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A comparative study of sourcing strategies

Niels Peter Mols, Poul H. Andersen,
David F. Birks, and Per Nikolaj D. Bukh

UNIVERSITY OF AARHUS • DENMARK

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Niels Peter Mols

Poul H. Andersen

David F. Birks

Per Nikolaj D. Bukh

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Autobiographical notes:

Niels Peter Mols
Associate Professor
Department of Management
University of Aarhus, Bygn. 350
DK-8000 Aarhus C, Denmark
E-mail: nmols@econ.au.dk

Poul H. Andersen
Associate Professor
Department of International Business
The Aarhus School of Business
DK-8210 Aarhus V, Denmark
E-mail: poa@hha.dk

David F. Birks
Lecturer in Marketing
School of Management
University of Bath
Bath, England, BA2 7AY.
E-mail: mnsdfb@bath.ac.uk

Per Nikolaj D. Bukh
Associate Professor
Department of Management
University of Aarhus
Denmark
E-mail: pbukh@econ.au.dk

Send correspondence to:

Niels Peter Mols
Department of Management
Universitetsparken 350
Aarhus Universitet
8000 Aarhus C, Denmark
E-mail: nmols@econ.au.dk
Tlf: +45 8942 1554
Fax: +45 8613 5132

A COMPARATIVE STUDY OF SOURCING STRATEGIES

ABSTRACT

Industrial consumers' use of single, dual or multiple sourcing strategies indicate, for example, how loyal they are towards their suppliers and whether they are transaction-oriented or relationship-oriented. In consequence, information about buyers' sourcing strategies is useful for sellers when evaluating and targeting different customer segments. This paper starts by reviewing the literature on single, dual, and multiple sourcing. It then goes on to investigate possible relationships between European corporate customers' sourcing strategies with regard to their domestic cash management banks in 1996 and 1998, and their intentions to increase or decrease the number of banks they use. It then goes on to examine their sourcing strategies by their geographical location, company size, industry type and market coverage. A questionnaire completed by more than 1000 corporate customers in 1996 and 1998 reveals that in most European countries the number of companies using three or more banks has decreased. Further, it indicates that the single sourcing segment is large in Austria, Ireland, and Norway. The segment relying on dual sourcing is large in the Scandinavian countries, whereas the segment using three or more banks is the largest in France, Greece, Italy, Portugal and Spain. No strong significant relationship is found between the descriptors of sourcing segments and company size, industry type, and market coverage, but the results show a widespread intention of reducing the number of banks used. Finally, the implications of these results are discussed.

Keywords: single versus multiple sourcing, cash management, European corporate customers.

INTRODUCTION

Many companies use several banks for their domestic cash management, other companies rely on only one or two banks for these services. Others have in-sourced their cash management and established an 'in-house' bank. The alternative number and types of bank used have distinct advantages and disadvantages, representing an investment and a commitment to a certain type of buying behaviour. Hence, the decision to in-source or to use single, dual or multiple sourcing have long-term implications for the buyers (e.g. Goffin *et al.*, 1997; Gadde and Hakansson, 1994).

Companies' sourcing strategies regarding cash management services are interesting for the suppliers of cash management services, i.e. the banks, because they place different requirements on the banks and because purchasing policies may serve as segmentation bases for the banks (Bonoma and Shapiro, 1983; Kotler, 1997). Companies using multiple sourcing have contacts to many alternative banks and should be better informed about the market for cash management services, i.e. prices and service specifications. They are not tied to a single bank and are likely to be more transaction-oriented, trying to get the best deal by use of the market forces. Companies using single sourcing are more likely to emphasise a partnership approach where trust and long-term orientation are central. They tend to be relationship-oriented and focus on reducing costs and improving service quality through cooperation. Hence, multiple sourcing is an indicator of a transaction orientation whereas single sourcing is an indicator of a relationship orientation (cf. Goffin *et al.*, 1997), or as noted by Ford *et al.* (1998, p. 141), single and multiple sourcing for the same service have many similarities with those about close and loose relationships.

For banks that operate in several European countries, an important question therefore is: do

European corporate customers all use the same sourcing strategies? or, can the characteristic of using single, dual or multiple sourcing be attributed to the type of industry, company size or location in Europe? The answer to these questions may determine whether a preferred marketing strategy is applicable in all countries, and towards firms of all sizes and in all industries.

Equally important to the banks are their corporate customers' planned changes in the number of cash management banks that they use. These planned changes may also differ amongst European countries, and according to industry type and company size. The differences and developments in sourcing strategies have major implications for the cash management banks in Europe. With a trend of a decreasing number of banking relationships, it is not an attractive proposition to be bank number four or five - it is important to be the lead bank (Moriarty *et al.*, 1983). Further, a decreasing number of banking relationships is an indication that the focus is changing towards a more relationship-oriented buying behaviour. With a static number of banking relationships it may be a viable strategy to be a secondary bank. In other words, such stability indicates that there is room for several smaller specialised banks serving the same corporate customers. It is also an indication that there is no movement in the focus regarding transaction or relationship orientation. An increasing number of banking relationships is an indication that the present banks are unable to solve the future cash management problems of their largest corporate customers. It also signals to banks that it is possible to form new relationships with these customers.

This paper aims at answering the following three related questions:

S How many banks do the largest companies in Europe use for domestic cash management and how does this number differ according to the country, industry type and company size?

S How has this number changed and in what direction is it likely to change in the future?

S What are the implications for the cash management banks operating in Europe?

First, the theoretical context to these questions is outlined and the data collection method is described. Then the results are presented and evaluated. Finally the managerial implications are highlighted.

THEORETICAL CONTEXT

Following the description presented by Goffin *et al*. (1997), we distinguish between single, dual and multiple sourcing. Some companies may have reduced their available market choice to rely on the same bank in subsequent choice situations, i.e. they *single source*. Other companies use two different banks for their cash management services, that is they *dual source*. Finally, some companies may use several different banks, i.e. they *multiple source* their cash management services. This categorisation produces three different customer segments based on the customers' present sourcing strategies. For future developments, companies have to decide whether to keep their present number of banks or to either increase or decrease the number of banks used for supplying cash management services. This makes it possible to divide each of the three segments as shown in Figure 1.

