Accounting for Networks - The Consolidated Network Approach

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Abstract

In the network economy a profitability analysis based on the figures of one company is not sufficient to obtain an insight into the competitiveness of the whole network. In this paper, the applicability of the consolidated financial statement as a tool for managing network profitability is analyzed. The idea of the consolidated network is presented on the basis of a conceptual analysis, derived from an action research in two company networks. Despite the fact that there are a number of barriers on the way of the consolidated network, the idea of a consolidated view on business has received a positive feedback. The recognized benefits include value creation, profit calculation and profit sharing, and some other ways to improve performance within the network. Using the consolidated network as a metaphor is a way to communicate in supply chains.

Keywords

Consolidated network, supplier network, consolidated financial statement

1 Introduction

1.1 Background

“We cooperate to compete against other networks.” “We apply win-win principle in our partnership relationships.” Those are well-known phrases in the network economy. Open-book management procedures (in addition to selling prices, also costs and profits are known by the business partners) are also discussed widely. In many cases the buzzwords can be questioned. Some researchers aim at showing the advantages of partnership structures more concretely (i.e. Vesalainen 2004). Open-book management is also a very complex, and yet unclear, phenomenon in practice (Kulmala et al. forthcoming).

Due to the networks it is more complicated to organize the division of tasks between the companies involved. Traditional transaction cost economics had explanatory power on, for instance, how many companies there should be, how big the companies should be, and why the companies should have certain products in their offerings (Coase 1937). During the last decade, companies have concentrated on their core competences and outsourced certain activities. The idea of the outsourcing is to improve the cost effectiveness of the company and the whole network (Dekkers 2000). Outsourcing may also be a tool for increasing value in the supplier network (Vesalainen 2004). Because of the outsourcing taken place, the number of suppliers has often decreased and certain suppliers have become system suppliers (Kulmala 2003, p. 30). Besides outsourcing, the most developed manufacturers have started to look for new opportunities by going downstream (e.g. Mathieu 2001; Wise – Baumgartner 1999). The objectives and strategic choices of the companies tend to vary a great deal in the changing business environment.
1.2 Objective and methodology

The objective of the paper is to analyze the applicability of the consolidated financial statement as a tool for managing network profitability. In the network economy, a profitability analysis based on the figures of one company is not sufficient to obtain an insight into the competitiveness of the whole network. In this article, the profitability analyses of networks are combined with the principles governing the financial statement of the consolidated corporation. The paper focuses on long-term relationships. Therefore, networks with only dynamic relationships as well as different types of informal collaboration have been excluded.

From the methodological perspective, the study can be labeled conceptual analysis. The need for this conceptual analysis was derived from an action research process that was carried out in two company networks. The goal of the action research was to develop the cost management of the company networks to meet the challenges set by the evolving business environment.

2 Consolidated financial statement for networks

2.1 Consolidated Corporation is a virtual company

A consolidation corporation (i.e. group) does not have any juridical power to act, nor does it have any duty to pay taxes. Therefore, a consolidated corporation does not exist as a juridical actor. The only thing that does exist is an agreement that an entity will be called a consolidated corporation when the right to vote becomes concentrated to a sufficient degree. In a manner of speaking, the group comes about as a by-product. The reasoning behind the consolidated statement (of a corporation) is the will to consider a group of juridically independent companies as a united economic actor.

Consolidated statements have been common in the United States since the early 1900s, when interconnected corporate entities first began to appear in the form of “holding companies”. J.P. Morgan’s U.S. Steel, formed in 1901, is a classic example. As recently as 1977, consolidated accounts were rare in Japan. In 2000 consolidated statements became compulsory there. (Horngren et al. 2002, p. 518) Actually, the legislation concerning consolidated corporations is quite young. The regulations regarding the financial statement of consolidated corporations were for the first time mentioned in Finland in 1980 (Järvinen et al. 2002, p. 11). During the 1980s, the attention toward the financial statements of consolidated corporations grew in tandem with capital markets. Present legislation has been greatly affected by the International Accounting Standards Board (IASB) and the Financial Standards Accounting Board (FASB) (Järvinen et al. 2002, p. 27).

