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THE IMPACT OF FIRM’S NETWORK ON THE GROWTH OF E-COMMERCE PLATFORM

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Abstract

From the perspective of firm’s network, this paper first does a brief literature review on firm’s network resources, network capabilities and the growth of e-commerce platform. Then it uses case study approach to explore the impact of firm’s network capabilities and network resources on the growth of e-commerce platforms cases involving retail, travel and footwear industries. The result of case studies indicates that the network capabilities and the platform’s growth, firm’s network capabilities and network resources, firm’s network resources and the platform’s growth all have clear positive correlations. Then this paper puts forward relevant hypotheses and it will complete empirical research in the future through questionnaires.

Keywords: Firm’s network, E-commerce, Network Capability, Network Resource, Growth.
1 INTRODUCTION

Firm’s network is kind of dynamic and complex network of relationships based on information technology and the needs of firm’s strategic development. Prior research has primarily viewed firms as autonomous entities striving for competitive advantage from either external industry sources or from internal resources and capabilities. As a form of inter-organization system, the networks of relationships in which firms are embedded profoundly influence their conduct and performance (Gulati et.al, 2000). Network theory suggests that enterprises are embedded in a network of relationships. Their activities, outputs and behaviours are affected by network members.

Firm’s network capability (or it is called network competence) is a key factor to activate the potential value of network resources. Ritter et.al (1999, 2003) postulated that network competence is a company-specific ability to handle, use, and exploit inter-organizational relationships. Past research has consistently shown that companies which have close relationships with customers, suppliers, research institutions and competitors are more likely to have higher product and process innovation success. As the economic environment becomes sharply more competitive, the firm’s network assumes enhanced strategic importance (Gulati, 1999). Firms have to foster networking capabilities and maintain a competitive advantage.

The majority of scholars from different perspectives affirmed the effect of firm’s network on the firm’s growth, but the research approach of network is rarely used in e-commerce fields. Because it is difficult to make it clear of the relationships in the e-commerce firm’s network. Do network capabilities affect the access to network resources? Do network capabilities have a direct or indirect impact on the growth of e-commerce platform? These require to do exploratory case studies, and finally to test the rationality by empirical research.

2 LITERATURE REVIEW

2.1 Network Resource

The RBV(Resource Based View) of the firm emphasizes the notion that resources owned or controlled by the firm have the potential to provide enduring competitive advantage when they are inimitable and not readily substitutable (Peteraf, 1993). In fact, a firm’s network can be thought of as creating inimitable and non-substitutable value as an inimitable resource by itself, and as a means to access inimitable resources and capabilities. Gulati (1999) refers to these as ‘network resources’, which is a concept akin to the notion of social capital that has been developed for understanding individual networks. And he identified three kinds of network resource as following: network structure, network membership and tie modality (Gulati, 1998).

Network structure refers to the overall pattern of relationships within which the industry is embedded. It can be measured by various indicators, such as network locations, structural holes, network heterogeneity and network size. Although constraint is widely used in social network analysis to measure structural holes, it is still a little troublesome. This paper selects network location
(which is expressed by centrality degree), network size and network heterogeneity as measures of firm’s network structure.

Network relationships discuss conditions among network participants, such as mutual exchanges, cooperation duration and the degree of trust. And we use tie strength and tie duration to express network relationship.

2.2 Network Capability

Network capability, which can be called ‘network competence’ by Ritter (1999), is measured by assessing a company’s degree of network management qualifications and execution of network management tasks. In this study, firm’s network capability refers to network building capability and network management capability. The first capability is the ability to build firm’s network, the second capability means the ability that maintain the tie strength and duration of network partners.

2.3 Growth of E-commerce Platform

Growth theory provides a theoretical vantage point to observe and interpret e-commerce development in the global economy (Feindt et al., 2002). At the same time, the firm’s network plays important role in the firm’s establish and growth procedure. A variety of different variables, increasing sales, market shares, assets and the number of employees are used to evaluate a firm’s growth. This paper studies the growth of e-commerce platform, mainly measured by increasing sales and the number of users. And we will use the firm instead of the e-commerce platform in the latter discussion.

