

Strategic Make-or-Buy Decisions: The $\frac{M}{o} \frac{B}{-}$ -Tool

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Abstract: Real world outsourcing decisions are very seldom based on a sound trade-off of risks, costs that these risks impose and benefits. The present paper attempts to overcome some of these shortcomings by developing a make-or-buy decision-supporting tool entitled “MoB-Tool”. The tool allows one to determine what organizational architecture is best suited to a specified activity. About 50 propositions of make-or-buy decisions, mostly gained from secondary analysis, are collected and ranked. Those propositions are systematically connected to 6 strategic objectives, 3 organizational characteristics, 4 product characteristics and 3 environmental characteristics. The tool helps decision-makers generate a transparent and strategy-oriented solution with fair attention to all important considerations. By contrast, the less structured intuitive approach allows the decision-maker to weigh only a few arguments simultaneously – typically those which have current subjective importance for the decider. Due to the modularity of this tool, it can be extended easily to additional ob-

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jectives and characteristics, e.g., those one that representing sustainable development aspects.

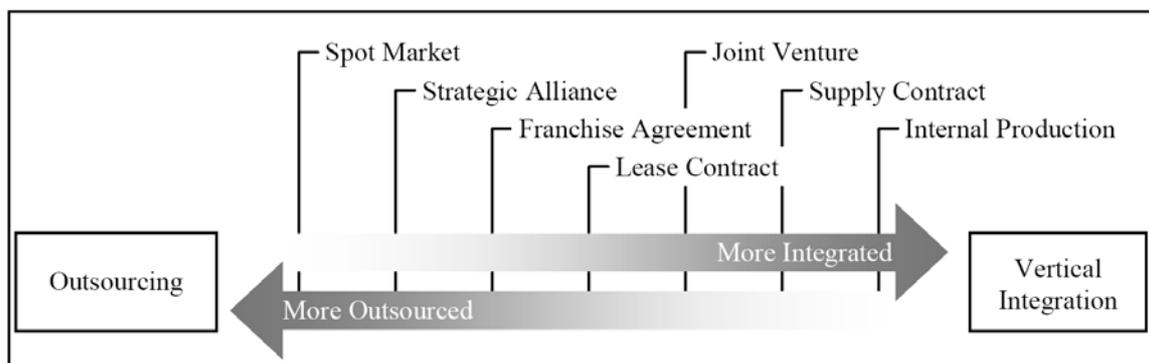
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JEL Classification: C72, L22, L25, L93, D23, M55, Q01

1 Introduction

A company has many architectural choices from which to produce its products or services (Figure 1). At one extreme, the product or service can be purchased from any supplier in the spot market. At the other extreme, the company can produce the product or service internally within a division. Between the extremes are various long-term contracts, such as strategic alliances, franchise agreements, lease contracts, joint ventures and supply contracts (Brickley, Smith & Zimmerman, 2006).

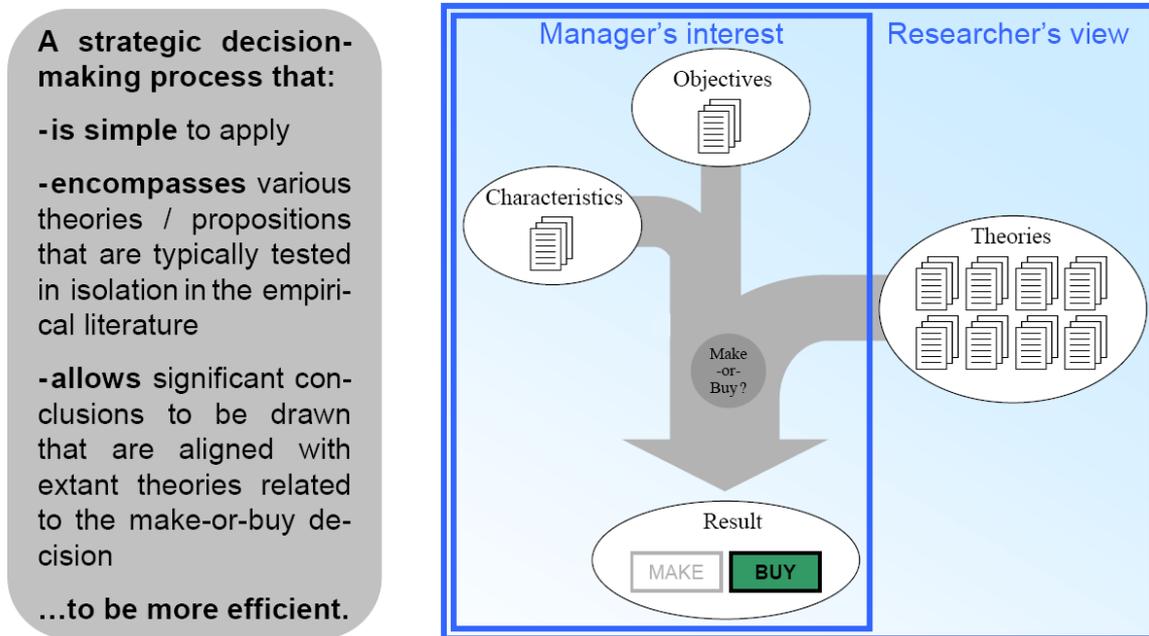
Figure 1: Illustration of Organizational Architectures



Current theories indicate why, when stressing efficiency gains in terms of transaction and production costs, certain activities might best be suited for outsourcing; while other theories show that particular activities, e.g., core competencies, are more efficient when vertically integrated. However, real-world outsourcing decisions are seldom based on the sound trade-off of risk, on the costs imposed and the potential benefits of these risks. One reason for this is the overwhelming supply of theories, each one concentrating on a single aspect of the problem and therefore complicating the decision-making process for managers. Thus, there is a need for a process that (Figure 2): (1) is simple to apply for managers; (2) encompasses the various predictions that are typically tested in isolation by researchers in the empirical literature; and (3) allows significant conclusions to be drawn that are aligned with extant theories related to the make-or-buy decision. This vision is realized by the development of the MoB-Tool described in this paper.

The study is structured as follows. In the next section, the process is introduced, the literature is qualitatively reviewed by presenting the pros and cons concerning vertical integration and outsourcing, and the resulting decision-supporting tool entitled “MoB-Tool” is shown. Finally, section three offers a comparison with other studies and a discussion on the limitations.

Figure 2: Vision / Research Question



2 The Process

2.1 General

The make-or-buy decision-supporting process is structured as shown in Figure 3 and comprises four sub-modules. The submodule “Settings” is illustrated in detail in Figure 4. This module processes the input data of strategic objectives, organizational characteristics, product characteristics and environmental characteristics. The submodule “Integration Pros” processes the main advantages of vertical integration from the point of view of the final assembler (Figure 5), while the submodule “Outsourcing Pros” processes those advantages of outsourcing as shown in Figure 6. The submodule “Results” processes the output data as shown in Figure 7.

