THE EFFECTIVENESS OF PARALLEL AND SINGLE SOURCING: PURCHASING AND MARKETING IMPLICATIONS

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ABSTRACT

In business-to-business markets supply-chain partnerships have become an important kind of strategic alliance. They are a.o. characterised by extreme and long term source loyalty. Consequently single and parallel sourcing strategies have become alternatives to multiple sourcing in industry. In single sourcing only one vendor is selected; in parallel sourcing different sources are used for a family of related items, whereas each item individually is sourced from a single source. One could expect the performance of both single and parallel sourcing to be superior to the performance of multiple sourcing. Is this really so? Do purchasing managers in Europe expect to use those strategies more often in the future? We try to formulate a preliminary answer to those questions in this research. Further, implications and guidelines are formulated for both supplier and buyer.
PROBLEM DEFINITION

In the business-to-business marketing literature as well as in the purchasing management literature, there is a widely shared view that buyer-seller relationships have undergone a major transformation over the past decade. As the IMP-group has demonstrated during the eighties (Hakansson, 1982; Ford, 1990), business-to-business relationships are often characterized by a process of long term commitment and trust. The short-term transactions only constitute episodes, "snap-shots" in the picture book of a marriage (Dwyer, Shurr and Oh, 1987).

Relationship marketing or the development and maintenance of partnerships in the supply chain has replaced the traditional one-time-transaction oriented marketing/sales attitude. It is by many considered to be the most appropriate marketing response to buyers, wishing to contract on the basis of long-term total costs rather than on the basis of short-term prices and conditions. Conflicts and problems between buyers and sellers are objectively analysed and solved by rooting out their causes (Spekman, 1988; Landeros and Monckza, 1989). Both parties gradually get to know each other and build mutual trust (Hawes, 1994). The conflict model is gradually replaced by a more cooperative model (Matthyssens and Van den Bulte, 1994) in which openness mutual commitment and source loyalty are important characteristics (Morris and Holman, 1988).

In this study we look at supply chain partnerships from the angle of source loyalty. The reduction of the supplier base is indeed described in the purchasing literature as being utilized widely by companies developing supplier partnerships (Bhote, 1989; Ramsey, 1990; Presutti, 1990; Dyer and Ouchi, 1993). It is often referred to as a single source strategy in which buying companies voluntarily choose to stay with only one supplier in a market where otherwise different alternative sources of supply exist. The stimulation of (price) competition among suppliers is no longer considered as a necessarily prosperous activity. Simultaneously, dependence on a single source is no longer
considered as a major threat to the continuity of the company (Newman, 1988). De Burca and Mc Loughlin (1995) and Lyons, Krachenberg and Henke (1990) emphasized the magnitude of the costs associated with maintaining an extensive supplier base and listed the numerous advantages to the buyers and sellers of the strategic moves into close relationships.

Single sourcing contrasts sharply with sole sourcing. The latter refers to cases where only one source is known to exist or to be reliable for the specifications sought in the product or service which is bought. Single sourcing represents an extreme form of source loyalty and pre-supposes a high level of mutual adaptation (Morris and Holman, 1988) of the marketing and buying company. This literature has focused extensively on the pros and cons of such a strategy, but only limited empirical research has been conducted (Presutti, 1990; Kavil, Mummalaneni and Scheuing, 1990; Sriram and Mummalaneni, 1990; De Burca and Mc Loughlin, 1995).

Recent qualitative research suggests that single sourcing has certain drawbacks (such as over-dependency on one source, less competitive pressure on the supplier and less competitive price structures). As such, large industrial companies try to limit these dangers by choosing for a single sourcing approach for one component, but at the same time introducing competition on the level of a family of related components (Keough, 1993; Asmus and Griffin, 1993; Richardson, 1993).

This approach has been labelled as parallel sourcing. As an example, one might consider an automotive company producing two different car models and buying a similar though somewhat different braking system for both of them. The braking system for model A will be bought from supplier A as a single source. Supplier B will be the single source for the braking system for model B. As such, each different product is bought from a single source, but the company keeps two parallel sources for braking systems as a family.

Watts, Kim and Hahn (1995) and Hines (1995) report contradictory evidence as to the effectiveness of parallel sourcing as compared to single sourcing. The former
hypothesizes that parallel sourcing is to be considered the very best sourcing strategy in two different buying situations, namely in cases where services are bought and in those product situations where the relationship between buyer and seller is more important (e.g. high-tech). Single sourcing, according to these authors would be the most effective sourcing strategy in partnership situations which are service or expertise-oriented. These conclusions were based however on limited case research. The latter still finds single sourcing to be the predominant alternative, especially in cases where large enterprises rely heavily on small or medium-sized single source subcontractors as in the case in traditional Japanese network buying.

The empirical literature on the importance and effectiveness of the different sourcing strategies is scarce. Presutti (1990) surveyed purchasing managers in the Pittsburgh area (USA) and states that 12 % of all important purchases in his sample were based on a single source strategy. This figure is quite close to the 20 % figure observed in the Long Island Region (USA) by Kavil, Mummalaneni and Scheuing (1990). The same authors have concluded later (1991) that there was no statistical evidence suggesting that single source performance was significantly better than multiple source performance in a survey of 35 buying companies. In their study, performance was measured on nine dimensions such as price, quality, delivery, responsiveness in case of problems, product innovation, commitment of both partners to the contract, cost reduction, fairness and flexibility. They also found out that only 10 % of the responding purchasing managers were likely to expand single sourcing as a strategy (Mummalaneni, Kavil and Scheuing, 1991). Performance was not seen by purchasing managers as having an impact on their attitudes towards future sourcing strategies. The authors suggest that since single sourcing leads to higher performance expectations, the performance comparison could not indicate statistically relevant differences between single and multiple sources.
In specific, the objectives of our present research are:

1. to compare the performance of multiple, single and parallel sourcing strategies with each other from the point of view of the buying company;

2. to identify determinants and decision criteria which can be used in the choice of the three sourcing strategies;

3. to study the (potential) impact of the sourcing strategy adopted on the performance criteria used by the buyer to evaluate suppliers;

4. to study changes in suppliers' marketing and sales strategies in response to (and/or prior to?) a change in customers' sourcing strategy.

