Olli-Pekka Juhantila[1] and Veli-Matti Virolainen[2]

[1] D.Sc. (Econ. & Bus. Adm.), M.Sc. (Eng.)
Dean
South Carelia Polytechnic
Business Administration, Tourism and Hospitality
P.O.Box 112 (Pohjolankatu 10)
53101 Lappeenranta, Finland

[2] Professor of Purchasing and Supply Management
Lappeenranta University of Technology
Department of Business Administration and Economics
P.O. Box 20
Fin 53851 Lappeenranta
Finland
Phone: + 358 40 5411862
Fax: +358 5 6212699
email: vmv@lut.fi

Buyers' expectations from their suppliers

Abstract

External relationship management assumes more strategic significance as companies become reliant on third parties. The key purposes of these engagements are to gain competitive advantage and to add value to a company's internal operations. Thus the process of managing business relationships during all respective stages is a critical success factor.

This paper explores the fundamental expectations buyers have from their potential suppliers. This is done in order to create an understanding on how to improve the results of intercompany engagement processes - the intitial stages of the relationship management continuum - applied by industrial companies. The fundamental questions to be answered are "What do industrial buyers expect from their suppliers?" and "What are the key attributes of a good supplier?" It is generally understood that to become a supplier to a company requires passing their supplier qualification program and thus meeting the respective supplier qualification criteria. Therefore it is important to understand what such programs and criteria might be and are they generic ones or specific to a particular industry or even a company. Furthermore a question of interest is: "Are the ways proposed by literature and described in industry processes aligned with: a) the true evaluation criteria of purchasing decision-makers; and b) the ingredients of a successful relationship"?

When observing the attributes to a good and to a poor supplier there is a common understanding on the role of the traditional three critical success factors time, cost and quality. However, when observing the attributes revealed in the empirical research on a more detailed level, it is clear that there is a difference between the main geographical regions.

Even though there is a reasonably good alignment concerning good supplier attributes across the industry and literature, they are reflected in companies' supplier qualification criteria only occasionally. Furthermore there is less alignment in what different companies measure during their process of supplier evaluation. When further comparing these criteria with what is actually preferred by purchasing managers i.e. those making or at least significantly influencing the supplier selection and qualification decisions, it can be observed that there is a great mismatch between the official supplier selection criteria published by companies and the actual criteria based on which decisions are made. Thus it can be assumed that there is a significant amount of subjectivism involved in the decision-making.

When comparing the good supplier attributes with the preferred criteria the purchasing managers have identified there is a rather good alignment between the two both world-wide and regionally. Also this suggests that purchasing managers rather pay attention to what they have experienced to be important to a successful supplier relationship than to what is the official decision-making criteria.

1. Introduction

1.1. Background

Understanding, interpreting, creating, impacting, and managing the relationships at supply markets are the most important denominators of supply strategy. Executives across a broad spectrum of market sectors are striving to adapt to the accelerating competition, the consequences of shorter product life cycles, rapid commoditization of once differentiated products and corresponding weakness in overall pricing across many categories (Hughes et al. 1998). There is a growing appreciation that the roots of competitive advantage are changing. Companies must look for new sources of business success. Relationship management has an essential role in providing new advantage (Mota and Castro 2002). It is essential to recognize that a company cannot achieve its objectives only through internal knowledge and capabilities. Successful companies have identified that business relationships are an important value driver for them (Wimmer and Mandják 2002; Leek et al. 2002)

One way of approaching business relationship management is to observe it as an evolutionary continuum. According to Ford et al. (1998) such a process consists of four stages, which are: pre-relationship, exploratory, developing and stable. The foundation of a business relationship is laid during the first – pre-relationship – stage in which the need for a relationship is recognized. While a company moves towards the second stage it typically conducts an evaluation of potential collaborator's capabilities against a set of pre-defined qualification criteria.

