarantees that some companies will have long-term success. The reality is quite the opposite; once a business has been established and can operate independently, this level of support is hard to find. The challenge is particularly formidable for business owners at this stage of the early cycle due to the need for more funding from the public and private sectors. This relates specifically to theories such as the Business Life Cycle Model developed by Churchill and Lewis (1982) or Greiner's Growth Model (Handcock et al., 2008).



**Figure 1: The Valley of Death Start-up Osawa and Miyazaki (2006)**

An interesting start-up that is the focus of this research is Linknau for Business. Linknau was established in 2019 as one of the start-ups that runs a business as a logistics aggregator, which uses applications via devices or smartphones for integrated delivery of goods through an application to support business growth. Linknau logistics partners include JNE, Anter Aja, Ninja Express, 21 Express, SAP Express Courier and Si Cepat. Linknau, in running its business, has all the conveniences for business people, such as being able to integrate with company systems using Application Programming Interfaces (APIs), having their store couriers with multiple logistics support, providing access between business people and partners through a separate interface system and providing more choices of delivery partners if using Linknau.



**Figure 2. Sales Data, Investment Expenditure Activities, and Investor Income for the 2019-2022 Period**

Furthermore, the growth rate is the process of increasing the production of goods and services in the economic state of the community; an economy is said to experience growth if the economic level achieved in a certain year is higher than the previous year. So that the rate of increase in GDP can cause changes in the ratio of state income because GDP is the numerator of the calculation of the Tax Ratio. DP is one of the benchmarks that can be used to determine a country's income. Gross domestic product is the number of products in the form of goods and services produced by production units within the territorial boundaries of a country (domestic) for one year (Kummu et al., 2018). Economic growth is very influential on company valuations, supported by research conducted by (Purnamasari et al., 2022) states that company growth and economic growth greatly affect start-up valuations. Likewise, research conducted by Oktaviani & Apriani, (2020) states that company growth, along with economic growth, greatly affects start-up valuations.

Market traction is a development momentum for start-ups to increase sales and customer base. In other words, traction is the company's ability to monetize the value of its users, where the output can be in the form of users, partners, merchants, and so on, as long as it can be monetized. Generally, a company's success in the traction period is judged by the number of new customers and the total revenue they receive. However, many large companies such as Amazon, Google, Uber, and start-ups such as Gojek have good traction, although their revenue can only sometimes be determined. Traction is an abstract yet possessive concept. Here are some important functions of traction for start-ups, Key Investor Considerations as the main consideration for investors to disburse funds. Investors will choose companies that are stable, potential, and able to grow exponentially. Indirectly, the traction success rate of a start-up is an indicator that is quite influential for investors who are interested in disbursing funds. Next, the Customer Interest Indicator is the customer's interest in the product or service offered (Solihin, 2020). The traction value will be a validation and material for evaluating the success of a start-up's product or service. Then, the ever-increasing traction value can convince excellent candidates to join your start-up. Thus, you can improve the quality of human resources within the company. Finally, considering traction is an effort to increase business profits, revenue, and customer base. No wonder start-up traction is also called a "whip" for companies to continue to take innovative steps so that their start-up grows. Market traction affects company valuation; this is supported by research conducted by Nielsen & Dane-Nielsen, (2019) stating that market traction affects

start-up valuation. Meanwhile, research conducted by Visconti, (2020) states that market traction affects start-up valuations.

Competitive advantage here is how a business practices or implements business strategies and is useful for implementing objectives and strategies to compete in the market (Porter & Siggelkow, 2008). There are also three general strategies for businesses that want or aim to have above-average performance in the industry taken, namely 1) Cost Leadership, 2) Differentiation, and 3) Focus (Pulaj et al., 2015). The competitive scope can greatly influence and significantly impact competitive advantage. Competitive advantage also affects the company's valuation. Meanwhile, Chiun-sin Lin and Chih-Pin Huang et al., (2011) research states that competitive advantage affects company valuation. The importance of assessing start-up valuations in terms of company size, profitability, industry growth in line with the economy, market traction, and competitive advantage is used to attract investors. Therefore, it is necessary to research the effect of company size, profitability, market traction, and competitive advantage on start-up valuation in logistics aggregators (Case Study at PT Linknau). The objectives of this study are as follows Describe the financial performance of start-ups in logistics aggregators at PT Linknau and can be considered by investors in making investment decisions by looking at these factors.

