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Business Feasibility Study of the Indonesia-China High-Speed Rail Project

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Abstract: The Indonesia-China High-Speed Rail Project is a strategic national infrastructure project operated by PT KCIC, a joint venture between a consortium of Indonesian state-owned enterprises (PSBI) and China Railway International. Although it promises modern connectivity with a travel time of 40 minutes, the project faces a major challenge in the form of cost overruns from the initial estimate to approximately US$7.27 billion (around Rp118.37 trillion). This study aims to evaluate the business viability of a post-operational project, focusing on financial aspects (profitability), economic aspects (social impact), and an analysis of investment risks resulting from construction delays and debt burdens.

Keyword: Business Feasibility, Project Analysis.

INTRODUCTION

Background

Transportation is one of the key factors supporting a country's economic growth. As times change and the population grows, the need for fast, safe, and efficient transportation continues to rise. One way to meet this need is through innovations in the transportation sector, such as high-speed rail.

The Indonesia–China High-Speed Rail Project is a modern transportation initiative connecting Jakarta and Bandung with a travel time significantly shorter than that of other modes of transportation. This project marks Indonesia's first step in adopting high-speed rail technology and forms part of the nation's infrastructure development.

However, as a large-scale project requiring massive investment, the Indonesia–China High-Speed Rail Project is not immune to various challenges, such as cost overruns, construction delays, and high financial risks. Therefore, a business feasibility study is necessary to assess whether this project is viable and what its future prospects are.

It is hoped that a business feasibility study will provide a clear picture of the project's potential, risks, and benefits—from economic, social, and financial perspectives.

Objectives

The objectives of this research are:

1. To understand the concept of a business feasibility study.
2. To understand the profile of the Indonesia–China High-Speed Rail Project company.
3. To analyze the issues and cases that have arisen in the project.
4. To assess the future business feasibility.

METHOD

The method of this research is to use the literature study method.

RESULTS AND DISCUSSION

Definition of a Business Feasibility Study

A business feasibility study is an analytical process conducted to assess whether a business or project is viable, considering various aspects such as market, technical, financial, legal, and environmental factors. The primary objective of this study is to mitigate the risk of loss and assist in decision-making before the business is launched. The primary objective of this study is to reduce the risk of loss and to assist in decision-making before the business is launched. Some of the main objectives of a business feasibility study include Determining the likelihood of a business's success, Avoiding business losses or failure, Serving as a basis for investment decision-making, Providing an overview of future business planning. Aspects of a Business Feasibility Study :

1. Market Aspects : Analyzing Supply and demand, Target consumers, Business competition. The objective is to determine whether the product/service has a clear market.
2. Technical Aspects : Analyzing Business location, Technology used, Production processes. The objective is to ensure the business can be operated effectively.
3. Financial Aspects : Analyzing Required capital, Costs and revenue, Profit (gain/loss), Typically uses indicators such as NPV (Net Present Value), IRR (Internal Rate of Return), Payback Period.
4. Legal Aspects : Analyzing, Business legality, Licensing, Legal compliance.
5. Social and Environmental Aspects : Analyzing Impact on the community, Environmental impact.

