

Chapter 16

The Concept of Sharing Risks: Warranty

ABSTRACT

This chapter introduces the readers with the concept of sharing risk. A warranty contract is mutually adopted for the distribution of the negative outcome of a malfunctioning product affecting few among the entire population of the product's users. The warranty as a business practice has legal aspects, as the warranty is a form of contract, and also uses mathematical modeling based on evaluation of the probability of malfunctioning of the product over its lifetime. Misinforming added a new aspect on the risk in acquiring new products – the risk that the product doesn't behave as assumed by the client at the time of purchasing. The warranty of misinforming is a form to mitigate the risk of dissatisfaction by sharing the cost among the clients' population.

INTRODUCTION

Risk sharing is a technique to mitigate negative outcomes result of occurring the hazard covered by the warranty contract. The cost is spread to all customers, with the assumption that the hazard will happen to only a few of them. The warranty is an adopted policy to share the cost of risk of failure of a product purchased by some of the customers among all who had obtained the same product. In this way the share of the cost is included in the product's price and paid by every one of the customers. The assessment of likelihood of hazard and the cost to cover the damage it creates, is essential to define the warranty parameters, including the share of the product price dedicated to covering warranty claims.

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This chapter addresses warranties offered to cover the two types of risks associated with the two types of hazards, the risk of malfunctioning of a product and the risk of misinforming. The probability for the first one is quantified by the product's reliability. This is the risk of malfunctioning of the product during a given period. The second risk is a function of success or failure that may occur during communication when a customer decides whether to buy or not the product. This is the risk of misinforming. Both are subject to warranty contracts. This chapter introduces the relationship between the two risks and product warranty contracts from the customer's and producer's viewpoint. The purposes, legalities and types of warranties are briefly presented, followed by a summary of mathematical models and concepts for quantifying the financial implications of warranties of malfunctioning. Part 2 of the book is dedicated to models and approaches to quantify the risk of misinforming and is not detailed here. The policy to define product warranty to address these risks is becoming important and represents a complex managerial problem, especially in indirect sells.

The success of a business deal, involving two parties, a seller, and a buyer, depends on various factors, which can be divided into two major groups. The first group consists of factors, which are properties of the environment in which the seller-buyer relationship takes place, such as IT, logistic, financial infrastructures, government regulations, etc. The second group consists of factors, which are properties of the interpersonal relationship between the two parties, such as efficiency and effectiveness of the communication process, trust and confidence, content, and acceptance of the exchanged messages, etc.

A product's warranty, as a risk sharing mechanism, affects the business transactions in two aspects: firstly, by providing a legal frame of the deal, and secondly, by enhancing the trust between the parties. The two sources of risk that warranty covers are:

- the risk of malfunctioning of the product and
- the risk of making a wrong purchase decision while buying the product caused by misinterpreting or misunderstanding the usability of the product as described in the advertising message.

The first type of warranty is well represented by the slogan "if the product fails – free of charge repair or replacement", whereas the second type of warranty is summarized by "if not fully satisfied – money back guaranteed". The risk of malfunctioning of the product and related warranty modeling is well represented in the literature. At the same time, recently, due to the increased volume of indirect commerce, the impact of the risk of misinforming on the business transactions has been extensively considered, including developing and launching regulations. This

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