Chapter 17
Assessment of Quality of Warranty Policy

ABSTRACT

The two forms of warranty contracts, introduced in the previous chapter, increase the complexity of decisions the producers need to make in offering risk-sharing contracts. The considered risk is composite and requires assessment of parameters to offer a meaningful and feasible warranty contract. The chapter introduces the structure of composite warranty policy and by referring to the measures introduced in the second part of the book proposes a possible way to target clients by combining the two forms of warranty. The proposed measure of policy's "quality" allows to build a rational solution.

INTRODUCTION

Let us recall that product warranty is used by the manufacturers/vendors as a mechanism to share the risks associated with the uncertainty of the product performance with their customers. Nowadays warranty is one of the product's attributes and it is used also as a competing tool on the marketplace. Appropriately assigned product warranty could significantly stimulate the sale process and positively impact the producer's profit. At the same time, the warranty servicing cost should be considered, because if it is high enough, warranty coverage could lead to considerable losses.

The "quality" of a warranty policy is an integral measure, based on the balance between the two types of warranty – the warranty of malfunctioning and warranty of misinforming – as discussed in the previous section. This measure is represented in terms of the length of the warranty coverage, which is the main one-dimensional

warranty parameter. The period of coverage is the time the client is allowed to file a claim and to get compensation. A possible approach what represents the "best" quality warranty policy is discussed as well as how to choose one in different contexts.

The parameters of the two warranty contracts are "times". Here, by "time" we mean any measure of the warranty coverage, not necessarily the calendar time. For example, in the automobile industry, the warranty coverage is identified not only by the vehicle's age, but accounts also for the accumulated mileage, i.e., "time" could by the age of the vehicle, or it could be the accumulated mileage:

- warranty of malfunctioning – it is related to product's failure to perform the functions as specified in its description for a predetermined (warranty) period of time $t^R=[0,t^R]$, which usually starts right after the sale. The length (size) of the warranty period is usually closely related to reliability and quality of the product.
- warranty of misinforming – it is related to a failure in the communication process during the course of the product sale, which leads to customers being misinformed regarding the product's features and scope of usage. The warranty of misinforming shares the risk of misinforming for a period of time $t^M=[0,t^M]$, during which the customers are protected against misinforming, i.e., during this period they can return the product for full reimbursement.

Quantifying the risks of malfunctioning of the products is relatively well studied; see the previous chapter. It uses models, based on information obtained from reliability tests, quality control or other activities carried out by the producer to study product's performance measures and the accuracy of this assessment is entirely under the control of the producer and the assigned warranty parameter fully reflect the objectives of the warrantor. The producer may assess with needed precision the expected probability of the product to fail, as well as the cost associated with every type of failures. In this way, the producer may calculate the expected warranty cost and how this cost will be spread over the period of warranty coverage.

On the other hand, measuring the risk of misinforming is related to failures in communication processes. It is not under the control of either of the two parties involved in the communication and its evaluation requires different approaches and techniques for collecting and processing data. The primary data source for evaluating the risk of misinforming is the customer's feedback on their satisfaction with the performance and suitability of the product. Part 2 is dedicated to present approaches to evaluate the likelihood of misinforming.

This chapter explores findings made and published in Christozov D., Chukova S. & Mateev P. (2010).

12 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/chapter/assessment-of-quality-of-warranty-policy/338757

Related Content

Sources of Institutional Capability for Innovation in China's Catching up Economy: An Explorative Study
Mark Greeven (2014). *Quality Innovation: Knowledge, Theory, and Practices (pp. 406-417).*
www.irma-international.org/chapter/sources-of-institutional-capability-for-innovation-in-chinas-catching-up-economy/96667

Qualtiy Measures and the Information Consumer
Mikhaila S.E. Burgess, W. Alex Grayand Nick J. Fiddium (2007). *Challenges of Managing Information Quality in Service Organizations (pp. 213-242).*
www.irma-international.org/chapter/qualtiy-measures-information-consumer/6549

An Algebraic Approach to Data Quality Metrics for Entity Resolution over Large Datasets
John Talburt, Richard Wang, Kimberly Hessand Emily Kuo (2007). *Information Quality Management: Theory and Applications (pp. 1-22).*
www.irma-international.org/chapter/algebraic-approach-data-quality-metrics/23022

The Role of Knowledge Sharing on Organisational Innovation: An Integrated Framework
Kijpokin Kasemsap (2014). *Quality Innovation: Knowledge, Theory, and Practices (pp. 247-271).*
www.irma-international.org/chapter/the-role-of-knowledge-sharing-on-organisational-innovation/96658

Management of Data Streams for Large-Scale Data Mining
Jon R. Wright, Gregg T. Vesonderand Tamraparni Dasu (2007). *Challenges of Managing Information Quality in Service Organizations (pp. 136-153).*
www.irma-international.org/chapter/management-data-streams-large-scale/6546