

# **Asetpedia.id as a Start-Up Based Technology Benchmarking Innovation for Beginning Companies in the North Sumatera Region**

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## **ABSTRACT**

In the current era of globalization, the development of information technology will be able to increase business activities both locally and internationally. This is marked by the emergence of several companies that are just developing and offering products or services that have never been offered to the market, known as start-ups. The number of digital start-ups in North Sumatra has grown significantly. However, the development of local start-ups in North Sumatra Province has experienced many failures and some have made major changes to the business models that have been developed because of the demands of very unstable market competition. Asetpedia.id is a company engaged in finance, which is a management platform service provider, analysis and prediction of various financial instruments. Such as managing various stock price data, cryptocurrency, commodities such as precious metals to forex. Asetpedia aims to provide a digital platform that makes it easy for investors and traders who want a detailed and accurate analysis of the latest market conditions and want a platform that helps asset portfolio management consisting of several types of trading and investment instruments. Asetpedia.id can be used as a benchmark for other start-ups in North Sumatra province to be able to build a modern start-up product business based on technology and artificial intelligence to win the start-up business competition in the era of globalization.

**Keywords:** *Start-up, innovation, Benchmarking, asetpedia.id*

## **1. BACKGROUND**

A Start-up is a human company or institution that is designed to develop a product or service in a sustainable manner in an environment of extreme uncertainty. In developing a start-up, there are several stages in its development, including Seed and Development, Start-up Stage, Growth and Establishment, Expansion and Maturity and Possible Exit. One of the important stages in the development of a digital start-up is the Seed and Development Stage. Statistically, according to Small Business Trends, more than 50% of start-ups globally experience failure within the first four years of development. The general description of start-up development shows that globally it has low business resilience, failure in development in digital start-ups is also caused by inconsistencies in start-up development at each stage. Digital start-ups that are categorized as inconsistent tend to fail more and pivot more frequently (make changes to the overall business model).

The data show that the start-up failure ratio is very high, according to a research survey compiled by senior

researchers at Harvard University published by the Wall Street Journal that 75% of emerging start-ups experience failure in their development. The research was conducted on 2,000 start-ups from 2004 to 2010 in the United States. The definition of start-up failure is a failure in managing limited company resources so that start-ups do not get a good money turnover cycle, they don't even get sufficient revenue at the beginning of the year [2]. Tens of thousands of start-ups were established and started businesses in the millennial period. Nasscom [8] noted that a non-profit association in India contained 47,000 start-ups born in the United States and sequentially there were 4,500, 4,200, 3,300 start-ups established in the UK, India and China. In 2016 Indonesia had 2,000 start-ups, according to the Nasscom research institute, this figure was the highest in Southeast Asia. The majority of start-ups are new companies based on technology, science and engineering with a percentage of 60.8%, education at 9.4%, food and accommodation services at 11.4% and the rest is divided by retail, property, business Economic conditions in North Sumatra experienced an administration and construction.

In 2013, the World Bank stated that the digital economy will support Indonesia's economic growth [4]. This is now increasingly evident seeing the increasing number of digital-based financial transactions recorded from year to year. In 2015, the recorded value of online transactions exceeded 3.56 billion USD, or the equivalent of IDR 46 trillion [5]. The potential growth of the digital economy is in line with the rapidly growing number of internet users in Indonesia.

Based on the results of a survey conducted by the Indonesian Internet Service Providers Association (APJII) in 2016, there are 97 million Indonesia who have accessed the internet and 60 million of them are accustomed to using the internet as the right place to shop online. The very fast development in the world of technology, especially information and communication technology, is an opportunity as well as a challenge for digital start-up activists. On the one hand, the technological development is a means that they can use to innovate and produce a product or service, but on the other hand, the rapid development of technology makes their products obsolete or unnecessary. This requires start-up founders to continue to innovate.

Meanwhile, the development of start-ups in North Sumatera starting from 2015, has increased significantly. Medan City in particular has a population of 2,210,624 people, where this number provides huge potential for Medan City as the foundation of the start-up ecosystem in 2017. Medan City has several priority industries, namely Labor-Intensive Industries, Textiles, Furniture, Fashion, Ceramics, and based on natural resources. Although in fact there are many more industries in Medan City, and the progress of economic development in the province of North Sumatera will also play an important role in encouraging the development of the start-up ecosystem, especially in Medan City. Economic conditions in North Sumatera experienced a growth of 5.18% in 2016. Compared to the previous year, which experienced growth of 5.10%. The conditions of economic growth that has experienced this growth also has an effect on the number of businesses in Medan City. According to BPJS North Sumatera, the number of business in Medan City has increased by 12,000 from 1.06 million to 1.18 million in the last 10 years.