### **RESEARCH METHODS**

The study was conducted from January to March 2023. The data used in this study are primary data and secondary data. Primary data is in the form of interviews conducted in-depth interviews with the CEO of PT Linknau, and secondary data is in the form of financial statements of start-up Companies PT Linknau from 2019-2022. There are also data as support for this research in the form of journals, theses, and books as research support. This study used a descriptive and verification approach using primary and secondary data. The descriptive approach provides an overview of the company's financial condition and ability to provide added value for investors in PT Linknau's start-up company.

### **RESULT AND DISCUSSION**

#### **Company Conditions**

The general description of the company consists of a profit and loss statement and a company balance sheet. The research's main results are calculating the valuation of *Linknau's start-up* using *real options*, *venture capital*, and *first Chicago methods*. Furthermore, the three valuation methods will produce a valuation value for PT Linknau and can be used to increase the company's capital.

PT Linknau has been operating since 2019, and the following is a summary of the company's financial statements.

**Table 1. Profit and Loss Report of PT Linknau**

<b>Income Statement</b>	<b>2021</b>	<b>2022</b>	<b>Nominal Growth</b>
<b>In Idr</b>			
<b>Income</b>			
Services - Jne	35,895,093	358,950,930	323,055,837
Services - Fast	2,094,419	196,875,374	194,780,955

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Services - Anteraja	130,500	78,039,000	77,908,500
Services - Sap	2,682,485	53,649,710	50,967,224
Services - 21 Express	79,047,364	229,237,355	150,189,991
Services - Ninjavan	4,196,980	88,136,579	83,939,599
Other Income	17,100,000	5,000,000	- 12,100,000
<b>Total Income</b>	<b>141,146,841</b>	<b>1,009,888,947</b>	<b>868,742,106</b>
Total Cost Of Business	81,145,656	527,081,239	445,935,583
<b>Gross Operating Profit</b>	<b>60,001,185</b>	<b>482,807,708</b>	<b>422,806,523</b>
Operating Costs	50,726,129	99,575,391	48,849,262
Salary & Allowance Costs	1,065,902,649	895,358,225	- 170,544,424
General & Administrative Expenses	125,468,886	178,642,600	53,173,714
<b>Total Operating Costs</b>	<b>1,242,097,664</b>	<b>1,173,576,216</b>	<b>- 68,521,448</b>
<b>Net Operational Profit/(Loss).</b>	<b>- 1,182,096,479</b>	<b>- 690,768,508</b>	<b>491,327,971</b>
Other Income/Expenses	- 4,922,667	5,518,309	10,440,976
Total Other Income/Expenses	- 4,922,667	5,518,309	10,440,976
<b>Net Profit/(Loss) Before Tax</b>	<b>- 1,187,019,145</b>	<b>- 685,250,199</b>	<b>501,768,947</b>
Corporate Income Tax	-	-	-
<b>Net Profit/(Loss) After Tax</b>	<b>- 1,187,019,145</b>	<b>- 685,250,199</b>	<b>501,768,947</b>

**Table 1. PT Linknau Balance Sheet Report**

<b>Balance Report In IDR</b>	<b>2021</b>	<b>2022</b>	<b>Nominal Growth</b>
<b>Asset</b>			
<b>Current assets</b>			
<i>PettyCash</i>	124,236	3,192,865	3,068,629
Bank	864,108,190	498,521,849	- 365,586,341
Accounts receivable	86,580,000	3,257,500	- 83,322,500
Other receivables	- 3,885,450	2,580,375	6,465,825
Investor Receivables	215,750,000	35,000,000	- 180,750,000
Other Current Assets	4,276,628	4,276,628	-
Input VAT	5,945,325	42,538,096	36,592,772
<b>Total Current Assets</b>	<b>1,172,898,929</b>	<b>589,367,313</b>	<b>- 583,531,615</b>