Figure 3: Overview of the Make-or-Buy Decision-supporting Process

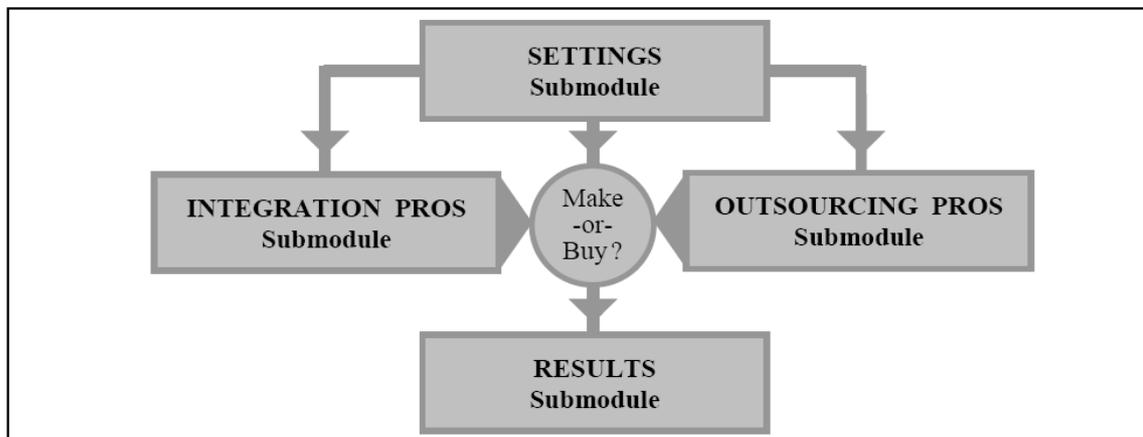


Figure 4: Settings Submodule

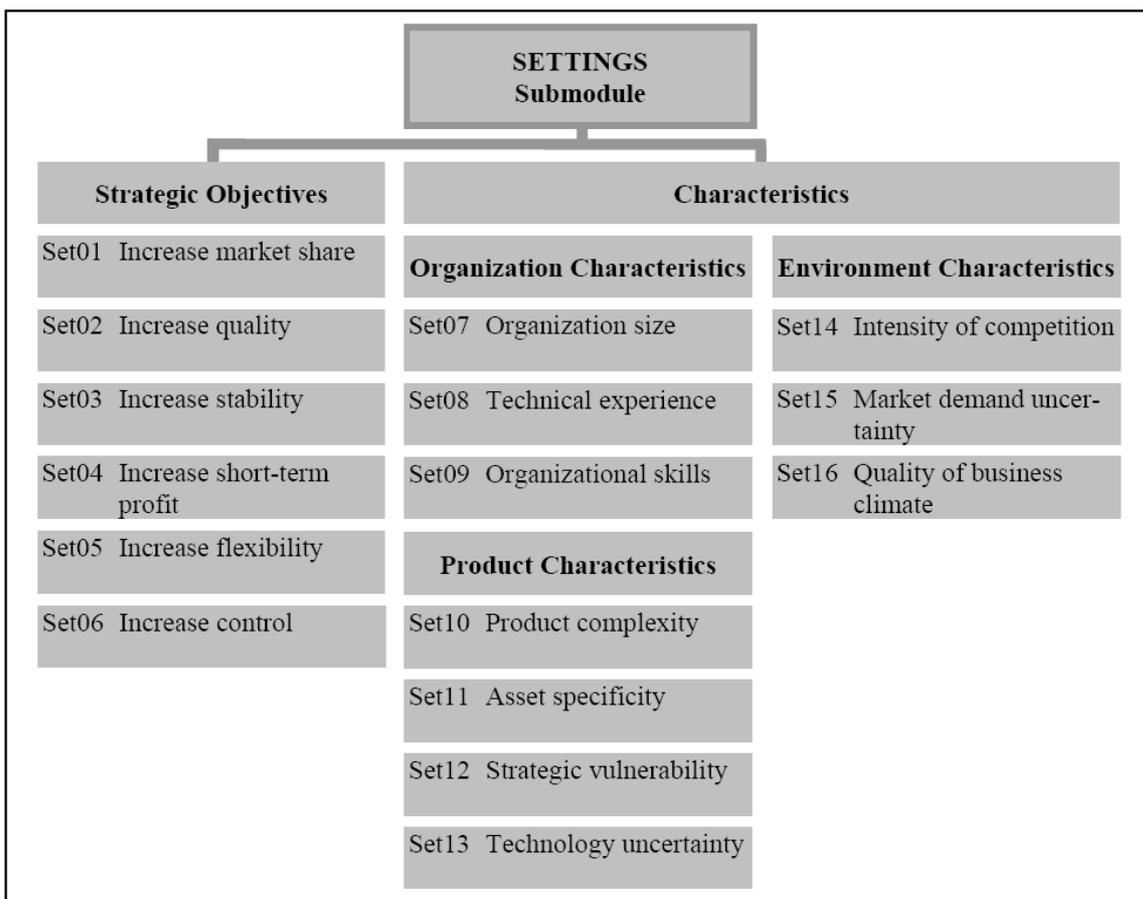


Figure 5: Integration Pros Submodule

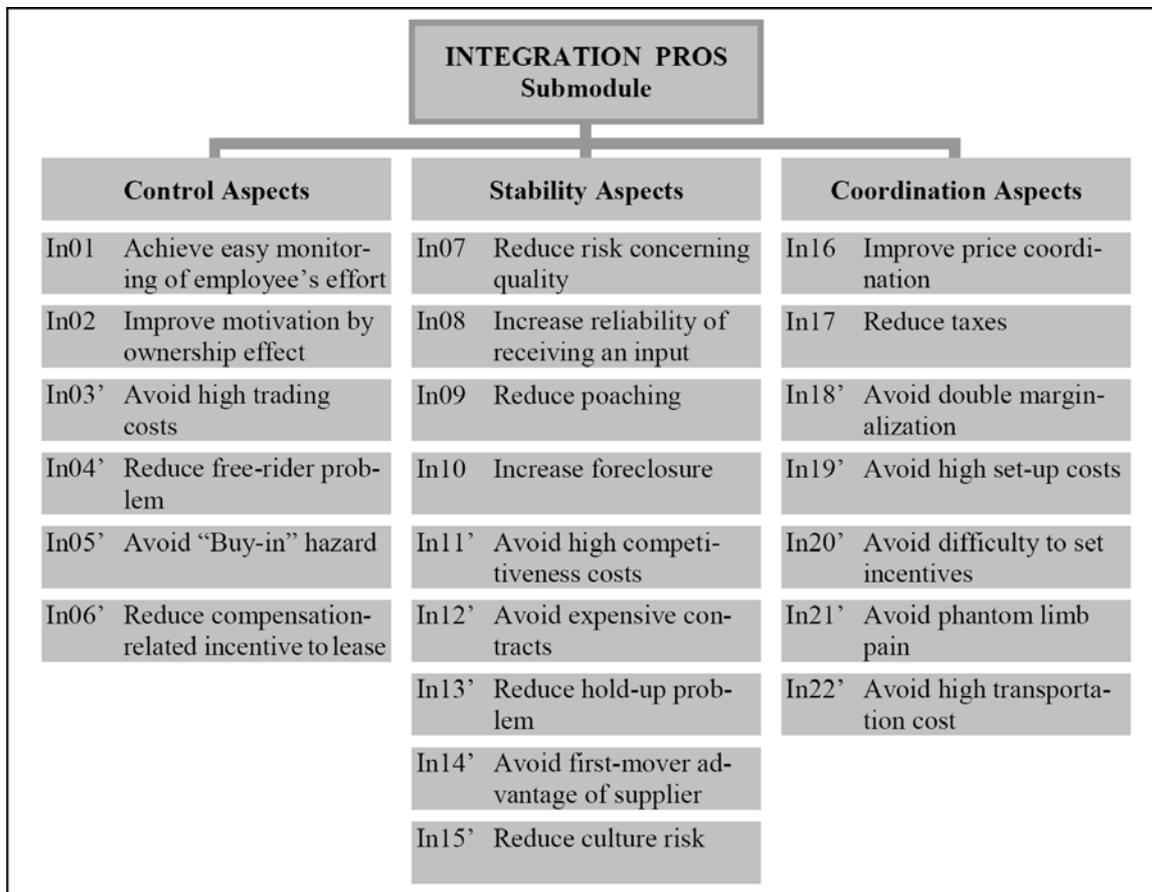