The most popular start-up business in Indonesia are games and educational applications. In addition to the relatively easy process of making games and educational applications, this type of start-up has a potential and open market share in Indonesia. After that followed e-commerce and information start-ups. With the development of social media and smartphones, the market for mobile games and social games is also growing and getting bigger. Meanwhile, for applications or websites that are engaged in e-commerce and information, the challenges in Indonesia are still quite large due to the lack of credit card usage. For the North Sumatera Region, an online application-based start-up has emerged called asetpedia.id and provides services on financial analysis, especially for predicting the prices of

financial assets such as stock trading, commodity trading, cryptocurrency and forex. Asetpedia.id uses a mathematical model generated from statistical analysis of research data in developing a software that can calculate risk values and produce predictions for the value of stock prices, cryptocurrencies by considering risk factors and world commodity price fluctuations. This start-up is based on mobile apps and the web so that it can be accessed online anytime and anywhere. This application will also visualize the calculation results in tables and graphs and have administrator access where there is a platform to control each forecast data output in an integrated manner so that it is easy to use and can only be accessed by the master or data processor.

Asetpedia, id can become one of the quality start-ups in the future if it is managed properly and continues to make changes and updated innovations related to financial analytics, and it is hoped that Asetpedia.id will be able to become a benchmark for start-ups in the North Sumatera region. 2019 is the beginning of the development of Asetpedia.id from the initial concept which is only a method of sharing stock prices, now it has advanced features. In 2020 asetpedia.id already has a performance asset indicator feature and an asetpedia news feature. This is of course very beneficial for millennials who are indeed involved in the world of finance so that making investment decisions and managing financial assets can now be easier by taking advantage of the sophisticated features available in the asetpedia.id start-up service which are currently still accessible for free (Open Access and Free Charge).

### ***Identification of Problems***

Based on the background above, there are problems associated with this research. These problems are identified as follows:

- There are obstacles in the start-up development process in North Sumatera province.
- Lack of innovation strategies in start-up development in North Sumatera Province

### ***Research Problems, Aim and Contributions***

Based on the background above, the problem formulations in this study are:

- How can you overcome obstacles in the start-up development process in North Sumatera Province?
- Can Asetpedia.id become the benchmark for start-ups in North Sumatera Province?

The scientific research carried out is aimed at reviewing the Asetpedia.id start-up development strategy so that it can be applied in helping the development of start-ups in the province of North Sumatera.

The scientific research carried out is expected to provide benefits for start-up business players, especially in the province of North Sumatera, to become a reference as a start-up management model in order to be able to

create a start-up innovation based on creative products to support Indonesia's economic development.

## **2. THEORETICAL FOUNDATION**

### ***Start-up***

In his study, [3] defines a start-up as is a company designed to grow fast. The only essential thing is growth. Everything else we associate with start-ups follows from growth". The point is that a start-up is a company designed to grow quickly. The only thing that is essential is growth. Everything else we associate with beginners follows growth. Start-Up is also taken from English which means the action or process of starting a new organization. Meanwhile, the start-up business itself according to Google is 'an entrepreneurial venture or an innovative business in the form of a company. Simply put, a start-up is a start-up business. This term became known after the internet era. This factor is because many companies that were started from scratch by one or a few people later became large.

In essence, start-up is a step in producing something new. According to [7] in his article, "A start-up business is a business that is just developing. However, this start-up business is more synonymous with technology, web, internet and related business. Meanwhile, according to [6] in his journal, he states that a start-up is an institution created to create new and innovate products or services in a condition of high uncertainty. From this explanation, it can be concluded that Start-up is an effort to form an organization in the form of a new company in the business field based on network or web technology by producing an innovative product.

The term start-up comes from English which means "The act or process of starting a process or machine; a new organization or business venture "or" the act or process to start a process, a new organization or business venture". The term start-up was popularized in Silicon Valley. Silicon Valley is synonymous with technology, especially with ICT. So, it is not surprising that the term start-up is better known for the ICT sector. Start-ups are not primarily a business of "writing code" for other companies, whether they are consultants, contract programmers, or freelancers. On the other hand, start-up is not an IT consulting company that has a codebase or an application by doing special customization for each client. A start-up is also a not a department or division of a company that is specifically assigned to behave like a start-up in building something different. Start-ups usually consist of one to eight people, most of whom are developers who come together to create a codebase or application whose benefits they offer to the world. Codebase or application can be accessed via the web, run on a Windows PC, Linux or Mac, and can also be run on smartphones such as Blackberry, Android, iPhone, Nokia and others. Funding for start-ups is initially through self-financing (swadaya) and is used as initial capital, which does not rule out the possibility of obtaining financial

assistance from family, friends or even venture capital and angel investors.