< Take in Figure 1>

This nine-celled figure has the advantage in that it adds a dynamic perspective to the three sourcing segments as recommended by Wind and Thomas (1994). By adding indicators of growth or decline it illustrates that segments are unstable, and it becomes possible to evaluate their future attractiveness (cf. Dickson, 1997; Kotler, 1997).

Buyers' sourcing strategies

The observation of single-sourcing practice can have several interpretations. One instance of single sourcing may be purely accidental, e.g. for a period, one of the suppliers has been able to repeatedly provide better or cheaper services or to match the competitors' offerings. More likely however, single sourcing is a consequence of market forces having reduced the number of available suppliers to only one. The supplier may have gained a monopoly and thus substantial bargaining power (Porter, 1980). Alternatively, either the supplier or the buyer may have invested in highly transaction specific assets, which have tied them to each other (Williamson, 1996). In both cases the single sourcing is probably regarded as unwanted by the buyer, and early management views have warned about such situations (cf. Treleven, 1987).

However, single sourcing may also be desired by both the supplier and the buyer (cf. Goffin *et al.*, 1997; Chatterjee *et al.*, 1995; Treleven, 1987). By choosing single sourcing, the buyer signals that price is not necessarily as important in the short-run as the development of the relationship and cost reduction through cooperation. The product or the service is probably complex and specialised. The buyer may have difficulties in describing his needs and wants and it is more important to get the right service than to have a standard treatment at a low price. Ford *et al.* (1998) refer to this situation as one of high need uncertainty on the part of the buyer. They point out that in such a situation, the buyer is likely to establish a strong relationship with a supplier, with whom he has positive experiences and whom he feels he can trust.

Another aspect is that single sourcing allows a more close relationship and the development of a thorough understanding of each others strengths and weaknesses. Eventually, the buyer may view the seller as an external source of a broad range of resources such as people, knowledge, and network connections (Dyer and Singh, 1998). The central element is not the product, the service nor a single exchange episode but the relationship itself. In this way it manifests a development from a product/service focus to a relationship focus (MacKenzie and Hardy, 1996). Hence, by depending on a single supplier it becomes possible for the buyer to enter into a closer cooperative relationship involving investments in transaction specific assets. This improves the daily interaction, the product and process developments and hence the performance of the companies in the relationship. For example Moriarty *et al.* (1983) note that the investments in complex cash management systems makes it advantageous for the corporate customers to use fewer cash management banks. However, a close cooperative relationship is resource demanding (Blois, 1997), especially when the relationship is being established. Therefore it is only possible to develop a few close relationships at a time (cf. Ford *et al*., 1998), and consequently the implementation of a conversion from a multiple sourcing strategy to a single sourcing strategy takes time.

Dual sourcing spreads the efforts to reduce production and transaction costs to two suppliers, but they are still relatively high-share customers for the banks and hence it may be possible to obtain the same advantages as with single sourcing. Ford *et al*. (1998, p. 143) note from observations of the electronic components industry and the Japanese automotive firms that dual sourcing does not prevent a company from developing close relationships with both suppliers. However, dual sourcing establishes two competing relationships, allowing the buyers to obtain reliable information about two alternatives, and thus to benchmark the two alternatives against each other (Kapoor and Gupta, 1997; Chatterjee *et al.*, 1995). The banks are aware that the buyers are both willing and able to transfer business from one bank to the other. The awareness of the existence of both common and conflicting goals is likely to be higher than with single sourcing. On the one hand, both want to reduce the costs of their activities and increase the quality of the services. On the other hand, they struggle over who should benefit the most from the cost reductions, and neither the banks nor their customers are likely to forget that the banks' revenues are the companies' costs. The buyers may not know or trust the banks but need to interact closely with one or a few of them. Such a situation involves a high degree of transaction uncertainty (Ford *et al*., 1998). Goffin *et al*. (1997) found that the companies they studied focused strongly on back-up suppliers (see also Chatterjee *et al.*, 1995; Treleven, 1987). The companies feared single sourcing, not because they did not trust their suppliers but because of factors which were outside the control of their suppliers, e.g. a fire.

Multiple sourcing indicates that the buyers rely more on an arms-length approach rather than on establishing cooperative relationships. They maintain a wide portfolio of banks and no single bank is likely to obtain a large share of the companies' spending on cash management services. With multiple sourcing the price and quality of the service are in focus. Cross-selling is viewed as the banks' means to exploit their customers. As noted by Ford *et al*. (1998) the buyer may be uncertain about the market and therefore reluctant to commit to a supplier that may turn out to be a non-optimal choice in a rapidly changing market. The buyers strive to minimize their risk and maximise their bargaining power by ensuring several alternative suppliers (e.g. Kapoor and Gupta, 1997; Chatterjee *et al.*, 1995). Hence, an important element connected with this strategy is the spread of buying from several different suppliers in order to increase the bargaining power (e.g. Ford *et al*., 1998). It is important for buyers to avoid becoming dependent on one or a few banks. Close cooperation with the inherent knowledge sharing and investments in transaction specific assets are avoided. Many relationships can be regarded as a way to impede opportunism and increase competition amongst the sellers. However, multiple sourcing also leads to greater complexity, and it can be difficult to coordinate the deliveries from many different service providers. Hence, search and coordination costs may be high (Chatterjee *et al.*, 1995).

Buyers’ intended changes in sourcing strategies

The buyers of services may intend to either increase, decrease or not change the number of banks that they use for cash management services. The intention to increase the number of banks indicates that the company is becoming more transaction oriented. It may be dissatisfied with its present relationships and may want to find additional alternatives in order to increase its buying power, to lower its dependence and to reduce the risk of using only few banks. Another reason may be that the need uncertainty is decreasing and the market uncertainty increasing. To reduce the market uncertainties the buyers may attempt to increase competition and lower the emphasis on cooperation (Kapoor and Gupta, 1997; Ford *et al*., 1998).