3 CASE SELECTION

The main purpose of this paper is to explore the relationship between firm’s network resources, network capabilities and firm’s growth. Since the above relationships between variables are lack of systematic theoretical framework in the current e-commerce environment. It is demanded to do a lot of case studies to propose hypotheses.

Because it is difficult to deep interview with the firm’s executives, this paper just takes three e-commerce platforms to do exploratory case studies. Cases are evaluated based on the following three criteria.

- The firms should be scattered in multiple industries, such as retail, tourism, footwear and so on.
- The firms should have certain differences in firm’s network resources, network capabilities, or the firm’s growth.
- The firms should have been founded for more than three years, and is well known in the industry.

The related material of case studies include the internal data of the firms, interview records of executives and information from the website of the firm or industry.

Firm A is the only authorized service platform for Xiamen’s government procurement. It has the resources of government procurement, so it has advantage on price and quality. But its business is
limited in Fujian Province, especially in Xiamen. This firm was founded on Sep. 2008, and has 194 employees by May 2013. It has two platforms, B2B (gov.anport-e.com) and B2C (anport-e.com), primarily sells 3C products, office equipment and home furnishing products.

Firm B, which was founded in Feb. 2009, is a platform providing integrated e-commerce service for tourism industry. The company is committed to helping traditional tourism companies realize online development. It also runs two platforms. One is the largest B2C reservation platform of tourism products in China (cncn.com); the other is B2B platform (cncn.net), which is the No. 1 real name tourism community in China. Cncn.com provides more than 1.3 million tours for 3 million tourists and reservation service of 0.7 million individual tourism products every day. More than 51,000 travel agencies and over 4000 paying subscribers joined the platform.

Firm C is the earliest B2C platform dealing with authentic footwear sales in China. It was founded in 2007, and has over 200 staffs now. Its headquarters is adjacent to China’s shoes city Jinjiang. With advantages of region and supply chain, firm C has become one of the most influential sales platforms. It has more than 200 well-known shoe brands, such as NIKE, ADIDAS, Lining, Anta, as its partners. And it has maximum shoes styles, more than 20,000 styles are on sale online. In 2012, firm C completed the first round of financing with tens of millions of US dollars by the well-known international investment bank Heiner Asia and Goldman Sachs. In the next 5 years, it will become a billion-scale online sales plaza for brand shoes.

4 CASE STUDIES

We will use tables and data to express the results of case studies.

4.1 Network structure and network relationship

<table>
<thead>
<tr>
<th>Case</th>
<th>Network Position (Centrality Degree)</th>
<th>Network Size</th>
<th>Network Heterogeneity</th>
<th>Ties Strength</th>
<th>Ties Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm A</td>
<td>It is the only authorized service platform for government procurement. But its B2C business is just started.</td>
<td>Its partners include Bureaus of government, large enterprise, tens of well-known suppliers and logistics.</td>
<td>It primarily sells 3C products, office equipment and home furnishing products. Commodity types are limited.</td>
<td>The partners are relatively fixed.</td>
<td>The ties duration is usually as contract periods. Long-term supply relationship is not established yet.</td>
</tr>
<tr>
<td>Firm B</td>
<td>cncn.com is the largest B2C reservation platform of tourism products in China; and the B2B</td>
<td>It has more than 51,000 travel agencies and over 4000 paying</td>
<td>It focuses on the heterogeneity of partners. Elong.com was selected as the only partner hotel</td>
<td>It helps travel agencies establish stores on B2C platform and build independent</td>
<td>It will not stop any partnerships in general.</td>
</tr>
</tbody>
</table>
platform (cncn.net) is the No. 1 real name tourism community in China. It integrates the whole footwear supply chains, including suppliers for product release, promotion, sales, customer service, logistics and after-sale service.

