Market Strategy Transition and co-evolution in networks: the case of contract manufacturers in the metal working industry

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COMPETITIVE PAPER

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1. Introduction and problem statement

Manufacturers increasingly seek new ways to differentiate in buyer-seller relations (Ulaga and Eggert, 2006). Marketing has evolved away from tangibles and transactions, toward a new dominant logic consisting of services, interaction and the co-creation of value (Vargo and Lusch, 2004). Gebauer and Friedli (2005), however, describe how in business markets such transition processes often remain unsuccessful, leading into a large number of services offered and higher costs, but with limited corresponding returns.

A transition to a new value added market approach must be managed actively in order to become successful. The business marketing literature offers a number of insights. First, Oliva and Kallenberg (2003) pinpoint the need to adapt firm activities and to realize organizational changes. Second, Gebauer and Friedli (2005) suggest behavioral changes such as the need to accept higher levels of risk, empowerment and a more professional service approach. Third, Ford, Gadde, Håkansson, Lundgren, Snehota, Turnbull, and Wilson (1998) acknowledge that the extent and content of a company's offering determines its partners. A transition from basic products and a commodity-based business model toward a new 'value added' and service based business model is therefore expected to have an impact on the position of the company in the network. This process must also be managed for service transition to become successful. This is in line with Matthyssens, Vandenbempt, and Berghman (2006) who describe that value innovation goes hand in hand with the generation and management of 'multilevel absorptive capacity' within industries.

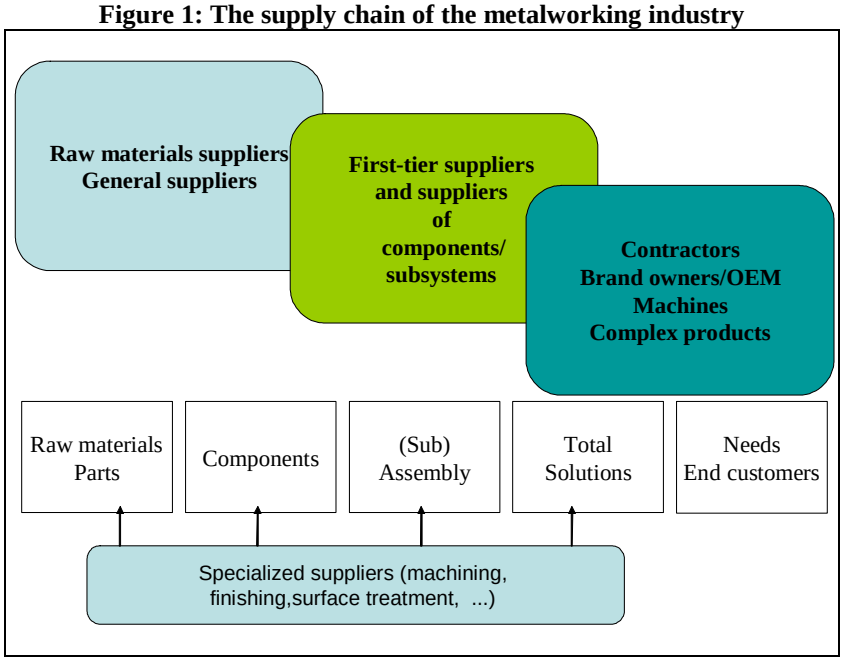
The paper addresses (1) the *transition imperative* by studying how companies in the metalworking industry try to create additional value in a highly commoditized, basic industry, and (2) how this process can be managed within existing business networks. The problem statement thus focuses on how Belgian contract manufacturers and subcontractors in the metal working industry build successful market strategies. Amidst delocalization tendencies, professionalization of purchasing processes of customers and fierce volume competition from low labor cost countries, Belgian contract manufacturers in the metal working industry have no choice but to continuously add value to their offerings. Although tactics to drive costs down and to boost efficiency have had some effect, really securing and further developing their market positioning calls for more strategic choices. This paper identifies 'ideal' positions in the market and identifies how companies can migrate to these positions. In this process, we operationalize the necessity of "co-evolution in business markets", a statement often put forward in the business-to-business literature.

The paper is structured as follows. In the next section, we introduce the empirical research context (the Belgian metalworking industry) and the methodology that was followed (a mixture of qualitative methods: expert interviews, a focus group and case study research). In the findings section, we report how contract manufacturers can create value and how they can migrate to these market positions. Our argument is built on (1) the trends and challenges within the industry, (2) the value creation and market positioning options for these contract manufacturers, and (3) the key success factors and pre-conditions for each of these options.
In the last section, we highlight the contribution of our study and confront our findings with IMP literature. Given the above, we contribute to the business marketing strategy and customer value literature by showing how in a commoditized setting, suppliers will face 'paradoxes' that limit their degrees of freedom in realizing new customer value. Further, we show the interaction between these ideal value-based strategy types with organizational issues on the one hand and with relationships and networks features on the other hand. We specifically draw conclusions on how companies must upgrade their network/partnership capabilities and on how relationships and networks can act as inhibitors/drivers of a value creation strategy.

2. Research design and context

The context of this qualitative study is the Belgian metalworking industry. The companies operating in this industry are contract manufacturers to other companies (operating in industries such as mechatronical engineering, automotive, etc.). Contract manufacturers take on different roles in the supply chains. For this reason it is quite difficult to give a straightforward picture of the metalworking chain (see figure 1). Figure 1 provides a linear representation of the supply chain (from raw materials to products for end customers), and lists the different players in this chain (such as original equipment manufacturers (OEMs) and brand owners, general suppliers, raw materials suppliers, suppliers of components and subsystems, and specialized suppliers).

Figure 1: The supply chain of the metalworking industry



This representation gives a clear view of the types of activities that need to be done to get from raw materials to end products. It illustrates that subcontractors/contract manufacturers are often situated upstream in the supply chain and/or are shielded from end users/customers. Using this figure, it is reasonable to deduct that through their role played in the supply chain, it is quite vital for contract manufacturers to have a large network of contacts.

This paper uses a mixed qualitative research methodology (Patton, 1990) and was conducted in cooperation with the Belgian sector federation for the technological industry, Agoria. We performed among others interviews with participants of metalworking companies, carefully selected through purposeful sampling. With the help of an industry expert (a member of the sector federation), we identified companies that were seen as leading and successful (realizing above average rents) by their peers.

We chose for this particular research methodology for the following reasons. The literature on strategic value positions in the metalworking industry is scant. As a consequence and before embarking on the study of value-adding positioning strategies, we first had to dig deeper in the selected industry and its typical companies. This is in line with Pettigrew's statement (1992) that relatively undefined constructs (such as, creating additional value in a highly commoditized market) should be studied in their natural context in order to improve their validity and measurement. Further, this methodology also enabled to reveal managerial and organizational cognitions (Laukkanen, 1994) and to uncover causal maps (Hodgkinson, 1997; Spender, 1989; Weick, 1979) of the market actors. The latter is useful to get a better understanding of active sense making schemes and drivers for market actions of companies.