The intention to reduce the number of cash management banks indicates a commitment to engage in closer cooperation with fewer banks. It indicates less need for risk reduction, an intent to invest in relationship specific assets, and a recognition that it has become too costly to maintain a large number of contacts at many different banks. Thus, a move towards single or dual sourcing and closer cooperation with a cash management bank could be an attempt to reduce the costs and to provide access to desired resources (e.g. Goffin *et al*., 1997; Gadde and Hakansson, 1994). Ford *et al*. (1998, p. 141) argue that there are three reasons for a buyer to reduce their number of suppliers: (1) to reduce the costs of handling the relationships, (2) to increase their purchasing power and (3) to be able to concentrate on developing fewer but more productive relationships. For companies which at present are only using one cash management bank, the intent to reduce this to no banks requires the existence or establishment of an 'in-house' bank.

The companies which do not intend to change the number of banks signal that they are satisfied with their present number of banks and have found an effective mix of competition and cooperation. Stability with respect to sourcing strategy is probably believed to be at an optimal level. Alternatively, companies may perceive high switching barriers, which prevent them from adding or deleting one or more banks from their portfolio of cash management banks.

The intention to reduce or increase the number of bank relationships may also be explained by bank activity. Banks' service offerings may become more or less differentiated. A higher comparability between the different offerings will encourage a price-oriented market approach amongst buyers. The banks may also pursue strategies which encourage loyalty, making companies reduce their number of cash management banks. Hence, Moriarty *et al*. (1983) noted that many commercial banks increasingly emphasise relationship banking, trying to establish long-term institutional relationships with their corporate customers in order to win a larger share of the customer's business.

Banks' marketing strategies

For the banking sector, a number of authors have advocated relationship banking as a successful strategy in commercial banking (Berry and Thompson, 1982; Turnbull and Gibbs, 1987; Moriarty, Kimball and Gay, 1983; Perrien, Filiatrault and Ricard, 1992, 1993). Following the IMP-studies (see Hakansson, 1982; Ford *et al*., 1998) the distinction between discrete transactions and collaborative relationships has been used to formulate marketing strategies (e.g. Gronross, 1990; Keltner, 1995; Keltner and Finegold, 1996). Focusing on corporate banking relationships, Moriarty *et al.* (1983) argued that whether customers are transaction-oriented, i.e. emphasising price and quality, or relationship-oriented emphasising long-term, trusting win-win relationships, has implications for a bank's strategic product decisions. However, in the context of banking the issue of relationship has also been disputed, as pointed out by Day (1985). Bankers themselves have been quick to argue that they strive for a unique relationship with every customer. Based upon their understanding of a customer, being able to cross-sell a mix of products that best fulfill the distinct needs of individual customers (cf. Moir, 1988). Underlying this stance is a wish to become the sole supplier of cash management services to their corporate customers. Banks want to offer a unified solution to a company's cash management needs. For the ambitious bank, the ideal is being the preferred bank and not having to share the customers with other banks. In other words, most banks want to become sole suppliers of cash management services, and consequently the corporate customers to be single sourcers of bank services.

In reality however, banks face three groups of potential customers in terms of present sourcing strategies. Customers using a single sourcing strategy are probably more relationship oriented and thus likely to be sympathetic to relationship banking. Moriarty *et al.* (1983) noted corporate customers' tendency to use fewer banks has stimulated the implementation of relationship banking. Relationship banking is described as focusing on the profitability of the total customer relationship over time as opposed to a transaction orientation which focuses on getting the maximum profit from any individual product or transaction. Key elements in a relationship-oriented strategy are cross-selling to the corporate customers on a recurring basis, interdependence between the bank and its customers, the creation of mutual trust, shared objectives, and a long-term view of the relationship (Moriarty *et al.*, 1983). These relationships often show a complex pattern of interaction between the members of the two organisations and bonds of different types and strengths, i.e. economic, informational, organizational knowledge, technical and social bonds (Thunman, 1992).

As mentioned previously, the advantages of emphasising relationships are a reduction of uncertainty and costs through routinisation, and easier joint problem solving through an open exchange of information. Customers that desire a relationship-oriented strategy are those who value relationship banking and consider the long-term perspectives of the relationship instead of the temporary gains from ‘transacting’. Once the banks have established a relationship with them, these firms are likely to be less price sensitive (Thunman, 1992) and thus constitute a stable customer segment, which will be difficult for competitors to capture (Gronross, 1990, p. 148). A relationship-oriented strategy is, however, a resource demanding strategy that requires the patience to establish and build the trust and closeness needed.

In an environment of wide-spread single sourcing, banks that seek to develop new business in another country, might find that all potential or attractive customers have entered into close relationships with other banks. The companies may have invested in relationship specific assets and be tied into their existing relationships. Such strong single sourcing relationships may constitute a high entry barrier, and a bank entering such a market will face a hard time attracting new customers and building relationships (Treleven, 1987). Only in cases where existing relationships have caused potential customers problems and generated dissatisfaction, may a late entrant have a chance of gaining a new customer. In other words, there are strong first-mover advantages in segments where the customers are willing to commit themselves to using only one bank. An important and necessary capability becomes the ability to identify and approach the companies which are relationship-oriented but dissatisfied with their existing relationship.

At the other extreme are the multiple-sourcing customers. These customers are likely to emphasise the trade off between price and quality as the most important criteria in selecting cash management banks. These customers are best targeted with a transaction-oriented strategy which regards each transaction as independent and perceives the customer as reacting to stimuli such as the price of the offering. The strategy does not value long-term relationships in themselves but rather regards them as a manifestation of a bank's ability to continuously offer better quality products or services at lower costs than competing banks. Thus, customers matching a transaction-oriented strategy are price/quality sensitive and non-loyal (e.g. Moriarty *et al.*, 1983). They do business with the bank which at present offers the best product in cost-quality terms, and if the bank is in a position to offer its customers quality products at low cost, it will gain a large market share. However, it is not a strategy that generates loyal customers, and therefore transaction-oriented banks are vulnerable to competing banks. Also multiple sourcers are often buying less, and consequently they are on average less profitable than single sourcers, which has led for example Knox (1998) to recommend reconsideration to let go of low-share customers.

