

A Peer to Peer Supply Chain Network

by

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Declaration

I, Bradley Charles Goldsmith, certify that this thesis contains no material which has been accepted for the award of any other degrees or diplomas in any tertiary institution, and that, to the best of my knowledge and belief, this thesis contains no material previously published or written by another person except where due reference is made in the text of this thesis.

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Abstract

Many papers have speculated on the possibility of applying peer-to-peer networking concepts to networks that exist in the physical world such as financial markets, business or personal communication and ad hoc networking. One such application that has been discussed in the literature has been the application of peer-to-peer to corporate supply chains to provide a flexible communication medium that may overcome some classical problems in supply chain management.

This thesis presents the design, development and evaluation of a system which implements a peer-to-peer supply chain system. A general, flexible peer-to-peer network was developed which serves as a foundation to build peer-to-peer data swapping applications on top of. It provides simple network management, searching and data swapping services which form the basis of many peer-to-peer systems. Using the developed framework, a supply chain focussed application was built to test the feasibility of applying peer-to-peer networking to supply chain management.

Results and discussion are presented of a scenario analysis which yielded positive results. Several future directions for research in this area are also discussed.

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