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Strategic Sourcing in Banking - A Framework

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STRATEGIC SOURCING IN BANKING – A FRAMEWORK

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Abstract

The banking landscape in Europe and Germany has a polypolistic market structure with an average vertical range of integration of 80%, implying high process redundancies. Accumulating processes for standardized products is one way to achieve efficiency improvements. "Smart sourcing" can change the production mix of banks lead to a concentration of processes. A challenge is the lack of consistent frameworks for the banking industry to systematically support the sourcing decision process.

In this paper, drawing on the resource based view and transaction cost economics it is shown that, in addition to a make or buy decision, co-operation between competitors should be included into a sourcing analysis as the third alternative. To support the decision on making, buying or sharing an activity, a quantitative analysis of each activity of the banking value chain is necessary. We propose an analysis framework based on a generic banking value chain. Since the recent literature mostly focuses only on the outsourcers' case, a formalized model is developed to consider both the objective function of the out- and the insourcer. Since the market might restrict sourcing options, as there may be no providers of relevant activities, it can be shown that "sharing" as part of a co-opetition concept instead of buy or make can be a way to break up the value chain. The framework thus supports decision makers to approach an optimal degree of vertical integration for both market sides.

1   INTRODUCTION

The banking industry in Germany and Europe has a polypolistic market structure consisting of some 15.000 institutions in Europe (Hamoir et al. 2002, p. 118) or 2.355 banks in Germany (Deutsche Bundesbank 2003, IV, 24). 96.7 % of all banks listed by Deutsche Bundesbank are universal banks offering a full spectrum of banking services. The vertical integration in the German banking industry is about 80% compared to a vertical integration of about 20% in the electronic consumer goods market (Buchard 1997). One reason are different ways of value generation. Banks mainly exchange information and therefore information and communication networks form the essential infrastructure. This could result into a paradigmatic shift leading away from traditional proprietary systems dominating the universal banking world to specialized banks operating in value networks. This substantial change process has recently again been discussed in the context of sourcing decisions, i.e. the decision which parts of the banking services are considered to be core business and which are expected to be delivered more efficiently by an external provider or a specialized bank. The main research questions in this paper are: What is the optimal degree of vertical integration, how can a bank improve its production mix by switching from make to buy or by sharing activities between two or more banks.

Chapter 2 introduces Transaction Cost Economics (TCE) and the Resource Based View (RBV) to offer some valuable theoretical foundation to qualitatively analyze activities with regard to a make, buy or share decision. Chapter 3 shows how the criteria derived in chapter 2 can be used to cluster activities into make, buy or share, and points at the need to quantitatively support a sourcing decision as well. Chapter 4 introduces a generic banking value chain which is used to identify the value activities that are analyzed in the analytical framework. Finally in chapter 5, a formal sourcing model is developed to show trade-offs between make, buy or share incorporating both the outsourcer's as well as the insourcer's value function. This optimization model will be the focal point for further research.

Within this paper different sourcing terms are used, for which we propose the following definitions. *Sourcing analysis* is defined as the analysis of the combination of internal and external resources and capabilities to improve the production mix of a company or a bank. The overall goal of a sourcing analysis is to realize efficiency improvements as cost minimizing or value maximizing (Blomquist et al. 2002, 4). *Outsourcing* is the abbreviation for "outside resource using". These words refer to the *usage* of superior *resources outside* the company, i.e. the evaluation of potential suppliers (Arnold, 2000, 24). A company that gives an activity to an external partner, which was formerly produced by the company itself, is called *outsourcer*. The *insourcer* is the external partner that takes over the activity from the outsourcer.

2   LITERATURE REVIEW AND THEORETICAL FOUNDATION

2.1   Transaction Cost Economics

TCE is mainly based on the work of Commons (1934), Coase (1937) and Williamson (1975, 1981, 1985). TCE are key to the analysis of the efficiencies of different governance structures, i.e. market, hierarchy and other managerial governance patterns called hybrids such as joint ventures, strategic alliances and franchises etc. (Williamson 1991). It is used to examine organizations with regard to the efficient boundary of an organization, i.e. which activities should be produced in-house and which should be sourced externally (Williamson, 1985).

Companies are hierarchically designed as the governance is based on the property rights of the management and complementary attributes given by processes and administrative control mechanisms (Arnold, 2000, 24). The market is steered by price mechanisms (Williamson, 1985) and hierarchical

control is replaced by contractual agreements. Hybrid forms, e.g. joint ventures or shared services organizations, include governance elements from markets and hierarchies (Tröndle, 1987).

