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# BUSINESS PROCESS RE-ENGINEERING IN A LOGISTIC OPERATION

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(06/8106)

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## DECLARATION

"I declare that this is my own work and this thesis does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any University or other institute of higher learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text"

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# ABSTRACT

The development of the industrial age has seen a remarkable growth which has led to competition not of products but of the supply chains. A related problem such organisations face is the difficulty in identifying the most appropriate way of managing the operation in a cost effective and efficient for the organisation as a whole. The better way to solve such kinds of problems, is the use of Operations Research (OR) techniques. The purpose of this project is to use statistical techniques to solve operational problems and further optimise the model. Here an operational environment is used to apply this learning with the intension of gaining benefits in terms of cost savings and service improvement.

Here two operating models (model A and model B) were studied in detail study, its pros and cons as well as problems that may arise were identified. Since the model needed to be cost effective, the main cost elements were identified and their impacts were quantified base on the past information and finally forecast figures were estimated. Based on all the key parameters, the final impacts of the models were derived along with the optimum inventory model and the feasibility of the model is also evaluated.

Finally, the outcomes were evaluated for all the cost elements using the actual data of the two models and the best model has been concluded to be Model B since it is cost effective by 6.5% and also service oriented. At this point, deviations of cost due to inefficiencies in the operation were also identified where the main cause is due to poor inventory management. Therefore, could conclude that proper inventory management is essential in order to optimise model B and for it to be feasible.

The inefficiencies were proposed to be solved as future projects. The difficulties faced during the study and limitations are also been discussed.

Finally, recommendations are provided such as identifying a better location to relocate the Regional DC (Distribution Centre) and to develop an optimum distribution network to reduce the distribution cost.

*To My Parents*

*With Love*

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# LIST OF ABBREVIATIONS

| Abbreviation | Description |
|---|---|
| 3PL | 3rd Party Logistic Provider |
| CBM | Cubic Meters |
| CDC | Central Distribution Centre |
| DC | Distribution Centre |
| EBQ | Economic Batch Quantity |
| EOQ | Economic Order Quantity |
| FG | Finished Goods |
| FMCG | Fast Moving Consumer Goods |
| RDC | Regional Distribution Centre |
| ROL | Re-order level |
| SKU | Stock Keeping Unit |
| Std Dev | Standard Deviation |