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<b>Balance Report In IDR</b>	<b>2021</b>	<b>2022</b>	<b>Nominal Growth</b>
<b>Fixed assets</b>			
Fixed Assets - Office Equipment	177,391,358	191,617,848	14,226,490
Intangible Assets	15,000,000	15,000,000	-
<b>Total Fixed Assets</b>	<b>192,391,358</b>	<b>206,617,848</b>	<b>14,226,490</b>
<b>Depreciation &amp; Amortization</b>			
Accumulated Depreciation - Office Equipment	- 33,636,042	- 43,726,855	- 10,090,813
Accumulated Amortization	- 10,000,000	- 14,500,000	- 4,500,000
<b>Total Depreciation and Amortization</b>	<b>- 43,636,042</b>	<b>- 58,226,855</b>	<b>- 14,590,813</b>
<b>Total Assets</b>	<b>1,321,654,245</b>	<b>737,758,307</b>	<b>- 583,895,938</b>
<b>Liability and Equity</b>			
<b>Short Term Liabilities</b>			
Accounts payable	-	41,732,699	41,732,699
Exit VAT	9,686,874	69,308,436	59,621,562
Other Debt - Investors	4,200,000,000	4,200,000,000	-
<b>Long-term obligation</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Total Liabilities</b>	<b>4,209,686,874</b>	<b>4,311,041,135</b>	<b>101,354,261</b>
<b>Equity</b>			
Paid-up capital	500,000,000	500,000,000	-
Retained earning	2,201,013,483	3,388,032,629	1,187,019,145
Current Period Revenue	1,187,019,145	- 685,250,199	501,768,947
<b>Total Equity</b>	<b>2,888,032,629</b>	<b>3,573,282,828</b>	<b>- 685,250,199</b>
<b>Total Liabilities and Equity</b>	<b>1,321,654,245</b>	<b>737,758,307</b>	<b>- 583,895,938</b>

Based on the financial statements above, in the 2022 profit and loss report, PT Linknau recorded a net loss of -685 million IDR. This condition improved compared to the position in the previous year, where the company recorded a net loss of -1.18 billion IDR. This condition was supported by an increase in revenue of 868 million IDR and a decrease in salary costs of -170 million IDR. Regarding the financial balance, the company's total assets decreased by -583 million IDR, most of which came from a decrease in bank cash of -365 million IDR. Total Liabilities also increased by 101 million IDR from the increase in

trade payables and outgoing VAT. Total Equity decreased by -685 million IDR following an operating loss in 2022.

**The Real Option Method of Valuation Method at PT Linknau**

The Real Options method is used in PT Linknau's valuation in this study, assuming that management can carry out business operations by obtaining funding from external parties (investors) or without additional funding. In addition, Real options valuation is very useful in its application to optimize the value of a strategic investment decision by evaluating several options under certain conditions with a different order of evaluation to obtain optimal results and develop several options. Existing and determined strategic decisions that serve as an advantage in the future. In this method, the authors use data from the financial statements owned by PT Linknau and projected financial statements for the next 5 years.

There are 2 scenarios used in making financial report projections, namely with additional financing of 2 billion IDR and without additional financing. With data processed from PT Linknau's financial reports, it is found that if additional financing is obtained from external parties, the revenue growth will be 339%. Meanwhile, revenue growth is projected at 172% without additional financing in 5 years. From these data, the projected cash flows and present value of cash flows are obtained as follows:

**Table 2. Real Option Model Cash Flow Projections**

In IDR million	2023E	2024F	2025F	2026F	2027F	Probability	Present Value
With External Funding	421	768	1,790	4,257	5,336	65%	3,933
Without External Funding	84	154	358	851	1,067	35%	787

The *present value* of flows with and without external funding is 3.9 billion IDR and 787 million IDR. The author uses a probability that 65% of the company will get external funding and 35% without external funding. Using these probabilities, *the present value* of expected cash flows is 2.8 billion IDR.

**Table Error! No text of specified style in document.. Option Value Calculation**

Expected PV	2,831
Investment Cost	2,000
Option Values:	831

Furthermore, to calculate *the option's value*, cash flow expectations must be reduced by the investment value, where the value of *the option* is 831 million IDR. The PT Linknau management considers this option's value in determining whether the company needs external funding.

**The Venture Capital Method of valuation method at PT Linknau**

In the valuation method of The Venture Capital Method, company value is assessed from the net present value of future cash flows in an optimistic scenario. This valuation calculation uses a specified timeframe and interest rates representing high investment risk. The Venture Capital Method calculates the value of a start-up company by assessing future cash flows using a comparable and market multiple approach. Furthermore, start-up companies are discounted using a high discount rate in accordance with the company's high risk. In the case of PT Linknau, with the current conditions, the company needs to obtain

funding from investors of 2 billion IDR to increase the company's revenue growth by 3.4 times within 5 years. The author uses a *net income approach* to calculate *the exit value* of investors who will provide funding. The company's growth projection can be seen in the following table.

**Table 3** The projected growth of PT Linknau's profit and loss balance  
 In IDR million

	2023E	2024F	2025F	2026F	2027F
Revenue	1,923	2,727	4,086	6,539	8,439
EBITDA	62	362	1.109	2,723	3,359
<b>NetIncome</b>	<b>68</b>	<b>368</b>	<b>1.116</b>	<b>2,730</b>	<b>3,366</b>

*Net income* growth grew from 68 million IDR to 3.4 billion IDR within 5 years after receiving funding from investors. Using the value of *net income* in 2027, the author uses a *revenue multiple of 5x* to determine *the exit value* of investors when they want to take advantage of their investment in PT Linknau. *The exit value* obtained using the *multiple revenue method* is 16.8 billion IDR. Furthermore, the company's valuation value is calculated by calculating *the present value of the exit value* using DCF with a *discount rate* of 35%, considering the level of risk obtained by investing in start-up companies.