Transactions are defined as the transfer of goods or services between technologically separable interfaces, i.e. one activity finishes and a new one begins (Williamson, 1985, 552). The more frictions occur during the transfer of goods and services, the higher are the transaction costs. Williamson (1975, 1983) identified three variables explaining the differences of transactions: frequency, uncertainty and asset specificity.

Frequency targets the re-occurrence of transactions within an organization or company. Transactions that are processed frequently are expected to be more likely produced in-house (Poppo and Zenger, 1998). The second variable - *uncertainty* – states that increasing uncertainty implies higher ransaction costs and can be expected if transactions are long-lasting or if information asymmetries exist. *Asset specificity* is "the most important dimension for describing transactions" (Williamson 1981, p555). An insourcer has to make production specific investment if he takes over highly specific activities from an outsourcer. Furthermore, the insourcer is only able to amortize its specific investment if the relationship with the outsourcer is long-lasting. Therefore, the investment of the insourcer needs contractual safeguards that avoid a termination of the contract or post contractual bargaining (Klein et al., 1978). This leads to complex contracts and high negotiating, monitoring and enforcing costs. Thus, high asset specificity implies in-house production and "has a strong negative effect on market performance" (Poppo and Zenger, 1998, 867).

As shown, frequency, uncertainty and asset specificity are indicators for making or buying an activity. If frequency, uncertainty and asset specificity are high the TCE indicates high transaction costs for externally sourced activities and comparatively lower transaction costs for internal production. But besides transaction costs, production costs have to be included in the analysis as well (Cheon et al., 1995, 213; Poppo and Zenger, 1998). Managers have to analyze an activity and to make a trade-off analysis between transaction costs and production efficiency of this activity to decide on the production by an external supplier (market mechanism), in-house production (hierarchy) or joint production within a hybrid institutional design (Apte, 1990; Lacity and Hirschheim, 1993; Cheon, 1995). Thus, companies will only buy products or services if production cost advantages offset the transaction costs. The trade-off between transaction and production costs is an approach to explain the different levels of vertical integration and builds a possible framework for companies to decide on a discrete level between different governance structures and sourcing strategies. Thus TCE analyzes the efficiency of different governance structures and thereby shed light on the "outside usage" of resources. They do not analyze the differences in resources and capabilities between different sourcing alternatives. The resource based-view of the firm is a suitable approach to analyze resources and to identify if superior resources should be acquired externally.

2.2   Theory of the Firm – Resource based view

Based on Penrose (1959), who pointed out the importance of heterogeneous firm resources, the RBV of the firm advanced (Wernerfelt, 1984; Barney, 1991). RBV represents a framework for understanding how companies can gain and sustain competitive advantages if they have superior resources and capabilities compared to their competitors. Resources and capabilities are defined as (tangible and intangible) assets, which especially include organizational processes and routines, management skills and company specific information and knowledge (Barney et al., 2001, 625). Barney (1991) built a framework to evaluate whether the resource of a firm is a source of sustainable competitive advantage or not. Superior resources are described by Barney (1991) to be valuable, rare, imperfectly imitable and non-substitutable. Resources are valuable if they lead to an increase in revenues or a decrease in costs. They are rare if they are not employed by other firms or only by a few firms. Resources are imperfectly imitable if they are path-dependent, if it is not clear for a competitor how to develop an identical resource within a short-or medium time period (causal ambiguity) or if there is social complexity, e.g. a network of experts or individuals that cannot be bought. Furthermore

it is required that the resource is not substitutable, i.e. there are no alternative resources available to other firms that provide the same value as the deployed resource. Regarding sourcing strategies, a resource-based view on a distinct activity can be used to analyze whether resources are able to provide a competitive advantage within an activity or not. This analysis may be a step toward a decision on making or buying this activity, while a buying-decision includes the external acquisition of desired resources and capabilities that are not internally available to the firm (Stevensen, 1976).

3   A QUALITATIVE FRAMEWORK FOR SOURCING DECISIONS

TCE and RBV support a general model for sourcing decisions (Quinn and Hilmer, 1994; Arnold, 2000). A company can arrive at three results applying a sourcing analysis: the traditional "make or buy" decision (Coase, 1937; Arrow; 1962) or a decision on sharing activities between competitors to realize production economies. The corresponding institutional designs to these three alternatives are, in accordance with TCE, hierarchy (=make), market (=buy) and hybrids (=share/co-opetition).