DATA COLLECTION

European corporate customers of cash management banking services were questioned about their sourcing strategies for domestic cash management, and their planned changes. These questions were set in the context of a comprehensive survey dealing with issues related to different aspects of pan-European cash management and electronic banking practices. The survey was conducted in 1996 and developed and repeated in 1998. The surveys were designed on the basis of studies of cash management practices in 1994 as well as on information available from a pilot questionnaire and interviews with bankers and corporate treasurers (cf. Birks, 1998).

During the first six months of 1996, a questionnaire was sent to 5783 firms representing the largest firms measured by sales for non-financial companies and assets for non-bank financial companies in 20 European countries including 3 Eastern European countries. A total of 1129 partially or fully completed questionnaires were returned, corresponding to a 19.5 percent response rate.

In the first six months of 1998 a similar questionnaire was sent to 5800 firms representing the largest firms (using the same criteria as in 1996). It was similar to the 1996 questionnaire in that many questions were identical to allow comparisons over time, but given the dramatic impact on cash management practices faced by preparations for the EMU, certain questions had to be changed or added. In the 1998 study, 17 European countries were surveyed, this time excluding two Eastern European countries. A total of 1079 partially or fully completed questionnaires, corresponding to a 18.6 percent response rate, were returned. For both 1996 and 1998, the response rate differed from country to country, which indicates that non-response bias might be a problem. The distribution of respondents by country, industry type, and annual home-country sales is shown in Tables I-III (for additional information on the 1996-survey see Birks, 1998).

In each country the survey was undertaken by a local university business school to facilitate access to the firms in their respective countries. The questionnaire was sent under cover of a personal letter from the appropriate business school addressed to the most appropriate person identified in the firm. In many countries, the covering letter also identified sponsorship from national cash management trade associations. The identity of the ‘appropriate’ person in a target company was established through a telephone ‘warm-up’ before the questionnaire was posted. Respondents held positions such as finance director, treasurer or cash manager of the company. In some of the countries the questionnaire was translated into the respective languages, but the questions were the same in every country. Sending out the questionnaire to target respondents was followed up with a telephone chase for its completion and return.

The two surveys were not prepared for tracking individual respondents. However, some of the respondents supplied their names and the name of their company on the questionnaire. Based on the company names and their country code, it was possible to identify the responses from 160 companies which had participated in both 1996 and 1998.

SOURCING STRATEGIES 1996 AND 1998

< Take in Table I >

The cross-tabulation in Table I indicates that the number of relationships and location were related in both 1996 (χ^2=208.7, p<0.001) and 1998 (χ^2=238.1, p<0.001). Hence, European corporate customers differ among countries regarding the frequencies of the three different sourcing strategies. In 1998, most single sourcers were found in Austria and Norway. Companies using two cash management banks constituted a large group in Finland and Sweden, whereas multiple sourcers having three or more relationships are especially large groups in the Southern European countries like Greece, Italy, Portugal and Spain and including France. Though the results seem similar for 1996 and 1998, there is a trend towards fewer companies using multiple sourcing and more companies using single sourcing in most European countries; exceptions are for example Sweden and Switzerland. Hence, the development towards fewer banks noted by for example Moriarty *et al*. (1983) seems to be widespread in Europe.

< Take in Table II >

In 1998 the number of relationships and industry (cf. Table II) are only weakly related (χ^2=46.0, p=0.017). In the 1996 questionnaire industry type was measured by an open question, and no relationship between industry type and sourcing strategies was found (χ^2=90.6, p=0.463). On average, non-banking financial institutions and insurance and pensions companies have a larger number of cash management banks than other types of industry. However, the 15 different industry groups are much more homogeneous than the different countries regarding the number of cash management banks used by the largest companies. Hence, type of industry is not a good surrogate for the present sourcing strategy.

< Take in Table III >

The results in Table III indicate that in 1998 sourcing strategies and company size (χ^2=18.02, p=0.206) are not related. Similar results were found in 1996 (χ^2=20.8, p=0.106) . The number of European countries in which the company group operated was used as an additional indication of company size. We found no significant relationship between on the one hand the companies' market coverage and on the other, the number of banks used, neither in 1996 (χ^2=13.562, p=0.094) nor in 1998 (χ^2=7.498, p=0.484). Thus, the results of this study provide no empirical support to the proposition that segments formed on the basis of sourcing strategies are related to macro-segments derived from the companies' sizes and market coverage.

The 160 companies which could be identified as having answered the questionnaire in both 1996 and 1998 allowed us to track the extent to which individual buyers were using the same sourcing strategy for successive periods (cf. Table IV). This is an important aspect of stability for two reasons. First, it makes it possible to describe the number of respondents having shifted sourcing strategies between 1996 and 1998. Second, it becomes possible to register the scope of the changes in number of cash management banks used by these companies, i.e. how radically the companies have changed their sourcing strategies.

< Take in Table IV >

The results in Table IV shows a remarkably high degree of stability. Nearly 75 percent of the companies used the same sourcing strategies in both 1996 and 1998 (χ^2=82.580, $p<0.001$). If the shifts between the segments measured by percentages are used to predict the future sizes of the segments, the results are that single sourcing will be used by approximately 26 percent of the companies, dual sourcing by 20 percent of the companies and multiple sourcing by 54 percent. This high stability of segment sizes is in contrast with, for example the many authors who seem to assume that by nature segments are unstable, in particular Dickson (1997) and Kotler (1997), who note that the market-segmentation procedure has to be updated frequently or carried out periodically. It is also in contrast with the few studies on segment membership stability, which registered a much higher degree of instability. For example, Farley *et al.* (1987) reported a low degree of membership stability in a mature consumer market, where less than 50 percent of the respondents were in the same segments for two successive periods. Calatone and Sawyer (1978) too found that segment membership was independent of any previous classification, and that as few as 28.8 percent of the consumers remained in the same segment during a time span of two years.

