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Lei Nie

Jinlong Zhang

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IOS-ENABLED CONTROL IN MOBILE SERVICE PARTNERSHIP-A CASE STUDY

Lei Nie¹, Jinlong Zhang²

School of Management Huazhong University of Science and Technology

¹n18201@gmail.com, ²prozhangjl@gmail.com

Abstract

In mobile service partnership (MSP for short), partners' opportunism has become a serious question which obsessed mobile network operators (MNO for short) and impedes healthy growth of mobile services chain. For loose-coupled inter-organizational cooperation partnership, the implementation of formal control is often faced with many challenges. Meanwhile, mobile communication service industry is one of highest-level IT/IS equipped sector, how IT/IS affects control mechanism in MSP is the main objective of this study.

Drawing from a typical case study, we identify what characteristics of MSP are more vulnerable to inclination of opportunism. On the other hand, we report the significant role that interorganizational system (IOS)-enabled process control played in curbing opportunism in MSP from this case. Lastly, we conclude some managerial implication of our study.

Keywords: IOS, mobile service platform, control, partnership

Introduction

Telecommunications is one of the most turbulent industries in today's economy. Among this industry, the fast growth of mobile value-added service has acquired high attention and was predicted as the most potential business in incoming "3G" era.

In the mobile service sector, MNOs and service providers/content providers (hereafter we all use SPs to refer to both two unless otherwise specified) formed a unique cooperative relationship. [1] identified relationship between MNO and its partners as a virtual and global one which enacted through an inter-organizational information system (IIS). [2] called this relationship "strategic community", specifically, partnership between mobile operator and SPs as "Portal community". As the former focus on communication medium and the latter emphasized strategic attribute of this partnering, this relationship is supposed to be learned from different angles.

In line with prior literatures which studied telecom partnership, we think, MNO and SPs have established a cooperative strategic alliance

partnership but with its distinguishing feature. Both of two parties focused on their own specialty, therefore joint surplus can be created only through melting by complementary skills, routines and capabilities of specialized partners [3]. Using Das's analogue that opportunistic behaviors by partners are like "thorns on the stems of roses" [4], alliance solely pursuing fast growth was easily exposed to the hidden "thorns". Opportunistic behavior of one or more partners to an alliance is often suggested as a primary cause for the failure of an alliance to achieve the goals and purposes of the partners [5].

Control in alliances is generally viewed as a process of regulation and monitoring for the achievement of desired alliance goal [6]. In MSP, control is implemented by controller (operator) to influence controllee (service providing partners) through a variety of governing actions. The main purpose of control is reduction of goal incongruence and interest divergence among organizational members. Although control can be costly and challenging, it is often presumed necessary to curb opportunism [7].

We focus on formal control in alliance. There are two main modes of formal control: 1) Outcome control, which refers to the prespecification by the controller of desired controllee outputs and the associated evaluation criteria; 2) process (or behavior) control, which refers to prescribing the methods and procedures that the controllee should follow [8]. The two forms of control play different part in curbing opportunism. Outcome control, similar to market mechanism, can effectively avoid "free-ride" behavior of alliance partners; comparatively, process control by regulating the conduct of partners to prevent major surprise may effectively reduce opportunism in a more direct way.

Process control increases the ability to detect opportunism, and accordingly make rewards and sanctions to the partner's behavior more appropriately [9]. Moreover, from a behavioral perspective, the monitoring process itself may place uncomfortable social pressure on a party and thereby increase compliance [10].

As the new form of internet-based fraud emerging, some academic interest has transferred to more advanced IOS controls, such as EDI controls [11]. However, existing literatures on IOS and organizational control are limited, most of them

focus on EDI [12][13], and Organizational context, technology factors, task characteristics and relational factors are suggested to influence EDI control. Although the purpose of IOS is to enhance cooperation and control, some practical works claim IOS often merely play a part in monitoring [14].

As there are few studies concerning how IOS is used to control over partners' opportunistic behaviors, and IOS served in mobile service sector usually has surpass the scope of "information links" or "electronic market"[15]. So the study in this filed still needs more specific evidence and understanding.

In this study, we want to explore these questions: How does focal firm govern partners' opportunistic behavior effectively? As a typical virtual partnering relationship, we also want to know what role that IOS played in alliance control, and further more in curbing opportunism in MSP.