3.1   The Make-Decision

Based on the RBV, a bank will *make* an activity if it represents a sustainable source of competitive advantage, i.e. the underlying resources and capabilities are valuable, rare, non-imitable and non-substitutable (Barney, 1991). In accordance with TCE, activities with high asset specificity, that are produced frequently and where uncertainty is high will be made in-house, as these factors lead to increased governance costs (Arnold, 2000, 25; Poppo and Zenger, 1998). Using both theories, it is possible to identify activities that are kept in-house.

From a resource-based-view, hybrid forms like a joint ventures would lead to a loss of the sustainable competitive advantage, as the superior resources and capabilities could be imitated by partner companies. This phenomenon can be seen e.g. in software development, where software is cloned after an alliance failed or when pharmaceutical giants build joint ventures with biotech companies to indirectly acquire the resource-bundle or know-how available in the biotech company.

3.2   Sharing

Sharing describes a way of co-opetition where hybrid institutional designs are used to gain efficiencies by bundling activities between competitors to realize scale and skill economies. "Sharing" is preferable, if there is no real differentiation to the competitors, i.e. no lasting competitive advantage and also no measurable competitive disadvantage. In this case a major source of differentiation is size, i.e. realizing scale economies. If a company or bank is able to get load on an activity using hybrid institutional design, it is possible to reduce costs per unit and to build up a sustainable competitive advantage with regards to scale economies. The scale of the operations will be a barrier of entry for potential competitors.

3.3   The Buy-Decision

The third alternative is buying and will be taken if the activity does not provide any competitive advantage and is not considered a core competence (Quinn and HiImer, 1994, 43). Additionally asset specificity, uncertainty and frequency should be low to decrease governance and migration costs for buying the activity from a specialized bank or external supplier (Globerman, 1980; Globerman and
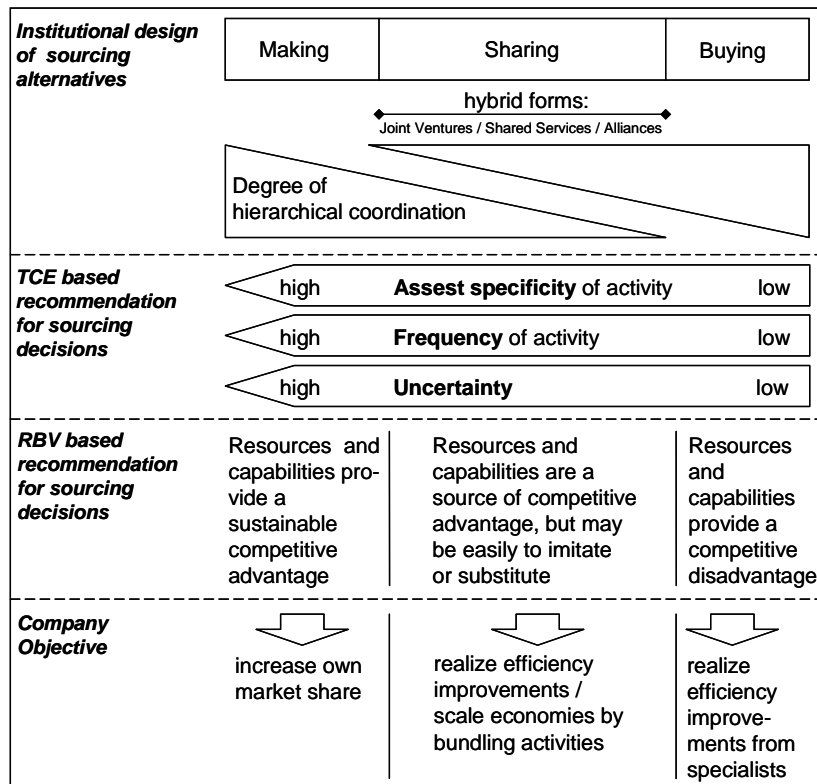
Institutional design of sourcing alternatives	Making	Sharing	Buying
		hybrid forms: Joint Ventures / Shared Services / Alliances	
	Degree of hierarchical coordination		
TCE based recommendation for sourcing decisions	high **Assest specificity** of activity low		
	high **Frequency** of activity low		
	high **Uncertainty** low		
RBV based recommendation for sourcing decisions	Resources and capabilities provide a sustainable competitive advantage	Resources and capabilities are a source of competitive advantage, but may be easily to imitate or substitute	Resources and capabilities provide a competitive disadvantage
Company Objective	increase own market share	realize efficiency improvements / scale economies by bundling activities	realize efficiency improvements from specialists