<table>
<thead>
<tr>
<th>Firm</th>
<th>Network Building Capabilities</th>
<th>Network Management Capabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>It relied on the government and group to confirm partners by assigning or bidding process initially, then built up the trust of partners by improved customer service and price advantage.</td>
<td>It manages partners through contractual agreements. At the same time, it gives IT system permissions to partners for online inquiry, quotation and related financial queries.</td>
</tr>
<tr>
<td>B</td>
<td>It helps traditional tourism enterprises realize e-commerce by providing complete e-commerce solution, the platform has attracted more than 50,000 travel agencies.</td>
<td>With proficiency of tourism information service and SEO(search engine optimization), it can enhance customer loyalty, and help travel agencies to improve e-commerce system.</td>
</tr>
<tr>
<td>C</td>
<td>It provides comprehensive support and service for shoes companies, including promotion, sales, after-sale service. Plenty of firms join this platform, and its network expanded.</td>
<td>With powerful supply chain management skills, it is able to achieve zero stock. And it can choose proper partners by sophisticated supplier evaluation system.</td>
</tr>
</tbody>
</table>

Table 1. Comparison of three platform firms in network structure and network relationship

4.2 Network capabilities

4.3 Growth of e-commerce platform

In 2011, the number of subscribers in B2C platform of firm A was 41,356, and it increased to 111,028 by May 2013. The significant increase of subscribers was due to big investment in the promotions. As for total profit, it was 1.89 million RMB in 2011 and it increased to 3.31 million RMB in 2012. Because the services of this platform was limited in Fujian province, and the
commodity type and price is hard to compete with other major domestic e-commerce platforms. Thus its B2C business developed relatively slowly in the past 3 years.

From 2009 to 2013, over 51000 stores were built on firm B’s platform, including 500 stores in mall and 4000 paying subscribers. In 2012, there were two dozen travel agencies achieve a turnover of more than ten million, and over 100 travel agencies achieve a turnover of more than three million. The whole platform operated more than one billion RMB. According to Iresearch.com statistics in Jan 2013, firm B has become the top 5 popular reservation website for domestic travel (based on monthly page views) and the No.1 e-commerce platform in travel industry.

So far, firm C has get network distribution permission of more than 200 well-known footwear brands. The main source of profit is the sales commission, which ensures a 20% -25% rebate. In this stage, it is struggling to achieve a balanced budget. By November 2012, the number of users had been over 5 million and average page views per day had been over 3 million. The sales income in 2011 was more than 100 million, and it was double in 2012. It had become one of the leading vertical footwear websites in China.

5 DISCUSSION AND HYPOTHESES

5.1 Discussion of Case Studies

Based on the former qualitative description, this paper evaluated each case on the dimensions of firm’s network structure, network relationship, network building capabilities, network management capabilities and the firm’s growth, with very high (strong, large, long, fast), high (strong, large, long, fast), in general, low (weak, small, short, slow), very low (weak, small, short, slow) five levels to represent each indicator.

<table>
<thead>
<tr>
<th>Case</th>
<th>Network Location (Centrality Degree)</th>
<th>Network Size</th>
<th>Network Heterogeneity</th>
<th>Tie Strength</th>
<th>Tie Duration</th>
<th>Network Building Capability</th>
<th>Network Management Capability</th>
<th>Firm’s Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm A</td>
<td>in general</td>
<td>in general</td>
<td>in general</td>
<td>Strong</td>
<td>in general</td>
<td>Strong</td>
<td>in general</td>
<td>in general</td>
</tr>
<tr>
<td>Firm B</td>
<td>Very high</td>
<td>Very large</td>
<td>High</td>
<td>Strong</td>
<td>Long</td>
<td>Strong</td>
<td>Very strong</td>
<td>Very fast</td>
</tr>
<tr>
<td>Firm C</td>
<td>High</td>
<td>Large</td>
<td>Very High</td>
<td>Strong</td>
<td>Very strong</td>
<td>Very strong</td>
<td>Fast</td>
<td></td>
</tr>
</tbody>
</table>

Table 3. Discussion of case studies
5.2 Network Capability and the Firm’s Growth

The case studies show that it has a clear positive correlation between network capabilities and firm’s growth. Firm B and firm C have strong network capability, and they have relatively outstanding performance on increasing sales and the number of users. For example, firm C established extremely rapid response mechanisms, as well as the effective management of the supply chain by IT systems. It is more competitive and profitability in the industry. And it has the ability to support its different tiers of suppliers to grow together. Then we hypothesize that:

H1: Network building capabilities have positive impact on the firm’s growth.
H2: Network management capabilities have positive impact on the firm’s growth.