For seeking evidence to answer the questions we interested, a specific case is leveraged to find answers. Firstly, we extensively collect documentation and report material about China Mobile and its value-added service chain. An interview to several experts, including three managers in China Mobile and two managers in main SP to verify data we used, meanwhile, their insights on the above research questions have been organized to develop our proposition.

The Rest sections outline our analyses and results; and discuss the implications of the study. Lastly, we conclude some managerial implication of our study, and index the limitations of our study, suggest directions for further research.

Case study

China Mobile Communications Corporation ("China Mobile" for short) is the world's largest mobile telecom operator in terms of network scale and subscriber base. By 2008, the number of subscribers has reached 400 million.

China Mobile and SPs cooperated in the open and mutual beneficial basis mainly through "Monternet" business model which launched by China Mobile in 2000. From initial mainly focusing on SMS-based value added services, the "Monternet" business has become synthesized mobile services including various types of wireless data services and voice value-added business.

In China Mobile and value-added service providers partnering development process, there has several distinctive key stages:

Prior to August 2004, the value-added business was in its infancy. China Mobile attracted partner to its "open value chain" without serious selection just running for high speed. The qualification of SPs is uneven. Some SPs adopted deceitful behaviors to pursue high profit. Since lack of corresponding

regulations and sanctions, their misconduct didn't accept enough punishments. Meantime, although high profit stimulate fast growth of value-added services, the misconducts of SPs also affect interests of subscribers seriously and lower their confidence to mobile value-added services. The whole services chain was affected consequently.

Facing this case, both the MNOs and government regulator step up efforts on the regulating and managing of SPs from 2004. At the same time, China Mobile also strengthened the supervision of SPs and issued some regulations.

In the end of 2004, China Mobile constructed a data service management platform (DSMP) system named MISC (mobile information system center, more detailed introduction and process reengineering see Appendix). The management of contracted SPs was transferred in this powerful platform in succession.

Meantime, China Mobile prescribed a series of new methods to implement control. In the starting of cooperation, the outcome control implemented by China Mobile only focuses on partners' business performance. When recognized that opportunism has damaged the whole alliance' interests and reputation, China Mobile began to evaluated partners' performances based on both business performance and credit.

From October 2005, China Mobile introduced credit score approach to manage SPs in Monternet, which is based on credit assessment of SPs negatively to their irregularity. The credit score approach mainly measures SPs' trustworthiness, business and service quality, not including operating income. The indicators of credit score management have three dimensions including: SPs' violation, customer complaints, and the fulfillment of contract. The low-level credit SPs will subject to punishment from business suspension until the termination of operation. The high-level credit SPs have qualification to participate China Mobile's "leveled management" in which SPs will obtain different resource support from China Mobile according to their business performances.

Since there methods were adopted, the opportunistic behaviors of partners were held up effectively. For instance, according to the public financial reports of listed SPs like Linktone (NASDAQ: LTON), Kongzhong (NASDAQ: KONG), they all attribute d revenues decline during 2004 and 2005 to application of MISC platform as the main affecting factor coincidentally. This also proved MISC platform played a role in rectifying misconducts of SPs.

Analysis and discussion

This case reveals some beneficial implications, and we discuss our finding as follows.

IOS-enabled process control

The case studies revealed that one of the most important enablers of efficient process control is that an appropriate deployment and implementation of interorganizational information system (IOS) which can effectively reduce partners' misdeeds and thereby decrease the threat of opportunism.

Some key value-added service processes were transformed after adoption of MISC, and the transformation effectively curbed SPs' opportunistic behaviors including modifying business logic, enforcing subscription, hostile mass message sending et al.

The IOS-enabled process control plays a role in curbing opportunism from the following aspects:

1) Facilitate automatic monitoring. Employing IOS, the content delivered by SPs towards end users can be monitored automatically, non-compliance and ill messages will be blocked accordingly, thereby reducing SPs' fraudulent behaviors.

Automation by IOS helps to reduce process variance, thereby effectively reducing human intervention. e.g. IT always acts as an automatic tool of process implementing, which makes controllees' act in accordance with prespecification.

2) Automate key business processes. The IOS replaces human to achieve certain key processes, facilitates information and data flow between MNO, service providers and end users without human intervention.