Figure 1 .   Model for sourcing decisions (partly based on Arnold, 2000, 26)

Schwindt, 1986; Liebermann, 1991; Hallwood, 1990; Zaheer and Venkatraman, 1995; Ang, 1998; Poppo and Zenger, 1998). The objective of an outsourcing deal is to participate on efficiency advantages of the insourcer. The insourcer, as a specialist for the activity, is able to achieve scale economies and produces goods and services to a lower cost while improving quality through the application of specialist knowledge (Ricardo, 1970; Stigler, 1951; Quinn and Hilmer, 1994; Alexander and Young, 1996). In the banking industry, e.g. IT Infrastructure was sourced out from Banks like ABN Amro, Citibank or Deutsche Bank to different system operators like IBM, EDS or CSC. The value added from outsourcing IT Operations are increased efficiency (e.g. scale economies), effectiveness (e.g. higher network availability) and flexibility (e.g. variabilized costs) (Lancelotti et al. 2003, 132).

Prerequisite for outsourcing is that the there is a reliable and efficient market which is determined by different suppliers with adequate but not dominating scale and mature market standards and terms (Quinn and Hilmer, 1994). Furthermore the outsourcing deal will only be done if the cost reduction of an outsourcing deal offsets the transaction costs (Vining and Globerman, 1999, 646).

This analysis provides a framework using TCE and RBV to cluster activities into "make", "share" or "buy" alternatives. The presented framework can be seen as an analysis to qualitatively prepare a sourcing decision. But the final decision on outsourcing, in-house or jointly producing an activity is finally an investment decision and has to be evaluated quantitatively (Tayles and Dury 2001, 607). A quantitative analysis requires the identification of value activities operated by a bank. Only if there are distinct value activities, it is possible to analyze these activities. The value chain as a tool enables to cluster activities and to break down activities into processes which is required to quantitatively analyze costs and revenues, i.e. the value generated in each process step.

4   SOURCING SUBJECT: THE GENERIC BANKING VALUE CHAIN

The value chain is used to identify activities that are core capabilities and sources of competitive advantage as well as activities that are non-core activities (Lamarque, 1999, 141). Lancelotti et al. (2003) point out that it is crucial for sourcing decisions to understand the value creation mechanisms to define sourcing objectives and establish transparency on services and cost efficiency. The process view of the value chain enables on the one side the allocation of resources. On the other side the chain view mitigates to identify how different activities interact with each other, i.e. what outcomes one activity delivers to another activity and what transaction costs would result from insourcing, outsourcing etc. This process view also seems to support that the value chain is better capable to analyze activities with regard to sourcing decisions than a listing of value activities or an SBU (Strategic Business Unit) analysis.

Originally Porter (1985) developed a value chain to define the different areas of value creation in the producer goods industry. The value activities defined by Porter for the producer goods industry are not fully transferable to the banking industry as the industrial value generation differs from the production process of a bank (Canals, 1993, 197-206; Lamarque; 1999). The banking business is customer driven and therefore the banking value chain starts from the market side. The value process starts with advertising a newly developed product or service to the market. Secondly, the product/service is sold to customers, e.g. the credit contract will be signed by the customer. In a third step the product will be provided to the customer, e.g. the credit amount is paid to the account of the customer. Finally the corresponding transactions, like payments, clearing & settlement transactions etc. will be processed.