Figure 6: Outsourcing Pros Submodule

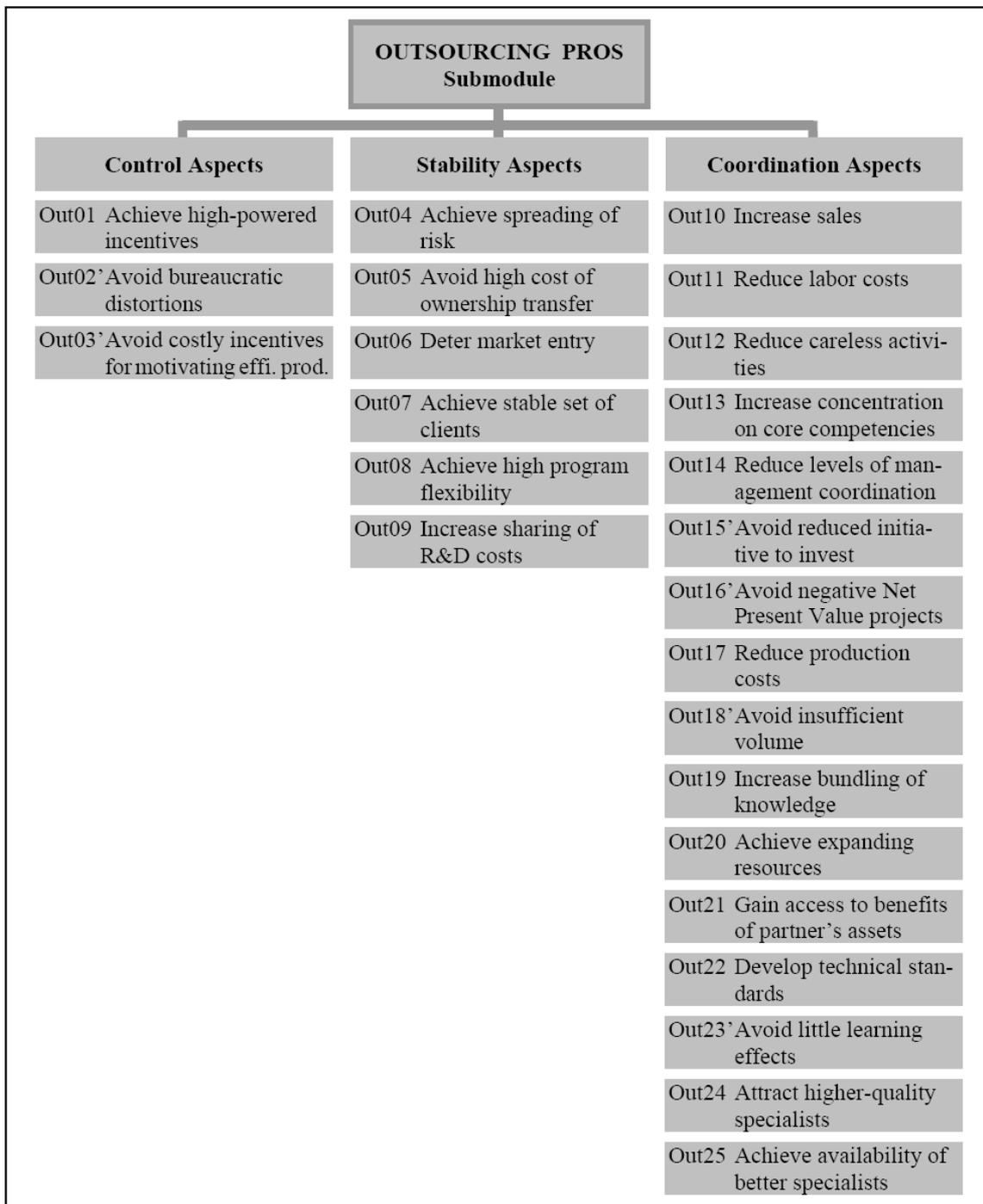
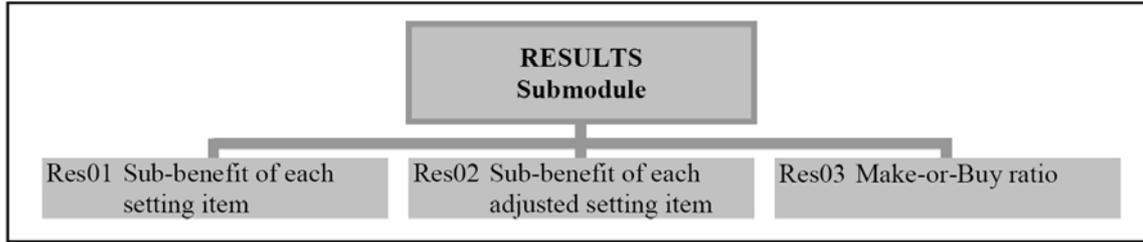


Figure 7: Results Submodule



2.2 Qualitative Assessment

Table 1 shows an overview of the literature used for “Integration Pros” and “Outsourcing Pros” submodule propositions.