### ***Benchmarking***

Benchmarking is a learning process to find better ways of doing things. This is a management process that requires constant updating where the company's performance will be compared with the best companies [1] Benchmarking Wheel. There are five stages of the benchmarking process which is commonly called the benchmarking wheel [9].

1. Plan: Conducts an assessment of the company's performance according to a predetermined period and determines the company's performance to be compared with the company chosen to be the company's performance reference.
2. Search: Looking form companies with the most potential as partners to do benchmarks.
3. Observe: Gather various information about the key success factors of the benchmark company as a reference for company performance.
4. Analyze: Analyze the information that has been collected from benchmark companies to see how performance differences compare with the company.
5. Adapt: Compile and implement company performance improvement programs and evaluate company performance improvement programs that have been implemented.
6. Benchmarking in the business field is as stated by Watson, which states that benchmarking is an activity of continuous search and the actual application of better practices that lead to superior competitive performance.

From some of the above definitions it can concluded that the objective is the presumption (Benchmarking) is to find the keys or secrets to the success of another start-up company, then adapt it, select it, and improve it to be applied to a managed start-up that implements the benchmark. This benchmarking strategy was originally used in the business sector in measuring the performance of a company with other more advanced companies. As explained by the Design Steering Committee of the International Benchmarking Clearinghouse (IBC) which states that Benchmarking is a systematic and continuously comparing the business processes of an organization with business figures anywhere in the world, to obtain information that will help the organization's effort to improve its performance. The issues discussed in this benchmarking study usually include: how to build competencies that are able to support a company's competitive advantage, how to develop innovations, and how to prepare the company for changes in the future.

### 3. RESEARCH METHODS

This research includes the type of literature study, research by looking for theoretical references and scientific journals that are relevant to the cases or problems found. The theoretical references obtained by the literature study serve as the basis for study foundations and the main tool in conducting research. This study uses literature studies, analysis based on several previous studies and scientific journals that discuss start-ups and company benchmarking strategies as indicators of performance appraisal.

### 4. DISCUSSION

#### *Asetpedia.id Start-up Company Profile*

Asetpedia.id is a company engaged in finance, which is a management platform service provider, analysis and prediction of various market instruments.

Such as managing various stock price data, cryptocurrency, commodities such as precious metals to forex. Asetpedia aims to provide a digital platform that makes it easy for investors and traders who want a detailed and accurate analysis of the latest market conditions and want a platform that helps asset portfolio management which consists of several types of trading and investment instruments.

Asetpedia was founded by two experienced people in the field of Capital Market Economics and management information system development. That is:

- Dr. Rico Nur Ilham Mangapul Sinurat, SE., MM (Founder Asetpedia.id)

He is the founder of Asetpedia.id who is a professional in the field of capital market research and is one of the capital market investors. Who is currently researching the development of the Cryptocurrency market for his Doctoral Dissertation Research?

- Hizamrul Jaen, ST (Co-Founder)

He is one of the alumni of Informatics Engineering at Malikussaleh University who has experienced in the field of Web Development and Mobile Application Development for years. And now it has entered the world of Data Science since 2019.

Asetpedia.id was built based on the observations and experiences of the same Founder and Co-Founder in researching the development of the Cryptocurrency market which has a very high-risk margin. Found that, there are still many investors and traders who have difficulty observing the conditions of market development, which often results in losses or losses in portfolio management. This is due to a lack of knowledge and experience in high-risk markets such as Cryptocurrency, this also affects the capital market, forex and other financial market.

Based on these problems, the Founder and Co-Founder realized that a solution was needed that could help investors and traders to minimize risks in investing and trading activities. Then we came up with an idea, which is a platform that can analyze the market with technical analysis methods to produce detailed description of market conditions, yet easy for anyone to understand. This is a lucrative market potential and provides a new innovation in the financial sector. Asetpedia.id also utilizes Artificial Intelligence and Big Data Technologies that help analyze the market automatically, quickly and on target. In addition, we also found that there are still many investors and traders who still have difficulties in managing their portfolios, because many investors invest and traders have various types of investment and trading instruments, for example, such as owning various shares of different public companies and owning them. Various types of cryptocurrency, various types of precious metals and various types of foreign exchange that are traded.

With many types of trading and investment instruments, it will be difficult to manage them all, and can lead to Miss Management in making decisions. Mistakes in management can result in various losses such as incorrectly increasing the number of shares even though the company's conditions are uncertain, buying Cryptocurrency coins which are very high risk without knowing how the market is developing, and so on. This is what became the basis for the formation of Asetpedia.id, apart from helping traders and investors to develop their assets, it also helps the public to make investment transactions easier so that investing is not a frightening thing for the community anymore.

