# Chapter 7
# Categorization of Losses across Supply Chains:
## Cases of Manufacturing Firms

**Priyanka Singh**
*Jet Airways Limited, India*

**Faraz Syed**
*Shri Shankaracharya Group of Institutions, India*

**Geetika Sinha**
*ICICI Lombard, India*

## ABSTRACT

*Supply chain loss can occur during transit and storage, leading to unnecessary inefficiencies. The literature details much of the traditional losses, albeit descriptively and for developed economies. Through several case studies conducted on the Indian manufacturers and retailers, this case study discusses the losses specific to supply chains operating in developing economies that are difficult to control and prevent even with contemporary enabling technologies such as RFID. This chapter also suggests some possible measures to counter such losses, so as to increase the efficiency and enhance the resilience of the supply chain. An understanding of these losses and their possible mitigation through improved flows, reduced inventory, and reduced manpower, can equip firms for better supply chain risk and productivity management.*

## INTRODUCTION

Losses are quite common during transit and can occur due to various reasons including theft, tampering and spillage. The type of loss also depends upon the nature of product. Bulk products are more prone to losses than packaged products. Similarly, the type of transport used also determines the losses that would occur in the supply chain. Traditionally, firms allow some tolerance limit for such losses. However, any loss during the supply chain is still a loss. This is truer with increased competition and emphasis on all around cost-cutting. Lets us consider the example of coal transport. If there are 100 trucks supplying coal to

DOI: 10.4018/978-1-4666-1945-6.ch007

a steel plant everyday and each truck can deliver 10 tonnes of coal. A tolerance limit of 1% means there would be a loss of 10 ton of coal every day. Considering the prevailing price of $50 per ton of coal, the total loss would be around $500 everyday and $0.15 million in terms of annual cost. This is a crude estimate.

Different supply chains are prone to different types of losses. For example, supply chains of perishable goods are prone to losses due to perishability of food products. Bulk products are prone to adulteration with lower quality bulk material as well as theft and spillage. Packaged goods are prone to damage during transit and sometimes intentional tampering is done, such as in crockery so that it will be sold at substantially lower prices.

Here, two case studies are reported which were conducted to identify these supply chain losses.

## CASE 1: LOSSES IN SUPPLY CHAIN OF BULK PRODUCTS: COAL

The Indian energy sector is largely dependent on coal as the prime source of energy. After the Indian independence, a great need of coal production was felt in first five year plan. In 1951 a working party for the coal industry was setup, which suggested the amalgamation of small and fragmented producing units. This led to the idea of a unified coal sector [1]. Coal is an essential ingredient in various industries such as steel industry, thermal power plants, hydro-electric power plants, manufacturing industry, and cement industry.

### Coal Mining in India

In the pre-nationalized era coal mining was controlled by private owners, and suffered from their lack of interest in scientific methods, unhealthy mining practices and sole motive of profiting. The miner lived in sub standard conditions as well. In 1956, the National Coal Development Corporation was formed with 11 collieries with the task of exploring new coalfields and expediting development of new coal mines[1]. The objective of nationalization was the conservation of the scarce coal resources, particularly coking coal. Later the name of NCDC was changed to Coal India Limited (CIL). Coal India Limited is a Schedule 'A' 'Navratna' Public Sector Undertaking under Ministry of Coal, Government of India, with Headquarters in Kolkata, West Bengal1. CIL is the single largest coal producing company in the world and the largest corporate employer in the country with manpower of 409,332 (as on 1 July 2009). With proven coal reserves of 105.82 Billion Tonnes out of total reserves of 267 Billion Tonnes (as on 1 April 2009) Coal India plays a pivotal role in Indian energy scenario. The Mission of Coal India Limited is to produce the planned quantity of coal, efficiently and economically with due regard to safety, conservation and quality[2]. Coal India is a holding company with seven wholly owned coal producing subsidiary companies and one mine planning & Consultancy Company. It encompasses the whole gamut of identification of coal reserves, detailed exploration followed by design and implementation and optimizing operations for coal extraction in its mines[2]. The producing companies are Eastern Coalfields Limited (ECL), Sanctoria, West Bengal; Bharat Coking Coal Limited (BCCL), Dhanbad, Jharkhand; Central Coalfields Limited (CCL), Ranchi, Jharkhand; South Eastern Coalfields Limited (SECL), Chattisgarh; Western Coalfields Limited (WCL), Nagpur, Maharashtra; Northern Coalfields Limited (NCL), Singrauli, Madhya Pradesh; and Mahanadi Coalfields Limtied (MCL), Sambalpur, Orissa; The consultancy company is Central Mine Planning and Design Institute Limited (CMPDIL), Ranchi, Jharkhand. North Eastern Coalfields (NEC) a small coal producing unit operating in Margherita, Assam is under direct operational control of CIL.