In each of the interviews, elements of previous interviews were incorporated. An expert from the sector federation participated in all interviews, and was involved in a discussion with the two interviewing authors in generating a summary report after each interview. By doing this, and by using diverse types and sources of data in the two waves of data gathering, we were able to fulfill the data triangulation requirements in qualitative research (Eisenhardt, 1989; Yin, 1994; Woodside & Wilson, 2003). Also, preliminary findings were enriched by existing theories on strategic positioning. In this way, our empirical data gathering and analysis process is in line with the 'iterative grounded theory' method from Orton (1997) who describes a continuous and 'systematic combining' (Dubois and Gadde, 2002) of theoretical and empirical insights during interviews.

Our research can be situated in the upper right-hand corner of the matrix of Golfetto and Gibbert (2006). We study a potential (ex ante) value creation strategy, from the suppliers' perspective. We seek to identify migration paths to new value added strategies together with their key success factors. In this process, we also studied the problems these companies encountered and how they tried to succeed in their endeavor of market strategy renewal. Knowledge of the industry is crucial in this process. The essence of the metalworking industry is that it supplies to other industries. The historical reason of existence of these contract manufacturers is that they can offer certain products/services at a lower cost than the contractor. By specializing in certain types of operations, product sizes and/or services, they can have considerable cost advantages compared with their contractors. The key success factors are thus based on clearly defined economic variables, such as economies of scale and economies of scope. 'Economies of scale' (in production, purchase, etc.) occur when the average production costs decrease as the produced volume increases. 'Economies of scope' occur when for example production resources can be used to serve several customers with different metal products, or when a cross fertilization of expertise takes place. Combining economies of scale and scope becomes more and more essential for contract manufacturers. The latter is supported by the availability of multi-purpose metal working machines.

Besides scale and scope economies, other potential sources of comparative advantages reside in economies of experience, economies of learning and economies of span.

- 'Economies of experience' occur when an organization specializes in a certain type of activity (surface treatment, custom-made goods, etc.). Execution and operation will thus be faster, smarter and more cost efficiently than less specialized organizations.
- 'Economies of learning' occur when the contract manufacturer focuses on continuously developing new applications. The contract manufacturer excels in listening to contractors and translating these needs in specific products/solutions. Eventually, this may even lead to becoming a product innovator and brand owner. For example, a contract manufacturer developed a pre-assembled tank (including fillers, hoses, e-components and wires) for off-road applications.
- 'Economies of span' refer to the strength of the companies' network. It must have an extended and quickly mobilizable network of partners, customers and other market players. This enables the contract manufacturer to offer a superior solution in a smart and cost efficient manner. We notice that in the supply of components more and more intense networks arise, which decrease 'manutention' (refers to all labor-intensive movements during the production process). For example, through alignment of the activities of the customer, contract manufacturer and designer, the design of a wheel was modified so that four treatments in operations were reduced to one. The resulting 'economies' were shared among the participating parties.

Our research itself was conducted as follows. In a first phase of this research project (year 2005), twenty CEOs from metalworking companies were interviewed. Discussions centered around how trends and tendencies (societal, technological, organizational, market and supply chain) have a potential impact on the strategies of metal working companies.
In a second wave, carried out during 2006/2007, we performed an additional six in-depth interviews with CEOs and commercial managers (duration from 1,5 to 2,5 hours), a focus group (discussion of nearly three hours) with twelve managers from metalworking companies (as well specialized as more

general contract manufacturers), two suppliers, and two industry experts (one technical and one market expert). We also interviewed two managers from the steel federation specialized in metal working. The interview guides and focus group guides focused on identifying trends, successful market strategies, value-added and differentiation efforts, and perceived critical success factors (internally and externally).

3. Findings

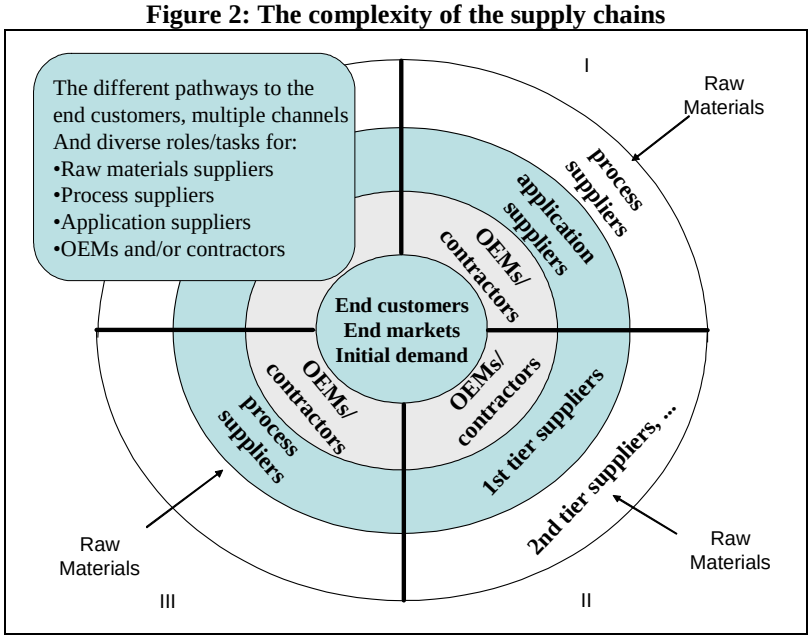
In this section, we discuss trends and challenges that can be observed in the metalworking sector. After elaborating on the basic paradox and other dualities, we introduce some strategy types for value creation and market positioning for metalworkers. We then identify the critical success factors and describe development paths for contract manufacturers to evolve from the current situation to the 'ideal' types.

3.1 Trends and challenges

Several of the participants in our research stressed the importance of networks for the higher-value applications. For engineering, the contract manufacturers have contacts with the customer's customer, with design partners, and with parties developing parts and complementary subassemblies. Some contract manufacturers even subcontract their production to foreign partners. Some 20 contract manufacturers of our study report that they use their networks mostly for extra capacity, complementary technologies, local support for non-core activities, product development, treating products (machining, finishing, etc.), co-design and value engineering, and optimization of logistics.

The common characteristic of contract manufacturers is that they work under assignment of a third party. Mostly, the demand is initiated by brand owners and OEMs from other industries. This demand triggers a lot of other product demands, such as the demand for metalworking. The implications of this on strategic choices should not be underestimated. This is why we complement figure 1 with figure 2, in which we represent the metalworking chain alternatively as "value chain". We start from the initial demand, which departs from the end customers/markets (automotive, machine construction, etc). The first circle round the end users is populated by brand owners and original equipment manufacturers (OEMs). They capture the first demand and trigger the chain. The metalworkers start at the earliest in second position, as contract manufacturers of other companies (mostly those brand owners and/or OEMs).

