SOME ASPECTS OF AIRPORT SYSTEM PLANNING IN MALAYSIA

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SUMMARY

Malaysia currently has 21 air carrier airports. Few airports are in the situation where urgent attention are required to cope with the rapid growth in the demand. The aviation planner, the airport management, and the government need to know the implication of their plans, recomendations and decisions on the provision of airports. A systematic approach based on quantitative estimates are required to arrive at the desired transportation system.

Air transportation system need to take into account of the interest of three main components in the system i.e. the airline, the airport and the passengers. The accomplishment of the planned system need not only be measured by the level of service are being provided to the passengers but also whether they are at the minimal cost to the airline and the airport operators. This project has the following aims and objectives:

-to give an insight into the major determinants of airport system planning;

-to develope few scenarios of the possible role of each individual airport in the system and scenarios of the whole airport system and to look at their consequence.

-to use passenger route choice model (Ghobrial A. & Kanafani.A.) in the assessment of the effect of the attributes to the total system in the scenarios.

Passenger traffic data used was gatered from the Department Of Civil Aviation of Malaysia Annual Statistics and Malaysian Airline System flight schedule and Air Fare. These was used to assign passengers to take various likely route in each scenario.

The utility function in the passenger route choice model which take into account of the attributes such as air fares, travel time, aircraft size, connectivity and frequency were used in the probability function. This was used to compare the probability of passenger taking the route either flight via the hub or the direct flight provided between the two city-pairs.

The results suggest the followings:

-the current practice by the airline currently was not structured for the hub-and-spoke operations.

-the main dominant attribute that can determine the passengers to take the hub-and-spoke service was the air fare.

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CHAPTER 1

1.0 INTRODUCTION

1.1 Requirement

Airport system planning needs to take into consideration all the interacting factors which are quite complex in nature, it requires a wide range of planning and engineering to incorporate the economic and social factors into technical analysis.

One aspect of airport system planning is to determine the appropriate air transport network suitable to serve the traffic demand, be it in the form of hub-and-spoke configuration with highly centralised national system or to the other extreme of providing extensive point-to-point air service in which the traffic is extensively decentralised.

1.2 The aim and objective of the project

The aim of this thesis is to develop various possible scenario on the role of an individual airport in Malaysia and a multiplicity of scenarios in the major scenario. The consequence of this system of scenarios will then to be look at by using the passenger route choice model that have been developed elsewhere. Currently the national airline practice

is to provide any sort of service whenever there is enough demand between the two city-pairs which is more towards a decentralised system. However, with the trend of hub-and-spoke operation proven to be successful elsewhere, it is also the aim of this project to determine what route structure and what attributes in the route choice model can be varied to make a similar system work.

1.3 Limitation and Assumption

In this project, concentration will be given to the domestic flights among the twenty one regional airports. Assumption is made here that the passenger route choice model to be adopted is universally applicable, however the outline theory and methodology to arrive at the model will be discussed in order for the same to be recalibrated in the future for the country.