

## E-Alliances: Search and Match for Small Business Partnership

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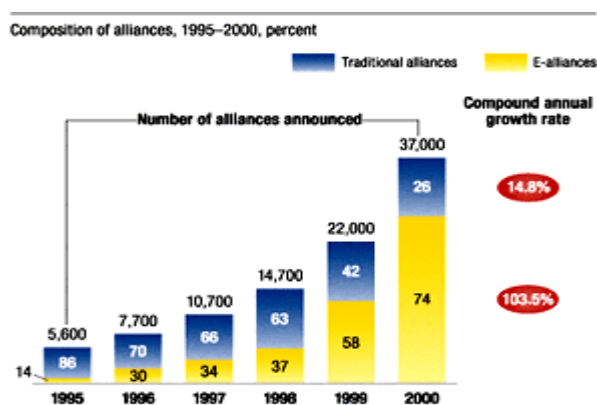
### ABSTRACT

Companies across all sectors with increasingly smaller size rely on alliance relationships to bolster revenues during times of economic uncertainty. When forming alliances, large firms typically hire vendors such as investment banks to help identify potential alliance partners. However, small businesses with intention to build alliance find difficulties to search desired partners especially on a global arena due to three causes: 1) lack of skills, resources and information; 2) too small to capture the attention of investment banks or alike; 3) not affordable to the high search fee charged by vendors. Thus, reliable information about small business market is often limited. The odds of successful search and match become very low given their limited access to right information. In fact, traditionally labor-intensive search and match either by investment banks or by firms themselves have been both costly and time-consuming. On the demand side, small businesses are searching for more alliance opportunities than ever before while deal size has been increasingly declining since the last two decades. The globalizing, deregulation and internet are attributed to the driving forces of this trend. Under this circumstances, E-Alliances is able to close the huge gap between the demand side which represents the tremendous alliance search needs of small businesses worldwide and the supply side which is constrained by search capacity. In this paper, the author will interpret how E-Alliances is able to help worldwide small business companies to reach their desired partners in a fast, cheap and DIY manner. The author will also discuss the outlook of alliance.

**Keywords:** E-Alliances, Deal Fit Index, Aladdin Setting, Liquidity

### 1. INTRODUCTION

Companies across all sectors with increasingly smaller size rely on alliance relationships to bolster revenues during times of economic uncertainty. Indeed, the percent of total business involving alliances continues to grow rapidly over time. Alliances enable companies to pursue new growth opportunities without incurring the costs and risks associated with other development options.



Source: McKinsey 2001

Figure 1. Growth of alliance activities

When forming alliances, large firms typically hire vendors such as investment banks to help identify potential alliance partners. However, small businesses with intention to build alliance find difficulties to search

desired partners especially on a global arena due to three causes: 1) lack of skills, resources and information; 2) too small to capture the attention of investment banks or alike; 3) not affordable to the high search fee charged by vendors. Thus, reliable information about small business market is often limited. As a result, many companies in the small market have developed their own methods to identify and obtain information concerning potential alliance targets, rarely engaging investment banks during the identification phase, but occasionally employing them as the deal progresses. The odds of successful search and match become very low given their limited access to right information. In fact, traditionally labor-intensive search and match either by investment banks or by firms themselves have been both costly and time-consuming. To a large extent, this explains why investment banks are lured by large deals while rejecting small ones. On the demand side, small businesses are searching for more alliance opportunities than ever before while deal size has been increasingly declining since the last two decades. The globalizing, deregulation and internet are attributed to the driving forces of this trend. Under this circumstances, E-Alliances is able to close the huge gap between the demand side which represents the tremendous alliance search needs of small businesses worldwide and the supply side which is constrained by search capacity. The purpose of this paper is to examine how E-Alliances is able to help worldwide small business companies to reach their desired partners in a fast, cheap and DIY manner. The author will also

discuss the outlook of alliance. The results suggest that the entry of e-Alliances should stimulate alliance activity and enhance the efficiency of market.

In an alliance market, there exist huge numbers of firms which look for alliance opportunities. E-Alliances provides an online marketplace for firms to search and match each others. Each firm will first register in by offering its company information and desired partner criteria through a series of simple click of either single or multiple choices. To obtain an even higher quality partner list, searching firms can even enter more selection criteria by category method such as alliance type, locations, industry and/or by weighted preference of criteria called Deal Fit Index (DFI). The criteria designated basically enables specific firm to sort potential partners according to its alliance objectives and appropriate alliance structures which varies from equity-based alliances such as merger & acquisition, joint venture, etc. to non-equity-based ones such as joint-R&D, license agreement, OEM, etc. With all individual firm's information inside, E-Alliances automatically matches the firms and provides a shortlist of potential partners for each member firm. For advanced members, they are able to view a highly selective shortlist based on DFI, which are sorted from a huge member database throughout the world. The search and match of E-Alliances are 7×24 real-time based which automatically send email to logged-out members to inform them of new prospects which show interest in them. E-Alliances also provides mailbox for members to connect each other for further relationship building. The author concludes that E-Alliances significantly improves firms' ability to search quality partners from both scale and scope in a real time, global reach, and cost effective way. To facilitate the deal progress and provide the members with total solution, E-Alliances will strive to create the value chain by providing customer education programs to develop members' alliance skills and inviting qualified vendors to provide professional services like due diligence, valuation, negotiation, accounting and law, post-alliance integration, etc.