3) Synchronize business processes. IOS helps to increase process synchronicity which can effectively reduce human intervention. Employing IOS, many processes of previous independent business units can be synchronized with other business processes to assure data reliability and reduce the possibility that partners will change business process logic privately. What's more, synchronization makes sure that master data is harmonized and homogenized.

4) Standardize business processes and increase business transparency. Through adding authentication of subscription and request, the IOS can effectively prevent SPs from leveraging entry traps to mislead end users.

IOS-facilitated outcome control

The influence taken by IOS on outcome control may not be as obvious as on process control. However, deployment and implementation of advanced IOS also benefit to outcome control by facilitating accurate measuring partners' business performances.

As [16] stated "without precise specification of the expected outcomes, outcome controls are subjective and ineffective". The extensive use of IT/IS facilitates the efficient gathering of vast

amounts of data, thereby forming more accurate measurement of partners' output. Moreover, IOS is likely to create a relative advantage for institutional over contractual governance mechanism [17], and controller can render more contingent incentive and outcome control over controllees.

In effect, for the purpose of curbing opportunism or strengthening partner relationship management (PRM), more comprehensive and restrictive partner evaluation is needed and depends on more information gathered.

Employed by IOS, focal firm is facilitated to measure partners' output from many more appropriate aspects, thereby adopting corresponding incentives and sanctions based on more contingent situations. For example, China Mobile can implement "Leveled management" towards SPs based on more comprehensive evaluation from both business performances and credit scores.

Prerequisites for IOS-enabled control

This case also highlights that only higher levels of external integration that go beyond simple procurement or communication systems allow focal firms to enhance formal control efficiency. That means some important conditions are supposed to be fulfilled to implement this IOS-enabled control.

Firstly, IOS-enabled control demands focal firms have mature IT-capacity (e.g. China Mobile held majority stake in platform provider — ASPire Technologies to strengthen this capacity). Most of the businesses are carried on based on IT-infrastructure, and thereby business intelligence (BI) can be widely supported. From the above analysis, whatever process control or PRM can't be achieved without BI derived from mature IT-capacity.

Secondly, a reciprocal interdependent cooperation is demanded between focal firm and its partners. In effect, the resource complementarity of MNO and SPs means that they need to share mutual resources, exchange reciprocity, which are also essential enablers in implementing IOS.

Thirdly, IT strategy should be integrated with partnering strategy with complementary incentive and sanction institutions rather than a tool facilitating business processes automatically or communication. In this case, whether a series of management approaches issued by China Mobile go behind or beyond IT construction, they can't work effectively. IT provides MNO with flexible ability to deal with contingency, further, the better use of this ability is another art.

Conclusion

In this study, we raise the question of partners' opportunism and its curbing mechanism in emerging MSP. From perspectives of organizational control

and IOS, we propose our central argument that an IOS-enabled process control can effectively curb opportunism, which is illustrated by using a typical case study. In our context, we implied that the IOS-enabled process control is linked with focal firm's mature IT capacity. In addition, the focal firm incorporated technology strategy and partnering strategy also contribute to the success of IOS-enabled process control.

We also discussed the prerequisites for efficient implementation of IOS-enabled control, not merely related to task characteristic, industrial context, the complementarity between institutional arrangement and IOS practices is highlighted as well.

Several limitations still exist in this work. Firstly, our evidence rest on qualitative analysis of a typical case, we still need more quantitative data to support our results. Secondly, we focus our interest on IOS's impact on formal control, but how IOS use affect informal control, like some relational governance mechanism, is still needed to be inspected in MSP further.

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Appendix

Table1 key processes reengineered before and after adoption of MISC

| Item | After Upgrade | Before upgrade |
|--|---|---|
| Subscription records storage | Subscription records are only stored by SP. | Subscription records are stored in MISC and SP's system simultaneously, and validation should based on MISC |
| Subscription status delivery | Notification of subscription is delivered by SP own | Notification of subscription as well as canceling are delivered by MISC |
| Subscription canceling | Services canceling process is charged by SP own | Services canceling process is automated by MISC |
| Monthly charges | SP launched monthly charges request independently | MISC launches monthly charges request based on valid subscribers instead of SP |
| Authentication of Subscription and request | No authentication of Subscription and request, all the messages were delivered to SP by gateway | All the MO/MT messages must be authenticated by MISC |
| Synchronization of subscription records | Subscription records were only stored by SP, no synchronization exist | Subscription records were synchronized in MISC and SP' system through Provision interface. |

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