

Chapter 9

The Risk of Misinforming for Competing Messages

ABSTRACT

This chapter makes a next step toward developing the model for evaluating the risk of misinforming in more realistic settings. The market case, described by 1:N topology, explored in the first chapters of this part of the book, is valid only in a monopoly dominated trading environment. The market is described typically with M:N communication topology. This chapter extends the model to the case of 2:N – the case of assessment of risk of wrong purchase decision when there are two competing products. As above the stress is on the design of a survey that may reveal clients' attitude.

INTRODUCTION

This chapter extends previous studies on quantifying the risk of misinforming by introducing models, which allow measuring the likelihood of the risk of misinforming in case of competing messages. The example, as in the previous chapters, is to make a decision for purchasing a product, but in this section the objectives of the Buyer are not only to buy or not to buy (Yes/No decision) but also to choose among some competing products. The Buyer's options are to not purchase any of the offered products, to purchase product 1, or to purchase product 2. The objectives are to evaluate the risk of misinforming in more realistic settings. The marketplace is a place where messages, describing different products suitable for accomplishing one and the same set of clients' works, are competing. It may appear also that one of the products is better for a given subset of activities and the other – for the other subset.

DOI: 10.4018/978-1-6684-8800-3.ch009

The previous chapters addressed the evaluation of the risk of misinforming in two cases – the risk of misinforming in offering a single product to a single buyer (“one-to-one”) – the case of individual Buyer; as well as the risk of misinforming in offering a single product to many buyers (“one-to-many”) – the case of Seller. In this section, these models are expanded by proposing models to cover the cases of “many-to-one” – the risk of individual Buyer; and “many-to-many” – the risk of Sellers on a real competing market.

First, for simplicity, in the first section, the case of offering two competing products to one and the same group of buyers is considered (“two-to-one” topology). The model is later generalized to n competing products (“many-to-one”). These models are better representation of the real market situation, where purchasing decisions are made based on assessment and comparison of different offers and selecting the one, which satisfies in the best way the buyer’s needs as the buyer assesses it. In the later section, the case many-to-many is discussed. For further details one can refer to Christozov, Chukova & Mateev P. (2008, 2009).

THE CASE OF TWO COMPETING MESSAGES: TWO-TO-ONE

The “two-to-one” topology is the simplest case for competing messages, describing two competing products. In this case, the client b_j receives two competing messages 1D and 2D from two competing sources of information, describing two competing products 1d and 2d and s/he has to choose which of the knowledge, acquired only by one of them, is suitable to solve her/his problem or to ignore both. In the business transaction context, the client purchases only one of the two products or does not purchase them at all. The case of two complementing messages is not discussed here, nevertheless that in reality the information describing one of the products can be used in assessing suitability of others.

The probability space describing this case extends the decision options described in Chapter 2.2. The client has the following options in making her/his decision:

1. choose 1D : this message is useful, the client b_j solves her/his problem a_{ij} , the decision is correct, and the risk is ${}^1r_{ij}=0$.
2. choose 1D : this message is not useful, the client b_j doesn’t solve her/his problem a_{ij} , the decision is wrong, and the risk is ${}^1r_{ij}=1$.
3. choose 2D : this message is useful, the client b_j solves her/his problem a_{ij} , the decision is correct, and the risk is ${}^2r_{ij}=0$.
4. choose 2D : this message is not useful, the client b_j doesn’t solve her/his problem a_{ij} , the decision is correct, and the risk ${}^2r_{ij}=1$

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