## 2. PERFORMANCE OF STRATEGIC ALLIANCE

Research has reported that building alliance will improve performance of both allying firms and market with an example of OEM partnership<sup>[1]</sup>. (Ren 2003) Consider a simple economy with only two firms: firm A and firm B. The both firms make same product. Firm A is legally allowed to sell its product in region B; in symmetry, firm B is legally allowed to sell its product in region A. Firm A and firm B can only make decision on the quantity of their own production, i.e., Cartel is prohibited.

The product price is the function of production in both region A and B, denoted by the following equation (1):

$$P(z) = a - z \quad (1)$$

The marginal cost is denoted by  $c$  and suppose there is no fixed cost of production. However, a firm must incur a fixed a fixed cost of distribution channel management in order to sell in a region, denoted by  $D$ .

Furthermore, in order to sell in an outside region, a firm has to not only incur the distribution cost but also bear the shipment cost. This suggests that the total cost of making and shipping one unit product is  $c/g$  with  $1 < g \leq 1$  (shipment cost is zero if  $g=1$ ).  $Q$  is the rental cost of one firm pays to another for the use of its infrastructure and distribution channel.

In direct competition, the two firms pursue each own profit maximization as equation (2) and (3):

$$\text{Firm A: } \underset{x, x}{\text{Max}}(x p_{(x+y)} + x^* p_{(x^*+y^*)} - cx - \frac{c x^*}{g} - 2D) \quad (2)$$

$$\text{Firm B: } \underset{y, y}{\text{Max}}(y p_{(x+y)} + y^* p_{(x^*+y^*)} - cy - \frac{c y^*}{g} - 2D) \quad (3)$$

On the other hand, when two firms ally in OEM model, they agree on the equilibrium point for a rental value  $q$ . Because the two markets are symmetric, we only consider the region A. In market region A, the profit maximization conditions of two firms are as shown below:

$$\text{Firm A: } \underset{x}{\text{Max}}(x(p_{(x+y)} - c) - D + y(q - c)) \quad (4)$$

$$\text{Firm B: } \underset{y}{\text{Max}}(y(p_{(x+y)} - q)) \quad (5)$$

To evaluate market performance, Ren (2003) examined the respective impact of the above two models on total surplus of welfare. In the Nash equilibrium of direct competition in market region A, the total surplus of welfare is as below:

$$W_1 = [\int_0^{z_1} p_z dz - z_{e1} p_{z_{e1}}] + [z_{e1} p_{z_{e1}} - c x_{e1} - (c/g) y_{e1} - 2D] \quad (6)$$

In the Nash equilibrium of OEM alliance model in market region A, the total surplus of welfare is as below:

$$W_1 = [\int_0^{z_1} p_z dz - z_{e2} p_{z_{e2}}] + [z_{e2} p_{z_{e2}} - c x_{e2} - c z_{e2} - D] \quad (7)$$

Obviously,  $W_1$  and  $W_2$  are the functions of the fixed cost  $D$  to set up distribution channels. To compare the performance of the above two situations, we find the partial derivative of the difference between  $W_1$  and  $W_2$  against variable  $D$ . as shown below:

$$\frac{\partial(W_1 - W_2)}{\partial D} = \frac{\partial(W_1 - W_2)}{\partial q} \cdot \frac{\partial q}{\partial D} = \frac{c - a + 9\sqrt{D_{\max} - D}}{8\sqrt{D_{\max} - D}} \quad (8)$$

Ren (2003) further discussed how  $W_1 - W_2$  differs in two cases when  $D=D_{\max}$  and  $D=0$ , respectively. He drew the conclusion that OEM alliance helps increase the total welfare and thus improve the market efficiency.

