

# Chapter 11

## Managing Cost of Quality in Supply Chains: Arctic North Inc., Montreal Case Study

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### ABSTRACT

*The purpose of this case study is to analyze the cost of quality (COQ) in the supply chain process at Arctic North Inc., one of the winter jackets manufacturers in Montreal, Canada. In addition to the case study, some proposed solutions and recommendations will be chosen based on the studied performance of the company. Over the past decades, quality is becoming more and more a key factor in customers' expectations. Organizations and businesses around the world are very interested in applying methodologies and techniques to reach higher quality levels since this will distinguish them from other competitors in the market. Furthermore, measuring the COQ in an organization is very important in order to be able to identify the problem of poor quality, quantify it, and analyze its causes to be able to solve it.*

### ORGANIZATION BACKGROUND

Not only specialized in winter jackets but also winter accessories, Arctic North products are sold throughout the globe. Arctic North brand is designed and manufactured in Canada, following a philosophy based on the design, comfort, Canadian entrepreneurship, and providing the best customer service.

### INTRODUCTION

Over the past decades, quality is developing more and more where it became a critical factor in customers' expectations. Organizations and businesses around the world are very interested in applying methodologies and techniques to reach higher quality levels since this will distinguish them from other

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competitors in the market. Furthermore, measuring the COQ in an organization is very important to be able to identify the problem of poor quality, quantify it, and analyze its causes to be able to solve it.

Nowadays, companies and organizations are more and more concerned about quality in either products or services. Experts and professors in the Quality field agreed that a decent quality would lead to better financial returns, sometimes in long terms, but finally, the goal of any organization will be reached. A decent quality means reducing waste, thus decreasing costs. From that point, we can notice the relation between quality and financial returns, whereby reaching high-quality levels, we are reducing waste, then reducing cost, and everything that is saved can be considered as a profit. Moreover, quality can be defined in many ways; one of these ways is customer satisfaction. Then, we can notice that due to the high customers' expectations, and because of the competition in any specific field, organizations are caring more about the quality of their products or services. On the other hand, supply chain management is also considered as a principal key in any organization success, where good management can result in making the entire process under control, assuring good quality, and reducing errors and failures.

When talking about Quality, we should remember the importance of the cost of quality (COQ). COQ is usually dedicated to poor quality; then, it is considered the cost of preventing poor quality. This prevention cost is not a waste but an investment that will result in reaching the main organization goals that we already mentioned: high-quality levels and better financial returns.

In Canada, due to the low temperature during winter, every individual needs a winter jacket. One of the global companies that manufacture winter jackets is the Arctic North. This case study aims to analyze the cost of quality in the Arctic North Incorporation supply chain.

In this case study, firstly a brief review of the cost of quality history has been done. Besides, the two models used in COQ has been explained. After, the importance of measuring the cost of quality has also been explained.

Secondly, an overview of the supply chain process at Arctic North has been developed including product development and its importance, managing demands, and the supply chain management process with its different stages.

Thirdly, the cost of quality at Arctic North has been studied with the application of the PAF model. Also, solutions concerning different decisions or actions related to COQ has been proposed based on the stages or activities that have been found a week or in need of improvement in the different supply chain stages.

Finally, a conclusion about this case study has been conducted including the key points, and possible future work is discussed.

## **Literature Review on Cost of Quality**

Juran (1951) was the first to develop the concept of COQ. In the first edition of his book "Juran's Quality Control Handbook," Juran mentioned the importance of measuring the COQ and how this will impact the decisions positively about the solutions that should be implemented. At first, the COQ concept was applied in manufacturing industries, especially in Japan, where the Japanese Union of Scientists and Engineers (JUSE) was attracted to his book.

In 1956, Armand Feigenbaum developed Juran's ideas and proposed the concept of "Total Quality Control," later known as "Total Quality Management" (TQM). Regarding COQ, he mentioned that the COQ is used to measure the quality control activities.

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