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Dissertation Abstract

Channel and Coordination

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I. Introduction

Marketing channel and organizational coordination are crucial parts in any organization. Especially in this era of blooming electronic commerce, and in the era when it is difficult to find business processes not involving any kind of information technology, strategic planning to use Information System as digital channel and to coordinate an organization around it becomes an important part in any business, nonetheless an interesting one. This research investigates channel and coordination as organizational decisions in digital content distribution: which channel to choose to distribute digital contents, how to coordinate under market competition. Thus, the paper will consist of three parts under the overall theme of digital content distribution channel: IT department's coordination with other departments within an organization in an electronic market channel, peer-to-peer network as a digital contents distribution channel, and digital content distribution as network diffusion.

II. Problem Statement

Since distributing digital contents via the internet is getting easier than ever, traditional entertainment media, though still fighting with piracy issues, has been increasingly interested in incorporating digital channel as a crucial part of distributing its contents. Along with the media firms' interest, there are non-stopping attempts from digital companies to allure digital entertainment, the most recent one being Google trying to cut a deal with movie production companies to distribute their contents via YouTube, which only partially succeeded with very small companies. With the media companies' interests to get a part in the turf, net neutrality is also a never-fading issue brought up by broadband companies. Thus, it is not enough for an organization to choose whether to open a digital channel or not. Choosing an effective channel incorporating consideration of the

cost of broadband and server capacity becomes an important part. In this paper, two major digital channels are identified, which are center-server based channel and peer-to-peer channel. It suggests that channel selection should not be limited to offline versus online channel, but alternate digital channels with different characteristics. A server-based channel (such as iTunes) forms a network that displays negative externality, while P2P (such as KaZaA) is a network with positive externality.

Since digital channel selection highly depends on capacity and quality-of-service, it cannot be considered without an internal coordination with its IT department and marketing department. For the firm's interest, coordination always brings a better result. An interesting question arises how a competition in the market will affect the organizational coordination scheme. And once a firm makes a decision on which channel to choose and how to plan marketing and prepare capacity, the next question will be how to target effectively to diffuse its contents.

III. Conceptual Framework and Methods

This research resides within the literature of channel selection, channel coordination, and organizational coordination. Another crucial component is the study of the impacts of competition on organizational behavior. To consider the optimal decisions on channel selection and coordination scheme, a game theoretical analysis will be used. From the analysis some results are already drawn.

1. Digital Channel Selection

The analysis represents a firm's decision on which channel to choose to distribute its digital contents, and if it chooses one, what outcome will be to its contents demand if it is competing in the market with the other type of change. The two types of distribution channels examined are server- and Peer-to-Peer (P2P)- based. A server-based channel (such as iTunes) forms a network that displays negative externality, while P2P (such as KaZaA) is a network with positive externality. When presented with the option of these two channels to obtain digital content, users select one based on its comparative utility. While the content download performance for a center server based-channel highly depends on the capacity of the server, the utility for a P2P-based channel is determined by users' sharing costs. The equilibrium demands are derived when these two channels are in competition as well as in coordination. In a competitive setting, as the capacity of the server increases, so does the number of users who opt for the server-based channel. However, the quality of service deteriorates with higher capacity. When both channels are integrated, it is preferable to allocate more users to the P2P channel even though it provides a lower utility. Accompanying a game theoretic optimization

model, a numerical analysis is also presented to illustrate the optimal decision results.

2. Organizational Coordination

Also from a game theoretical analysis, it is found that both IT and marketing departments share the effect of lower QoS, and that in some conditions, expanding capacity is too costly so that it is better to reduce capacity even under the presence of customer's higher sensitivity to QoS. In the presence of market competition, the result is that, in case of duopoly, the equilibrium status is when both firms choose internal coordination scheme. At this stage, two separate competition schemes, front-end and back-end competition are considered. Another analytical model combining both competition schemes to finalize the issue of coordination under competition. In this case, too, a numerical analysis is conducted to illustrate results, which do not have closed-form solutions.

On the other hand, the following digital product diffusion model will use empirical analysis.

3. Digital Product Diffusion

Much attention has been drawn to the social network effect in digital communities. Thus, studying the characteristics of contents diffusion characteristics with respect to the social networks as well as the characteristics of successful channels and user behaviors is an interesting part. If a firm can identify the characteristics of its digital contents channel characteristics, then it can target its digital market effectively. However, to identify the characteristics, an analytical framework only would not be enough. A data collection from a popular digital contents distributing network community is being conducted, and an empirical model will follow.

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