INTENDED CHANGES IN SOURCING STRATEGIES

The aggregate results of the 1998 survey are shown in Table V which is structured similar to Figure 1.

< Take in Table V >

The cross-tabulation indicates that the variables are related (χ^2=140.5, $p<0.001$). Most companies do not intend to change the number of suppliers. Especially the companies using single and dual sourcing are very stable segments and probably satisfied with their sourcing strategies. Among the companies using a multiple sourcing strategy there is a clear tendency towards wanting to reduce the number of bank relationships. Hence, the segment which uses multiple sourcing and intends to reduce the number of banks makes up almost 27 percent of all respondents. This result is in accordance with the general tendency to reduce the number of suppliers noted by e.g. Bakos and Brynjolfsson (1993), Goffin *et al.* (1997), and Ford *et al*. (1998). Though the results reflect only part of the customer relationships in the financial services industry, the results are probably generalisable to other industries. They are strong indications that large European companies are becoming less transaction oriented and more relationship oriented in their relationships with their banks. Some companies may have less need for risk reduction and are trying to reduce the costs connected with the many relationships. However, it is also worth noting that approximately seven percent of the companies plan to move in the opposite direction and increase their number of cash management banks. Hence, there is a large diversity in both the number of banks used and the intended changes in sourcing strategies among large European companies with regard to their use of domestic cash management banks.

< Take in Table VI >

The three columns in Table VI contain the indicators of growth, stability and decline of the sourcing segments in different European countries. The intended changes in the number of relationships and countries are related (χ^2=189.0, $p<0.001$). Thus, not only do the segments differ among countries, but also in their dynamics. Hence, this aspect of the attractiveness of the segments also differs among countries. The most stable markets are in Sweden and Austria, where 87 percent of the companies do not intend to change the number of cash management banks. The intentions to decrease the number of cash management banks are most widespread in countries like Belgium, Italy, and Spain - all countries with many multiple sourcing companies. The intentions to increase the number of cash management banks varies between 0 percent and 23 percent of the companies in the 17 countries. Only in Finland do more companies intend to increase their number of cash management banks (17.1 percent) rather than decrease the number of cash management banks (9.8 percent). If the intention to decrease the number of bank relationships is a reliable predictor of the developments in the number of bank relationships, the trend towards more single sourcing companies will continue and the sourcing strategies used in the different European countries will converge. Hence the heterogeneity in Europe with regard to the large companies use of cash management banks may be disappearing.

A chi-square test (χ^2=32.4, p=0.260) indicated that intended changes in the number of relationships and type of industry are not related. Further, no relationship between the intended changes in the number of relationships and company size was found (χ^2=6.678, p=0.946). The number of European countries in which the company group operates was used as an additional indication of company size. However, we found no significant relationship between on the one hand, the companies' market coverage and on the other, the intended changes in the number of relationships (χ^2=15.797, p=0.045). Hence, neither type of industry, company size nor market coverage can serve as surrogates for the intended changes in the number of cash management service suppliers.

DISCUSSION AND MANAGERIAL IMPLICATIONS

Not knowing a customer's sourcing strategy can lead to problems and ineffective use of marketing resources. For example, a bank may use a relationship approach towards customers which are pursuing a multiple sourcing strategy, or it may try to attract single sourcing customers by emphasising price and other marketing tools which are more appropriate towards transaction-orientated customers. Hence, it is important for the banks to develop an understanding of their customers and an important part of such knowledge is whether the customers are single, dual or multiple sourcers. Information about the sourcing strategies of the customers may, however, be hard to achieve because it requires intimate knowledge of the customers. This study tried to relate information about sourcing strategies to the respondents' industry type, size of firm, market coverage and geographical location, which are all highly visible and therefore easy to use, for example for segmentation.

The analysis revealed three large customer segments, which European cash management banks can choose among and tailor their offerings to. The single sourcing segment was the smallest with 14.5 percent of the customers in 1996 and 17.3 percent of the customers in 1998. This segment is best targeted with a relationship-based marketing strategy, which suggests that such a strategy could be successful for some banks. The multiple-sourcing segment was the largest with 66.7 percent of the customers in 1996 and 62.7 percent in 1998. This segment is best won by the use of a transaction-based marketing strategy. The dual-sourcing segment, which is a little larger than the single-sourcing segment is best addressed by a combination of a relationship-based and a transaction-based marketing strategy, where low prices, a high service quality and emphasis on relationships are all likely to be important.

A highly significant result was that the three sourcing segments differed in terms of their relative size in different European countries. Hence, the size of the segments in the European corporate market for financial services is dependent on location. In countries like France, Greece, Italy, Portugal and Spain, a relatively large proportion of the corporate customers belonged to the multiple-sourcing segment. In Finland and Sweden the dual-sourcing segments were large, whereas countries like Austria and Norway had a large percentage of customers belonging to the single-sourcing segment. Despite the significant differences between these countries, the first impression is that the largest segment of multiple sourcers is substantial in all European countries with sizes ranging from 18.6 percent in Norway to 91.3 percent in France in 1998. The multiple sourcing segment crosses the borders whereas the single sourcing segment is very small (<5 percent) in countries like Czech Republic, Finland, France, Greece, and Italy (cf. Table I).

There was no or only very weak relationships between the sourcing segments and industry type, company sales and market coverage. This indicates that these three variables are not usable as surrogate measures for segments based on the customers' sourcing strategies. In other words, neither industry type, company sales nor market coverage is usable for determining whether the corporate customers should be approached by using a transaction-based or a relationship-based marketing strategy. Furthermore, the results support the segmentation schemes combining several segmentation bases, such as Wind and Cardozo's (1974) two-stage approaches, the nested approach to segmentation (Bonoma and Shapiro, 1983) and the integrated segmentation framework suggested by Chéron and Kleinschmidt (1985).