Hamoir et al. (2002) and Steffens (2002) reflect this process by differentiating the primary activities into distribution, products and transactions/infrastructure. The distribution part of the banking value chain consists of marketing and sales activities. Marketing includes promotion and advertising activities, branding the firm name/products/services and sales support. Sales consists of multichannel management (sales force, internet, call centers, branches), acquisition of customers and offering/pricing.
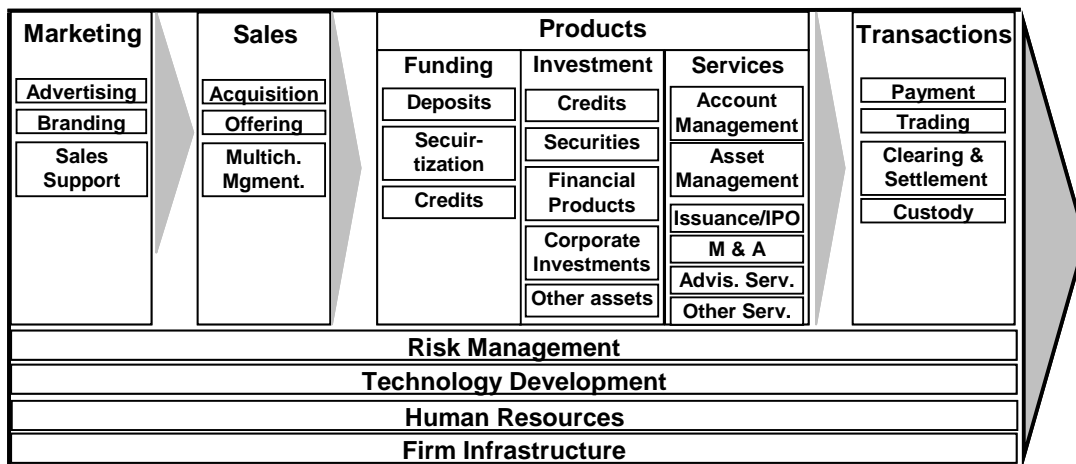

Figure 2.   Generic Banking Value Chain

The value activities from products include the product development process as well as the provision of the product itself, e.g. the payment of the credit amount to the client. All products of a bank can be subsumed under the terms funding, investment and services. The financial intermediation business is reflected in the "funding" and "investment" parts of the product activities. The transactions part of the value chain is processing products and services offered by the banking industry. The transaction activities include

- payment transactions for national and international payments,
- clearing and settlement transaction for securities, derivatives and credits,
- trading transactions for the exchange and price determination of securities and derivatives and
- custody transactions including infrastructure, e.g. custody of securities and deposit box facilities.

These primary activities are enabled by the supporting activities infrastructure, technology and human resources (Canals, 1993, 199; Porter, 1985). Additionally to these three supporting activities, risk management plays a vital role in banking and has to be added (Lamarque, 1999).

The presented generic banking value chain allows to breakdown a value activity into process steps and gives an indication for the interaction with other processes. In figure 3 we show how a break down could look like for a consumer credit.

A case study to the generic value chain for consumer credits

The generic value chain for consumer credits can be used to identify resource usage and to quantify cost efficiency and value added for each process. This builds the foundation to compare in-house efficiency with the efficiency of a potential supplier and to identify potential cost savings that would result from "sharing" production facilities with other banks/non-banks.

