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Unlocking the promise of mobile value-added services by applying new collaborative business models

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ABSTRACT

Due to the intense voice service competition and subscriber growth saturation, the average revenue per user (ARPU) of mobile communications service providers continues to decline, thereby severely affecting their total revenue and profitability. To counter this challenge, mobile communications service providers are now moving from "tariff competition" to "service competition." As mobile communications enter the next-generation network (NGN) era, network bandwidth and transmission speed are greatly enhanced. The enhancement enables mobile communications service providers to provide content-rich, multimedia value-added services to create new service value, meet demands of customers, and increase ARPU. To understand how to construct mobile value-added services, this study uses survey forms to collect feedback from 35 industry and research institution experts and scholars and to present systematically the finding on the mobile value-added services strategy. The research employs the analytic network process (ANP) to analyze the strategy of mobile service providers in delivering mobile services in the NGN. The business strategy evaluation framework and evaluation result can be used as guides for players in the mobile communications industry to review, improve, and enhance their service and strategy.

1. Introduction

In the 20th century, the use of mobile voice communications grew rapidly and became a major revenue source for mobile service providers. However, due to subscriber growth saturation and voice tariff competition, the average revenue per user (ARPU) of mobile service providers has been steadily declining in the past few years. Broadband bandwidth and faster transmission speed will enable mobile service providers to provide better mobile value-added services, and these are expected to be the next source of growth for mobile service providers. However, mobile service providers have yet to realize the potential revenue from these value-added services. This paper attempts to find out why and to address related issues.

As the next-generation network NGN emerges, internet protocol (IP) becomes the basis for communications network. IP-based network infrastructure not only supports voice, data, video, and multimedia services but also fixed mobile convergence (FMC) to improve the efficiency of a new service platform. Due to the evolution of FMC, internet applications and services can now be extended to mobile communications. Mobile value-added services can thus be further enriched and enhanced, and the utilization and penetration of mobile value-added services promoted.

Mobile communications offer mobility, convenience, personalization, and security features [1–10]; thus, users can access content-rich digital services and applications via mobile communications. According to a consumer behavior study, mobile services can be categorized into four areas: mobile communications service, mobile entertainment service, mobile transaction service, and mobile

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information service [1,9,11–14]. In this study, value-added service includes mobile communications and information services. The content of the value-added service is multimedia (voice, data, and video) and broadband in nature.

Until the end of 2008, only 10% [15] of the revenue of mobile service providers in Taiwan came from mobile value-added services compared with about 40% of the mobile value-added services ARPU of the top three Japanese mobile service providers. Thus, it is believed that there is still room for growth for Taiwanese mobile service providers in the area of mobile value-added services [16]. The main reason for the slow adoption of mobile value-added services in Taiwan is the lack of attractive digital content and innovative service model. Creating, providing, and managing digital content and services in the NGN era have thus become critical issues for mobile service providers in Taiwan.

In recent years, the telecom industry has stressed the importance of cooperation among industry players to provide a competitive solution to end users. The main players in the mobile value-added service value chain include mobile service providers, gateway provider, interface provider, content and service aggregator, and content creator [14,17,18]. This whole spectrum of supply chain is often called the "value chain" or "collaborative business model." The term "collaborative business model" is used in this paper to highlight the importance of cooperation among the parties in the collaborative business model to maximize the subscribers' benefits.

This research aims to establish an evaluation model that can objectively identify mobile value-added services criteria that are critical to the success of promoting mobile value-added services. It also intends to rank the various business strategies that mobile service providers could embark on to facilitate working with different players in the mobile service business model. The identification of key value-added service implementation criteria will affect future mobile technology development priority. For example, the ranking of the criteria is likely to influence resource allocation by manufacturers in future technology development. Furthermore, the value-added service business model and strategy research and analysis can help mobile service providers effectively address the needs of the mobile value-added service market. The response to market needs will have a substantial impact on the daily activities and social lives of people in the future. For instance, the ubiquity of mobile location-based service jointly provided by all multiple players can profoundly affect the daily lives of people. With the proliferation of mobile smart phones and the continuous expansion of the processing, storage, and functional capability of mobile devices, the possibility to create new mobile value-added service is unlimited. It is foreseeable that mobile value-added service could enable a ubiquitous communication society in the future. In this society, not only can people connect to each other using a device at any time and location, but information can also be shared at the discretion of the users. This ubiquitous communication can profoundly change the future development of economies and the social interaction behavior of people.

There are only a limited number of research papers that discuss either a mobile service concept and service description [1–10], or the view of end users on mobile value-added services [2,4,5,19–21]. The objective of this research is to provide a different perspective on the matter and analyze different aspects, criteria, and strategies for mobile value-added service to promote new services in the mobile communications industry successfully.

The design of the research framework is established based on the interviews with industry experts and the literature review. The tasks become more complex with the increase in the selection of criteria [22].

Selecting a mobile value-added service strategy creates the need to evaluate multiple hierarchy criteria [23]. Many scholars employ the analytic hierarchy process (AHP) [24] to analyze strategy selection issues [25–29]. AHP is a multi-attribute decision analysis tool useful for evaluating decisions with multiple criteria and alternatives [30]. However, a significant limitation of the AHP is the assumption of independency among the various decision-making criteria [31]. Analytic network process (ANP), on the other hand, eliminates these limitations and allows the inclusion of all relevant criteria (tangible or intangible, objective or subjective, etc.) that have some bearing on arriving at the best decision [32]. Therefore, instead of using the common AHP approach, we use an ANP-based model to determine the best business strategy that telecom firms may adopt to provide value-added services to subscribers.

We chose telecom experts and executives for the interview and data collection to ensure the business creditability and effectiveness of the responses. Thirty-five responses were identified as complete, resulting in an 88% return rate. Opinions of experts obtained from the survey, which dealt with supplying mobile services in the NGN, provided valuable references to the players in the telecom industry with respect to selecting a business strategy for value-added services.

This paper is organized as follows. Section 2 reviews the next-generation telecom industry landscape. Section 3 reviews the issues and concerns in establishing value-added service strategies of Taiwan mobile service providers. The selection of aspects in the ANP evaluation model is discussed as well. Section 4 introduces four different strategies to promote mobile value-added service and discusses the pros and cons of each strategy. Section 5 establishes an ANP-based model for evaluating different mobile value-added service strategies. Section 6 examines the practicality and usefulness of the model through an example and its empirical results. Several value-added service strategy implementation issues in Taiwan are also analyzed. Furthermore, we discuss the lessons learned from the iPhone and Amazon experience while analyzing the mobile value-added service strategy. The last section gives the conclusion and suggestions.

2. Review of the next-generation telecom industry

The NGN is an IP-based network platform that supports voice, data, video, and multimedia services. This platform is also viewed as an IP-based integrated network or convergent network. Through IP technology, various vertical network applications can be integrated into one network (Fig. 1) so that both fixed and mobile networks can offer convergent applications for end users. In convergent applications, users can access any network using any device at any time to receive the same seamless integrated services using the same number and to be billed in the same invoice [16].