

An internet banking system establishment with transaction rate uncertainty: a real options approach

Tyrone T. Lin*

Department of International Business

National Dong Hwa University

1, Sec. 2, Da Hsueh Rd.

Shou-Feng, Hualien, 974

Taiwan

R.O.C.

Abstract

This study investigates the entry threshold for providing a new transaction service channel via the real options approach, where the entry threshold is established by using an Internet banking system designed for the use of financial institutions under transaction rate uncertainty. This work is based on the assumption that an Internet banking system requires a limited replacement period of equipments or software upgrades, which will be charged as a fixed cost when the system is renewed following the replacement period. Additionally, the current paper discusses the differences between the real options approach and the conventional net present value method. Sensitivity analyses of related parameters are also conducted through numerical simulation. The results of the novel approach presented in this study provide a valuable reference for financial institutions to establish Internet banking systems.

Keywords : Internet banking, decision making, replacement planning, real options.

1. Introduction

Following the development of more technologically advanced and secure Internet services, financial institutions have begun introducing Internet banking systems (IBS) to complement their traditional service channels, namely counter tellers, automated teller machines, telephone

*E-mail: tjlin@mail.ndhu.edu.tw

Journal of Information & Optimization Sciences

Vol. 27 (2006), No. 1, pp. 1–15

© Taru Publications

0252-2667/06 \$2.00 + 0.25