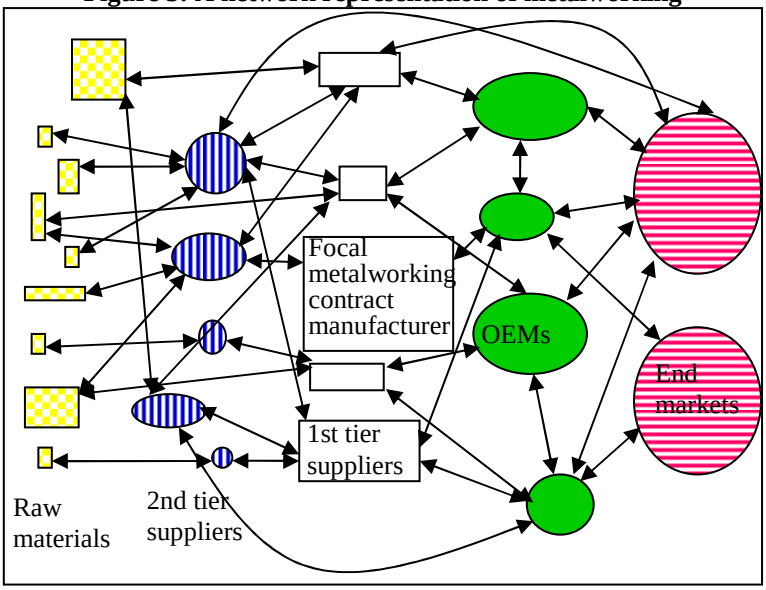
Figure 2: The complexity of the supply chains



From this representation of the chain, we can deduct that in practically all cases, the contract manufacturers do not have direct contact with the customers of the contractors/OEMs. Metalworkers perform their production on the detailed specifications of other companies, the contractors. This implicates that the metalworking companies are just offering production capacity to other companies. The fact that they do not have direct contact with the end customer, the customer's customer, nor the principal, makes upgrading their role in the chain extremely difficult, because having knowledge of the needs of the customer's customer is in that case essential.

An alternative representation of the figure above is to portray the metalworking industry as a network. It is important to remark that each company has its own incomplete view of the network it is operating in. This is obvious, as it is impossible to form an unbiased view of the network for each of the actors involved. It is extremely difficult to set boundaries and to objectively represent the importance of each of the actors (as each of them thinks of themselves as the center of this network). These views on the network are called network pictures in IMP literature (Ford et al., 2003). In the following figure, we represent a possible network picture of the metalworking industry, including relationships between actors. We do this for the case of quadrant II in figure 2. The different shapes and sizes of the actors in the network represent their heterogeneity.

Figure 3: A network representation of metalworking



Source: Inspired by Ford et al, 2003

The unique position of the sector as contract manufacturer leads to a few specific trends and evolutions. But like all sectors in our economy, the metalworking industry too faces challenges such as increasing competition, further globalization of buyers and suppliers, technological developments (such as ICT, smart technologies, mechatronics, new materials, etc.), new production techniques, and a changed purchase pattern of buyers with increased professionalization.

A first set of trends and evolutions is related to the increasing globalization and the exploitation of cost advantages on a global scale. More specific, we can observe:

- An increase of volumes from low(er) cost countries (such as Eastern Europe, China, etc.).
- A continuing and gradual delocalization of the production capacity of OEMs to lower cost countries.
- Optimization by OEMs of their (global) organization and production architecture.

An increasing number of contractors have developed supply lines from low wage countries. The greatest threat is probably the fact that contractors/OEMs themselves are delocalizing and consequently moving their production capacity to for example China. This is, however, not always the case and varies from sector to sector. OEMs themselves are confronted with increasingly fierce

competition. A lot of these organizations are also active in pan-European and/or global markets. The pressure to keep their competitiveness is enormous. Obviously, these companies are working actively to optimize their organization, to distinguish themselves in their market, and to press costs. In many cases, business processes are reconfigured by delocalization and concentration of production activities, guided outsourcing/offshoring and subcontracting. Delocalization does not necessarily mean a movement to low wage countries. The main goal is to optimize all activities in view of an efficient organization. The customers of contract manufacturers in this sector thus think at least on a European scale. Besides the optimization of the proper organization and the streamlining of their buying policy, OEMs are searching for unhealthy profits upstream in their chain. By doing this, they often skip the first tier suppliers to study business processes and margins higher in the chain. Possible optimizations and efficiency improvements are imposed in the relationship with the first tier supplier. Similarly, it is often demanded that contract manufacturers have a branch in a low labor country.

A second set of trends and evolutions has to do with the role contract manufacturers play and the changing buying behavior of the customers. More specifically, we can identify:

- Further professionalization of the purchasing function of customers
- Transferring of more tasks to the contract manufacturer

The further professionalization of the purchasing function is also inspired by the importance to do business cost efficiently. Multi-plant organizations evolve more and more to centralization of purchasing. Mostly, this process means that the personal relationship between local buyers and (local) suppliers is broken. By centralizing and upgrading the purchasing function, the buyer gets more and more elusive for the contract manufacturer. The metaphor of the buyer as 'ghost' (not seizable and not nameable) is indeed well chosen. The professionalization is demonstrated in another way. The number of contract manufacturers with who is cooperated in first tier, is still diminishing. In some sectors – like automotive – this is resolutely being implemented (or is implemented already). This can mean that the contract manufacturers are situated even one step further from the end customer (a shift from quadrant I to II in figure 2). This intermediation makes it even more difficult to get to know the demands and such of end customers, and thus makes paths to create value less accessible/known.

Linked to the professionalization of the purchasing function, we could also perceive that the contract manufacturers in this sector are practically obliged to take on other roles. This is mostly coupled with the passing on of part of the business risk to the contract manufacturer. Delivery deadlines get shorter and more and more flexibility is demanded. At the same time, the logistics stock and supply risks are imposed upon the contract manufacturers. This is illustrated by the situation in which the contract manufacturer gets a production planning from the OEMs of three months, whereas his own purchasing (of raw materials) has a lead time of over three months. The situation, however, differs from sector to sector. The automotive industry works on a totally different basis and is in that way probably the most optimized. Production volumes are better known by the contract manufacturers, which makes efficient cooperation possible.

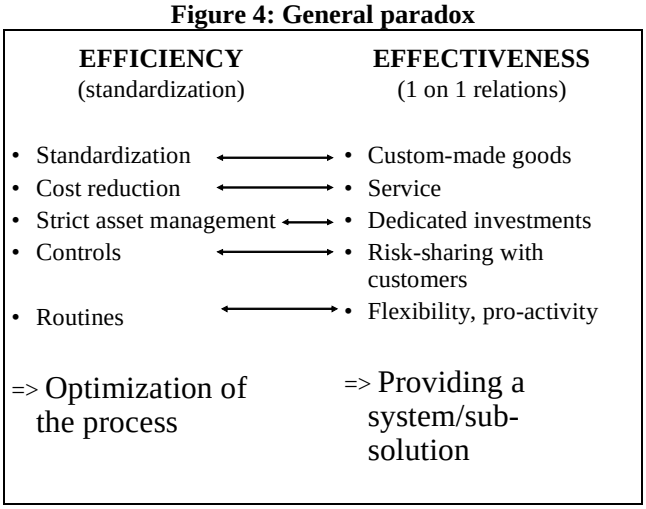
There is not only a widening of tasks, but also a movement of tasks. Contract manufacturers are obliged to shift more and more to quality and precision work. This, however, does not necessarily mean that prices are better. This movement of tasks is considered normal and there appears to be little room for a financial compensation of the tasks performed. The widening of tasks does not only relate to technical aspects. The demand for extra service is also increasing and threatens to put further pressure on the margins of contract manufacturers. Offering service often means performing manual actions and these are the most expensive for Belgian contract manufacturers.

One of the consequences of the trends listed above is that contract manufacturers in metalworking have specialized or focused on specific markets, customers, and processes. Two broad categories of contract manufacturers have arisen. A first category is the application supplier, which is focused on specific customers/markets and offers total solutions or components to contractors/OEMs. For these application suppliers, the application and the product are of main importance. The second category is the process supplier, which is specialized in parts of the production process, such as forges, foundries,

finishers, and other specialized fabrication applications and technologies (machining, etc.). For process suppliers the process and the specialized knowledge of this process are of main importance. In many cases the process suppliers are called in into the production process of application suppliers.