Table 1: Literature Review for Vertical Integration (left) and Outsourcing (right)

	ID	Reference	ID	Reference	
Control Aspects = 11	In01	Grossman and Helpman (2004), Anderson and Schmittlein (1984)	Control = 10	Out01	Holmstrom and Milgrom (1991), Gibbons (2005a), Grout (1984)
	In02	Smith and Wakeman (1985), Holmstrom and Milgrom (1991)		Out02'	Hayek (1945), McAfee and McMillan (1995), Milgrom (1988), Downs (1966), Williamson (1967), Aoki (1988), Levine and Tyson (1990)
	In03'	Williamson (1985), Wilhelm (2001)		Out03'	-
	In04'	-	Stability = 10	Out04	Burgers, Hill and Chan Kim (1993), Esty (2004)
	In05'	Defense Federal Acquisition Regulation Supplement (2006), Koelle (2003), Monteverde and Teece (1982b), Defense Federal Acquisition Regulation Supplement (2006)		Out05	Smith and Wakeman (1985), Flath (1980)
	In06'	Smith and Watts (1982)		Out06	Chen and Ross (2000)
Stability Aspects = 37	In07	Grossman and Helpman (2002), Masten (1988), Akerlof (1970), Quinn and Hilmer (1995)	Out07	Clemons and Hitt (1997)	
	In08	-	Out08	Bean (2003), Heinemann (2007)	
	In09	Klein, Crawford and Alchian (1978), Schumpeter (1989), Malerba and Orsenigo (1995), Prahalad and Hamel (1990), Shinde (2007)	Out09	Teece (1992), David (1985)	
	In10	Hart et al. (1990)	Coordination Aspects = 24	Out10	Frynas, Mellahi and Pigman (2006), Wessner (1999), MacPherson and Pritchard (2002)
	In11'	Richardson (1993), Destefani (2004)		Out11	MacPherson and Pritchard (2002), Engardio, Bernstein and Kripalani (2003)
	In12'	Hart (1995), Klein, Crawford and Alchian (1978), Pamigiani (2007), Destefani (2004), Crocker and Reynolds (1993), Federal Acquisition Regulation (2005), Grossman and Hart (1986), Arrow (1969)		Out12	Rebitzer and Taylor (1991), Malnke (2001)
	In13'	Hart (1995), Klein, Crawford and Alchian (1978), Holmstrom (1999), Lafontaine and Slade (2007), Monteverde and Teece (1982a), Quinn and Hilmer (1995), Ouichi (1981), Heide and John (1988)		Out13	Quinn, Doorley and Paquette (1990), Quinn and Hilmer (1995)
	In14'	Monteverde and Teece (1982a), Harrigan (1984), Goldstein (2002), Pritchard (2001), Smith (2001)		Out14	Quinn and Hilmer (1995)
	Coordination = 10	In15'	Pennings (1994), Manabat (2003), Lafontaine and Slade (2007), Chen (2004)	Out15'	Gibbons (2005a)
		In16	Carlton and Klammer (1983)	Out16'	Jensen (1986)
In17		Scholes et al. (2005), Majd and Myers (1987)	Out17	-	
In18'		Spengler (1950)	Out18'	Berger and Ofek (1995), Berndt, Friedlaender and Wang Chiang (1990)	
In19'		Richardson (1993)	Out19	Clemons and Hitt (1997)	
In20'		Rowan (2004), Ng (2007)	Out20	Quinn and Hilmer (1995)	
In21'		Malnke (2001), Quinn and Hilmer (1995)	Out21	Rowan (2004), Rothaermel, Hitt and Jobe (2006), Smitka (1991)	
In22'		Ng (2007)	Out22	-	
			Out23'	Grossman and Helpman (2002), Nayyar (1993), Irwin and Pavlenik (2004)	
			Out24	-	
		Out25	Domberger (1998), Malnke (2001)		

For reader-friendly use, all information is prepared in the same format and shown by example in Figure 8. The full data sets are available upon request.

Figure 8: Example of a Vertical Integration Proposition

In21' Avoid phantom limb pain

Description: Lost interaction effects with outsourced activities (independently on their core or non-core status) can diminish the effectiveness of the remaining activities (Mahnke, 2001).

Example: Airlines outsourced the handling of passenger luggage at airports. Even though airlines try to offer the best service for their first class passengers, the passenger satisfaction can be strongly blurred by dirty, damaged, delayed or lost luggage.

Solution: The organization can ensure that its remaining employees interact closely with its outsourced activities (Quinn & Hilmer, 1995). Alternatively, the organization can handle the “loss” better by finding and implementing alternatives, if the process of outsourcing is slower.

2.3 Quantitative Assessment

For pre-assessment of approximately 50 propositions concerning outsourcing and vertical integration decisions two indicators are used, namely “potential” and “probability.” The assessment of potential (What is the maximum positive, relative effect in terms of short-term profit, market share, etc., to the organization, when this circumstance occurs?) is measured on a five-point Likert-type (Babbie, 2000; Trochim, 2006) scale (+, ++, +++, +++++, ++++++) wherein “+” represents a very poor proposition and “+++++” represents a very promising one. The assessment of the probability (How often does this circumstance

& Marshall, 2006), the potential-probability matrix illustrates the benefits of high potential and high probability.

Table 2: Integration Pros Submodule

Serial No.	Strategic Objectives						Organization Character.			Product Character.			Environm. Character.		Sum			
	Set01 Increase market share	Set02 Increase quality	Set03 Increase stability	Set04 Increase short-tem profit	Set05 Increase flexibility	Set06 Increase control	Set07 Organization size (high)	Set08 Technical experience (low)	Set09 Organizational skills (low)	Set10 Product complexity (high)	Set11 Asset specificity (high)	Set12 Strategic vulnerability (high)	Set13 Technology uncertainty (high)	Set14 Intensity of competition (high)		Set15 Market demand uncertainty (high)	Set16 Quality of business climate (low)	
Control	In01	0	8	2	2	0	8	0	0	5	0	8	2	0	0	8	51	
	In02	5	5	5	8	0	0	0	0	0	0	2	0	0	0	0	25	
	In03	0	2	0	8	5	0	0	0	0	8	0	0	0	8	8	39	
	In04	0	8	2	8	0	2	8	0	0	0	5	0	0	0	0	33	
	In05	0	0	5	5	8	8	0	0	0	2	8	8	8	0	2	0	54
	In06	0	0	0	5	2	5	0	0	0	0	0	0	0	0	0	0	12
Stability Aspects	In07	0	8	8	2	0	0	0	0	8	0	8	0	0	0	8	42	
	In08	0	0	8	0	8	2	0	0	0	5	8	8	0	0	0	47	
	In09	5	0	8	2	0	2	0	0	0	8	8	2	5	0	8	48	
	In10	8	0	8	5	5	8	8	0	0	0	2	8	0	8	2	0	62
	In11	0	0	0	2	8	0	0	0	0	2	2	5	0	0	5	24	
	In12	0	5	8	5	5	8	0	0	0	2	8	8	5	0	8	8	70
	In13	0	5	8	5	8	5	0	0	0	5	8	8	0	0	5	57	
	In14	5	0	8	5	5	8	0	0	0	0	8	8	5	8	0	8	60
	In15	0	0	5	0	0	8	2	0	0	2	5	8	2	0	0	8	40
Coordination	In16	2	0	2	8	2	5	8	0	0	0	5	0	5	8	0	45	
	In17	0	0	0	5	0	0	8	0	0	0	0	0	0	0	0	13	
	In18	0	0	0	5	0	0	5	0	0	5	2	0	0	2	0	19	
	In19	0	0	0	5	2	2	0	0	0	2	5	5	8	0	5	8	42
	In20	0	2	0	5	0	5	0	0	0	2	0	0	0	0	0	0	14
	In21	0	0	2	5	0	0	0	0	0	5	5	5	0	0	0	0	22
	In22	0	0	0	5	2	0	8	0	0	5	2	0	0	0	0	0	22
Sum	25	43	79	100	60	76	55	0	0	48	71	104	37	28	33	82	841	