The relationship with a group comes about by the majority of voting rights or by other factual authority. The rights to vote clinch which companies will be considered as a united economic entity. If the parent company has over 50 percent of the rights to vote, it has the majority. Another alternative is to make an agreement about the factual authority over the entity. For instance, the contracting parties may agree who has the right to nominate or discharge board members. The factual authority primarily means juridically arguable power to control and to make decisions. A second characteristic is united management. Consolidated corporations can be classified as subordinated or paralleled groups according to ownership. In a subordinated group the subsidiaries are totally under the power of management of the parent company. In the paralleled groups, none of the subsidiaries can force another subsidiary to unwanted actions. (Järvinen et al. 2002, pp. 17–18)

The consolidated corporation is primarily an economic concept. It is defined as an entity which aims at combined economic targets. Secondarily, a consolidated corporation can be considered as a juridical concept. The objective of the financial statement of consolidated corporation is to give a true and fair view. Because the consolidated corporation forms a united economic entity,
the information released by juridically independent companies is not adequate. On the other hand, the information based merely on the financial statements of the juridically independent companies may be in many ways misleading (Järvinen et al. 2002, p. 25–26).

The consolidated financial statement shows profit after the elimination of internal transactions. The consolidated balance sheet shows the financial position and the shareholder’s equity of the group after the elimination of internal receivables and liabilities as well as internal ownership of the group companies. Consolidated accounts are also needed to find out distributable earnings. The parent company cannot pay dividends that would exceed the free shareholders’ equity deducted with undistributable items in the consolidated balance sheet. (Committee for Corporate Analysis 2002, p. 17) The financial statements of consolidated corporations must be transformed to follow the uniformed principles of accounting (Ahti et al. 2001, p. 16). The financial statement of a consolidated corporation is of great practical importance. Investors’ interest concentrates solely on the figures of a consolidated corporation. Therefore, the market cap of the parent company will be defined mostly on the strength of the financial statement of the consolidated corporation.

A network is not a juridical actor. A network may be formed (as a temporary construction) e.g. by companies that act in a supply chain and have the same end-customer. In practice, a company may take part in several networks. Interestingly, being part of a network makes the number of the company’s stakeholders grow. In addition to shareholders’ views, the company must take into account several new parties, e.g. competitors, indirect suppliers, and customers. According to Cox (1999), the power of control is based on the market position and mutual power relationships of the network parties, whereas in a consolidated corporation the power is based on ownership.

Considering a network as a united economic entity calls for an exact definition its boundaries. Furthermore, similar accounting conventions as in consolidated corporations are presumed. However, even if legislation requires that a financial statement of consolidated corporation be drafted by the parent company, a network’s focal company does not have this kind of responsibility. Regarding a network, a consolidated financial statement should be taken as a possibility, not as a responsibility. It may offer useful advantages for each party. Naturally, it requires very open, trust-based cooperation.

In genuine networks, none of the companies consider the whole entity but instead try to sub-optimize. Because the market position guides the development of networks, a sub-optimizing company may endanger the development of the whole network, and indirectly, the internal development of other parties in the network. The cost accounting systems of the network companies produce useful pieces of information regarding the whole network. These pieces should be collected together, and this can be carried out by means of the financial statement of consolidated corporation.

2.2 Modeling the consolidated financial statement of network environment

By learning from consolidated corporations and their accounting methods, the view can be broadened to the profitability of a network as a whole. In this paper the supplier network is called a consolidated network. The profitability of the network is examined by this concept. In the consolidated statement, the statements of the parent company and the subsidiaries are summarized into one statement by eliminating the internal business transactions. In Figure 1, the environment of the consolidated network is illustrated. The consolidated network, in its basic form, consists of the customer (A) and its supplier(s) (B).
In order to determine the profitability of the consolidated network, the parties involved and their elements of profitability should be analyzed deeply and properly. Profitability can be measured by the return-on-investment criterion (Kaplan – Atkinson 1998, p. 500). In the ROI measure the ratio of profit to assets (capital) is calculated. Profit consists of two components: revenue (price x volume) and costs, which can be affected by a number of decisions. There are two types of capital: fixed assets and net working capital. The main factors of profitability are income and costs compared to the capital invested. There are risks or uncertainties associated with these elements.

Transferring incomes, costs and capital between customer and supplier will not have any influence on the profit of the consolidated network. Internal development is not a way to improve profitability, unless it has an effect on the total costs of the entity. In other words, in order to increase profitability it is possible to a) increase revenues, b) reduce costs, or c) release capital invested. It should be noticed that the revenues and costs outside the consolidated network and the assets inside the consolidated network have an influence on the profitability. The revenues in particular are paid by the end customer.