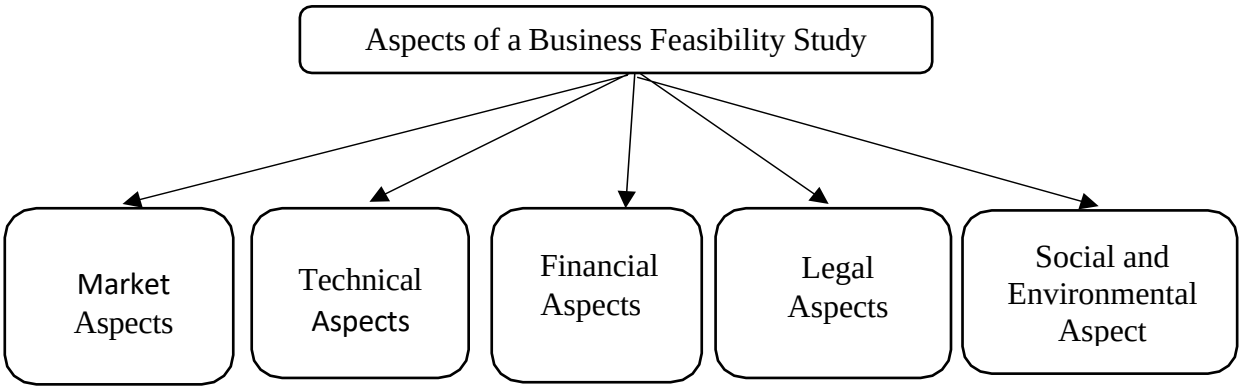

Figure.1 Aspects of a Business Feasibility Study

Overview of the Indonesia–China High-Speed Rail Project

The Indonesia–China High-Speed Rail Project is the first high-speed rail system development project in Indonesia, connecting Jakarta and Bandung. The project aims to provide fast, safe, and efficient transportation to support public mobility and national economic growth. The high-speed trains in this project are designed with modern technology capable of

reaching speeds of up to approximately 350 kilometers per hour, thereby reducing travel time between Jakarta and Bandung to about 40 to 50 minutes. The project also utilizes a dedicated rail line separate from conventional railways and is supported by advanced electrical and safety systems. The management and implementation of this project are carried out by PT Kereta Cepat Indonesia China, a joint venture between Indonesia and China in the field of transportation infrastructure development. With the Indonesia–China High-Speed Rail Project, it is expected to improve transportation efficiency, reduce traffic congestion, and drive economic development in the regions it passes through, particularly Jakarta and Bandung.

Company Profile of the Indonesia–China High-Speed Rail Project

The Indonesia–China High-Speed Rail Project is one of the most important modern transportation infrastructure projects in Indonesia. This project connects two major cities, Jakarta and Bandung, with the aim of improving travel time efficiency and supporting national economic growth. The introduction of this high-speed rail marks the beginning of high-speed transportation technology development in Indonesia. The company responsible for implementing this project is PT Kereta Cepat Indonesia China. This company was established as a result of cooperation between Indonesia and China in the field of modern infrastructure and transportation development. The company managing the Indonesia–China High-Speed Rail Project is PT Kereta Cepat Indonesia China. This company was established in 2015 as a joint venture between Indonesian and Chinese parties. The company operates in the fields of high-speed rail transportation and infrastructure development. Its primary focus includes planning, construction, operation, and management of high-speed rail services connecting Jakarta and Bandung. As the company managing this national strategic project, PT Kereta Cepat Indonesia China plays a crucial role in delivering a modern, fast, and efficient transportation system in Indonesia.

Background of Establishment

The establishment of the Indonesia-China High-Speed Rail Project was driven by the public's need for faster and more efficient transportation. The Jakarta-Bandung route is one of the routes with extremely high mobility, resulting in frequent traffic jams and congestion. Additionally, this project aims to accelerate infrastructure development in Indonesia and enhance national competitiveness. Cooperation with China enables Indonesia to acquire high-speed rail technology that was previously unavailable. Through this project, it is hoped that Indonesia can enter a more advanced and efficient era of modern transportation.

Ownership Structure

PT Kereta Cepat Indonesia China is a joint venture between Indonesia and China. On the Indonesian side, the company is supported by several state-owned enterprises, including PT Wijaya Karya, PT Kereta Api Indonesia, PT Perkebunan Nusantara, PT Jasa Marga. Meanwhile, on the Chinese side, the company is supported by firms in the railway and construction sectors with experience in high-speed rail development. This collaboration reflects the synergy between domestic and foreign investment in supporting large-scale infrastructure development.

Company Vision and Mission

Vision

To become a provider of modern, safe, comfortable, and efficient high-speed rail services to support public mobility and national economic growth.

Mission

1. To provide high-speed transportation services meeting international standards

2. To enhance inter-regional connectivity
3. To support sustainable economic development
4. To deliver the best possible service to the public

Products and Services

The main product resulting from the Indonesia–China High-Speed Rail Project is the Jakarta–Bandung high-speed rail service, known as "Whoosh. "This service offers various advantages, including High speeds of up to approximately 350 kilometers per hour, Shorter travel time, approximately 40 to 50 minutes, Modern and comfortable facilities for passengers, A digitally integrated ticketing system. This high-speed train is designed to provide a more efficient travel experience compared to other modes of transportation such as private vehicles or conventional trains.