Note: Benefit that proposition “Inxx” has on item “Sety”?

Scale: 0 = no effect; 1-3 = low effect; 4-6 = medium effect; 7-9 = high effect; 10 = 100% effect

For detailed assessment, a pairwise comparison (see Grob, 1984) is used to support the subjective-based assessment. This is a first

approach method given uncertainty in a situation, where detailed studies are not yet been performed. The pairwise comparison method is a powerful tool that allows the researcher to perform a fair and comprehensive transparent ranking of criteria; it allows ranking and assessment of the relative weight of each proposition to be determined.

However, results of pairwise comparisons must be checked for plausibility. Therefore, the relative benefit on each item of the “Settings” submodule that is gained from the propositions of the “Integration Pros” and “Outsourcing Pros” submodules are adjusted. All results for vertical integration and outsourcing are incorporated in the input mask of the “Integration Pros” (Table 2) and “Outsourcing Pros” submodule.

2.4 Results

The make-or-buy decision-supporting process is structured in five phases (Phase 1: Define Mission Statement, Phase 2: Define Strategic Objectives and Independent Factors, Phase 3: Define Weighting of Factors, Phase 4: Check Plausibility of Integration Pros and Outsourcing Pros Submodules, and Phase 5: Obtain Results) and can be applied to various challenging cases. For this, I develop a tool entitled “MoB-Tool,” as shown in Figure 10-15.

Figure 10: Phase 1: Define Mission Statement

M_oB -Tool

A Make-or-Buy Decision-supporting Process by Robert A. Goehlich
Version 1.0

Instruction

yellow	= cell value must be determined	Comprehensive decision-support (1 week):	use phase... <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr></table>	1	2	3	4	5
1	2	3	4	5				
orange	= cell value can be changed	Quick decision-support (1 hour):	use phase... <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td> </td><td>2</td><td>3</td><td> </td><td>5</td></tr></table>		2	3		5
	2	3		5				
red	= cell shows results	Validate and/or adjust tool (tbd):	use phase... <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td> </td><td> </td><td> </td><td>4</td><td>5</td></tr></table>				4	5
			4	5				
Help	= provides information how to use							
Data	= input is required by user							
Fig	= a graph is shown here							
Scale	= defines range of operation							

Phase 1: Define Mission Statement

Help: Before defining the organization's strategic objectives, it is necessary to clearly define a mission statement.

Data: "Provide society with superior aerospace products that improve the quality of life, satisfy customer needs, and provide employees with advancement opportunities and investors with a superior rate of return."

Figure 11: Phase 2: Define Strategic Objectives and Independent Fact.

Phase 2: Define Strategic Objectives and Independent Factors (SETTINGS Submodule)

Help: The strategic objectives using the mission statement as a guide (profitability, market share, quality, cost, flexibility, dependability, innovation, etc.) need be defined for each case study. In addition, the quasi independent factors, such as organization, product and environment characteristics need also be classified in this table.

Data:

	Strategic Objectives						Organization Char.			Product Char.			Environment Char.			
	Set01	Set02	Set03	Set04	Set05	Set06	Set07	Set08	Set09	Set10	Set11	Set12	Set13	Set14	Set15	Set16
	Increase market share	Increase quality	Increase stability	Increase short-term profit	Increase flexibility	Increase control	Organization size (high)	Technical experience (low)	Organizational skills (low)	Product complexity (high)	Asset specificity (high)	Strategic vulnerability (high)	Technology uncertainty (high)	Intensity of competition (high)	Market demand uncertainty (high)	Quality of business climate (low)
(A) Copy machine usage (as reference)	1	1	1	2	4	0	8	10	10	1	1	1	2	10	2	5
(B) Aircraft final assembly production	10	7	7	10	7	10	8	2	2	5	7	7	2	9	2	5
(C) Satellite rocket launch operation	10	10	7	7	5	10	8	4	6	10	10	8	4	8	4	5
(D) Space tourism rocket development	10	10	2	2	5	5	8	9	8	6	6	2	9	2	10	5
Test integration	0	10	10	0	10	10	0	0	0	10	10	10	0	0	0	10