In Figure 2, the elements of profitability are illustrated in the context of the consolidated network. The parties of the entity (A, B) have their own revenues (Ra, Rb) and costs (Cai, Cbj). The internal costs of a company (Cb) can be separated from the purchasing costs (Cbd) of a certain supplier (D). The assets of the consolidated network can naturally be divided into the assets of the customer (Aa) and the assets of the supplier (Ab).

To help analyzing the profitability, it is assumed that a major part of the revenues of the supplier are generated by customer A. In these special cases it is easier to separate those elements that should be taken into account in the context of the consolidated network. From now on the revenues of supplier B equal revenues of supplier B from customer A. The internal costs and revenues (Cab = Rb) mean internal invoicing in this context.

Figure 1: The idea of a consolidated network.

Figure 2: The elements of profitability in the consolidated network.
The consolidated network should be seen as an entity when analyzing its profitability (profit (ab), ROI-%(ab)). The revenues of the entity can be summarized as follows (Equation 1):

\[
\text{Revenues (ab): } R(ab) = Ra + Rb \quad \text{(Equation 1)}
\]

The costs of the consolidated network can be summarized by taking into account all the cost elements involved. The total costs of the entity are calculated in Equation 2.

\[
\text{Costs (ab): } C(ab) = Ca + Cab + Cac + Cb + Cbd \quad \text{(Equation 2)}
\]

The profit of the consolidated network is the distinction between the revenues and the costs as follows. The internal invoicing is naturally eliminated in the calculation (Equation 3).

\[
\text{Profit (ab): } P(ab) = R(ab) - C(ab) = Ra + Rb - (Ca + Cab + Cac + Cb + Cbd) \quad \text{Cab = Rb}
\]

\[
P(ab) = Ra - (Ca + Cac + Cb + Cbd) \quad \text{(Equation 3)}
\]

When estimating the return-on-investment, it is not self-evident which assets should be taken into account. It is obvious that the total assets of the customer (A) are included. But from the supplier’s viewpoint the assets related to this customer relationship should be separated from the total assets. This demands a lot of the accounting of the company. The ROI-% of the consolidated network is calculated in Equation 4:

\[
\text{ROI-% (ab): } \text{ROI}(ab) = \frac{[Ra - (Ca + Cac + Cb + Cbd)]}{(Aa + Ab)} \quad \text{(Equation 4)}
\]

The total costs of the consolidated network consist of the internal costs of the companies and the purchasing prices paid outside the entity. Transferring incomes, costs and capital between customer and supplier will not, as such, have any influence on the entity’s profit. They can be thought to be profit-sharing inside the consolidated network. If the revenues from the end customers cannot be influenced, the only way to improve profits is to reduce costs. If the supplier wants to take care of new tasks, the cost reduction of the customer (Ca, Cac) should be greater than the increases in the supplier’s own costs. Moving activities (assets) between the parties should lead to a more effective use of the assets. Outsourcing outside the consolidated network should be considered by means of costs and assets.

The interaction costs of the relationships in the consolidated network context need a separate consideration. Internal costs (Ca, Cb) include interaction costs of the business transactions of the parties. The cost effectiveness of those business transactions can be analyzed by transaction cost economics, for instance (i.e. Williamsson 1979) When estimating potential cost reduction, the internal costs should be analyzed thoroughly.
3 Applicability of the consolidated view on business

3.1 Potential benefits

A traditional way to examine an end-product’s cost structure is to analyze the first-tier supplier’s cost structure. For example a result may be that materials and supplies are in total 80 percent of the purchase price. By summing up each cost item separately from all the suppliers, the result looks somewhat different. The network entity may reveal quite a different cost structure. Only less than 30 percent of materials and supplies came outside of this network. This also helps the assessment of the network’s value-adding work.

Figure 3 below depicts an illustrative cost structure of network companies, and importantly, the consolidated statement of the network companies. Redistribution of work within the network parties is reasonable from the network entity’s point of view if the total cost of an end product decreases. Outsourcing makes it possible for the main contractor to remove activities out of sight – and out of the financial statement. However, when considering the network entity, these activities have not disappeared. These cost items remain in the financial statement of consolidated corporation. Compared to the cost structure in Figure 3 below, the profit row should be disclosed from the consolidated financial statement.

