SUMMARY

Project cost estimation is one of the Project Manager's important responsibilities. This dissertation is about project budget efficiency of an airline's interior fit-work projects being carried out locally and overseas. The airline business is very complex because it cuts across human, business, safety and entertainment needs. To cater to these fast changing demands and the competitiveness of the airline business, our national airline, Singapore Airlines Limited (SIA) has to procure or lease many properties all over the world from a short term to long term basis to ensure their presence in the different countries. These call for a specific interior fit-out work to be carried out for these new premises and buildings so that a consistent image of SIA can be achieved.

The objective of this dissertation is to determine the situation of project budget efficiencies through the study of cost over-run and over-estimation problems of projects managed by SIA Properties Pte Ltd (SIAP), the property arm of SIA between 1988 and 1998. The study entails statistical analysis of some cost data from past projects and study of the company process in relation to cost estimation of the projects. The reasons affecting the level of accuracy of cost estimation are analysed. Some new company procedures are proposed by the researcher to facilitate the commitment of cost estimation for future projects so as to reduce the problem of budget inefficiency to a minimum.

The statistical methods of measurement used to measure the level of accuracy of cost estimation are namely: Range, Mean Error, Mean Deviation and Coefficient of Variation. A total sample size of 136 observations from all over the world is used in the study. A detailed analysis is being carried out on the projects to study the state of Cost Estimation Error in each of the 7 regions for the project completion year, nature of work, usage type and project actual value.

Multiple Regression analysis is used to test the strength of correlation between the Cost Estimation Error and the other factors provided by the data of the sample projects for the different regions. A multi-factor ANOVA test is further used to determine the possible effect of
the various factors on the Error. A comparison of unit rate is also done for the 11 years and for each region to see the differences between them.

Assessment of the project cost estimation performance is done by comparing the results obtained with measurements achieved by a past researcher. More importantly, the assessment of the results is compared with the SIA’s allowable maximum cost over-run of 5% before the request for additional funding. However, there are 10 other factors identified by the researcher that have in one way or another contributed to the difficulty in deriving accurate cost estimation of the projects, especially those located outside Singapore.

The study concludes that the state of budget inefficiency of projects completed between 1988 and 1998 is high and is greater than 5%. The continual practice of the existing way will only lead to further budget inefficiency. The result also noted that the budget inefficiency is mainly caused by project cost over-estimation and not cost over-run. This is largely due to Project Executive’s perceived uncertainty and therefore, buffers upon buffers are built into the cost plan at the early stage of the project. There are recommendations made to reduce the project budget inefficiency so as to provide a better service to SIA and in return, allowing more projects to take off and creating a win-win solution for both SIA and SIAP.