Scale: 0 = very low; 1-3 = low; 4-6 = medium; 7-9 = high; 10 = very high

Figure 12: Phase 3: Define Weighting of Factors

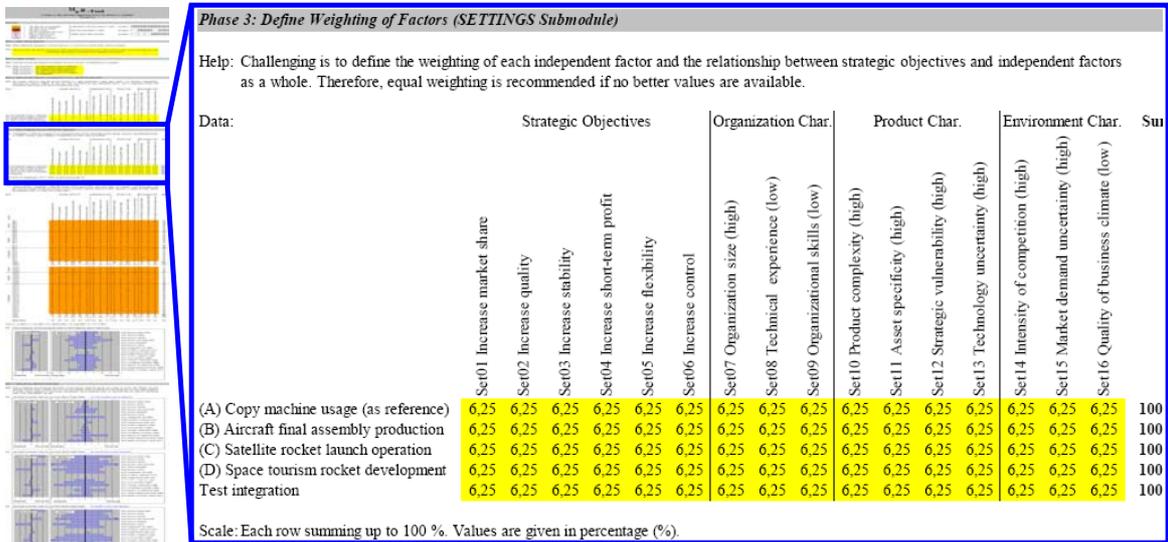


Figure 13: Phase 4: Check Plausibility

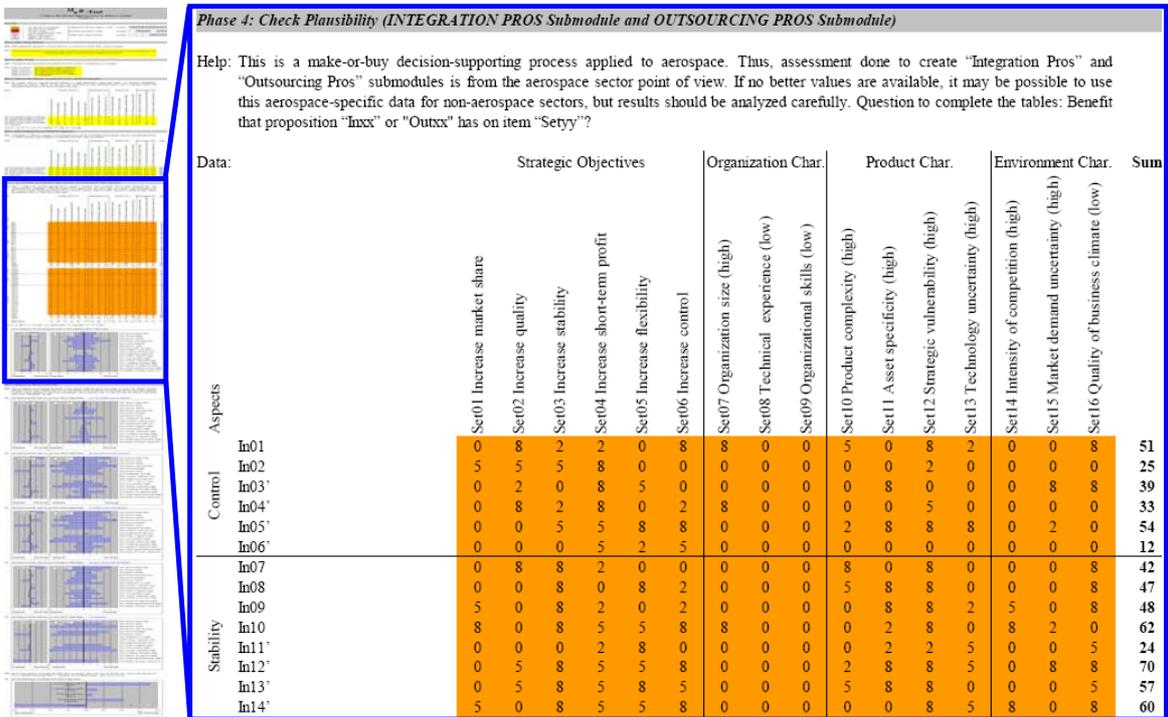


Figure 14: Phase 5: Obtain Detailed Results

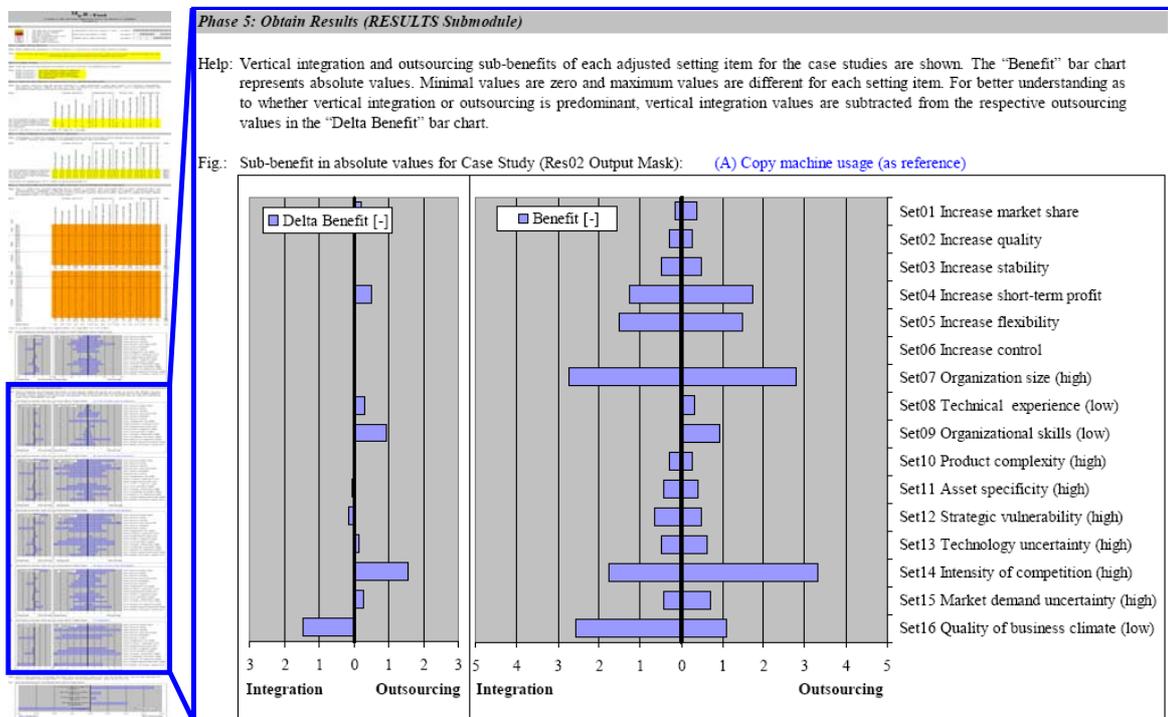
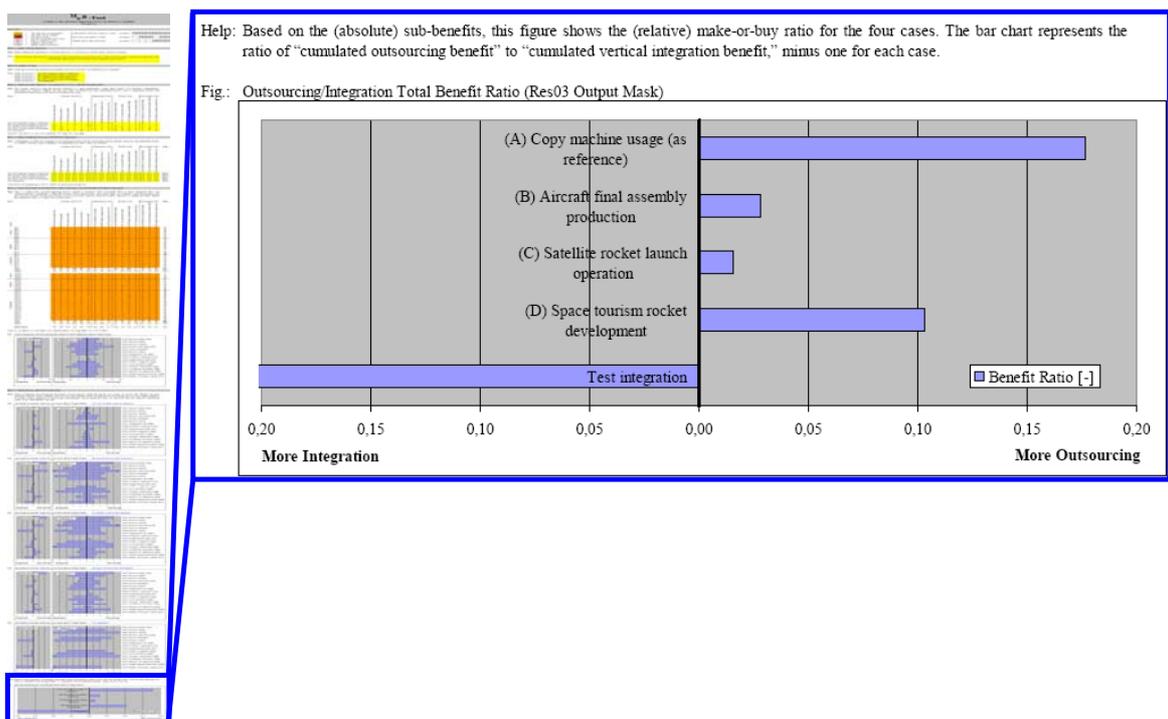