Issues and cases

1. Project Cost Overruns

One of the main issues with the KCIP project is the occurrence of significant cost overruns. Initially, construction costs were estimated at around Rp85 trillion, but during implementation, they rose to over Rp110 trillion. These cost overruns were caused by several factors, such as changes to the project design, increases in construction material prices, and technical challenges on-site. Additionally, project delays have also contributed to increased operational costs. The impact of these cost overruns is an increased debt burden, thereby raising the project's financial risk.

2. Project Completion Delays

Another prominent issue is the delay in project completion. Projects originally targeted for earlier completion have been delayed by several years. These delays are caused by various factors, such as Slow land acquisition processes, Disruptions caused by the COVID-19 pandemic, Technical challenges in infrastructure construction, As a result, project costs continue to escalate and potential revenue is delayed.

3. Land Acquisition Issues

Land acquisition is one of the biggest challenges in the KCIP project. Many communities affected by the project have not agreed on compensation amounts or the relocation process. This has led to Construction delays at several sites, Conflicts between the community and the project team, These issues not only slow down the project but also cause significant social impacts

4. High Financial Risks

The KCIP project carries substantial financial risks. This is due to high investment costs and reliance on foreign loans. Additionally The internal rate of return (IRR) is relatively low, The payback period is very long (approximately 30 years), This makes the project less attractive from a purely business perspective, as profits cannot be realized in the short term.

5. Reliance on Foreign Technology and Labor

In its implementation, the KCIP project relies heavily on technology from China. This results in a dependence on foreign experts and systems. Some of the risks that arise include Suboptimal technology transfer, Dependence on foreign expertise for operations and maintenance, If not managed properly, this could hinder domestic technological self-reliance.

6. Uncertainty Regarding Passenger Numbers

The success of the high-speed rail project is highly dependent on passenger numbers. However, there is uncertainty regarding whether passenger targets can be met. Factors influencing this include Relatively high ticket prices, The availability of cheaper alternative modes of transportation, If passenger numbers fall short of targets, project revenue will decline, impacting financial viability.

7. Social and Environmental Impacts

The KCIP project also generates social and environmental impacts. During the construction process, changes in land use and spatial planning occur. The resulting impacts include Land expropriation affecting communities, Environmental disturbances such as pollution and noise, Changes to the ecosystem along the project route, Nevertheless, these impacts can be minimized through proper and sustainable management

Future Business Feasibility of the Indonesia–China High-Speed Rail Project

1. Market Feasibility

From a market perspective, the high-speed rail has excellent prospects. The Jakarta–Bandung route is a high-mobility corridor, serving needs related to work, education, and tourism. In the future, demand is expected to increase due to Population growth, The need for fast and efficient transportation, Changes in people's lifestyles, Additionally, the development of areas around the stations will attract more users. Conclusion Highly market-viable.

2. Financial Feasibility

From a financial perspective, this project still faces challenges. Current conditions Initial investment is very large, Payback period is quite long (long-term), Debt burden remains high. However, in the future Revenue can increase as passenger numbers rise, There is potential for additional revenue from non-ticket businesses (commercial, property, etc.). Feasible in the long term, but financial risks remain high

3. Operational Feasibility

Operationally, high-speed rail offers advantages Modern technology, Fast travel times, High efficiency, Looking ahead Operational systems will become more stable, Service quality can be improved to attract customers. Conclusion Feasible and has the potential for stability.

4. Economic Feasibility

From an economic perspective, this project is highly beneficial for the country. Future benefits Driving regional economic growth, Attracting new investment, Reducing traffic congestion, Increasing productivity. Conclusion Highly economically viable.

5. Social and Environmental Feasibility

From a social perspective Facilitating public mobility, Improving quality of life. From an environmental perspective More environmentally friendly than private vehicles. Conclusion Feasible and has a positive impact

6. Future Risks and Challenges

Factors that could affect feasibility Ticket prices must be affordable for the public, Passenger numbers must remain stable, Competition with other modes of transportation, High operational costs. If not managed properly, this could reduce profits.

