Modeling New Zealand's Log's Supply Chain:

A Two-Tiered Modeling Approach of Logistical Network Resilience

A thesis presented in partial fulfillment of the requirement for the degree

of

Master of Supply Chain Management

At Massey University, Palmerston North, New Zealand

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2017

Abstract

The global characteristic of today's market raise concerns regarding the compatibility between the different nodes within a supply chain. Political, economic, infrastructural, cultural and other risks should be considered when operating globally. Tsunamis, strikes, hurricanes, bio-security threats and wars and their impact on the logistical networks are all examples of major events that might happen in a certain place and affect other supply chain members in other parts of the world. This type of events and their disastrous consequences show the importance of being ready and having a contingency plan for such events to minimize their effect on the companies' supply chains

The objective of this research is to provide the building bricks of a tool that functions as a decision support system to help practitioners in the log industry deciding their course of action spontaneously in response to sudden major events that might disrupt their supply chains. The resulting decision support system and recommendations of this research aim at improving the resilience of the log supply chain in New Zealand and the logistical network in general. Hopefully, the resulting DSS will be capable of producing recommendations that would increase the profitability of logs supply chain and make it more reliable and resilient under multiple disruption scenarios.

The proposed decision-making approach and the suggested improvements in this research provide an in-depth insight for policy makers and practitioners operating in the logistical network in New Zealand. This research provides a solid analytical approach for decision makers to direct their investments in the corresponding part of the supply chain that they are operating in to make the biggest possible impact of their investment on the supply chain through put. The model can be employed to generate improvement recommendations for different regions and decision makers can prioritize the presented recommendations according to their strategic goals.

Acknowledgments

First of all Alhamdulillah for making my Journey easy during my whole life. I would like to thank my supervisor Paul Childerhouse, who opened my eye to the importance of having a noble objective as a part of my career objective and who has the best way to provide insightful feedback and guidance to improve any document in the world. My co supervisor Carel Bezuidenhout whose selfless time, optimism and appreciation of what I did gave me a lot of confidence in my abilities. Special thanks for the Scion team and the VCO team in particular for helping in data collection and analysis. I would like to particularly mention and thank Ginny Christians for the tremendous efforts, tme and patience she put in helping me building the models. I want also to extend my thanks to my friend Aden Farreh for the technical support he provided in building the linear program. I would also like to thank Mr. Jeremy Christmas, Mr. James Drummond, and Mr. Steve Chapple from the C3 company for the insights they have provided. I want also to extend my sincerest thanks to my mom Eman Albashiti, dad Zuhair Alaqqad, family and friends for their continuous support. I would also like to thank Mr. Jamie Hooper, Mr. Dave Broderick , Mrs. Reilly Dianne and all the International student office team at Massey University Palmerston north Campus for their continuous support and for making my stay here enjoyable , I would like to thank Massey Muslim society for the great times we had and the sense of home they provide. I would also like to thank Mrs. Sandy Shillington the registrar of Massey University for her support in accommodating international students in general and Massey Muslim Society in particular. Last but not least, I would like to thank the people of New Zealand represented by the Ministry of Foreign affairs for the scholarship that supported me to be here and pursue my degree.

Contents

List of Figures

List of Tables