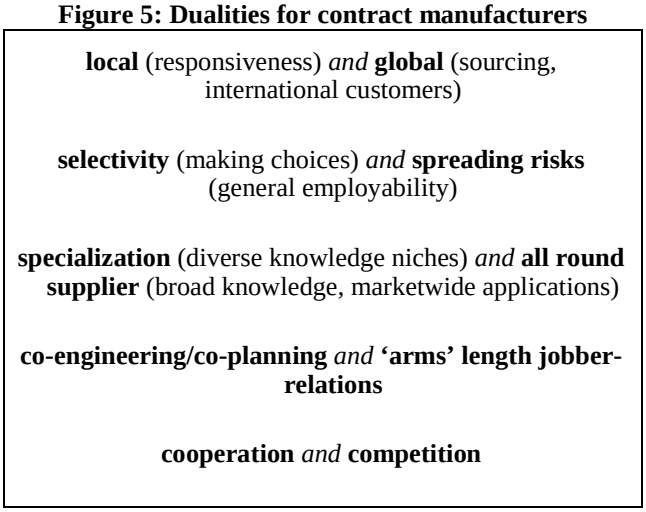
Out of the above, we can formulate some challenges, which are a concern for all companies in the metalworking industry. Obviously, there are differences depending on the end market one is working for (such as automotive, machine construction, truck & trailer, etc.). We represented these challenges as dualities (Dittrich, Jaspers, van der Valk, and Wynstra, 2006) between two extremes that need to be bridged. In this way, they are paradoxes that need to be managed. The basic paradox has to do with the unnatural split between efficiency and effectiveness. Efficiency requires standardization and a certain scale in the entire organization; effectiveness refers to alignment, custom-made goods and 1 on 1 relations with customers. Flexibility, adaptability and the capacity to empathize are crucial. These basic paradoxes are listed in figure 4.

Figure 4: General paradox



The customers are at the origin of the basic paradox in figure 4, because of their high expectations. Customers want to try and purchase products at the prices of low wage countries, and expect at the same time the quality, service and know how of the Western companies. Contract manufacturers are struggling with this dilemma. The pressure of efficiency is pushing contract manufacturers towards process efficiency, standardization, cost reduction and a strict asset management. The pressure of effectiveness stresses the importance of custom-made goods, service, flexibility and pro-activity. This combination isn't uncomplicated. This basic paradox in combination with the global fierceness of competition, the increased complexity of technology, and the professionalism of customers, leads to a few other dualities (see figure 5).

Figure 5: Dualities for contract manufacturers



Metalworkers also have to find a compromise between the necessity to do business locally (be able to respond quickly to the demands of customers) and pan-European/globally (international customers, offshoring, sourcing). The fact that companies in this sector offer a certain capacity to their customers to treat and process metal also leads to another duality. There is a continuing tension between making choices and thus selectivity, and a healthy spreading of risks. Selectivity helps to align own resources/capacity to the demands of customers. An extreme example of this is the automotive industry. The spreading of risks, on the contrary, pleas for the reduction of selectivity and keeping the availability of production capacity more generic. A paradox that matches the previous one is the duality between specializing further in certain techniques (such as finishing) and/or products, and positioning yourself as an all-round contract manufacturer. Working on both extremes probably requires an adjustment in the scale of the company.

Another field of tension expresses itself in the payment behavior on the market. Customers make use of the engineering and design capacity of metalworkers, but eventually pay through an 'arms-length jobbers' contract. In many cases, contract manufacturers are doing much more than the detail engineering or are they saving a lot on production costs of clients through an innovative design, without being compensated for this. Consequently, there is almost no space to innovate and organizations are forced to view everything as 'business as usual', at the expense of necessary innovations at several fields (technology, market approach, etc.).

3.2 Value creation and market positioning for metalworkers

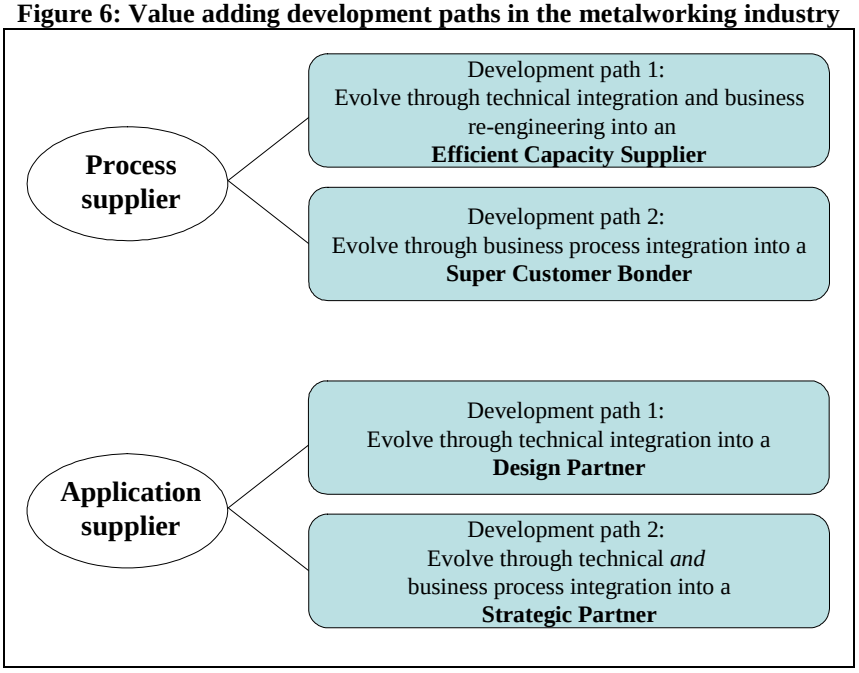
In this section we discuss the possible pathways for application and process suppliers to strengthen their market position. A stronger position on the market is only possible if the contract manufacturers achieve to create extra customer value. The creation of customer value implies that the contract manufacturer can make a significant contribution to the contractor's profitability. Important is that the contract manufacturer can add value by integrating into the customer's processes.

There are two dimensions along which a company can integrate into the processes of the customer, namely through technical or business processes. In a first dimension, the contract manufacturer goes further in the production process of the customer by integrating into their technical processes. For instance, a company of components could think about making links between these components and deliver sub modules. The latter holds added value for the customer because a number of operations in production or assembly are integrated and automatized by these sub modules (integrated components). This movement can further lead to the supply of integral systems or subsystems. A foundry for instance, can try to move up by offering a form of 'processing' (e.g. by gluing fittings in the metal part), but the customer is not always willing to outsource these extra production steps. A contract manufacturer of pre-assembled units always tries to sit down together with the engineers of the customer, to coordinate designs and add surface treatment (e.g. degreasing, anti-corrosion treatment).