Supplier evaluation and screening have received a lot of attention in research during the last decades. The main research streams have focused on a variety of techniques related either to the processes or to the evaluation criteria. The results of these studies are rather controversial and do not provide a clear common understanding of the subject. The environment of several businesses has become more complex through the following trends: globalization of supplier sourcing, increase in the role of outsourcing, and increase of collaboration between buyers and their suppliers (Iandoli et al. 2003). A describing example of such an industry is electronics manufacturing. Some of its typical characteristics are heavily impacting the relationship management within it: high clockspeed of the whole industry including rapid technology renewal and short product life cycles; materials are typically marketed and acquired from global markets; materials represent a dominant proportion of manufacturing costs (even above 90%); there is a general downward trend in component and material prices; to an extent the industry is vertically integrated, which lead to business relationships even between direct competitors; electronics manufacturing is typical assembly industry in which products are assembled from components acquired from the market or to an extend through vertical integration to component manufacturing (Juhantila 2002).

1.2. Objectives of the study

This study concentrates of the first stage from the perspective of what are the buyers' expectations from their suppliers and thus how they should be addressed in order to relieve the inertia, which is typical to this particular stage of the process.

The purpose of this study is to explore the fundamental expectations buyers have from their potential suppliers. This is done in order to create an understanding on how to avoid waste caused by the potential set-backs, which are typical to the relationship evolution process (Ford et al. 1998). It also provides for reducing the controversy of the earlier research. The fundamental questions are “What do contemporary buyers expect from their suppliers?” and “What are the key attributes of a good supplier?” A related question of interest is: “Are the ways proposed by literature and described in industry processes aligned with: a) the true evaluation criteria of purchasing decision-makers; and b) the ingredients of a successful relationship”?

The questions are explored from two complementary directions. First there has been conducted a literature survey on the earlier research and theories of different buyer supplier relationship. Secondly there has been conducted an empirical study within electronics manufacturing industry to verify the practical application of the research findings.

2. Theoretical review of supplier qualification and respective criteria

It is generally understood that to become a supplier to a company requires passing their supplier qualification program and thus meeting the respective supplier qualification criteria. The topic of supplier qualiication has been discussed widely during the past few years under the titles of qualification, selection and/or approval.

The scope of discussion is quite diverse: some authors discuss the process, some discuss the decision-making tools, and some discuss the criteria as a core of the activity.

The following overview demonstrates the earlier mentioned controversy of current research in the context of relationship initiation. The list is not intended to be complete, rather a demonstration.

Ittner et al. (1999) have identified a correlation between supplier selection, monitoring practices and a company's performance under the condition of a non-arms-length supplier strategy. Verma and Pullman (1998) concentrate on studying how purchasing managers manage the tradeoffs between the high-level supplier attributes of cost, quality, delivery, lead-time and flexibility. Newman (1988) suggests an eight-dimension qualification evaluation mainly concerned with quality, cost, scheduling and contract performance. The study of Choi and Hartley (1996) identifies consistency of practices over the tiers of the automotive industry supply chains and contains an extensive high-level list of qualification criteria.

Braglia and Petroni (2000) have identified that there is a potential problem in evaluating both quantitative and qualitative selection criteria simultaneously. They suggest the use of a methodology based on the use of cross-efficiency in data envelopment analysis (DEA), which would provide for complete objectivism. A similar proposal is made by Liu, Ding and Lall (2000) as well. To solve the dilemma between quantitative and qualitative criteria Min (1994) has proposed the use of a multi-

attribute utility (MAUT) approach to evaluate alternatives by simplifying the complexity of variables through a simple hierarchy for subjective analysis.

Applying a supplier qualification process typically requires a set of qualification criteria against which the final evaluation and comparisons are done. Several authors have suggested a set of sufficient and optimal criteria for the purpose. A major issue related to the discussion is that there is only a limited consistency with the suggested criteria and thus it is difficult to draw reliable conclusions of what would be an optimized set of criteria to be applied.