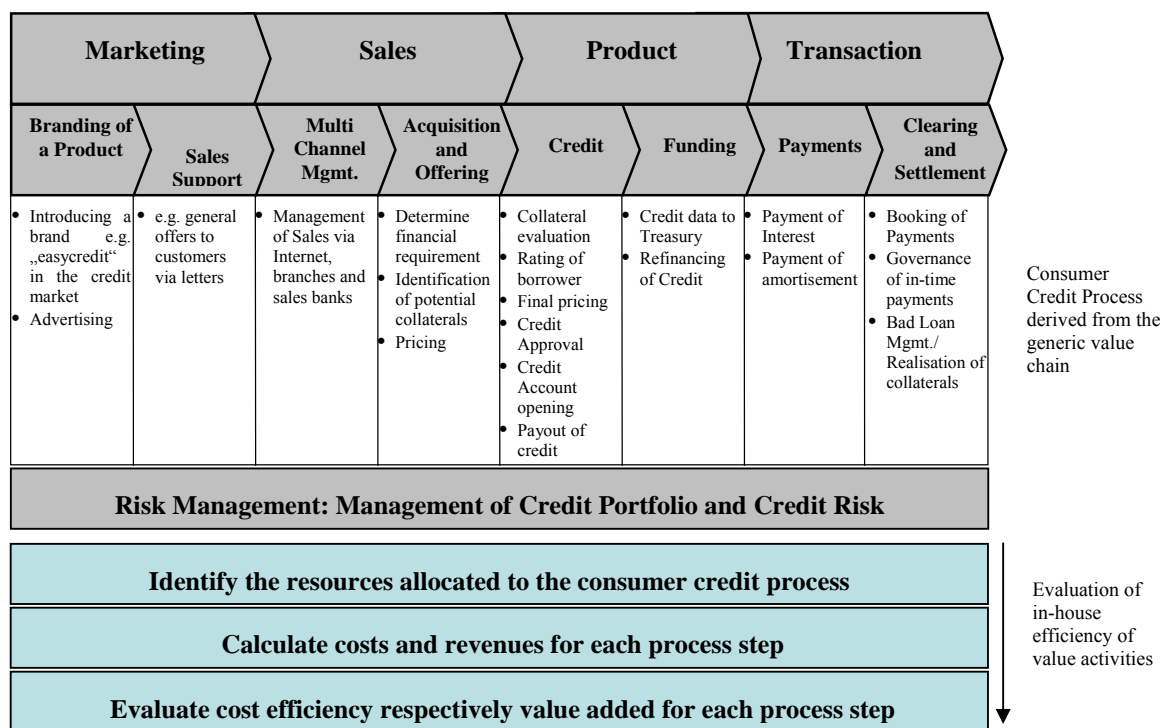| Marketing		Sales		Product		Transaction		
Branding of a Product	**Sales Support**	**Multi Channel Mgmt.**	**Acquisition and Offering**	**Credit**	**Funding**	**Payments**	**Clearing and Settlement**	
• Introducing a brand e.g. „easycredit" in the credit market • Advertising	• e.g. general offers to customers via letters	• Management of Sales via Internet, branches and sales banks	• Determine financial requirement • Identification of potential collaterals • Pricing	• Collateral evaluation • Rating of borrower • Final pricing • Credit Approval • Credit Account opening • Payout of credit	• Credit data to Treasury • Refinancing of Credit	• Payment of Interest • Payment of amortisement	• Booking of Payments • Governance of in-time payments • Bad Loan Mgmt./ Realisation of collaterals	Consumer Credit Process derived from the generic value chain
Risk Management: Management of Credit Portfolio and Credit Risk								
Identify the resources allocated to the consumer credit process								Evaluation of in-house efficiency of value activities
Calculate costs and revenues for each process step								
Evaluate cost efficiency respectively value added for each process step								

Figure 3.   A generic value chain for consumer credits

Additionally, it opens the possibility to compare the in-house efficiency with market benchmarks. Sources of competitive advantage can also be identified from a qualitative view and computed performance figures can support these qualitative aspects. Taking e.g. the Norisbank, which introduced "easycredit" in the German Banking market, the following sources of competitive advantage can be identified:

Marketing: Norisbank successfully branded the product "easycredit[®]" independently from the corporate identity of the Norisbank. The registered trademark is valuable and rare, as it represents an established and registered brand mark.

Sales: The Norisbank is able to deploy different sales channels, including its own branches, partner banks, online channels and non-financial enterprises to sell easycredit to potential customers. Utilizing effectively multichannel management enables the Norisbank to leverage the sales of easycredit. Consequently Norisbank is able to invest 87′% of all funds in its core product consumer credits (Norisbank, 2003).

Products/Transactions: Norisbank is processing its consumer credits fully automated. This leads to a significant reduction in processing time during the offering and settlement phase. E.g. the average processing-time per signed "easycredit" contract is 35 minutes compared to 128 minutes in average for other banks (Norisbank, 2002, 13).

From the resource based view, Norisbank regards consumer credits as their core business. Which can be supported by the transaction cost view: Norisbank made specific investments to optimize their processes and to establish a brand in the market. Furthermore the frequency of the consumer credit activity is high (69% of total assets) and leads to scale and skill economies. On the other site, banks do especially not always consider parts of the transaction business as core business. Therefore Deutsche Bank sourced out their custody services to State Street Corp. and Sal. Oppenheim is buying clearing and settlement services for securities form the European Transaction Bank. Taking these examples, a bank can analyze each activity of the individual value chain, benchmark it against the competitors and decide on making, buying or sharing a service.

5   AN OPTIMZATION MODEL FOR THE SOURCING DECISION

In this chapter we want to lay ground for an optimization model using the previously introduced generic value chain for banking as building block to analyze the possible variables influencing the sourcing decision in a quantitative way taking both a possible target function of the out- as well as the insourcer into account.