The second dimension illustrates to what extent a company searches added value by integrating further in the customer's business process. In this case, the enterprise mainly tries to give solutions to simplify the customer's business process. In other words, he goes further in the customer's administrative value chain. At that moment, he will try to add value to the components/products with extra services. For instance, a leasing option can create some space in the customer's financial, administrative process. Another example is a 'vendor managed inventory', in which the stock management is taken over from the customer. Finally, going further along this axis of added value can put the company in a position of process management. The full business process then gets taken over. A contract manufacturer adds coating, piping and cables to his (sub)systems as a leading director. Therefore, he exploits his customer's network. The foundry moves up by offering flexible logistic service. *Vendor managed inventories, JIT supply, and labeling* are examples of simple service concepts. A general application supplier shares business risks with his customer.

Taking a market leading position forces the process supplier and the application supplier to create added value for customers. The development paths are presented in the next figure.

Figure 6: Value adding development paths in the metalworking industry



The **'efficient capacity supplier'** is organized to use its product capacity and processing knowledge as efficiently as possible. This enterprise has resolutely chosen to compete on price. That is why it tries to actively have an effect on the direct costs of customers. It is a company that strives for high efficiency and scale. The engineering is focused on being able to take over production questions of customers and there is a strong response capacity, leading to logistic and cost performance. This is the *Ryanair* option of metal industry, mainly giving the customers price advantages. This path implies that the process supplier integrates further into the technical process of his contractors.

The core element of the '**super customer bonder**' is that the corporation proactively searches for better solutions for its customers. Price off course remains an important decision criterion. The super customer bonder searches for added value by integrating as deep as possible in the customer's business process. It generally concerns specialized players, focusing on one or a few markets/applications.

The **design partner** is looking to add value mainly by integrating technology in his solutions. This way, he tries to shift from basic solutions supplier to supplier of sub modules and even system integrator. The higher the technical integration in the customer's processes, the more tasks a contract manufacturer fulfils (e.g. assembling components, developing intermediary products to full systems, etc.) and the more custom-made goods are involved. Specialization in specific domains and applications becomes a necessity.

The **strategic partner** combines the roles of system integrator and service provider. He is the 'turnkey provider' for the goods/products he has to supply, responsible for the management of all processes involved.

3.3 Critical success factors

Increasing professionalization of contractors in several markets has resulted in a different relation between the different sources of cost advantages described in the methodology section. The end markets (e.g. automotive, machine construction, trucks, industry, etc.) and contractors do not always have the same demands for the contract manufacturers. The development paths illustrated in Figure 6 (efficient capacity supplier, super customer bonder, design partner, and strategic partner) have adapted their business model to meet the changing needs of the customers. A clear specialization occurs in the searched customer value. This specialization is induced by the behavior of the contractor and the increased competition in the end markets. In the next scheme we indicate, for each type, the market positioning pursued, and the according critical success factors (CSF) and qualifiers. It is important to excel on the CSFs. The qualifiers are the minimum conditions to participate. (See table 1).

Table 1: CSFs for the sustainable strategy types

	The efficient capacity supplier	The super customer bonder	The design partner	The strategic partner
Market positioning (customer value searched for)	• Most efficient supplier (price) of high volumes	• Most flexible supplier for series and projects (offering solutions, custom-made goods, etc.)	• Cooperating in the design phase • Custom-made goods and integration into technical process of customer • In high-end markets, play a role in the new product development of contractors	• Thinking integrated total solutions • Custom-made goods and integration in technical, administrative, logistic and financial processes of contractor • In high-end markets, safeguarding the contractors' differentiation
Critical success factors	• Economies of scale in the entire set-up of the organization and production • Organization is specialized in 1 type of buyer	• Economies of scope • Economies of experience in custom-made goods or customized solutions • Economies of span (network of contacts and partners)	• Economies of scope • Economies of experience • Economies of learning	• Economies of experience • Economies of learning • Economies of span (network of contacts and partners)
Qualifiers	• Efficient use of engineering capacity	• Sufficient scale to be price competitive	• Sufficient scale to be price competitive • Competence development	• Sufficient scale to be price competitive • Competence development
Potential pitfalls	• Drastic alignment on 1 customer or 1 type of customer increases the risk profile • Organization cannot switch to other application in the short term	• Organization can get stuck in the middle between efficiency and effectiveness • Too expensive to compete with low cost players; too less specialization in technique and development to compete with knowledge companies	• A lot of upfront investments needed in engineering capacity, but is the company really looked at as partner by the client? • Too little pro-active attitude • Difficult to capture the value created	• Is the contract manufacturer supposed to integrate strongly with the contractor? • Not all competencies are under direct control. The company is dependent on specialist suppliers. Not easy to manage + big responsibility
Examples/ Typical markets	• Volume markets • Customers are optimized globally • Automotive	• Project market • Series markets • End markets where speed and flexibility are important	• Series markets (diverse applications) • Developing end markets • Niche markets • Market specialization	• Series markets (diverse applications) • Developing end markets • Niche markets • Application specialization

The **efficient capacity supplier** aims on being able to supply components/products at the lowest possible price. This company searches the competitive advantage in a super efficient organization. More concrete, their whole organization is attuned to the contractors' demands. The latter one is mostly globally optimized or managed and active in volume markets. The OEM-product itself experiences heavy competitive pressure and this is passed on to the next link in the chain. CSFs refer to realizing maximum economies of scale in purchase, production, factory layout, distribution and logistics. The specific organization of a metalworking company is completely attuned to the needs of the OEM in this segment and there is a far-reaching standardization to be able to realize the lowest possible price for a certain product. In other words, contractor-specific investments are made, which makes it difficult for this type to supply to other contractors in an efficient and effective manner. Even the engineering capacity is attuned to the business process of a type of contractor. *A metalworker has resolutely chosen for less, but bigger customers, a redesign and streamlining of the plant's lay out and an exclusive focus on ironwork (metal plates) (no profiles for example). There was also heavily invested in new production apparatus. The company is now cost efficient compared to Central-European low wage countries.*

The **super customer bonder** searches customer value in a different way. He mainly focuses on being able to satisfy the needs of the contractor in a flexible way. Mostly it concerns projects (rather than series production) where the contract manufacturer also has an engineering task. Also, the end markets are less predictable and volatile, making a focus on standardization and efficiency very difficult. Off course, price remains an important factor and realizing minimal efficient scale is a qualifier. Organizationally this means that 'economies of scope' are very important. The production apparatus and the organization of the contract manufacturer must be aimed at making quick adaptations, adapting designs and realizing small production runs in a cost efficient manner. The focus on one type of contractor is less desired here, but attention is given to a generic market demand for flexibility. Apart from economies of scope, economies of experience are of great importance. These indicate how fast and efficient a certain task can be executed. The more experience, the faster and thus cheaper an activity can be executed. Economies of experience must be realized by super customer bonders mainly by translating flexible customer demands into the production process, resulting in custom-made goods or individualized solutions. *The customer of a foundry signs a 'metal contract', agreeing with the contract manufacturer on a fixed price for a pre-determined volume planned and confirmed in advance. Also, the foundry jointly develops delivery and logistics in order to minimize 'change-over costs'.*

The **design partner** goes one step further and must have economies of learning. Given the nature of the market demand with which he gets confronted, he must not only be able to quickly anticipate market changes but also form these changes. He remains a contract manufacturer but has advanced in basic engineering and design aspects of the production process. Supplying parts, components, and solutions also implies the presence of a network of equal partners who take care of other aspects of the total solution. The expertise in design and production lead to a strategic relation with the contractor. *To realize co- and redesign value engineering together with customers, contract manufacturers try to coordinate with customers and designers. For this purpose they must have an extensive material and application knowledge (for example to think about alternative materials).*