Baily, Farmer, Jessop and Jones (1994, pp 126-128) have suggested two complementary sets of criteria which focus on experience and demonstrated capabilities; Ellram (1990) focuses on strategic fit; Gay and Essinger (2000, pp 118-119) promote policies and past performance; Goldfeld (1999, pp 65-77) focuses on control of measurable facts; Greaver (1999, pp 173-178) divides his criteria into two categories – hard and soft qualifications; MacBeth and Ferguson (1992, p 169) promote strategies, systems and organizational issues; Partnership Sourcing Ltd. (Saunders, 1997, p 267) supports criteria related to capabilities and attitude; Schorr (1998, pp 29, 215-223) stresses the importance of management processes; Underhill (1996, pp 52-56) focuses on total cost; and White and James (1996, pp 146 - 152, 249-256) are supporters of relationship related criteria. A much more limited view on the subject has been developed by Maass, Brown and Bossert (1990, pp 7-8), who argue that appropriate criteria would consist of quality, delivery, technical support, management attitude and cost. Tersine and Campbell (1977, p 95) are even more concise. They limit the criteria to price and delivery.

Research on applying supplier selection and /or qualification criteria has also been conducted by several authors. Vonderembse and Tracey (1999) have identified a correlation between applying supplier selection criteria, involving suppliers with product development and continuous improvement, and manufacturing performance. Swift and Gruben (2000) discuss the influence of gender on supplier selection weighing criteria, with conclusion that on certain items there is a difference and thus potential for business development managers to apply another micro-segmentation variable. In an earlier study Swift (1995) has found that the preferred sourcing strategy (single vs. multiple) has an impact on the valuation of qualification criteria. Wilson (1994) has studied the evolution of selection criteria and arrived at the conclusion that there is a continuous evolution process going on and during the past three decades especially the valuation of mere product price has significantly decreased in the benefit of more collaborative attributes.

Pearson and Ellram (1995) have studied the differences of supplier selection practices in small and large electronics companies. Their conclusion was that there is no significant difference in selection criteria attributable to company size.

3 Empirical study

3.1 Methodology

To maintain the strategic relationship perspective outsourcing of secondary functions, MRO purchases and other trivial buying situations have been excluded from the

study. All studied situations as well as respective respondents are related to managing relationships with suppliers of components, materials and assemblies. Electronics manufacturing was selected to be studied due to the mentioned industry characteristics.

The empirical part of this study consists of a survey conducted using self-administered questionnaires within the electronics manufacturing industry. The questionnaire is a combination of strictly qualitative open-ended questions and questions to collect ordinal data on the importance of supplier qualification criteria identified in the literature; this data could be used for quantitative analysis, but in this context it is used for the purpose of qualitative analysis only. The data has been collected by using ordinal scale measurement and questions involving a subjective five-point continuum scale. The five-point scale was selected to ensure appropriate responses.

To avoid any potential confusion, an instruction document was created and distributed to the respondents with the questionnaire. Additional preventive actions were taken to avoid the disadvantages of self-administered questionnaires as much as possible (Fowler 1993, p 66): The validity and clarity of the survey design and questions were tested by allowing four experienced practitioners to study them and provide feedback. The instructions on how to fill in the questionnaire and the final version were created on the basis of feedback received. To ensure the quality of responses the researcher was available to answer any questions from the respondents, and an opportunity for anonymous discussion was provided by e-mail messages through a focal person in each company. Special attention was paid to

formulating the questions to ensure clarity and to make sure that each respondent understood the questions in a similar manner. For the same reason universally recognized terminology was used.

Critical sampling issues were considered to ensure the accuracy of the survey (Fowler 1993) as follows: Probability sample was not considered to be relevant for this research because the participants were purposefully selected. The comprehensiveness of the sampling plan was ensured by involving companies with comparable businesses and wide geographical coverage, including companies from Asia-Pacific, Europe and North America. The size of the sample was not intended to provide very high coverage over the whole industry. It does, however, provide a representative sample of the selected companies, which on the other hand are good representatives of the electronics manufacturing industry. The design was highly influenced by the companies' willingness to participate. The participants were selected in a manner enabling the highest possible response rate. This was ascertained by prior request from a number of companies. Only those companies, which agreed to participate in the first place were included in the sampling plan. The original plan was to include 14 companies. During the pre-selection and screening two of the intended companies declined. To maintain the desired global coverage and representativeness, two additional companies were included. However, two companies did not return the questionnaires, and thus the response rate was 86%.