Figure 15: Phase 5 (continued): Obtain Executive Results



3 Discussion

3.1 General

The following section attempts to widen the study's point of view through a discussion centered on: (1) a comparison with other studies and (2) limitations concerning the introduced process.

3.2 Comparison With Other Studies

Many authors investigate business cases for outsourcing. Due to very different assumptions in these studies, an exact comparison is not possible at this time. However, a preliminary comparison is attempted in order to enlarge the basis of discussion for make-or-buy decision models and/or processes. Several models are drawn in the economic literature to distinguish between activities that can be outsourced and those that should be made in-house by the buyer based on multiple criteria. Some of the models sorted by year of publication are listed below:

- The Tullock (1980) model, based on rent-seeking, allows one to determine the transaction costs of outsourcing, but does not produce a trade-off between outsourcing and vertical integration.
- The Venkatesan (1992) model indicates that there are either core products that should be strictly produced in house or non-core products that should be strictly produced with the help of suppliers. The weakness of this model is its neglect of the intermediate types of

products (from core to non-core) and thus, the corresponding recommendations.

- The Quinn and Hilmer (1995) model is based on the dimensions “degree of strategic vulnerability” and “potential for competitive advantage.” This model covers three conditions of make-or-buy (in-house production, partnership and buy-off-the-shelf). The authors only analyze some possibilities out of a total of nine.
- The Olsen and Ellram (1997) model specializes in the partnership condition and distinguishes between strategic products (important, but difficult to manage), bottleneck products (not important and difficult to manage) and leverage products (important and easy to manage). In-house production and buy-off-the-shelf are not considered.
- The Clemons and Hitt (1997) model is based on the concept of a “keeper.” An activity should be considered “a keeper” if its loss, should it occur, would entail high costs or even destroy the company. Clemons and Hitt argue that the traditional characterization of “core” is of little use in assessing what can be outsourced. Instead they propose the formation of the following four groups: (1) Strategic Competence: an activity that represents a keeper and a competence that should not be outsourced. (2) Strategic Incompetence: an activity that represents a keeper, but is poorly performed internally should not be outsourced. Outsourcing would initially offer benefits, but the potential losses of outsourcing will dominate any short-term gains. Instead, these incompetence activities should be improved. (3) Non-strategic Competence: an activity that represents a non-keeper,

but is a company's competence and can be outsourced or become a business unit. (4) Non-strategic incompetence: an activity that represents a non-keeper and an incompetence that should be outsourced. Outsourcing offers opportunities for performance improvement with moderate risks.

- The Levin and Tadelis (2005) model distinguishes between various contract forms that range from employment, and thus vertical integration, to outsourcing types. This model's feature is to investigate the make-or-buy decision from the point of contracts.

In an enhancement to existing models, the process developed in the present study covers the entire spectrum of make-or-buy decisions (the continuum from in-house to buy-off-the-shelf). The economic environment is held fixed for analyzing alternative structures individually, and finally compared to one another, while the existing models are isolated, as they do not take into consideration the parameters developed by one another.

3.3 Limitations

Extant make-or-buy related studies are quite voluminous. Thus, complete implementation of this literature into the make-or-buy decision-supporting process is beyond the scope of the present study. Rather, I limit my discussions and investigations on those studies that I found to have significant influence on make-or-buy decisions, especially for

managers. However, I find that many extant studies suffer from measurement problems, such as follows:

- Some factors, such as motivational, cultural and social factors are hard to handle, but may strongly influence decisions.
- Several studies examine only one factor that is predicted to affect the make-or-buy decision, holding other factors constant, whereas it is often a combination of such factors that should be assessed (Lafontaine & Slade, 2007).
- While it is easy to determine external transaction costs (buyer to supplier) but difficult to identify internal transaction costs (department to department), many results of trade-off studies are unjustified, biased in favor of vertical integration. However, those companies who conduct extensive outsourcing may have too many suppliers. This would be more costly to manage than less efficient in-house operations, as argued by Blaxill and Hout (1991).
- Companies from different countries generally apply divergent success criteria because of unique cultures (Yan & Zeng, 1999). In addition, each culture has specific cultural codes, e.g., the trust-based cooperative norms of Japanese society encourage high collaboration rates among companies (Todeva & Knoke, 2005). Thus, assessing international scenarios is especially complicated because results are biased by different cultural environments.
- A challenge exists whether to use objective outcome indicators (e.g., financial gains, number of innovations, revenue), subjective indica-

tors (e.g., partner satisfaction with the collaboration, customer service, corporate identity) or both, in order to fully assess the performance of organizations.