Studies of alliance performance are discussed in many other business literatures. Jay<sup>[2]</sup> (2002) suggested that alliance relationship building can be considered as real option so that its performance could be valued through adjusted Black-Scholes equation. However, he did not illustrate how to do that but instead, went back to a more intuitive NPV rule to value the synergy of allying firm A and firm B as below:

$$NPV(A+B) > NPV(A) + NPV(B) \quad (9)$$

### 3. ALLIANCE SEARCH AND MATCH THROUGH INTERMEDIARIES

#### 3.1 Cost of direct search and intermediary search

Consider a market with many heterogeneous firms who search and match for alliance. We review a simple economy with two firms: Firm A and Firm B, to seek each other for partnership. Before alliance, the two firms maximize their profit  $VA$  and  $VB$ , respectively. They directly reach each other to bargain and finally decide to ally. After allying, they achieve a profit  $V$ . However, a search cost is  $C$ . We suppose the alliance brings in a positive gain for both parties as below:

$$V - C > V(A) + V(B) \quad (10)$$

For simplicity, we suppose the both parties equally share the gain:

$$\frac{V - C}{2} \quad (11)$$

Given the uncertainty for search directly, suppose a intermediary can help both firms to find each other. The intermediary incur the search cost  $T$ . Apparently, when and only when the intermediary can reduce the search cost, the indirect transaction through intermediary can really happens, that is

$$T \leq C \quad (12)$$

The deal volume processed by intermediary is far exceeding that of an individual firm. Moreover, an intermediary stay much longer in the market than any single firm and thus build up a credibility which lasts much longer than that of an individual firm. The deal volume and brand longevity of intermediary create cost advantage over the direct search.

#### 3.2 Cost of human search and internet search

The search by intermediary can be human-based historically (e.g., investment banks, accounting firms, etc) and web-based which is innovative E-Alliances. Because of the uncertainty of search business, both human search and internet search will incur search cost. For instance, search results via internet can immediately appear on the screen while human search must wait for longer time. After wait, the alliance gain which is  $V - T$  is achieved and equally shared between the allying two firms. If the two firms discount the future alliance gain with ratio  $\delta$ , then the present value of the human search equals to

$$\frac{\delta(V - T)}{2} \quad (13)$$

This implies that the human search cost is

$$H = (1 - \delta)(V - T) \quad (14)$$

When and only when

$$I \leq H = (1 - \delta)(V - T) \quad (15)$$

The internet search is better off than the human search.

Since the human reach is limited by time and space, the human search can find the right match at a probability  $\beta$ . Suppose the website of internet search is widely known, thus the human search cost will be

$$H = (1 - \beta)(V - T) \quad (16)$$

If the matching process by human search is inefficient, then  $\beta$  is very small; consequently, internet search will be superior to the human search. In reality, while big firms have a broad network, professional expertise and good money to guarantee efficient search (increase  $\beta$ ), small business is inferior to this situation with limited access, few talents and less money to lure attention of search vendors ( $\beta$  is fairly low). Accordingly, a new approach to search and match for small business partnership is essential. E-Alliances becomes appealing to alliance search for small business due to its self-service, global reach and low cost.

### 4. WORKING MODEL OF E-ALLIANCES

E-Alliances provides an internet search marketplace for firms to search and match ideal partners. In particular, small business firms are targeted customers for this marketplace with driving factors in three folds: 1) neglect by human search institution because the deal is too small to capture the attention of investment banks or alike; 2) inaffordability to high human search cost; 3) liquidity generated by positive feedback of internet which follows the Metcalf Law. The online alliance search engine is supposed to provide small business a perfect tool to search and match at low cost, high speed and global reach.

#### 4.1 Quick match through Aladdin setting

To increase liquidity by attracting as many as possible firms to join in paid-membership, E-Alliances develops a quick match functionality to quickly show real-time match results by asking search firms to create their own Aladdin setting, which requests the firm to make single or multiple choices against a designated questions reflecting a series of search criteria of the firm. Once the firm finish and submit its result, it instantly shows on the screen a list of prospects which satisfy its Aladdin settings, as shown below



Figure 2. Illustrated list of quick match

The sequence of prospect list is sorted in Basic Match status based on their match level of criteria preset in Aladdin setting. The search firm can further review a prospect's profile by clicking its username as shown below



Figure 3. Illustrated prospect profile

If the firm is interested in the prospect, it can either send a email to the prospect or add the prospect into its hot list for later contact.

## 4.2 Browse profiles through demographics

To satisfy firms' need to search by demographics, E-Alliances provides category search such as alliance type, geographic and industry. The prospect list then further sequenced according to matching level with the above demographics, as shown below



Under this search mode, search is more accurate and time is further saved for the member firms.

## 4.3 Advanced search through Deal Fit Index®

To identify potential partners, searching firms should formulate the criteria for evaluating potential partners, and determine which candidate best meets these criteria. The main goal of the firm is to determine if there are suitable partners that can help it fill its capability gap. Making this selection requires that the firm understand and rank each prospective partner's critical attributes in terms of how well they meet the firm's criteria. E-Alliances provides the paid members with a designated criteria with weighted preference through single or multiple choices by simple clicks. As result of this exercise, the firm can quickly present the conceptual structure of the alliance to the candidates for their matching criteria. At the end of this stage, the firm should have a shortlist of prospects with best fit on its objectives for entering into the alliance, which are ranked by their Deal Fit Index (DFI®). The firm may also wish to re-examine the list of required partner attributes to confirm that the criteria is realistic by going back to its original setting to make adjustment of weight and preference.