3.2 Description of the data

The empirical data was collected between January 2001 and May 2002. The lengthy period of data collection is explained by the fact that this particular study is a part of a larger research program, part of which is already published and part of which will be published in other contexts. The sample size varied from one to eight depending on the company – the total sample size being 46. Twenty-eight responses came from six companies of Asian origin, six from two North American companies and twelve from four European ones. Direct comparisons between the regions were not made due to the different sample size, but when relevant some indicative demonstrations are presented below.

The respondents were asked to list the five most important attributes of a good supplier, as well as the five best describing a poor supplier. Good supplier attributes, which clearly stand out are: high quality, delivery accuracy, responsiveness and service, low/competitive cost and competitive price. Similarly poor suppliers are characterized by poor quality; poor responsiveness, bad service, arrogance or missing customer focus; poor delivery accuracy; high price and high cost. Some differences in the emphasis of attributes and characteristics between the regions can be identified when observing the most common characteristics, i.e. ones which were mentioned by several respondents, as can be seen in table 3.1.

Attributes to a good supplier			
World-wide	**Asia**	**North America**	**Europe**
High quality	High quality	High quality	High quality
Delivery accuracy	Delivery accuracy	Low / competitive cost	Delivery accuracy
Responsiveness / Service	Responsiveness / Service	Delivery accuracy	Low / competitive cost
Low / competitive cost	Competitive price	Responsiveness / Service	Flexibility
Competitive price	Low / competitive cost	Advanced technology	Proactive communication
Advanced technology	Advanced technology	Reliability	Responsiveness / Service
Co-operation / partnership	Co-operation / partnership		Competitive price
Flexibility	Technical support		Failure analysis, corrective actions and continuous improvement
Failure analysis, corrective actions and continuous improvement	Flexibility		Profitability
Good quality control system	Matching product roadmap		
Technical know-how	Short lead-times		
Proactive communication			

Attributes to a poor supplier			
World-wide	**Asia**	**North America**	**Europe**
Poor quality	Poor quality	Poor responsiveness, bad service, arrogance or missing customer focus	Poor responsiveness, bad service, arrogance or missing customer focus
Poor responsiveness, bad service, arrogance or missing customer focus	Poor delivery accuracy	Poor quality	Poor quality
Poor delivery accuracy	Poor responsiveness, bad service, arrogance or missing customer focus	Unreliability	Unreliability
High price	High price	High cost	Inflexibility
High cost	High cost	Lagging technology or technical knowledge	Poor delivery accuracy
Inflexibility	Long lead-times	Poor delivery accuracy	Poor management support or commitment to co-operation
Unreliability	Inflexibility	Poor management support or commitment to co-operation	Poor communication
Lagging technology or technical knowledge	Poor communication		High cost
Poor communication	Poor quality management system		Lagging technology or technical knowledge
Poor management support or commitment to co-operation	Poor ability in failure analysis		Poor quality management system
Long lead-times	Slow corrective actions		
	Poor after market service		

Table 3.1. Attributes of a good and a poor supplier.

In most cases companies apply detailed criteria when analysing potential suppliers' capabilities to meet customer expectations, i.e. to be good suppliers. Three of the twelve companies were either not able or willing to disclose the criteria they apply, thus the response rate of this particular section remained at 75%. Table 3.2 compares the criteria defined by the nine companies on the main heading level. The purpose of this section of the study is to create an understanding on the level of alignment between the attributes of a good supplier, companies' supplier qualification criteria and the actual criteria applied by purchasing decision-makers.

As it has been identified earlier in this study, there is no common understanding on what the qualification criteria should be thus the detailed list of proposed criteria has been composed combining the supplier qualification criteria information collected from: Koskinen et al. (1995), MacBeth and Ferguson (1992), White and James (1996), Greaver (1999), Underhill (1996), Baily et al. (1994), Saunders (1995), Schorr (1998), Nokia Supplier Requirements (Nokia, 1997), and Flextronics International Supplier Quality System Evaluation (Flextronics).