The **strategic partner** strives for a total integration in the processes of the customer, both technical and business related (financial, logistic, ICT, service, etc.). Integrating in the technical processes requires the knowledge of a design partner. Integrating in the customer's business processes requires the competence to analyze the customer's business model and to offer process management (e.g. vendor managed inventories, risk management (also willingness to share risks), co-financing, document management, packing, parts-management, and other service concepts). *A contract manufacturer coordinates design and logistics more and more with selected customers. The subsystems and service concepts are specifically developed for the customers' processes.*

4. Interpretation: the necessity for active co-evolution

In the following, we draw the development path contract manufacturers can follow to evolve further on the path of distinctive capacity. This development path is represented in a generic manner. It also

tries to find the balance between what is feasible and realistic and what would be optimal. In the following figures we illustrate how the contract manufacturers can grow towards the ideal types. Figure 7 indicates how the process supplier can develop into an efficient capacity supplier or a super customer bonder. Figure 8 illustrates the development path for the application supplier towards design partner or strategic partner. Each time we indicate how the current position relates to the 'ideal' types. This way, it becomes clear where the extra value is created. The efficient capacity supplier scores extremely high on cost-efficient technical realization of the given specifications. The customer bonder, however, puts the focus on offering extra services cost-efficiently (see Figure 7). It also becomes clear which efforts the process supplier can do to reach the ideal types. For the application supplier (see figure 8) the situation is similar.

Figure 7: Development path process supplier

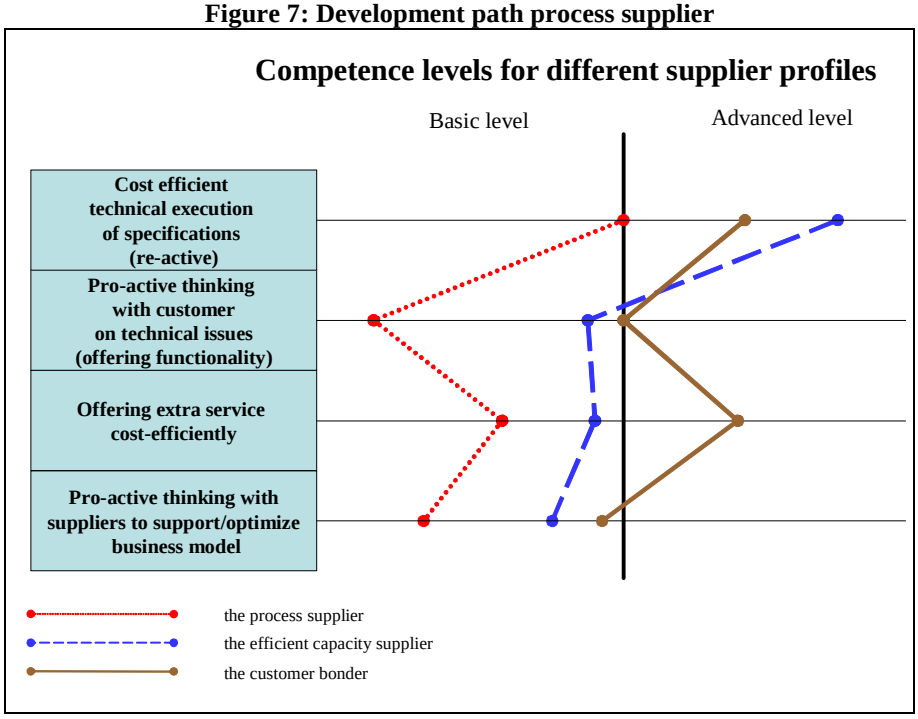
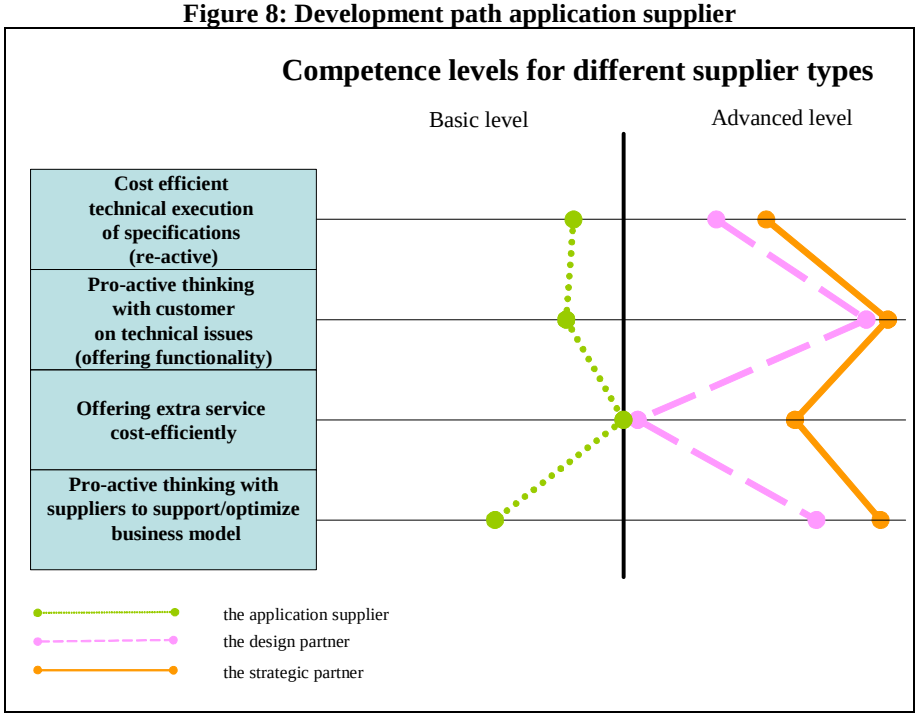