#### *Contents and products of Asetpedia.id*

The product we offer is a service or a market management, analysis and prediction platform service provider. A platform that has various features developed with the latest computing technology that is able to process millions of market data automatically to produce quality market analysis and predictions according to economic principles.

#### *Asetpedia.id Market Segmentation*

Asetpedia.id market segmentation is aimed at investors and traders who want portfolio management, market analysis and prediction of market movements quickly and easily. In particular, for investors and traders who are new to investing and trading. Most of them do not have enough experience and knowledge. Most of them are still in the age range of 20-30 years, or millennials who want to invest their current assets to get financial guarantees in the future. This market segmentations, has a large number, because currently capital market investment and cryptocurrency trading are still favoured investments in recent years. This is based on the fact that information is easier to obtain, thanks to technological developments, which make it easier for the

public to find out information on stocks, markets and national economic developments.

### ***New Innovation of Asetpedia.id***

Asetpedia.id strives to develop various financial technologies that aim to provide the best financial platform for investors and traders. We take advantage of the latest technologies such as Artificial Intelligence and Big Data. Both of these technologies have an important role to play in managing a lot of financial data such as historic data on asset prices from time to time, historical data on the country's financial economy and so on.

In its development, we have various innovations in the field of financial technology, namely:

#### ***Smart and Efficient All in One Assets Management***

The asetpedia.id platform provides the "My Assets Management" feature, a feature that functions to manage various types of investment and trading instruments efficiently and easily in one place. This also helps investors and traders save time in portfolio management so that market transaction activities become more efficient.

#### ***Intelligence Market Analytics***

This platform utilizes artificial intelligence and big data technology, which can recognize the movement of the capital market, cryptocurrency, commodities and forex at once in one place. So that it can make it easier for investors to understand market conditions and can determine portfolio management decisions for the future. The analysis is presented in the form of tables and graphs which are arranged neatly and in detail, but also strives to provide easy-to-understand market data analysis. So that it can be understood by anyone.

#### ***Market Prediction with Artificial Intelligence Powered***

A feature of the Asetpedia.id platform that is able to analyze and predict future market movements, and can also predict the movement of assets owned. By utilizing Artificial Intelligence, the Asetpedia.id platform will analyze market movements, determine the criteria for determining movement to understand how patterns of movement patterns, so that it can determine how the market moves in the future. This is very useful for investors and traders who want to determine their future steps, such as when is the right time to sell shares and buy shares, or when to add new types of investment instruments in the future.

#### ***4.4.4. Asetpedia News Market Sentiment Analyzer***

Asetpedia.id provides features that can analyze the market based on the news information collected. This information is carried out by the "Text Mining" method in which, each news item will be classified based on its

influence on the market. For example, measuring how much bad and good news affects market movements. This also helps the Market Prediction feature previously described, so that investors can more easily understand market movements and can more easily understand market movements and can determine how the market will move in the future. In carrying out this process, Asetpedia.id also provides the latest news from various sources, collecting it in one place so that the latest news information about the economy and finance is easier to obtain.

#### ***Asetpedia Assets Prospect Analyzer***

A feature on the Asetpedia.id platform that functions to analyze how the prospectus of an asset such as stocks, cryptocurrencies, and other financial assets. Asetpedia.id will collect various historical data on asset prices from time to time, transaction volume, equity, profit movement and various data on other factors that determine how healthy a company is. Processing it using Artificial Intelligence and the output is similar to a Score from the analysis results. Also provides a "Prospect Report" which can be a reference for investors and traders.

#### ***Asetpedia Smart Market Summary Report Maker***

Compiling a market summary report is tedious and requires a high level of precision, it takes a lot of time and energy. For this reason, the Asetpedia.id platform develops features that can make market reports quickly and easily. The resulting market reports will be of a professional standard and have high standards in presenting data. Contains data information required by investors and traders.

## **5. CONCLUSION**

Based on the results of research and discussion, the conclusions in this scientific research are as follows:

- a. The development of start-ups in North Sumatra starting in 2015 has increased quite significantly. Medan City in particular has a population of 2,210,624 people, where this number provides huge potential for Medan City as the foundation of the start-up ecosystem in 2017. Medan City has several priority industries, namely Labor-Intensive Industries, Textiles, Furniture, Fashion, Ceramics, and based on natural resources. However, the success of start-ups in North Sumatra Province cannot last long, so many of the North Sumatra start-ups will change their business direction and even go bankrupt while still being operational under 5 years.
- b. Asetpedia.id is a start-up from North Sumatra Province that already has a business concept and a business prospectus that is quite capable with various new innovations. Asetpedia.id can be used as one of the benchmarks for other start-ups in North Sumatra province to be able to build a modern start-up product business based on technology and artificial

intelligence to win the start-up business competition in the era of globalization.

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