The results suggest that banks which are targeting one of the three sourcing segments can not use the easily identifiable variables such as company size, market coverage, and industry type for segmenting the European market for cash management services. Location, i.e. country, was significantly related to the sizes of three sourcing segments and thus, country can be used as a rough approximation for banks wanting to know the size of the single sourcing, the dual sourcing, and the multiple sourcing segments in different parts of Europe in 1996 and 1998. Hence, the survey results suggest, for example, that there would be plenty of business for banks targeting the single sourcing segment especially in Norway. However, the results might also be interpreted such that it may be too late for banks presently targeting the multiple sourcing segment to convert to target the single sourcing segment by implementing a more relationship-oriented strategy, simply because the corporate customers valuing relationships have already established strong ties with one domestic cash management bank. Thus, the results may also be seen as depicting present bank strategies and be an indication of the number of banks competing for the three segments.

The Tables V-VI also include indicators of growth, stability and decline of the three sourcing segments. These indicators suggest that the segments using single or dual sourcing were growing in size, whereas the segments using three or more banks were shrinking. This result has major implications for banks' targeting decisions because according to Kotler (1997), the attractiveness of segments should be evaluated in terms of both size and growth. Another important aspect to consider when deciding on which segments to target is the profitability of each segment. Because segment sizes are likely to influence the profitability of a particular segment, targeting decisions may turn out to be risky when size instability is present. In this scenario, targeted segments may be smaller than expected at the time of the targeting decision, and hence the process of making long-term strategic decisions and investments is complicated considerably. A few good lead banks will be strengthened, if the reported movement among the corporate customers towards the use of fewer cash management banks continues, whereas many third and fourth banks are likely to suffer from a lack of customers and some will disappear from the market.

However, instability is a matter of degree, and the observed changes in segment sizes are only substantial enough to warrant attention if they significantly alter the profitability of the marketing actions of a specific bank. Even though the changes in segment sizes indicated by this study seem significant, they are not necessarily extensive enough to require any immediate alterations of the banks' marketing strategies. They might be so small that they neither affect the strategic decisions of the banks nor influence the competitive advantage of any of the banks operating in this market. Another complicating factor is that the results may be interpreted in two different ways: One interpretation sees the market segments as being formed independently of seller activity. Thus, it is not considered possible for the banks to alter the sizes and profiles of the market segments. Another interpretation views changes in the market segments as a result of seller activity. Thus, it is the competing banks which together influence the sizes and profiles of the market segments through different kinds of manipulations of the marketing mix.

The first interpretation leads to a focus on market surveillance and monitoring, and the conclusion is likely to be that for the growing single-sourcing segment, it is possible for banks to create and implement long-term marketing strategies and thus dedicate resources for purposes with a pay-back period of more than one or two years. It also reduces the need for frequent market analysis and segmentation. In case of shrinking segments, such as the multiple-sourcing segment, the more long-term investments in this segment is connected with a higher risk, and market surveillance becomes a more important task for the banks pursuing a transaction-based strategy.

The second interpretation shifts the focus to competitor activity. Thus, competition becomes a battle between different banks in order to make the customers choose an appropriate sourcing strategy, by which the banks will achieve substantial market segments for which competition is weak. In this case the movement towards the use of fewer cash management banks indicates that the banks pursuing a relationship-based strategy and striving to become the sole supplier of cash management services to specific customers, have been successful in creating intentions to decrease the number of banks used for cash management, and therefore the future seems to bring more single sourcers.

This study has only described the sourcing strategies of the large European companies with regard to their domestic cash management banks in the years 1996 and 1998. The sourcing strategies differed among the European countries but no theories explaining these differences were offered. The study also registered a widespread shift in sourcing strategies between 1996 and 1998 and with regard to the intentions to change the number of banks used. Some of the questions which remain unanswered are, why this shift should occur now, what may be the explanation of such a shift and why should there be a large difference between the sourcing strategies used in different countries. An explanation may be related to the introduction of the Monetary Union and differences in attention to the single Euro currency in the different European countries. It is therefore suggested that future research should try to relate the shifts in the companies' cash management practices to expectations and experiences connected with the adoption of the single Euro currency. One of the conclusions of this study is that geographic location seems to be a better basis for forming quasi-sourcing segments than macro variables such as market coverage, industry type and company size. It is therefore surprising that the relationship between location and different micro variables like purchasing approaches, benefits sought and personal characteristics is a seemingly neglected area in industrial marketing. Hence, further empirical research in this area is desirable in order to investigate and extend the scope of the conclusions.

REFERENCES

Bakos, J.Y. and Brynjolfsson, E. (1993) "Information Technology, Incentives, and the optimal Number of Suppliers", *Journal of Management Information Systems,* Vol 10 No 2, pp. 37-53.

Berry, L.L. and Thompson, T.W. (1982) "Relationship Banking: The Art of Turning Customers Into Clients", *The Journal of Retail Banking,* Vol 4 No 2, pp. 64-73

Birks, D.F., ed. (1998) *Global Cash Management in Europe*. MacMillan Press, London.

Blois, K. (1997) "Are Business-to-Business Relationships Inherently Unstable?", *Journal of Marketing Management*, Vol 13, pp. 367-382.

Bonoma, T.V. and Shapiro, B.P. (1983) *Segmenting the Industrial Market*, Lexington Books, D.C. Heath and Company, Massachusetts Toronto.

Calantone, R.J. and Sawyer, A.G. (1978) "The Stability of Benefit Segments", *Journal of Marketing Research*, Vol 15, August, pp. 395-404.

Chatterjee, S.C.; Hyvönen, S. and Anderson, E. (1995) "Concentrated vs. Balanced Sourcing: An Examination of Retailer Purchasing Decisions in Closed Markets", *Journal of Retailing,* Vol 71,, No 1, pp. 23-46.

