

Network externalities between carriers or machines: how they work in the smartphone industry *

Ryoma Kitamura[†]

Graduate School of Economics, Kwansei Gakuin University
1-155, Uegahara Ichiban-cho, Nishinomiya, Hyogo, 662-8501, Japan

April 18, 2014

Abstract

In this paper, we consider a duopoly model where two firms sell two differentiated products and there is a network externality between either carriers or machines. We derive the equilibria of these games and illustrate the effects of a change in quality on the equilibrium quantity of each good. Furthermore, we compare fully compatible and incompatible equilibrium outcomes and discover some insights on relations between them. Such insights were not found in earlier studies that considered only the network externality between carriers.

Keywords: Smartphone market, Multi-product firm, Duopoly, Cannibalization, Network externality

JEL Classification Numbers: D21, D43, L13, L15

*The author would like to express their gratitude to Kenji Fujiwara, Tommaso Valletti, Noriaki Matsushima, Noriyuki Doi, and Tetsuya Shinkai for their useful comments on an earlier version of this paper. Furthermore, the author is indebted to Akira Miyaoka and other participants at the workshop at Kwansei Gakuin University for useful comments. Any remaining error is the author's own.

[†]Corresponding Author: Graduate School of Economics, Kwansei Gakuin University, Uegahara 1-1-155, Nishinomiya, Hyogo 662-8501, Japan. Tel: +81-798-54-6204, Fax: +81-798-51-0944. E-mail: aja83048@kwansei.ac.jp.