5.3 Network Building Capability and Network Structure

Case study results also show that the firm’s network building capabilities have positive relationships with the firm’s degree centrality, network size and network heterogeneity. For example, firm B is a technology-based enterprise, it helps traditional tourism enterprises to do e-commerce and provides its partners complete e-commerce solutions. In 2012, there are 24 travel agencies achieve a turnover of more than ten million, and over 100 travel agencies achieve a turnover of more than three million. The whole platform operated more than one billion RMB. Firm B has become the No.1 e-commerce platform in travel industry. In choosing network partners, firm B focus on the heterogeneity of partners. For example, Elong.com was selected as the only partner hotel reservation website, because it can offer up to 20,000 hotels which covering all tiers of cities in China, then it is able to provide customers the most comprehensive selection. Thus, we hypothesise:

H3: Network building capabilities have positive impact on firm’s degree centrality.
H4: Network building capabilities have positive impact on network size.
H5: Network building capabilities have positive impact on network heterogeneity.

5.4 Network Management Capability and Network Relationship

The network management capabilities of firm B mainly include the tourist information service capabilities and SEO (search engine optimization) capabilities. Tourist information service capabilities embodied in collaboration with the tourism bureaus, such as assisting in the establishment of tourism e-government network. In addition, it also provides total solutions of microblog marketing, tourism destination promotion marketing, in order to establish a close working relationship with the tourism bureaus, travel agencies, hotels, etc. SEO capabilities embodied in collaboration with ad alliance and travel information media. Therefore, customers are often willing to put in all kinds of online advertise by Firm B’s website. Firm C and its most partners achieve integration via information systems. That makes them tie stronger, and they would not cancel cooperation because of accidental events. Then we hypothesize that:

H6: Network management capabilities have positive impact on firm’s tie strength.
H7: Network management capabilities have positive impact on firm’s tie duration.
5.5 Firm’s Network Structure and Firm’s Growth

E-commerce platforms are generally in a relatively central location in firm’s network, and they establish a long-term relationship with suppliers, customers, and other third-party logistics service companies. They have strong ability to deal with supplier management, inventory management, shipping management, etc.; The expansion of network size has a positive impact on the growth of the website, it is able to promote sales if the price level is relatively stable; network heterogeneity may meet different customers’ demand, thus attract more users to achieve more sales.

H8: Firm’s degree centrality has positive impact on the firm’s growth.
H9: Firm’s network size has positive impact on the firm’s growth.
H10: Firm’s network heterogeneity has positive impact on the firm’s growth.

5.6 Firm’s Network Relationship and Firm’s Growth

From the case studies, we find that firm C would not destroy cooperation unless the supplier could not pass firm C’s evaluation. Long-term stable cooperative relationships help firm C maintain rapid growth. Conversely, the contract period of firm A and its partners is shorter, when a contract expires, firm A will re-select suppliers. The loyalty of suppliers is weaker than firm C, and its growth in the industry is in general. Then we hypothesize that network relationship (tie strength and tie duration) has positive impact on the growth of e-commerce platform.

H11: Firm’s tie strength has positive impact on the firm’s growth.
H12: Firm’s tie duration has positive impact on the firm’s growth.

6 CONCLUSIONS AND LIMITATIONS

This article selected e-commerce platforms which are in different industry, different size and different growth tempo to do exploratory case studies. Considering the results of interviews, it did detailed analysis of the cases about firm’s network capabilities, network structure, network relationship and the growth of e-commerce platform, finally it put forward to relevant hypotheses. We will distribute questionnaire for data collection, then complete the empirical research in the future.

However, there are few e-commerce platforms which are listed on the stock exchange. So it is difficult to get the data about the firm’s growth from public channels. On the other hand, the relationship among firm’s network has to be distinguished by corporate executives. It demands painstaking efforts to ensure the quality and validity of the questionnaires, then to provide useful references for the development of e-commerce platform.

Furthermore, three cases are not enough and the performance of e-commerce platform may be dominated by the industry it belongs to. More comprehensive case studies should be conducted to propose the hypotheses considering the influence of industry and the size of the company.
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