

CHAPTER 7

CONCLUSION AND RECOMMENDATION

7.1 Conclusion

Bus transit in Chiang Mai has failed in the past, the major reasons could be concluded as small coverage area, the poor service, and lack of fund provided by the government. However, the bus transit was good enough to serve the needs that could not be met by minibus or any other means. Bus transit was provided by government as social service, therefore they did not try to make profit. Due to this reason during the economic crisis, the municipal could not bare the losses anymore which caused the service to be terminated.

The co-investment is one of the suitable solutions to ensure the success future while maintain the system as social service. The goal of co-investment is to establish a profitable government enterprise while provide public transit service to serve the people's needs.

This study has provided the guideline for co-investment project on public transportation system. The guideline starts with determine the route for co-investment, estimate the expenses, and form co-investment manner and establish an organization to manage the project. The conclusions are categorized as follow:

7.2 Route Selection

Route is selected from originally 33 minibus routes created by ITSC Chiang Mai University. Only 20 routes are suitable for bus operation regarding the width of the road. From those 20 routes, the selected route must pass all four constrains which are estimated demand, size of investment, needs of passengers, and law and regulation. Estimated demand is the key decision factor in route selection. Demand is estimated through the classic four step model. The four steps are Trip generation, Trip distribution, Modal split, and Trip assignment. The outcome of the model is the estimated demand for each route. Although, the estimated demands are originally for the minibus, the transit users, which about 80% are minibus user, demand for fixed-route and fixed-schedule transit system. Bus transit can serve those needs perfectly and when considering the fare charge of the bus it is cheaper than the minibus's.

From the result of the four-step model and with consideration of other three constrains, Main Route 9 is selected since it has the highest estimated demand, and also when comparing the second highest estimated demand route it passes through more active points.

7.3 Financial Analysis

Cost estimation is divided into 2 periods, before the operation and during the operation. Before operation involve the cost of purchasing fixed assets such as land, buses, and facilities, as well as the construction of facilities like bus stops, bus station, and garage. The cost for pre-operation period also include the salary for management and administration, business associated expenses like travel and contract expenses, and consultant and expert fees.

During the operation costs involve mainly the operation cost which includes fuel cost, labor cost, maintenance cost, administration and management personnel's payment, tax and insurance, and overheads.

The sensitivity analysis shows that, for the proposed to survive, the number of passenger per day must be higher than 2,013 passengers. After comparing with the existing CMB route2, it can be confidently said that the selected route 9 would have number of passenger per day higher than 3,000 passengers. This could mean not only the guarantee of survival of the project but also the profit generation ability of the project.

7.4 The contract agreement of co-investment

Since there is only route to manage, the most suitable way for co-investment is through contractual agreement. The length of the contract is 15 years. The government, the contract provider, is responsible for all the capital cost. The contractor, private investor, is responsible for all operation related expense. The government would get the depreciation cost of buses, building and equipment in return and if the project shows financial strength, in year 6 the government would receive all the profit from advertisement fee. The private investor, in the first 5 years, collect all the profit from the operation. For the next 10 years, if the project is financially strong, the private investor must give the profit from investment to the government.

For the project to be successful, government should provide some benefits to create competitive advantage to the bus transit system. The benefit should give the system advantages over the use of personal transport or at least over other means of non-government public transport system.

The major risks to be considered for the project are the fluctuation in fuel price, the malfunction of buses, and the resistance of minibus. Oil price fluctuation can cause direct impact to the project since the major operation cost is fuel cost. Malfunction of over 2 buses could lead to customer dissatisfaction. There are only 20 buses where 2 of them are spares, if more than 2 buses are out of service, the schedule cannot be kept which could lead to serious customers dissatisfaction problem. The resistance from the minibus is serious risk, if not the most serious risk. Since bus is proved to be the public transit mean that serve best with the current demand of transit users. When bus transit is up and running, there is a chance that the current bus passengers are changing to bus transit. When that happens, the resistance from minibus drivers will start. Even before the system does actually launch, there were series of protests from minibus drivers that caused the launch of City bus to be delayed.

7.5 The disadvantage of the demand estimation

The estimated demand in this thesis is based on the study of Saowapol and Therarattanaket (2004). The estimated demand result is based on a network of 33 routes. The network of route has a major effect of number of passenger since it could create the transfer between routes. Therefore, the estimated number of passenger for route 9 used in this thesis may not be accurate. The actual number of passenger when start operating the bus may be lower than expected since the route cannot provide the connection with any other routes like in the study of Saowapol and Therarattenaket (2004).

7.6 Recommendations

1. To reduce the risk of resistance from minibus drivers, the meeting and discussion should be held to find the solution to cooperate the two systems.
2. One of the ways for cooperation between the two means is the joint service. The number of bus used in peak period and non-peak period is very significant. During the peak period 18 buses are needed, while during the day only 6 is enough. To reduce the number of fleet, hence reduce the investment cost, minibus service is use to join during the peak hour. By the number of minibuses existed today, they can depart from the origin every 1 minutes. The benefits from this systems are, reducing conflict, reducing the investment and operation cost, and increasing the service quality during the peak hour which passenger can be pick up every minute by minibus and every 5 minutes by bus.
3. To encourage people to use public transit, some strategic action plan must be conducted to ensure the propose co-investment project successful operation
4. The duration should be added to the flat rate bus ticket. For example, the fare is flat rate 15 Baht as recommended but it has duration of an hour to use as many as time as the passengers like.
5. To reduce the operation expense, bus hostess can be replaced by the ticket machine on the bus.

7.7 Recommendations for Further Study

1. The cost of the project is very high and to be fair it is unlikely to be profitable. It might be better to use minibus instead of bus in the co-investment project. However, the minibus must serve the current transit passengers' needs.
2. If decided to continue with the bus transit project, further study is recommended on finding the solution to relief the conflict between bus transit system and minibus system.
3. Most of the public transportation projects fail to make profit, marketing strategies maybe the key to solve the problem. Further study on marketing strategy of public transportation project to ensure profitable operation while maintain a social service is recommended.
4. There are still number of potential routes to operate bus transit on. Therefore, further study should be done on other routes to invest on.