OEM	Asian					American	European	
	Company 1	Company 2	Company 3	Company 4	Company 5	Company 6	Company 7	Companies 8&9
Corporate	Business size	Annual sales						
	Financial strength					Financial soundness		
		Company age						
Supply and logistics performance	Delivery reliability					On-time delivery performance		
	Location							
								Contract and business review
								Demand-supply chain
Strategic fit	Willingness to establish business relationship							
							Estimated volumes for the product	
						Strategic view of us as a customer		
Customer satisfaction	Flexibility							
	Major customer: credit	Major customers						
					Customer claim			
Organization and staff		Headcount					Resources in R&D and production	
		Management team						
		Engineering/QC/QA force						
		Training	Training		Education and training			
Mgmt support								Management responsibility
Change mgmt				Documentation	Document control			
Technology and product development	Design ability/ Technical people				R&D Capacity			Product Development
							Technologies needed for the product	
						Technical strength		
Production	Equipment/ Mfr capability							
		Production capacity						
		Manufacturing process and quality control	Production process control	Manufacturing and material control	Manufacturing process control		Process quality assurance plan	Production process control
			In-process control					
Quality, health, safety and environment; and continuous improvement	System and product quality							
	Quality aspect (from various directions)	Overall quality	Quality process	Quality management	Quality mgmt system and mgmt responsibility			Quality management system
		Calibration		Calibration	Process equipment & calibration			
			Incoming inspection					
			Outgoing inspection	Final acceptance				Product control
				Quality information				
					Quality and reliability			
			Environment					Environmental management
					Health and safety			
								Risk management
Purchasing and SCM				Procurement				Purchasing
					Material control			Material control
Attitude						Responsiveness as the organization		
Cost and price	Price level					Quoted price and cost reduction efforts		
Communication	Responsiveness							
Other		Major products						
		Expansion plan						
							PC and network infrastructure	
					Mfr environment			Facilities and utilities
								Product liability

Table 3.2. Supplier qualification criteria used by electronics OEMs on main heading level. Companies 8 and 9 are grouped together as they are independent business units of the same corporation, and apply the same set of criteria.

The research questionnaire included a set of proposed criteria to analyze on a detailed level each decision-maker's personal view of what they judge to be important when making engagement decisions. The purpose was to obtain data on each respondent's personal decision-making preferences to find out how well the actual decision-makers' preferences coincided with the set formal criteria, and to build a comprehensive list of preferences actually applied during the process of qualifying suppliers. This list clarifies the issues suppliers and supplier candidates should focus on when exposed to a supplier qualification process. To determine the importance, the averages of the importance scores given by individual respondents were calculated. The results were summarized both on regional and worldwide level. For calculation purposes "not applicable" –responses were weighted at zero. If there was no response to a particular criterion the divisor was adjusted accordingly.

The scoring instructions given to the respondents were:

5 = Very important: typically a deal breaker = if not implemented to an acceptable level, will cause a rejection

4 = Quite important: is always considered, but not fulfilling this criterion will not lead to a rejection

3 = Relatively important: sometimes used as a criterion, may also be used as an additional criterion to classify otherwise equal candidates

2 = Rather insignificant: not emphasized, but may occasionally be considered

1 = Insignificant

Not applicable =
Not an issue of interest when approving/qualifying suppliers or this issue is of no relevance at all in our industry

Table 3.3 contains a summary of the highest priority criteria on both regional and worldwide basis. The criteria presented are the ones which scored an average of higher than 4.5, i.e. were considered by respondents to be very important = if not implemented to an acceptable level, will cause a rejection.

Ranking	Asia	North America	Europe	World-wide
1	Product quality	Capacity available at the point of making the supplier selection decision	Potential to flexibly meet the future capacity needs of you as a customer	Product quality
2	Long term strategy match with your company's strategies (product/technology roadmaps etc.)	Product quality	Product quality	On-time delivery
3	Price	Process quality (implementation of SPC, process capability studies etc.)	On-time delivery	Potential to flexibly meet the future capacity needs of you as a customer
4	Level of incoming material quality control	Quality management system	Volume flexibility capabilities	Price
5	Quality management system	Potential to flexibly meet the future capacity needs of you as a customer		Quality management system
6	On-time delivery	Cost management, demonstrated value analysis and value engineering capabilities		Long term strategy match with your company's strategies (product/technology roadmaps etc.)
7	Quality management system certifications	On-time delivery		Process quality (implementation of SPC, process capability studies etc.)
8	Delivery terms	Available technologies		
9	Payment terms	Prototyping capabilities		
10	Process quality (implementation of SPC, process capability studies etc.)	Communication		
11		Employee competence and skills level		
12		Price		
13		Ability to use non-traditional methods of supply (kanban, consignment stock, direct replenishment to customer's production line etc.)		