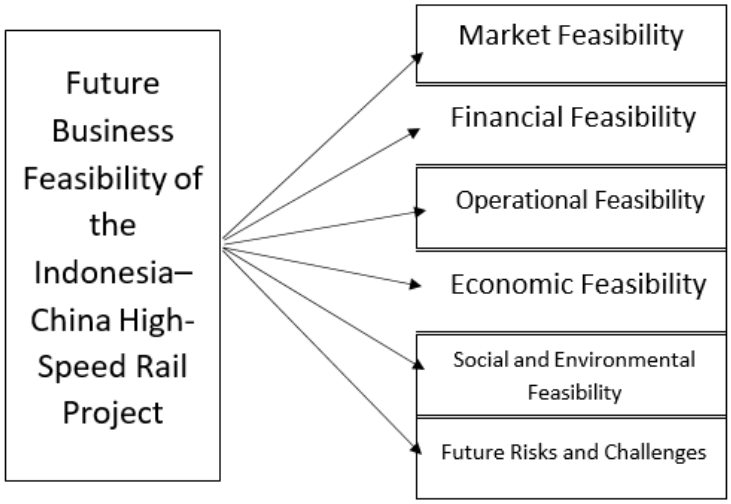

Figure 2. Future Business Feasibility of the Indonesia-China High-Speed Rail Project

Comprehensive Analysis of the Indonesia–China High-Speed Rail Project

The Indonesia–China High-Speed Rail Project is a modern transportation infrastructure project whose primary objective is to improve the efficiency of public mobility between Jakarta and Bandung. The project is managed by PT Kereta Cepat Indonesia China as a form of cooperation between Indonesia and China in the development of high-speed transportation. Overall, this project can be analyzed from various aspects, namely market, technical, financial, economic, as well as social and environmental aspects. From a market perspective, this project has enormous potential because the Jakarta–Bandung route is one of the routes with the highest mobility rates in Indonesia. Many people travel for various purposes, such as work, education, and tourism. The presence of a high-speed train capable of reducing travel time to approximately 40 to 50 minutes represents a highly significant added value. Therefore, from a market perspective, this project can be considered highly viable due to its high demand. From a technical perspective, this project utilizes modern technology meeting international standards, such as specialized tracks, electrical systems, and advanced safety systems. However, during implementation, the project faces various technical challenges, such as difficult geographical conditions, tunnel construction, and the need for complex technology. Nevertheless, the project can still be completed and put into operation, so it can be considered technically feasible despite its high level of complexity. From a financial perspective, this project faces significant challenges. Extremely high investment costs and cost overruns during the construction process are among the primary issues. Additionally, the relatively long payback period makes the project less profitable in the short term. However, in the long term, the project still holds profit potential, particularly if passenger numbers continue to rise and additional revenue streams can be developed.

From an economic perspective, this project has a very positive impact on the economy. High-speed rail can enhance inter-regional connectivity, drive investment growth, and create new job opportunities. Furthermore, the development of areas around the stations can boost local economic activity. Therefore, economically, this project is highly viable and provides long-term benefits for the country. From a social and environmental perspective, this project has both positive and negative impacts. The positive impacts include improved mobility for the public, as well as reduced traffic congestion and vehicle emissions. However, there are also negative impacts, such as land acquisition causing conflicts and environmental disturbances during the construction process. With proper management, these negative impacts can be minimized. Overall, the Indonesia–China High-Speed Rail Project can be deemed viable to implement, particularly when viewed from market, technical, and economic perspectives.

However, from a financial standpoint, this project still faces significant risks and requires a long time to achieve profitability.

1. Impact of the Indonesia–China High-Speed Rail Project on the Economy

The Indonesia–China High-Speed Rail Project is a major infrastructure project that has various impacts on the economy, both directly and indirectly. This project serves not only as a means of transportation but also as a driver of economic growth across various sectors. The impact are :

a. Improved Connectivity and Efficiency
One of the main impacts of this project is the improved connectivity between Jakarta and Bandung. With significantly shorter travel times, public mobility becomes more efficient. This results in Saved travel time, Increased work productivity, Easier business activities, Consequently, economic activities become faster and more efficient.

b. Driving Regional Economic Growth
The high-speed rail opens up opportunities for economic growth in the areas it passes through, particularly around the stations. The impacts are The emergence of new business centers, The growth of the real estate sector, Increased trade activity, Areas that were previously underdeveloped can experience economic growth.

c. Increased Investment
This project attracts investors, both domestic and foreign. The impacts are Inflow of investment capital, Development of industrial and commercial zones, Increased regional economic value, This accelerates regional economic development.