Up to this point we focused on the cost side of a sourcing decision modeling the banking value chain by de- or increasing vertical integration. An optimum of vertical integration and thus the decision process on what parts of the value chain to source – in or out – is a question of how quantification of functional dependencies is possible. For this analysis we want to lay ground in this article, modeling functional interdependencies influencing the sourcing case and analyzing the variables that determine that functionality. First let us analyze the cost determinants that influence the optimization model on the out- as well as the insourcers side of operations and processes. Drivers of cost efficiency are economies of skill, economies of scale and economies of scope (Baumol et al. 1982). Economies of skill define the position of the cost function. An improvement in skill economies leads to a shift of the average unit cost function towards the left side. Economies of skill are realized by technology leadership and/or superior resource bundles. Production side economies of scale are mainly realized by fix cost digressions and learning curve effects. Economies of scope are realized where it is possible to share resources between different activities (Panzar and Willig, 1981).
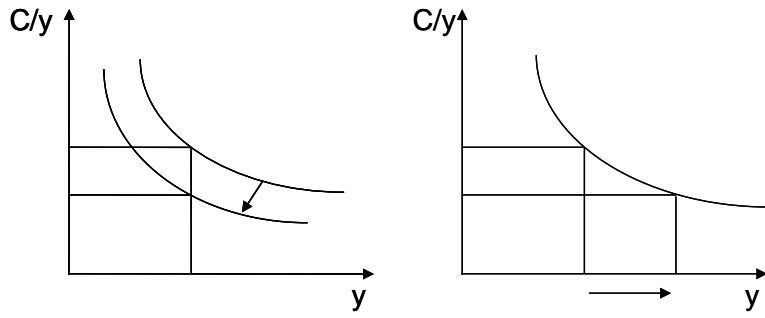
Figure 4a/b.   Increasing Economies of Skill/Scale

Consequently deciding on a more cost efficient way to producing an activity "j" it is necessary to take in consideration the cost function, the output size and possible scope economies. Formalized the cost function representing the current skill level would be:

(1) $C_j(y_j, w)$

with y_j being the quantity of activity j and w being the vector of factor prices times factor input.

Scale Economies are realized if the relative change of the cost is less than the relative change of the output x, or formalized (Baumol et al. 1981):

(2) $\dfrac{\Delta C / c}{\Delta y / y} < 1$

Scope economies can be measured by the difference between the sum of the individual cost functions and the aggregated cost function for a set of activities N (Panzar and Willig 1981).

(3) $\displaystyle\sum_{j=1}^{n} C(yj, w) > C(y_N, w) \quad \forall j \in N$

N=(1,2,…,n)   = set of activities with scope economies
y=(y_1,…,y_n)   = output generated by activities 1 to n
w   = Vector of factor prices times factor input

Let us take a look at the classical case, a buy vs. make decision without considering transaction costs and value. Then the optimization algorithm would be to minimize the following cost algorithm:

(4) $Min\left[\dfrac{C(y_j, w) - \left(C(y_j, w) + C(y_s, w) - C(y_N, w)\right)}{y_j} \,\middle|\, \dfrac{\Delta C_j / c}{\Delta y_j / y_j} \right]$

This term describes, that the bank will decide on make or buy by comparing the own cost efficiency including loss of scope economies with the realized scale economies of the potential insourcer for a given cost function of the insourcer.

Secondly let us look at the value side of the optimization model. We mentioned the overall goal of a sourcing analysis, which is to realize efficiency improvements as cost minimizing or value maximizing (Blomquist et al. 2002, 4). We already argued that a bank will never outsource an activity where it generates higher value than its competitors. This is coming back to the point of determining the maximum firm's value for the case of financial services. It is evident that each activity should have a clear deliverable to the firms' value by representing the most efficient process and superior resources upscaling the firms' competitive advantage. In the following we define and use variables (Ngwenyama et al. 1999, 356) and put them into a basic functional context, in a way to consider both the value and the cost approach described for the outsourcer as well as the insourcer:

A = set of different governance structures

$G(a)$ = coordination and monitoring cost function to the outsourcer with $a \in A$

y_j = output of activity j

$C(y, w)$ = cost function of the outsourcer

$P(a, y)$ = price the outsourcer pays the insourcer under governance structure a for a given output y.