Figure 8: Development path application supplier



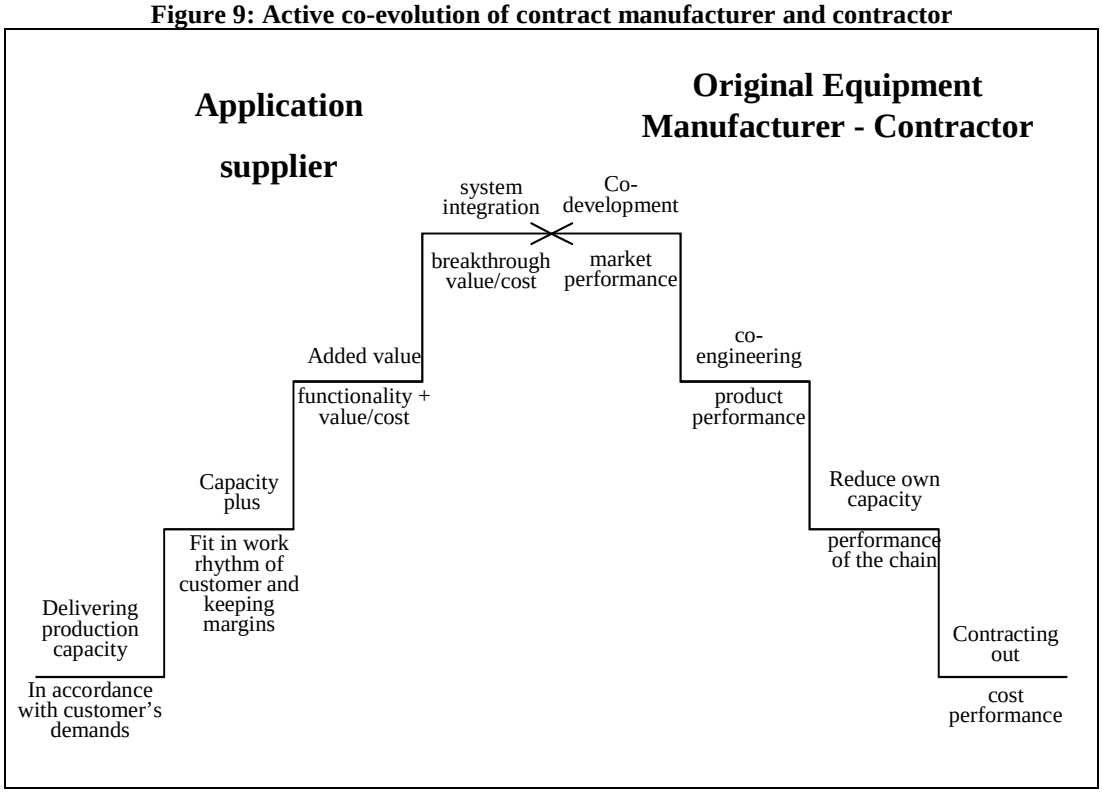
From the discussion above, it is clear that the relationship between contract manufacturer and contractor is crucial. Without stressing this explicitly during the discussion of the ideal types, relationship management/account management is a crucial issue in the strategy of a contract manufacturer. Depending on the market positioning pursued, other issues will be stressed, but in all cases, the relationship goes further than a simple buy/sell-contract. The close operational connection forces the contract manufacturer to further develop the relationship on the management level. This has direct consequences on the implementation of a development path, along which a contract manufacturer tries to pursue another market positioning. Here, we meet the bottleneck in the search for the implementation of new business models for the contract manufacturers. The identification of the ideal type with according business model is just the first step. Contract manufacturers that wish to extend their role in the chain (for example a contract manufacturer that wants to evolve to a strategic partner), does not only change its positioning, but also the internal organization and thus the business model of its customer. The success of such a change is not only dependent on the own efforts and competence building, but also on the necessary changes of the contractor.

As stressed in IMP literature (e.g. Ford, and Håkansson, 2002; Snehota, 2003), the only way a company can achieve change is through the network. It is crucial that the other actors in the network are convinced through intensive interactions. They have to clearly see the benefits of this change and all interdependencies need to be managed. The development path can only deliver the expected results if there is collective enactment of all parties involved. Conflicting characteristics and interests need to be managed. It is thus very important to interact frequently and thoughtfully with the contractor(s).

Ford et al. (1998), state that "co-evolution means that the way in which a company changes and develops are to a large extent conditioned by developments that take place in its relationships and in parallel with the changes in its counterpart's companies. This process reinforces the idea that strategy development in business markets centers on, is affected by, and is implemented through relationships".

We illustrate this with a general example (see figure 9). We use a model described by Vollmann, Berry, and Whybark (2005) for supply chain management, and use it to elaborate on the idea of co-evolution in business to business relationships.

Figure 9: Active co-evolution of contract manufacturer and contractor



Source: On the basis of Vollman et al (2005)

We start at the bottom of this figure. This represents the situation in which for example a contractor works together with a contract manufacturer of metal products, and decides to contract out a larger share of the production to that contract manufacturer. It is a first step in the co-evolution process of contractor and contract manufacturer. For instance, it can be the case that the contractor asks the contract manufacturer to assemble several components and deliver this as a whole. Another example is the contract manufacturer performing extra treatments on the metal products. In the right-hand bottom corner, one can see the decision the contractor has to take (above the line) and how he does or does not follow up the success of this decision (underneath the line). For this first decision, it concerns mostly the saving of costs (cost performance). In the left-hand bottom corner, we can see what this decision means for the contract manufacturer. Above the line is indicated which competencies need to be strengthened/build up (in this case: delivering production capacity for sub modules). The critical success factor in this situation concerns the ability of the company to meet the customer's demands/specifications.

This first step is in line with the description of Penttinen and Palmer (2007) regarding evolutionary paths and completeness of an offering. We see here a movement in their matrix from quadrant one to quadrant three, i.e. moving from a less complete towards a more complete offering. The nature of the buyer-seller relationship remains transactional at this level of our model for co-evolution.
A proof that this integration of different components into a system can be a source of market value can be found in Jacob (2006). Our first level of co-evolution is endorsed by his representation of 'costumer integration competence'. In his research, he found that this competence can indeed create market value.

In this position, the contract manufacturer can take the initiative for a subsequent transformation. This is represented in figure 9 by 'capacity plus'. Besides being able to produce in accordance with its customer's demands, the contract manufacturer also needs to be capable to tune itself to the production rhythm of the contractor. Obviously, new competence building is required in the area of for example logistics and borate concepts (vendor managed inventories, no stock outs, etc.). At this point, a bottleneck needs to be concurred. The relationship can only grow through or be kept status quo in a healthy way, if the contractor is decreasing its own production capacity accordingly. If this is not the case, than there are no cost savings in the supply chain and falling into merely price negotiation poses a serious threat. At the same time, this is a difficult step for contract manufacturers, as they have to offer extra services without making too many additional costs. Conserving margins is important, as additional costs cannot be transferred to the contractor (this would be in contradiction with the original intention to save costs).

A next step the contract manufacturer could take is to further develop the offered products/services. In this step, he seeks for additional value by for example R&D and/or engineering breakthroughs, which lead to cost savings in the entire supply chain. Another way is to make efforts to improve the functionality of the contractor's product. Obviously, this requires establishing new competences (technology that exceeds the own production, developing a system that generates information about the customer's customer and even the end customers, etc.). The criterion contract manufacturers have to fulfill does not only concern the increase in functionality of the product, but also a drastic improvement in customer value that is created per unit of costs made. We represent this in figure 9 as functionality and value/cost. Depending on the ideal type that will be pursued, the improvement of the value/cost-ratio will be achieved otherwise. Contract manufacturers that pursue to be capacity supplier, realize this through economies of scale as much as possible. Customer bonders seek for economies of scope and experience in complementarities between customers. The strategic partner is on a quest for real innovations that influence the market positioning of its customer. What matters is to learn quickly and be able to translate new needs cost efficiently into total solutions.