d. Job Creation
During construction and operations, this project creates many jobs. Impact are Reduced unemployment, Increased community income, Promotion of well-being

e. Development of the Tourism Sector
The high-speed train facilitates access for tourists between Jakarta and Bandung. Impact are Increased number of tourists, Growth of tourism businesses, Increased local revenue.

f. Long-Term Transportation Cost Efficiency
Although the initial costs are high, in the long term the high-speed rail can reduce transportation costs. Impact are Reduced use of private vehicles, Lower fuel costs, Reduced traffic congestion.

g. Negative Economic Impacts
In addition to positive impacts, there are also negative impacts, including Debt burden due to high project costs, Risk of losses if passenger numbers fall short of targets, Economic inequality if development is uneven.

Future Development Strategies

Indonesia–China High-Speed Rail Project To ensure the Indonesia–China High-Speed Rail Project continues to grow and remains commercially viable in the future, appropriate and sustainable development strategies are required. These strategies aim to increase passenger numbers, strengthen financial stability, and maximize the economic benefits of the project, among other things :

1. Increasing Passenger Numbers
One of the key strategies is to increase the number of high-speed rail users. Possible initiatives is Offering ticket promotions and discounts, Providing travel packages (tourism or business), Improving comfort and service, The goal is to make the public more interested in using the high-speed rail.

2. Ticket Price Adjustments
Ticket prices must be adjusted to align with the public's purchasing power to remain competitive. Strategies that can be implemented Flexible pricing based on time (peak

and off-peak), Promotions for students or groups, Subscription packages for regular users.

3. Diversifying Revenue Sources
   To avoid relying solely on ticket sales, alternative revenue streams are necessary. Examples Leasing commercial spaces at stations, Advertising and branding, Partnerships with retail and food companies.
4. Developing Areas Around Stations
   Transit-Oriented Development (TOD) is a key strategy. Potential areas for development Shopping centers, Office buildings, Apartments and hotels, This can boost revenue while stimulating the local economy.
5. Integration with Other Modes of Transportation
   High-speed rail must connect with other transportation modes to be more effective. Examples of integration Local trains, Buses and public transit, Online transportation, Facilitating travel from start to final destination.
6. Enhancement of Technology and Human Resources
   To reduce reliance on external parties, the development of local technology and workforce is necessary. Efforts undertaken Workforce training, Technology transfer, Development of self-sustaining operational systems.
7. Enhancement of Promotion and Branding
   Effective promotion will increase public interest. Strategies are Social media campaigns, Collaboration with influencers, Tourism promotion
8. Future Route Expansion
   Developing new routes presents a significant opportunity. Examples Extending routes to other cities, Developing a national high-speed rail network, This will expand the market and increase profits.

CONCLUSION

Conclusion

Based on the discussion regarding the Indonesia–China High-Speed Rail Project, it can be concluded that this project is a modern transportation infrastructure initiative that plays a crucial role in enhancing connectivity between Jakarta and Bandung. The project is capable of reducing travel time, improving public mobility, and driving economic growth in the regions it traverses. Based on the results of the business feasibility analysis, this project is deemed feasible, particularly from market, operational, and economic perspectives. High public mobility and the need for rapid transportation are the primary factors supporting the project's success. Additionally, the economic impacts generated—such as increased investment, job creation, and regional development—indicate that this project offers long-term benefits for the national economy. However, from a financial perspective, the project still faces various challenges, such as high investment costs, cost overruns during construction, and a relatively long payback period. Furthermore, there are risks such as uncertainty regarding passenger numbers and high operational costs. Overall, the Indonesia–China High-Speed Rail Project is better viewed as a national strategic project focused on long-term benefits, rather than merely short-term financial gains. With proper management, this project has great potential to grow and make a positive contribution to Indonesia's development.

Recommendations

Based on the conclusions above, the following recommendations can be made:

The company needs to increase passenger numbers by offering promotions, improving service quality, and implementing more effective marketing strategies. Ticket prices need to be adjusted to align with the public's purchasing power so that the service can reach a wider

user base. There needs to be diversification of revenue sources, such as developing areas around stations, leasing commercial spaces, and collaborating with various parties. The government and the company are expected to enhance technological self-reliance through training and the development of domestic human resources. More efficient financial management is necessary to reduce financial risks and accelerate return on investment. The development of high-speed rail routes in the future should be considered to expand service coverage and increase profit potential.

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