Table 3.3. Preferred criteria for supplier qualification and selection.

Table 3.4 provides a summary of criteria considered at least important. The ones presented in the table are those scoring less than 2.5, i.e. were considered by the respondents to be rather insignificant = not emphasized, but may occasionally be

considered. Only a few individual respondents considered the proposed criteria to be totally insignificant or not applicable.

Ranking	Asia	North America	Europe	World-wide
1		Product liability insurance coverage	Possibility to deal in your own language	Supplier is an ethnic minority, or female owned business
2		Management layers in organization	Supplier is an ethnic minority, or female owned business	
3		Physical distance to their sales representative (for instance sales office in your country)	Supplier's IPR portfolio	
4		Organization structure and hierarchies	Number of active material suppliers	
5		Number of active material suppliers	Discounts given from list prices	
6		Physical distance between your R&D and suppliers R&D	Sales effort	
7		Insurance coverage		
8		Manufacturing layout		
9		Discounts given from list prices		
10		Gauge R&R studies		

Table 3.4. The least important criteria for supplier qualification and selection.

3.3 Analysis and findings

The data collected with the survey questionnaire provides opportunities for various ways of analyzing the results and drawing conclusions. Pattern matching has been used to compare and analyze the decision-making authorities and the supplier/customer qualification processes of the involved companies and those identified in the respective literature. In the context of identifying attributes, characteristics, success factors and pitfalls related to relationships and selection criteria, counting of matching responses has been applied to prioritize and rank them. To enable an analysis of opposite attributes and characteristics, such as success factors and pitfalls the counted responses have been subjected to comparisons.

Some of the responses were provided in the form of written text. In such cases issues with identical meaning have been clustered. Related and intervening variables have also been identified, and when relevant, their impact on the results has been noted and emphasized. To analyze the responses to the questions representing ordinal data on the importance of supplier qualification criteria averages of the importance scores given by individual respondents have been calculated. The results have been summarized both on a regional and on a worldwide basis. For calculation purposes “not applicable” –responses have been weighted as zero. If there has been no response to a particular criterion the divisor has been adjusted accordingly.

Of the categories in table 3.2 there are only a few which are common to different electronics manufacturing companies’ supplier qualification criteria. Each company has its own emphasis on what is important. The most common one is the category related to production issues: it is included in seven out of the eight sets of criteria. “Overall quality management and related systems and processes as well as quality, health, safety and environment; and continuous improvement” is included in six; technology and product development skills and capabilities are considered in five; and organization and staff in four sets of criteria.

There is even greater variance within the categories. The issues arousing the most interest on supplier qualification are (number of responses):

- Overall quality management including related processes and systems (6)
- Manufacturing process-related quality control mechanisms (6)
- Education and training of employees (3)
- Product development skills and capabilities (3)

- Equipment calibration (3)
- Product control (3)

In a worldwide perusal none of the proposed detail criteria were found to be insignificant. Actually only one of them scored below three, which was the score for a relatively important issue. However, when observing the scores from a regional perspective significant differences are evident. In general Asian respondents have given higher scores to all criteria than their European and North American counterparts. This can be best seen in table 3.4 in which the Asian column is blank. A detailed list of significant regional differences in preferences is presented in table 3.5. Actually the only two criteria scoring below three are ethical considerations: “use of minor labor” (2.8) and “supplier is an ethnic minority, or female owned business” (2.5).

4. Conclusion

When observing the attributes of a good and a poor supplier there is a common understanding on the role of the traditional three critical success factors: time, cost and quality. Similar conclusions can be drawn from both the theoretical and the empirical data. However, when observing the attributes revealed in the empirical research on a more detailed level, it is clear that there is a difference between the main geographical regions.

