A Marketable Quality and Profitability Model Considering Service Providers and Consumers Relation

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ABSTRACT

In this article, we present a model to evaluate both marketable quality and profitability considering service providers and consumers relation. We use the real values of some leading Japanese manufacturing corporations as virtual data of service providers to our proposed model to analyze its accuracy. By analysis, we found that the theoretical and real standard values of the marketable quality indicator for the rate of operation at the break-even point were both 0.6 (that is 60%). This shows that the proposed model has a good approximation. From the fair relation of network providers and consumers, we provided the network pricing guidelines for the maximum profitability while enhancing the marketable quality.

Keywords: break-even point; business models; business re-engineering issues associated with networking; marketable quality; network service pricing; profitability; service providers

INTRODUCTION

The relationship between producers’ side and consumers’ side in the market has shifted from being “product out” (which is advantageous to producers) to being “market in” (which is advantageous to consumers). As this shift has taken place, the underlying mechanisms that determine economic behavior have shifted from ones of diminishing returns in Alfred Marshall’s days (where the products or companies that get ahead in a market eventually run into limitations, so that a predictable equilibrium of prices and market shares is reached) to ones of increasing returns (increasing returns are tendency for that which is ahead to get further ahead) (Arthur, 1996).

Production has been generally shifting from “small item, large scale” to “large item, small scale.” This is because of diversification of customer needs and acceleration of development of new products (the shortens-
This trend appeared especially in the 1980’s. Many business reforms from the time of Adam Smith (Smith, 1976), such as the pursuit of economies of scale in place of economies of scope by increasing the flexibility of the production and management system (Goldhar & Jelinek, 1983) and business process reengineering (Hammer & Champy, 1993) which integrates business processes in place of exhaustive application of specialization, have occurred.

Today, there are new trends in business such as business-to-business (B2B) and business to consumer (B2C) in electronic commerce, which affect the quality of business systems. Therefore, the evaluation of qualitative aspects of corporations is necessary to determine the effectiveness of such qualitative changes.

Considering the previously mentioned problems, the service providers are required to increase their profitability by enhancing their qualitative aspects. The profitability is conceptually considered to be a function of two variables: the qualitative and quantitative aspects. However, most of the profitability functions that have been proposed so far fall in two categories. In the first category, in the profitability function, the quantitative aspect is considered variable, while the qualitative aspect is considered constant the qualitative aspect is considered constant (the profitability function considering utility or demand function for a product). In the second category, during the measurement of the profitability function both aspects are unified as a variable (Knoeppel, 1933). In fact, the quality and quantity are independent variables. But, considering the profitability, there is a relation between them.

In order to measure the degree of safety (in the case of risk of loss), we use as the indicator of profitability the break-even point ratio.

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\text{Break-even point ratio} = \frac{\text{Sales at the break-even point}}{\text{Sales}} = \frac{\text{Fixed costs}}{\text{Sales} - \text{Variable costs}}
\]

This indicator is based on the profit graph presented by Knoeppel (1933). Another profitability indicator (relative annual profit) can be obtained from the rate of operation and the rate of operation at the break-even point (Fukuda, 1988).

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\text{Relative annual profit} = \frac{\text{Rate of operation}}{\text{Rate of operation at the break-even point}} = \frac{\text{Marginal profit}}{\text{Fixed costs}}
\]

As can be seen, this is an inverse number of the break-even point ratio. The relative annual profit is a profitability indicator that analyzes a function based on the concept of rate of operation. Therefore, we consider the relative annual profit as a profitability indicator in this study. We define the marketable quality based on the quality aspects of products and services provided by service providers. In order to define the quality, Garvin (1988) considers five viewpoints (i.e., transcendent, product based, user based, manufacture based, and value based) as main approaches. We define the marketable quality as a qualitative aspect of profitability. That is we measure it as a relative value of the fifth viewpoint (value based).

In order to increase profitability by enhancing the marketable quality, the objective of this article is to introduce the network service pricing considering the fair relation between providers and consumers.

The article is organized as follows. In the next section, we present a model to