Chéron, E.J. and Kleinschmidt, E.J. (1985) "A Review of Industrial Market Segmentation Research and a Proposal for an Integrated Segmentation Framework", *International Journal of Research in Marketing*, Vol 2, No. 2, pp. 101-115.

Day, A, (1985) "Selling to the Corporate Customer", *International Journal of Bank Marketing*, Vol 3 No 4, pp. 60-70

Dickson, P.R. (1997), *Marketing Management*, The Dryden Press, Hartcourt Brace College Publishers, Fort Worth.

Dyer, J.H. and Singh, H. (1998) "The Relational View: Cooperative Strategy and Sources of Interorganizational Competitive Advantage", *Academy of Management Review*, Vol 23 No 4, pp. 660-679.

Farley, J.U., Winer, R.S. and Lehmann, D.R. (1987) "Stability of Membership in Market Segments Identified with a Disaggregate Consumption Model", *Journal of Business Research*, Vol. 15, No. 4, pp. 313-328.

Ford, D.; Gadde, L-E; Hakansson, H.; Lundgren, A.; Snehota, I.; Turnbull, P. and Wilson, D. (1998) *Managing Business Relationships,* John Wiley & Sons Ltd., Chichester.

Gadde, L.-E. and Hakansson, H. (1994) "The changing role of purchasing: reconsidering three strategic issues", *European Journal of Purchasing and Supply Management*, Vol 1 No 1, pp. 27-35.

Goffin, K.; Szwejczewski, M. and New, C. (1997) "Managing suppliers: when fewer can mean more", *International Journal of Physical Distribution & Logistics Management,* Vol 27, No. 7, pp. 422-436.

Gronross, C. (1990) *Service Management and Marketing*, Lexington Books, Massachusetts.

Hakansson, H., ed. (1982), *International Marketing and Puchasing of Industrial Goods*, John Wiley & Sons, Chichester.

Kapoor, V. and Gupta, A. (1997) "Aggressive Sourcing: A Free-Market Approach", *Sloan Management Review*, Fall, pp. 21-31.

Keltner, B. (1995) "Relationship Banking and Competitive Advantage: Evidence from the U.S. and Germany", *California Management Review*, Vol 37 No 4. pp. 45-73

Keltner, B. and Finegold, D. (1996) "Adding Value in Banking: Human Resource Innovations for Service Firms", *Sloan Management Review*, Vol 38 No 1, pp. 57-68

Knox, S. (1998) "Loyalty-Based Segmentation and the Customer Development Process", *European Management Journal*, Vol 16 No 6, pp. 729-737.

Kotler, P. (1997), *Marketing Management. Analysis, Planning, Implementation, and Control*, 9th edition, Prentice-Hall International, London.

MacKenzie, H.F. and Hardy, K.G. (1996) "Manage your offering or manage your relationship?", *Journal of Business & Industrial Marketing*, Vol. 11 no. 6, pp. 20-37.

Moir, L. (1988) "Relationship Banking - What it Means to the Treasurer", *The Treasurer*, p. 37.

Moriarty, R.T., Kimball, R.C. and Gay, J.H. (1983) "The Management of Corporate Banking Relationships", *Sloan Management Review*, Vol 24 No 3, pp. 3-15

Perrien, J., Filiatrault, P. and Ricard, L. (1992) "Relationship Marketing and Commercial Banking: A Critical Analysis", *International Journal of Bank Marketing*, Vol 10 No 7, pp. 25-29

Perrien, J., Filiatrault, P. and Richard, L. (1993) "The Implementation of Relationship Marketing in Commercial Banking", *Industrial Marketing Management*, Vol 22 No 2, pp. 141-148

Porter, M.E. (1980) *Competitive Strategy*,The Free Press, New York.

Thunman, C.G. (1992) "Corporate Banking: Services and Relationships", *International Journal of Bank Marketing*, Vol 10 No 2, pp. 10-16

Treleven, M. (1987) "Single Sourcing: A Management Tool for the Quality Supplier", *Journal of Purchasing and Materials Management*, Vol. 23, spring, pp. 19-24.

Turnbull, P.W. and Gibbs, M.J. (1987) "Marketing Bank Services to Corporate Customers: The Importance of Relationships", *International Journal of Bank Marketing*, Vol 5 No 4, pp. 7-19

Williamson, O.E. (1996), *The Mechanisms of Governance*, Oxford University Press, Oxford.

Wind, Y. and Cardozo, N. (1974) "Industrial Marketing Segmentation", *Industrial Marketing Management*, Vol 3, March, pp. 153-165.

Wind, Y. and Thomas, R.J. (1994) "Segmenting Industrial Markets", *Advances in Business Marketing and Puchasing*, Vol. 6, pp. 59-82.

Present sourcing strategy:	Intended changes in number of relationships:		
	Increase	No change	Decrease
Single sourcing	Towards dual or multiple sourcing	Stable single sourcing	Towards in-house sourcing
Dual sourcing	Towards multiple sourcing	Stable dual sourcing	Towards single sourcing
Multiple sourcing	Cementing multiple sourcing	Stable multiple sourcing	Towards single or dual sourcing

