ITC19/ Performance Challenges for Efficient Next Generation Networks 1591-1599
LIANG X.J. and XIN Z.H.(Editors)
V.B. IVERSEN and KUO G.S.(Editors)
Beijing University of Posts and Telecommunications Press

Forecasting the Number of Subscribers of 3G Mobile Services in China Based on Bass Diffusion Model

ZHANG Jing
School of Economics and Management, BUPT, China, 100876
andiezhang@vip.sina.com

Abstract：It is expected that 3G mobile services will be launched into the market in China. But it is hard to predict the demand of this new service. In this paper, Bass diffusion model and Norton-Bass model are adopted to make the prediction of number of 3G subscribers. Based on the regression analysis with actual data, the predicted results are acceptable. And finally, the paper points out that the price of 3G handsets and services, and backward compatibility are two factors influencing the diffusion of 3G greatly.

Key Words: Innovation Diffusion；Bass Model；3G mobile services

1. Introduction

In 2004, there were some evidence that the 3G services began taking off around the world, as the 3G subscribers got a rapid growth in Japan, Korea and some European countries. For the telecommunication operators in China, it is the key period now for preparing the launch of 3G services into the market. The most important problem that all the operators are facing is to forecast the demand of 3G services in China, and consequently, to forecast the revenue and profits they can earn from 3G services. It is not easy to solve the problem, because 3G is a kind of new service and there is no enough historical data for forecasting. Although we can get some data of the development in some countries, comparative approaches are not quite applicable, considering the differences in economy, culture, and characteristics of market demand between countries. In fact, with the observation of the development of 3G services in some countries, we can find that the data showed totally different developing way, and it is hard to find the common experience directly from the short-term data.

As for new product forecasting, some innovation diffusion models (Bass, 1969; Lilien et al., 1992; Mahajan et al., 1993) can provide satisfactory results. These models typically use an S-shaped diffusion curve to model the cumulative sales up to time. In the past research, they have been validated empirically in many markets, and have been applied to telecommunication markets. Among them, the Bass diffusion model, developed by Professor Frank Bass in 1969, is one of the fundamental models to describe, and sometimes predict the purchases for consumer durable products.

In this paper, we use Bass diffusion model and Norton-Bass model to analyze the mobile