Even though there is a reasonably good alignment concerning good supplier attributes, they are reflected in companies’ supplier qualification criteria only

occasionally. Furthermore there is less alignment in what different companies measure during their process of supplier evaluation. When further comparing these criteria with what is actually preferred by purchasing managers, i.e. those making or at least significantly influencing the supplier selection and qualification decisions, it can be observed that there is a great mismatch between the official supplier selection criteria published by companies and the actual criteria on the basis of which decisions are made. Thus it can be assumed that there is a significant amount of subjectivism involved in the decision-making.

When comparing the good supplier attributes with the preferred criteria the purchasing managers have identified, there is a rather good alignment between the two both world-wide and regionally. Also this suggests that purchasing managers rather pay attention to what they have experienced to be important in a successful supplier relationship than to what the official decision-making criteria are.

5. Managerial implications

Due to the fact that differences have been identified in purchasing managers' perceptions concerning good supplier attributes between the main geographical regions – Asia, Europe and North America – business development managers should be able to use the respective arguments in their sales efforts.

Each company has its own set of criteria for analysing a supplier candidate's potential. The criteria have only a limited commonality and may not be traced back to any common heritage like ISO standards. Thus:

a) Each potential customer needs to be treated differently in business development.
b) It is not enough for a supplier candidate to be able to perform according to the requirements of a certified quality management system.

The differences between the published supplier selection criteria of electronics manufacturing companies and the preferences of the actual decision makers indicate that the decisions involve a significant amount of subjectivism. Thus it is important for a business development manager to understand this tacit knowledge in order to be able to influence the decision makers positively.

References

Baily Peter, Farmer David, Jessop David and Jones David. 1994. *Purchasing Principles and Management*. Seventh Edition. Pitman Publishing. London. 339 p.

Braglia Marcello and Petroni Alberto. 2000. A Quality Assurance-oriented Methodology for Handling Trade-offs in Supplier Selection. *International Journal of Physical Distribution & Logistics Management*. Volume 30. Number 2, 2000. pp 96-111.

Choi Thomas Y. and Hartley Janet L. 1996. An Exploration of Supplier Selection Practices Across the Supply Chain. *Journal of Operations Management*. 14. pp 333-343.

Ellram Lisa M. 1990. The Supplier Selection Decision in Strategic Partnerships. *Journal of Purchasing and Materials Management.* Fall 1990. pp 8-14.

Flextronics. *Flextronics International*. Supplier Quality System Evaluation –form. 12 p.

Ford David, Gadde Lars-Erik, Håkansson Håkan, Lundgren Anders, Snehota Ivan, Turnbull Peter and Wilson David. 1998. Managing Business Relationships, John Wiley & Sons Ltd. Chichester. 292 p.

Fowler Floyd J. Jr. 1993. *Survey Research Methods*. Second Edition. Sage Publications Inc. Newbury Park. 156 p.

Gay Charles L. and Essinger James. 2000. *Inside Outsourcing: an Inside Guide to Managing Strategic Sourcing*. Nicholas Brealey Publishing. London. 245 p.

Goldfeld Charles. 1999. *Supplier Strategies*. PT Publications Inc. West Palm Beach. 167 p.

Greaver Maurice F. II. 1999. *Strategic Outsourcing. A Structured Approach to Outsourcing Decisions and Initiatives*. American Management Association. New York. 314 p.

Hughes J, Ralf, M, and Michels, B, 1998. *Transform Your Supply Chain. Releasing Value in Business.* International Thomson Business Press.

Iandoli L, Shore, B, Venkatachalam, A, and Zollo, G. 2003. Towards Learning Organization Perspective to Supplier Selection for Global Supply Chain Management: An Integrated Framework. *Proceedings of 12th International IPSERA Conference,* Budapest.

Ittner Christopher D., Larcker David F., Venkatesh Nagar, Madhav V. Rajan. 1999. Supplier Selection, Monitoring Practices, and Firm Performance. *Journal of Accounting and Public Policy*. 18. pp 253-281.

Juhantila Olli-Pekka. 2002. *Hankintatoimen merkitys kilpailukyvylle*. Logistiikkapäivät. Logistiikan Koulutuskeskus ECL Oy Ab. August 2002. Turku.