**Table 4. Post-Money Valuation**

Rate of Return	35%
<b>Post-Money Valuations</b>	<b>3,753</b>

The valuation value after the investment (*Post-Money Valuation*) was obtained at 3.8 billion IDR. According to a comparison of investment value and *post-money valuation*, investors are entitled to 53.3% ownership of the company.

**Table 5** Pre-Money Valuation and Ownership Proportion

Post-Money Valuations	3,753
Pre-Money Valuations	1,753
VC Ownership	53.3%

This method also allows the author to compare the company's valuation before and after the investment by reducing *the Post-Money Valuation* with the investment value. Thus, the company's value before investment (*pre-money valuation*) is 1.7 billion IDR.

**The First Chicago Model of valuation method at PT Linknau**

*The First Chicago* method is in many ways similar to DCF. However, this method considers several scenarios that indicate uncertainty in business growth. The *First Chicago Method* is a weighted average of three DCFs, one for each scenario. The growth rates assigned to these scenarios differ from company to company, depending on several factors. These factors are scenarios in which the company has optimism in terms of performance growth, scenarios in which the company operates with reasonable growth, and the last is the scenario in which the company operates in pessimistic conditions. Since there are differences in terms of uncertainty, the probabilities of each scenario are also different. In the case of



Norsk Hydro, the ideal scenario is given a probability of 90% and 5% in the best and worst scenario, respectively. In the case of PT Linknau, the probability of an ideal scenario is 60%, an optimistic scenario is 10% and a pessimistic scenario is 30%. The probability of the pessimistic scenario is higher than the optimistic one because, considering the current condition of the benchmark interest rate, which shows an increasing trend, it will be more difficult for companies to pursue higher growth rates than before. The following is the calculation of The First Chicago Method's valuation.

**Table 6. Valuation *The First Chicago Method***

In IDR million							
	2023E	2024F	2025F	2026F	2027F	probability	DCF
Optimist Scenario	632	1.152	2,685	6,385	8.004	10%	5,899
Ideal Scenario	421	768	1,790	4,257	5,336	60%	3,933
Pessimistic Scenario	84	154	358	851	1,067	30%	787
<b>Weighted Average Valuation</b>							<b>3,185</b>

From the above scenario, *the present value* obtained under optimistic cash flow conditions is 5.9 billion IDR, in the ideal scenario 3.9 billion IDR, and 787 million IDR in the pessimistic scenario. To calculate the valuation value of *The First Chicago Method*, the author must calculate the present value, which has been weighted based on the probability of each scenario. These data obtained a weighted average valuation of 3.2 billion IDR. The valuation value found by *The First Chicago Method* is consistently higher than the DCF calculation because it takes into account both optimistic and pessimistic scenarios. The valuation calculation from The First Chicago Method is also more relevant because, in the real world, there are probabilities of success and failure determining factors for business success. Therefore, the authors believe that *The First Chicago Method's valuation* adequately represents the accuracy of PT Linknau's company value.

**CONCLUSION**

Based on the research results above, it can be concluded that the financial performance of start-ups in logistics aggregators at PT Linknau can be explained using company valuations calculated or measured using three methods, namely the Real options method, the First Chicago method, and the Venture Capital Method. The results show The Real Options method is used to optimize the value of strategic investments by considering the existing options. This study projected financial statements for 5 years with and without additional external financing. The results show a company valuation of 2.8 billion IDR considering the probability of additional occurrences without external funding. Furthermore, the VCM method assesses the company based on the investor's exit value. In the case of PT Linknau, the company's valuation was found to be 3.8 billion IDR. Finally, the First Chicago method is used as a weighted average of the three DCFs to address uncertainties in business growth. Probability is given in each set scenario. In the case of PT Linknau, the valuation value obtained was 3.2 billion IDR. In the case of PT Linknau, the company is in the logistics technology industry, and the company level is already growing. It has started to have customers, so the company's revenue has started to cover operational costs even though it is still in a loss condition. Under these conditions, the authors consider *The First Chicago*

*Method* to be the most suitable company valuation method for assessing PT Linknau's company valuation. The main reason why this method is the most suitable is that currently, the company is already in a condition of generating operating income, according to Damiano et al. (2020).

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