RESEARCH DESIGN

So far, a mail survey has been sent out to cover research topics one and two (partly). The sample was large in geographic coverage as we expected not all purchasing managers to be familiar yet with parallel sourcing as a strategy. Test questions were added to the first part of the survey to identify those not familiar with all three sourcing strategies. Their answers were not considered relevant to the testing of our hypotheses and will not be taken into account further. The following part of the survey was narrow in scope and focused on performance measures and actual and future attitudes towards sourcing strategies.

The mail survey in English was sent to members of the Professional Purchasing Associations of Belgium (VIB and ABCA) the Netherlands (NEVI) and the Northern and Eastern Part of France (CDAF-Picardia, Flanders, Pas de Calais and Alsace et Lorraine). Only companies with over 500 employees were selected in the sample. As such, 1476 questionnaires were send in total over a 15 month period during 1995 and 1996; 512 were returned. This is considered to be a satisfactory response rate, as only one reminder letter was send to those companies
not returning the questionnaire within 3 to 4 weeks. Finally, 213 relevant answers were gathered and can be processed in our analysis.

Table 1 lists the sectors to which the companies answering to our questionnaire belong.

Table 1 Research sample: subdivision by sector in industry (N = 213)

<table>
<thead>
<tr>
<th>Sector</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metal manufacturing</td>
<td>37</td>
</tr>
<tr>
<td>Services</td>
<td>33</td>
</tr>
<tr>
<td>Equipment manufacturing</td>
<td>26</td>
</tr>
<tr>
<td>Food manufacturing</td>
<td>25</td>
</tr>
<tr>
<td>Chemicals and pharmaceuticals</td>
<td>21</td>
</tr>
<tr>
<td>Paper manufacturing</td>
<td>15</td>
</tr>
<tr>
<td>Textile and apparel</td>
<td>13</td>
</tr>
<tr>
<td>Telecommunications</td>
<td>9</td>
</tr>
<tr>
<td>Electronics</td>
<td>9</td>
</tr>
<tr>
<td>Office equipment</td>
<td>4</td>
</tr>
<tr>
<td>Building equipment</td>
<td>3</td>
</tr>
<tr>
<td>Construction work</td>
<td>3</td>
</tr>
<tr>
<td>Others (sectors &lt; 3 units)</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td><strong>213</strong></td>
</tr>
</tbody>
</table>

On the basis of the above mentioned literature review, a number of research hypotheses were developed. Expectations regarding the results of single sourcing have always been rather high. Most authors (Lyons, Krachenberg, Henke, 1990; Han, Wilson and Dant, 1993) consider the benefits involved such as lower costs, improved quality and delivery performance, better product design and lower transaction costs largely to outweigh the drawback of increased dependence on one supplier. Empirical evidence, however, does not suggest so far that the
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The performance of single sources is superior to the performance of multiple sources. We do believe that fear of over-dependance on one source might lead purchasing managers to underestimate performance levels of single sources. In their mind, parallel sourcing strategies might not be subject to this fear, as they are exactly designed to overcome this over-dependence.

Therefore we hypothesize that:

H1: Performance of single sources will not tend to be superior to the performance of multiple sources.

and

H2: The performance of parallel sources, on the contrary, will be superior to the performance of multiple sources.

The testing of H1 is as such a replication of the study performed by Mummalaneni, Kavil and Scheuing (1991).

As described above, most of the literature indicates an increased tendency to a single source strategy. Dyer and Ouchi (1993) state that, although cultural factors might inhibit a successful transfer of this essentially Japanese strategy to the Western business world (Ramsey, 1990), supply chain partnerships tend to become even more similar in different economic regions of the world. In Japan, parallel sourcing has become a standard purchasing practice as well (Richardson, 1993; Hines, 1995). As it constitutes the only and widely recorded strategy to overcome the major drawback of over-dependence on a single source, without hampering the major benefits of source loyalty (Asmus and Griffin, 1993), we expect this practice to become more widespread in the future.

Therefore we suggest that the actual performance evaluation of any sourcing strategy will influence its adoption in the future is such a way that:
H3: The more parallel and single sourcing are considered superior to multiple sourcing, the more likely they will be adopted more in the future

and

H4: The more parallel sourcing is considered superior to single sourcing, the more likely it will be adopted more in the future.

H3 is disconfirmatory research of the Mummalaneni, Kavil and Scheuing (1991) - research in as far as single sourcing is compared to multiple sourcing. We should however bear in mind that the research sample of those authors was rather small (only 35 cases).

A next step of the study will consist of interviewing a small set of companies adopting different sourcing strategies simultaneously to identify differences in the vendor rating and evaluation criteria. Next, some of their suppliers will be interviewed to find out their strategic and tactical responses to changes in sourcing strategies of their partners.

By the time of the conference, analyses on the questionnaire results will be finished and preliminary results on the interviews will be available.

BIBLIOGRAPHY