$S(s)$ = outsourcers' setup costs influenced by the outsourcers' asset specificity s

δ = measure of quality of the sourcers' performance (dependent on economies of skill) with $\delta_i \geq \delta_o$

$V(\delta)$ = value function to the outsourcer if the insourcers performance is δ

$C(y, w, a, \delta)$ = cost function of insourcer to maintain a performance under governance structure a

Φ = minimum profit rate of the insourcer

$E_0(\delta, a, y, p)$ = value profit function if the insourcers performance is δ

$E_i(\delta, a, y, p)$ = insourcers profit function when his performance is δ and the price is p

Using these relationships the maximum value to the outsourcer can be computed in the following way:

$$MAX \begin{bmatrix} E_0(\delta_o, a_o, y_j) = V(\delta_o) - C(y_j, w_o) - G(a_o)/ \\ E_0(\delta_i, a_i, y_j, s) = V(\delta_i) - P(a_i, y_j) - G(a_i) - S(s) \end{bmatrix}$$

s.t. $E_i(\delta_i, a_i, y_j) = P(a_i, y_j) - C(y_j, w_i, a_i, \delta_i) \geq \Phi$

When looking at specific banking processes it is relevant in our model not only to qualify but to quantify δ, which is the measure of quality of the insourcers performance and his ability to score on his economies of skill. The set of skills are defined by the capability to deliver superior resources and efficient process design and implementation assuming a given asset specificity and processes of the outsourcer.

Case study of optimizing a shared approach of providing sourcing services

The strategy to maximize on the banks respectively outsourcers target function would then clearly point at a specialized transaction service as the specialized provider is expected to have a superior skill set. A high asset specificity of the outsourcer would in turn minimize the outsourcers' value function by increasing setup costs. The probability of the insourcer taking up operations would depend on its Φ, the minimum profit rate. The alternative for the outsourcer, to reduce asset specificity would be to "squeeze the lemon first", e.g. to reengineer proprietary transaction systems before sourcing them out. That would decrease the outsourcers set up costs and also give the outsourcer a stronger leverage on (a), the price the outsourcer pays the insourcer under the governance structure a. The case of two banks sourcing their processes for selected activities in one operation deserves special attention. This was the planning with two banks in Germany to jointly operate their payment transaction in one transaction bank. Here the two joint venture partners try to maximize their target functions separately:

$$MAX \left[E_A(\delta_o, a_o, y_j) = V(\delta) - C(y_j, w) - G(a)/ E_0(\delta_i, a_i, y_j, p_i) = V(\delta) - P(a, y_j) - G(a) - S \right]$$

$$MAX \left[E_B(\delta_o, a_o, y_j) = V(\delta) - C(y_j, w) - G(a)/ E_0(\delta_i, a_i, y_j, p_i) = V(\delta) - P(a, y_j) - G(a) - S \right]$$

to then jointly maximize the Joint Ventures- Transaction Bank target function:

$$E_i(\delta_i, a_i, y_j, p) = P(a, y_j) - C(y_j, w, a, \delta) \geq \Phi$$

As this is not a multi-vendor market for the insourcer and neither a price monopoly, where the insourcer is the only possible provider, price sensitivity is close to 0 and both outsourcing parties would try to minimize $P(a,y_j)$ to maximize their own value of outsourcing this transaction activity. Because of the defined governance structure Joint Venture $G(a)$ is given. Also as $C(y_j,w)$ is substituted by $P(a, y_j)$. So the only variable differentiating both partners is S. High asset specificity would result in high setup costs. This was the case with the two banks. Bank A has highly specific assets which would result into the depreciation of all deployed assets for payment transactions. Therefore the Value function of the Co-opetition deal for the Bank A decreases and led to a failure of the joint venture.

In many fields of the banks primary activities no potential insourcers exist or are reasonably considered because primary activities are considered "core" to the bank that δ and the needed set of skills can hardly be delivered by an external provider. The far more challenging sourcing decisions lie within the "core value chain" consisting of Marketing, Sales, Production and Transaction, where the factor δ is determining the value function $V(\delta)$ and the quality of processes. Transaction processes within financial services are chosen as entry point for our analysis because their processes are closely related to the IT infrastructures and thus give a clear indication and measurability within our designed framework and optimization model for sourcing decisions. Furthermore there is already a market for transaction services which can be examined.

6   SUMMARY AND FURTHER RESEARCH

This paper introduces a qualitative framework using RBV and TCE to identify superior skill sets and governance structures as well as the value chain to analyze the activities existing in the banking industry. So it was shown in a generic way how an analysis can be conducted and what are the value activities which have to be analyzed in the banking industry.

Finally, the basics of a formalized optimization model were introduced to understand the interactions between the different variables influencing sourcing decisions. Furthermore it was shown that co-opetition may break up the value chain in the banking industry, where there are partly no markets to source primary activities from. This model is laying ground for further research especially analyzing the variables and their sensitivity and testing the model on real sourcing cases.

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