Koskinen Aki, Lankinen Matti, Sakki Jouni, Kivistö Timo and Vepsäläinen Ari P.J. 1995(b). *Ostotoiminta yrityksen kehittämisessä*. Weilin+Göös. 333 p.

Leek Sheena, Turnbull Peter W., Naudé Pete, Ritter Thomas. 2002. Classifying Relationships as Successful and Problematic: Theoretical Perspectives and Managerial Implications. [web-document - referred to on 26.06.2003]. Available at: http://www.impgroup.org/papers.php?viewPaper=476.

Liu Jian, Ding Fong-Yuen and Lall Vinod. 2000. Using Data Envelopment Analysis to Compare Suppliers for Supplier Selection and Performance Improvement. *Supply Chain Management: An International Journal.* Volume 5. Number 3, 2000. pp 143-150.

Maass Richard A., Brown John O. and Bossert James L. 1990. Supplier Certification – a Continuous Improvement Strategy. *American Society for Quality*. Milwaukee. 141 p.

MacBeth Douglas K and Ferguson Neil. 1992. *Partnership Sourcing: An Integrated Supply Chain Approach.* Financial Times, Pitman Publishing. London. 230 p.

Min Hokey. 1994. International Supplier Selection: A Multi-attribute Utility Approach. *International Journal of Physical Distribution and Logistics Management.* Volume 24. Number 5, 1994. pp 24-33.

Newman Richard G. 1988. Single Source Qualification. *Journal of Purchasing and Materials Management.* Summer 1988. pp 10-17.

Mota Joao and Castro Luis M. de. 2002. The Role of Relationships in the Development of Firms' Capabilities: Evaluating and Acting on a Portfolio of Customers. [web-document - referred to on 26.06.2003]. Available at: http://www.impgroup.org/papers.php?viewPaper=512.

Nokia. 1997. Nokia Supplier Requirements, NQY00008 9.0 External. *Included in the Nokia Supplier Manual*. Version 1.0. 15 p.

Pearson John N. and Ellram Lisa M. 1995. Supplier Selection and Evaluation in Small Versus Large Electronics Firms. *Journal of Small Business Management.* October 1995. pp 53-65.

Underhill Tim. 1996. *Strategic Alliances. Managing the Supply Chain*. Penn Well Publishing Company. Tulsa. 292 p.

Saunders Malcolm. 1997. *Strategic Purchasing and Supply Chain Management*. Second Edition. Financial Times, Pitman Publishing. London. 354 p.

Schorr John E. 1998. *Purchasing In the 21st Century. A Guide to State-of-the-Art Techniques and Strategies*. Second Edition. John Wiley & Sons, Inc. New York. 272 p.

Swift Cathy Owens. 1995. Preferences for Single Sourcing and Supplier Selection Criteria. *Journal of Business Research.* Volume 32. pp 105-111.

Swift Cathy Owens and Gruben Kathleen H. 2000. Gender Differencies In Weighting Of Supplier Selection Criteria. *Journal of Managerial Issues.* Volume XII. Number 4. Winter 2000. pp 502-512.

Tersine Richard J. and Campbell John H. 1977. *Modern Materials Management*, Elsevier North-Holland Inc. New York. 281 p.

Underhill Tim. 1996. *Strategic Alliances. Managing the Supply Chain*. Penn Well Publishing Company. Tulsa. 292 p.

Verma Rohit and Pullman Madeline E. 1998. An Analysis of the Supplier Selection Process. *Omega*. Volume 26. Number 6. pp 739-750.

Vonderembse Mark A. and Tracey Michael. 1999. The Impact of Supplier Selection Criteria and Supplier Involvement on Manufacturing Performance. *The Journal of Supply Chain Management*. Summer 1999. pp 33-39.

White Robert and James Barry. 1996. *The Outsourcing Manual*. Gower Publishing Limited. Aldershot. 294 p.

Wilson Elizabeth J. 1994. The Relative Importance of Supplier Selection Criteria: A Review and Update. *International Journal of Purchasing and Materials Management*. Summer 1994. pp 35-41.

Wimmer Ágnes and Mandják Tibor. 2002 Business Relationships as Value Drivers?. [web-document - referred to on 26.06.2003]. Available at: http://www.impgroup.org/uploads/papers/469.pdf.