Figure 1 - Present and Intended Changes in Sourcing Strategies

	Sourcing strategies						Number of relationships			
Countries:	Single		Dual		Multiple		Mean		N	
	1996 %	1998 %	1996 %	1998 %	1996 %	1998 %	1996	1998	1996	1998
Austria	19.4	36.7	13.9	26.7	66.7	36.7	5.2	5.1	36	30
Belgium	0.0	20.0	25.0	0.0	75.0	80.0	11.1	17.6	8	5
BCCs	22.8	25.5	16.3	19.2	60.9	55.3	4.6	4.1	92	47
Czech Republic	3.5	3.7	10.3	18.5	86.2	77.8	4.7	4.5	58	54
Denmark	10.2	13.2	26.5	32.1	63.3	54.7	3.5	4.0	49	53
Finland	1.1	4.9	29.1	43.9	69.8	51.2	3.6	3.1	86	41
France	4.2	4.4	4.2	4.4	91.7	91.3	11.3	7.1	24	46
Germany	15.9	19.3	7.9	12.1	76.2	68.7	8.1	5.4	63	83
Greece	0.0	0.0	8.1	11.5	91.9	88.5	7.4	6.0	37	26
Hungary	14.0	-	7.0	-	79.1	-	4.0	-	43	-
Ireland	23.8	24.3	34.9	21.6	41.3	54.1	3.2	3.6	63	37
IFSCs	22.2	38.9	33.3	16.7	44.4	44.4	3.3	3.8	18	36
Italy	3.1	3.4	3.1	7.6	93.8	89.0	15.2	12.8	64	118
Luxembourg	28.6	-	0.0	-	71.4	-	5.0	-	7	-
Netherlands	14.6	20.0	25.0	24.4	60.4	55.6	3.5	3.3	48	90
Norway	26.8	47.5	34.2	33.9	39.0	18.6	2.3	1.8	41	59
Poland	7.7	-	15.4	-	76.9	-	3.3	-	13	-
Portugal	5.1	6.5	2.6	6.5	92.3	87.1	11.5	8.8	39	31
Spain	1.5	5.8	7.4	8.7	91.2	85.4	9.7	7.3	68	103
Sweden	22.9	16.7	33.3	41.7	43.8	41.7	2.5	2.7	48	24
Switzerland	41.7	21.2	19.4	30.3	38.9	48.5	3.6	4.4	36	33
UK	23.2	29.4	27.5	27.7	49.3	42.9	2.9	3.2	138	119
Total	14.5	17.4	18.8	19.9	66.7	62.7	5.6	5.5	1079	1035

Note: Frequency missing 1996=50; frequency missing 1998= 44; BCCs = Belgian Coordination Centres; IFCSs = International Financial Service Centres (Ireland).

Table I - Sourcing strategies by country - 1996 and 1998

	Sourcing strategies			
Industries:	Single %	Dual %	Multiple %	Mean
Oil/Gas	28.0	20.0	52.0	4.8
Manufacturing	22.4	15.2	62.4	5.1
Metals	17.0	24.5	58.5	5.2
Food/bevarages/tobacco	11.8	26.5	61.8	4.4
Chemicals/pharmaceuticals	14.4	20.3	65.0	5.3
Electronics	19.4	22.2	58.3	4.4
Utilities	43.3	6.7	50.0	6.0
Construction/engineering	15.0	23.3	61.7	6.2
Retail/wholsesale	19.1	14.6	66.3	5.3
Services	12.0	22.0	66.0	5.0
Transport	18.6	14.0	67.4	5.5
Telecommunication	11.5	26.9	61.5	7.4
Non-banking Financial Institutions	29.2	14.6	56.3	8.1
Insurance and Pensions	13.2	17.0	69.8	7.7
Other	9.8	27.7	62.5	5.3

Note: Frequency missing = 84

Table II - Sourcing strategies by industry - 1998

	Sourcing strategies			
Worldwide sales in million US$	Single %	Dual %	Multiple %	Mean
Less than 100	14.6	24.5	60.9	4.9
101 to 250	17.7	16.9	65.4	5.0
251 to 500	13.8	22.8	63.4	5.4
501 to 1,000	24.8	18.4	56.9	4.4
1,001 to 2,000	18.8	16.3	65.0	6.1
2,001 to 5,000	9.7	24.2	66.1	7.0
5,001 to 10,000	13.6	4.6	81.8	5.4
over 10,000	26.1	17.4	56.5	6.3

Note: Frequency missing = 338

Table III - Sourcing strategies by size of companies in the survey: annual home country sales of company in million US$ - 1998

Sourcing strategies:	Single - 1998		Dual - 1998		Multiple - 1998		Total - 1996	
	n	%	n	%	n	%	n	%
Single - 1996	17	11.6	2	1.4	6	4.1	25	17.0
Dual - 1996	7	4.8	20	13.6	7	4.8	34	23.1
Multiple - 1996	7	4.8	10	6.8	71	48.3	88	59.9
Total - 1998	31	21.1	32	218	84	57.1	147	1000

Note: Frequency missing = 13

Table IV - Respondents' changes in sourcing strategies from 1996 to 1998

Intended change in the number of banks:	Increase	No change	Decrease	N
Single sourcing:	6.2%	88.7%	5.1%	177
Dual sourcing:	7.4%	80.9%	11.8%	204
Multiple sourcing:	7.0%	50.1%	42.9%	641
N	71	643	308	1022

Note: frequency missing = 57.

Table V - Sourcing strategies and intended changes in bank relationships - 1998

	Intentions to change number of banks		
Countries:	No change	Increase	Decrease
Austria	87.1%	3.2%	9.7%
Belgium	40.0%	0.0%	60.0%
BCCs	53.2%	2.1%	44.7%
Czech Republic	68.5%	14.8%	16.7%
Denmark	81.6%	8.2%	10.2%
Finland	73.2%	17.1%	9.8%
France	57.5%	0.0%	42.6%
Germany	71.8%	5.9%	22.4%
Greece	38.5%	23.1%	38.5%
Ireland	84.6%	5.1%	10.3%
IFSCs	63.2%	15.8%	21.1%
Italy	33.9%	3.3%	62.8%
Netherlands	68.5%	6.5%	25.0%
Norway	78.3%	10.0%	11.7%
Portugal	56.3%	9.4%	34.4%
Spain	41.0%	6.7%	52.4%
Sweden	87.5%	0.0%	12.5%
Switzerland	65.7%	2.9%	31.4%
UK	71.2%	5.1%	23.7%
Total	62.8%	7.1%	30.1%

Note: Frequency missing = 30; BCCs = Belgian Coordination Centres; IFCSs = International Financial Service Centres (Ireland)

Table VI - Intended changes in bank relationships by country - 1998

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