Introduction
The objective of supply chain management is to focus on improving the efficiency of the supply chain as a whole from source to customer with particular emphasis on the interfaces of the different operations in the supply chain. The belief is that by partners in the supply chain all focusing on the same goals (eg deliver goods to the customer at the overall optimum quality, lowest cost and/or fastest rate); they will streamline their processes by eliminating duplication, improving communications and maybe even adjusting their operations to better serve the greater good of the supply chain. This may mean that some partners may incur greater costs or require higher investments, but a collaborative supply chain will ensure all partners share appropriately in the overall gains made. A successful supply chain requires a significant amount of trust between partners for them to collaborate in such a transparent manner. It is a cultural challenge to introduce these concepts into a business environment where adversarial relationships between supply chain entities have traditionally dominated.

The work proposed will be focussing on the supply chain of coal from the coal mines in the Hunter Valley region in New South Wales, Australia, via trucks or rail to the port in Newcastle (Port Waratah Coal Services, PWCS), where it is exported to customers world wide. This work will focus on the relationships between the supply chain partners and investigate the application of agency-theory and other theories to model the behaviour of the partners in the supply chain.

The Hunter Valley Coal Chain
The partners in the supply chain are the 30 coal mines in the region, the transport services providers that transport the coal from the mines to the port (truck and rail), the government body that owns the rail infrastructure and the port operations that stockpile and then load the coal onto the ships to be delivered to the customers.

In 2003, a cooperative logistics planning team, the Hunter Valley Coal Chain (HVCC), the first of its kind in Australia, was established by members of the various corporate and government organisations involved in the transportation of the coal to the port.

Even though improvements have been achieved since the establishment of the HVCC, continued demand for greater throughput at the port still remains. The coal producers are paying millions of dollars in demurrage costs due to ships having to queue and wait for their turn to be loaded. The complicating factors are the many organisations involved and the complex ownership and business relationships between the entities. To exacerbate the problem, small coal producers are emerging attempting to cash in on the current business environment and these operators also need access to the existing port facilities.

A recent development to this supply chain is a new business structure to better manage the capacity constraints. As of 2010, PWCS will enter into long-term contracts with the coal producers and these contracts will in turn support the investment required to meet the projected demand increase. Plans are already in place that could potentially double the capacity of the port. The HVCC will be established as a stand alone company, called the HVCCC (Hunter Valley Coal Chain Coordinator), and will continue to manage the day-to-day scheduling of trains and ships as well as support long-term planning of infrastructure projects to increase capacity. They will be responsible for ensuring all contract obligations by PWCS are met.

Agency-Theory and other applicable Organisational Theories
The aim of this research will be to apply relevant organisational theories to the above case study. In particular, Agency Theory and Social Exchange Theory are relevant to the case but other theoretical approaches will also be investigated.

Agency theory relates to business relationships that consist of a “principal” and an “agent” who are engaged in cooperative behaviour, but have differing power, goals and attitudes toward risk. The mechanism for controlling the relationship is the contract between the principal and the agent and, depending on the situation, the contract will be behaviour-based or outcome-based. The heart of principal-agent theory is the trade-off between the cost of measuring behaviour and the cost of measuring outcomes and transferring risk to the agent (Eisenhardt 1989).

Social Exchange Theory on the other hand focuses on the interactive relationships between partners (Qiu 2007) and considers material as well as non-material exchanges. Reciprocity of explicit and implicit rewards in Social Exchange Theory forms the basis for fairness research. The 3 types of fairness provide a good platform for analysing the relationships in the HVCC: Distributive (input v output), Procedural (impartiality, consistency and refutability) and Interactive (informal interactions, decision justifications and truthfulness) (Qiu 2007). Griffith et al (2006) found how perceived procedural and distributive justice improved the performance of a distributor in a supply chain context.

Research into Supply Chain Collaboration may also be applicable to the HVCCC. Extensive case study research in other industries into defining collaboration as a function of levels of information sharing, decision synchronisation and incentive alignment between supply chain partners has proven to be related to supply chain performance in terms of fulfilment, inventory and supply chain responsiveness (Simatupang and Sridharan 2005).

Furthermore, Social Network Analysis (Carter, Ellram et al. 2007) might prove a suitable method to determine the dynamics of the inter-actions between the actors in the coal chain.

Research Question
The purpose of this study will be to understand and explain the nature of the relationships that exist in the Hunter Valley Coal Chain and how they relate to business outcomes and, in doing so, answer the following question:

“Does Agency behaviour affect the performance of the Hunter Valley Coal Chain?”

The Methodology
The method used to analyse the relationships is using a Survey and conducting in-depth interviews to gather as much information as possible. The methodology defined by Yin (2009) and Cavana (2001) for case study research will be utilised.

Outline of methodology:
1. Literature study
2. Construct Hypotheses
3. Prepare Survey / Interview
4. Conduct pilot Survey / interview
5. Refine Survey / Interview
6. Conduct remaining interviews
7. Analyse and verify material
8. Test Hypotheses

References