## 5. CHALLENGES FOR E-ALLIANCES

Besides the functionalities designated, three other factors appear intrinsic to any marketplace able to sustain itself over the long term: liquidity, credibility and value-added services. These elements determine whether a marketplace can enlist users and provide them sufficient value to continue their participation. A marketplace initiative must manage these key issues well.

### 5.1 Liquidity

Generating liquidity by attracting enough customers is the most significant challenge to a marketplace's success. A new, electronic marketplace must compete against traditional methods of alliance service. While the e-business may offer administrative savings through automation, the presence of too few participants will leave marketplace prices out of alignment with regular channels.

### 5.2 Credibility

As a new, shared model for conducting business, marketplaces depend upon the trust of their participants. The marketplace host maintains access, at least theoretically, to all information that parties exchange. This insight into pricing and purchasing behavior can scare off participants fearful that the information may be turned against them in some way. While regulators will set rules limiting the worst abuses, consortia must take additional steps to demonstrate neutrality and build trust among marketplace users. Methods include setting up independent management executives and information firewalls between owners and participants. Pure plays

can attempt to claim the high ground as disinterested parties because the owners never buy or sell goods in the marketplace. However, as pure plays begin to accept equity investments from industry incumbents, the lines between ownership models begin to blur. Yet, in the end, liquidity cannot develop if users mistrust the marketplace and conduct transactions on other sites or through other channels.

### 5.3 Value-added services

To succeed in a long run, E-alliances must effectively integrate the value chain services into an alliance solution to the client.

Regardless of the alliance structure, alliance process is inherently complex at variety of difficulties which are far beyond small firms' capability because it heavily involve in people, process and tools. In other words, E-Alliances alone is not sufficient to satisfy firms' alliance needs. Alliance services typically comprise the following phases:

**Alliance needs assessment.** This services encompasses strategy consulting, including needs assessment, assistance with a decision on whether alliance is a feasible and beneficial option, evaluation of various options (m&a, joint venture, divestiture, OEM, channel sales agreement, joint R&D, etc.), and assistance in choosing the right option. The strategy work requires a deep knowledge of the client's business and tight alignment of merger options with the overall short- and long-term business strategy of a company.

**Partner selection.** The imperative task in this phase is assessing the strategic value of the partner. It is important not to treat it as a standalone activity. The valuation process must be closely integrated with the business strategy and integration plan to achieve the desired result.

**Due diligence.** Due diligence is conducted by the lead alliance services provider, or it is outsourced to an independent party.

**Transactional services.** Transactional services include negotiation and financial/legal advisory. A partner is chosen either by the alliance services provider together with the client.

**Customer education services.** Customer education programs seek to deliver information that enables customers to more effectively utilize a company's product.

## 6. OUTLOOK OF E-ALLIANCES

So far, I have interpreted how E-Alliances will help small business address their critical alliance issues from a market microstructure perspective. Since E-Alliances has intrinsically a global orientation, both from an alliance point view and internet standpoint, we are optimistic that it will become the world's largest base of

alliance. Its success will be not only measured by hit rate of customers, but also by the alliance deal success rate. Furthermore, E-Alliances provides an emerging market like China with a unique value to attract foreign direct investment, facilitate knowledge and technology transfer, and boost trade volume among countries. It will also help stimulate information transparency and establishment of national credit system. In essence, E-Alliances will contribute to accelerate the growth of worldwide small business by fostering successful alliances among them wherever they are.

## 7. CONCLUSIONS

Firms with complementary value are more likely to achieve synergetic performance through alliance than that of they work alone, even though the success is not guaranteed (according to David and Tammy<sup>[3]</sup> 2000, 50% of the alliance failed). To seek a partner, a firm can search by itself or by use of intermediary. The decision depends on the cost incurred by each alternative. For intermediary search, internet search reshaping the alliance economics by competing with the traditional human search. Giving its self-service, low cost, speed, global reach and 7×24 working mode, internet is gaining competitive advantage over the human search. Small business firms can benefit from the internet search most for they have limited access, few talents and less money. As an online marketplace, E-Alliances provides the small business with variety of search approaches to meet their search needs for alliances. However, while E-Alliances offers creative, promising functionalities, it faces challenges of liquidity and credibility generation, too. In particular, E-Alliances' success largely relies on the ability to restructure the alliance value chain by integrating E-Alliances and necessary value-added services into customer solution. To look ahead, E-Alliances will become the world's largest base of alliance and contribute to both micro- and macro economy by facilitating firm collaboration around the world.

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