

**HAPPYFEET -
A FRAMEWORK ADAPTING RE-DISTRIBUTED
MANUFACTURING (RdM) MODEL TO FACILITATE SHOE
CUSTOMIZATION/ PERSONALIZATION.**

KANISHKA DE SILVA

A dissertation submitted in partial fulfilment of the requirement for
Bachelor of Science (Honours) degree in Business Information Systems

**Department of Computing
Informatics Institute of Technology, Sri Lanka
In collaboration with
University of Westminster, UK**

2020

Abstract

Manufacturing of products for the purpose of human consumption has been gone through many phases throughout the year. The current manufacturing process consists of mass-production of goods. Products such as electronics, motor vehicles, apparel etc. have been adhered to a pre-defined set of standardization measurements to accumulate to a benchmark Large Scale Manufacturers has set. Customer centric product customization is out of the scope for market dominated Large Scale Manufactures due to deviations in its current adoption of take-make-dispose method. However, Small and Medium Scale Enterprises has the ability to cater the need but lacks in visibility. Moreover, consumers prone to consume customized products faces the problem of how much effort has to put in discovering the producer. Adapting to Re-distributed Manufacturing (RdM) model allows the SME manufacturers to connect with its demographic consumers for providing customization/ personalization of product.

This research exploits the problems consumers encounter in purchasing customized footwear & problems SME producers encounter in terms of lack of visibility. Consequently, this research aims to analyze, design and implement a solution to cater footwear customization ability for consumer, as well as exploiting marketing opportunity for SME producers. Based on the background of the problem existence and the potential opportunity to align Re-distributed Manufacturing (RdM) framework to local SME manufacturing process, a web based shoe customization tool called “**HappyFeet**” has been developed and deployed. This tool enables the consumer to design their own footwear virtually and directly communicate to the vast network of producers. By doing so, customer will gain maximum satisfaction for the intended product and producer will gain visibility and recognition.

As per the research done, it has been found that this customer centric service has not been properly utilized in Sri Lanka. Furthermore, showing evidence as to the adherence for the manual process. Both concept as well as developed prototype solution was rigorously evaluated by experts & users to validate the fulfillment of the solution provided and considered valuable to the current SME footwear manufacturing market. It was also validated that the concept **RdM** can be further utilized for other target markets.

Keywords: Product Customization/ personalization, Re-distributed Manufacturing model, Small and Medium scale Enterprise issues, Footwear customization