![Cost Structure of Network Entity](image)

An adequate level of profit is always an extremely interesting question when utilizing open-book management. In mature markets, even 10 percent sounds very sufficient to many managers. As shown in Figure 3, even 5 to 7 percent profit levels add up to 12 percent profit in the end-product. Therefore, it must be understood that, after consolidations of the financial statements, the adequate level of net profit may be much more than ten percent. The most important thing is to maintain the competitiveness of the end-product. Preserving competitiveness requires efficient operations from all parties, and in the long run, also continuous improvement of productivity. Knowing the cost structure of the network entity helps to aid development efforts to right directions (where the biggest potential exists).

In addition, cognizance of the real cost level makes it possible to set realistic targets. In markets with decreasing price rates, actors typically set percentage based annual cost reductions. It is not
unusual that the main contractor states that suppliers must decrease prices by 2-5 percent annually. These kinds of cost reduction targets should be based on facts – not on illusions.

3.2 Feedback from the potential users

Feedback was obtained from the potential users of the idea of the consolidated cost structure of the network. Six persons participated in the interviews concerning the topic. The interviewed persons are highly experienced in network partnership relationships (managing directors, business controller, production director, and procurement professionals). The interviewees represented manufacturing companies in two separate networks, chosen among the cooperative partners of the Cost Management Center (our research group). At the beginning of the interview, the consolidated cost structure of the network was briefly demonstrated to the interviewees by means of Figure 3.

The consolidated cost structure of the network was considered very beneficial. Undoubted benefits were seen in the cooperative relationships. The same benefits were also recognized in a competitive business environment. The sources of benefits are listed below in order of importance: 1) recognition and creation of value in cooperation, 2) distribution of profit inside the network, 3) pricing situations and estimations of the entity’s profitability, and 4) (new) product development.

Calculations regarding the consolidated cost structure in practice were considered to be forthcoming during the next five years. According to the interviewees, the probability is higher for some other network than networks of their own companies. On the other hand, one interviewee representing a system supplier remarked that the OEM of the network has already adopted the principles of the consolidated cost structure. The most important barrier to the use of the consolidated cost structure is the lack of appropriate information. Lack of openness in cooperation and the amount of work required were also seen as significant barriers. The interviewees totally disagreed that the idea was useless.

4 Concluding remarks

The need or the wish to consider inter-organizational entities has become significant. The companies focusing narrowly on their core business have lost direct authority and lots of knowledge. The consolidated network may be one way to gain the lost power back. Recently, the value added to the customer has been emphasized in the strategies of the companies. The company’s own profitability can be guaranteed by offering something that is concretely valuable to the customer. Therefore, the companies are willing to take care of, not only their own profitability, but the profitability of the customer as well.

Despite the fact that the consolidated corporation does not exist as a juridical actor, its financial statement is one of the cornerstones when assessing the economic situation of a public company. The consolidated corporation can be seen as a concrete entity, the financial accounting of which is regulated by laws and orders. Applying some of the principles of the consolidated financial statement in a network context would be an issue of management accounting which is not strictly regulated. Among the personnel the entity’s perspective is, however, unclear. In certain companies the consolidated figures are considered as “funny money”, with only a little practical use.

The laws concerning transfer pricing show that there could be laws within management accounting. However, establishing a consolidated network and reporting its financial statements is a total voluntary activity. The idea of a consolidated view on business received a very positive feedback. The recognized benefits included value creation, profit calculation and profit sharing, as well as some other ways to improve performance within the cooperative network.
Despite the positive signals from potential users, there is no reason to believe that this practice will spread quickly. It is somewhat unclear 1) who would be responsible for and who might be interested in a consolidated network, 2) which companies are allowed to participate in a trust-based open relationship, and 3) how to standardize the accounting methods used in a network context, not to mention the resources needed for the accounting of the consolidated network. Certain supplier companies are involved in many supply chains and this would mean several financial statements of consolidated networks, contrary to the situation with consolidated corporations, where a subsidiary company can belong to only one group.

There are a number of barriers on the way of the consolidated network. However, the framework of the consolidated network is still worth considering. The financial statement of the consolidated corporation has shown its ability to handle entities. The idea to use those methods in the modern network context is a new one. The regulated use of the financial statement of the consolidated network is improbable in the near future. Maybe it should not be seen as the ultimate goal. Applying parts of the idea of the consolidated network in real networks has helped us as researchers and our cooperation partners to understand many concepts of the network economy, extended enterprise, open book management, and value added services, for example. Using the consolidated network as a metaphor is a way to communicate in supply chains.

References