- In the case of the make-or-buy decision-supporting process, some of the propositions overlap each other partly or one proposition may be a sub-proposition of another (e.g., proposition “Out11 Reduce labor costs” is to a great extent a sub-proposition of proposition “Out17 Reduce production costs”). Avoiding this fact would result in garbling of the modules. Instead, double counting of similar advantages is avoided in the present study by carefully assigning values to each proposition (e.g., the benefit value of proposition “Out17 Reduce production costs” excludes the benefit of low labor costs, as this item is represented by proposition “Out11 Reduce labor costs”).

Thus, the precision of propositions is limited. Yet, I assume that a preponderance of indication, gathered across plentiful studies of diverse industries, time periods and geographic regions using different approaches, yields convincing evidence as to the validity of the introduced make-or-buy decision-supporting process.

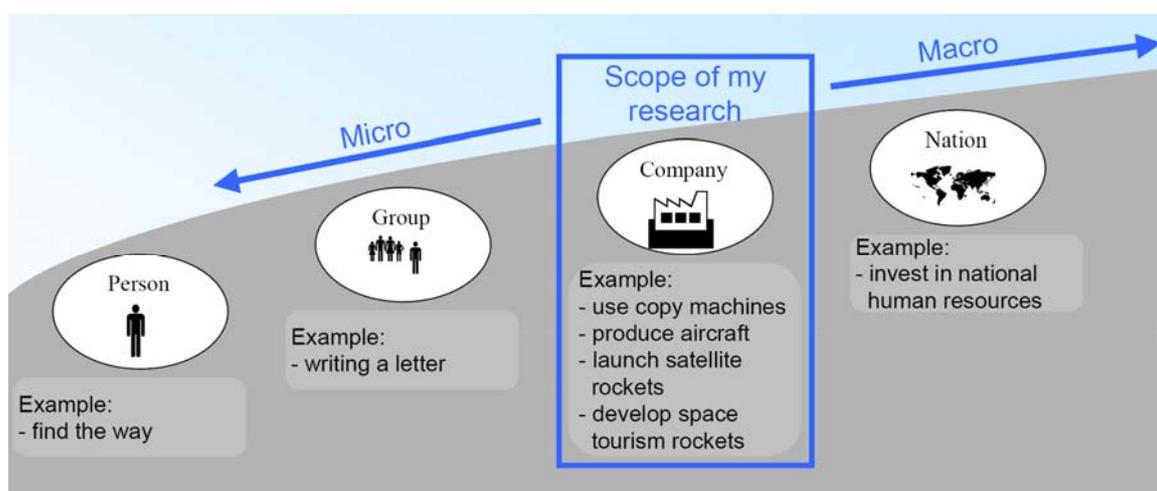
4 Conclusion

The main outcome of this study is the development of a make-or-buy decision-supporting process. A structured application procedure makes this process attractive to any manager who needs a simple and transpa-

rent tool to support make-or-buy decisions. Dividing the make-or-buy question into many sub-questions based on, in this case, 16 objectives and characteristics, helps decision-makers generate a transparent and strategy-oriented solution with fair attention to all important considerations.

By contrast, the less structured intuitive approach allows the decision-maker to weigh only a few arguments/propositions simultaneously – typically those which have current subjective importance for the decider, e.g., bad news about Dollar/Euro currency trends, which would favor an outsourcing decision or bad news about risk of revealing know-how, which would favor an integration decision.

Figure 16: Outlook for Extension of Process



As closing thought, I have concluded that economic motivational goals, political hurdles and technical challenges should be more closely merged in the early phases of strategic decision-making for any new, large-scale program in organizations. By doing so, decision-makers can

adapt the organizational architecture to the needs of any planned big program, resulting in an important aspect of efficiency improvements. In addition, the process may be extended to more macro or micro strategic make-or-buy themes as shown in Figure 16. The next step, which is beyond the scope of the present study, is an empirical validation of the tool in the form of interviews with experts, economists and politicians.

Note

The views reported in this paper are those of me alone, and not those of any institution. All errors and omissions, which may unwittingly remain are the sole responsibility of me.

References

- Alexander, C. & M.I. Marshall (2006). "The Risk Matrix: Illustrating the Importance of Risk Management Strategies," *Journal of Extension*, Vol. 44, No. 2, Article 2TOT1.
- Babbie, E. (2000). *The Practice of Social Research*, 9th Edition, Wadsworth/Thomson Learning, Belmont, CA.
- Blaxill, M.F. & T.M. Hout (1991). "The fallacy of the overhead quick fix," *Harvard Business Review*, July-August, pp. 93-101.

- Brickley, J.A., C.W. Smith & J.L. Zimmerman (2006). *Managerial Economics and Organizational Architecture*, Fourth Edition, McGraw-Hill, New York.
- Clemons, E.K. & L.M. Hitt (1997). "Strategic Sourcing for Services: Assessing the Balance between Outsourcing and Insourcing," Working Paper, University of Pennsylvania, Philadelphia, PA.
- Grob, R. (1984). *Erweiterte Wirtschaftlichkeits- und Nutzenrechnung: Duale Bewertung von Maßnahmen zur Arbeitsgestaltung*; TÜV Rheinland, Köln, Germany.
- Lafontaine, F. & M. Slade (2007). "Vertical Integration and Firm Boundaries: The Evidence," *Journal of Economic Literature*, Vol. 45, No. 3, pp. 629-685.
- Levin, J. & S. Tadelis (2005). "Employment versus contracting in procurement: theory and evidence from U.S. cities," presented at Econometric Society World Congress (ESWC) 2005, 19-24 August, London.
- Mahnke, V. (2001). "The Process of Vertical Dis-Integration: An Evolutionary Perspective on Outsourcing," *Journal of Management and Governance*, Vol. 5, pp. 353-379.
- Olsen, R.F. & L.M. Ellram (1997). "A portfolio approach to supplier relationships," *Industrial Marketing Management*, Vol. 26, No. 2, pp. 101-113.

- Quinn, J.B. & F.G. Hilmer (1995). "Strategic outsourcing," *The McKinsey Quarterly*, Vol. 1, reprinted from the Sloan Management Review, pp. 48-70.
- Todeva, E. & D. Knoke (2005). "Strategic alliances and models of collaboration," *Management Decision Journal*, Vol. 43, No. 1, pp. 123-148.
- Trochim, W.M.K. (2006). "The Research Methods Knowledge Base: Measurement," Second Edition, <http://www.socialresearchmethods.net/kb>, Cornell University, New York, accessed: 16.1.2008.
- Tullock, G. (1980). "Efficient rent seeking," in: Buchanan, J.M., R.D. Tollison & G. Tullock (Eds.), *Toward a theory of the rent-seeking society*, Texas A&M University Press, College Station, TX, pp. 97-112.
- Venkatesan, R. (1992). "Strategic sourcing: to make or not to make," *Harvard Business Review*, pp. 98-108.
- Yan, A. & M. Zeng (1999). "International joint venture instability: a critique of previous research, a reconceptualization, and directions for future research," *Journal of International Business Studies*, Vol. 30, pp. 397-414.