In this step, yet another bottleneck needs to be dealt with. The only way, in which the contract manufacturer will succeed in raising the value/cost-ratio, is when the contractor is co-evolving. It is crucial that the contractor is receptive for co-engineering and that he evaluates the relationship on the product performance rather than exclusively on the efficiency of the supply chain. A real partnership is

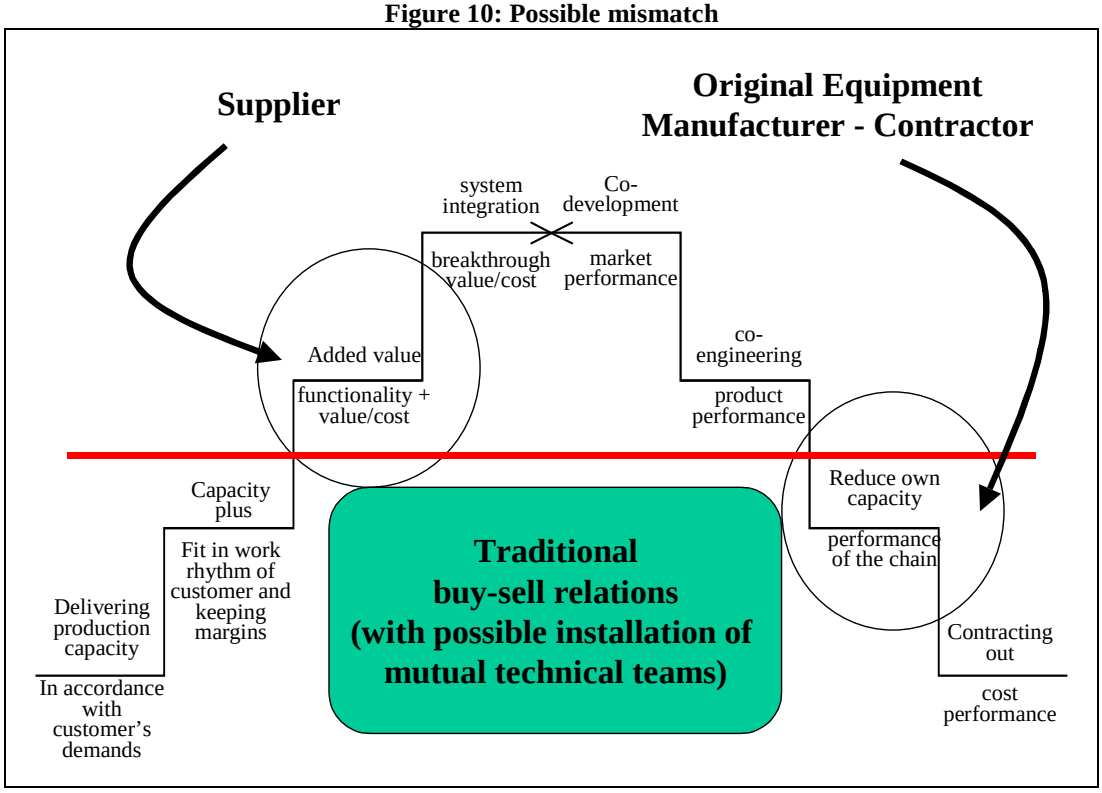
yet one step further and implies co-development. A contract manufacturer can only reach this point through drastic specialization (in the technical aspects, but also in the value-chain of the contractor) so that system integration is made possible, coupled with a strong increase of the value/cost-ratio.

The path to distinctive capacity thus implies active co-evolution of contractor and contract manufacturer. In other words, it is impossible for a contract manufacturer to develop into a new business model without the co-evolution of his most important customers. If the contractor does not cooperate, the development path stops and the contract manufacturer is confronted with a situation in which the own organization and pursued positioning are not aligned with the specific customer's demand (see figure 10). For one reason or the other, the contractor in this situation is not going further than the optimizing of the logistics in the supply chain. The consequently, the contract manufacturer is being obstructed in his development. In this example, he will thus not be able to prove his capacity to deliver more functionality at a lower (or at least the same) value/cost-ratio.

Here, we see analogies with the second dimension of Penttinen and Palmer's (2007) framework. They describe subsequently the evolution to a more complete offering and then a relational buyer-seller relationship in stead of a transactional one. This is very important in our framework, as elaborated in the above. They also state that moving only to a more complete offering and keeping the relationship transactional is a less sustainable position, as this goes hand in hand with high coordination costs. This is in line with our findings that co-evolution and thus going from a transactional to a relational relationship with the contractor is of main importance.

Figures 9 and 10 demonstrate that the road to distinctive capacity is long and partly dependant on the contractor. Besides the internal challenge of developing the own organization (the higher in figure 9/10, the more competences are needed), it is vital that the contractor co-evolves.

Figure 10: Possible mismatch



There are some issues very important in developing this kind of relationships. We addressed some issues, which are in line with Windahl and Lakemond (2006), who identify "the following six factors as important when developing integrated solutions: the strength of the relationships between the different actors involved, the firm's position in the network, the firm's network horizon, the solution's

impact on existing internal activities, the solution's impact on customer's core processes, and external determinants".
They developed a matrix, with on the axes the integrated solution's impact on existing internal activities, and ties to important external relationships. Our model of co-evolution can surely be situated at the right side of their matrix, with a high impact on existing internal activities. They state that either with high or low ties to important external relationships, the companies should create processes and organizational structures to handle both internal and external dependencies, or secure internal commitment and match it to end customers' needs. This is in line with our model and recommendations.

Wagner and Hoegl (2006) argument that supplier involvement is indeed a possible source of sustainable competitive advantage, but their research on the subject clearly indicates that there are still many companies that have a problem with managing these new product development teams with supplier involvement, and fear loss of proprietary information. This is in line with Ploetner and Ehret (2006), who state that companies should be selective in choosing their partners. They call for partnership-related research to investigate the special requirements and success factors of partnership development in more depth. Spekman and Carraway (2006) propose such a framework, which describes certain barriers and how to overcome them for the transition towards more collaboration.

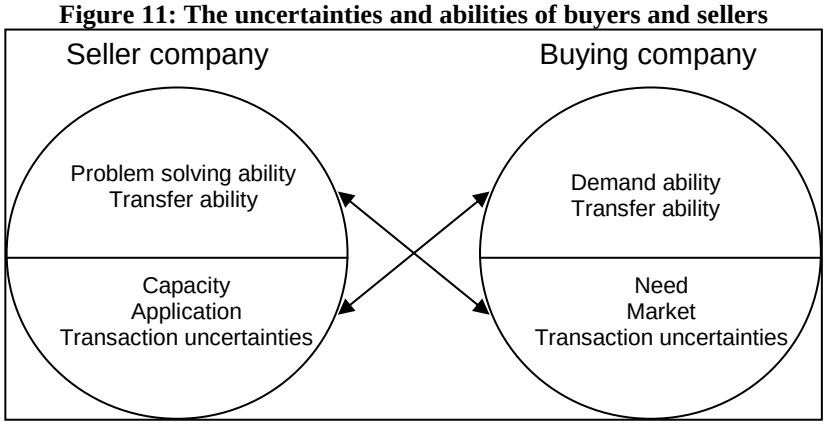
5. Conclusion

In our paper, we described a research project, conducted in the Belgian metalworking industry. We interviewed members of companies that seem to be able to create above average value and by combining this knowledge with information on specific trends and challenges of the metalworking industry, we described four value adding positionings (being the efficient capacity supplier, super customer bonder, design partner, and strategic partner) and their critical success factors. We then identified development paths to migrate from process supplier or application supplier to these 'ideal' types.[i]
To make sure these changes have the desired effect, it is vital that the development path is followed together with the contractor. Therefore we constructed a model for co-evolution of contractor and contract manufacturer, which gives clear indications on what to focus on in each step of the 'ladder of co-evolution'.

The above analysis clearly indicates that the market strategy transitioning path is far from evident. Contract manufacturers in this industry face a daunting task in upgrading their own resources/competences and in co-evolving with their partners. We feel that this case study has the potential to enrich and contribute to different streams of literature. The articles contributes to B2B marketing and strategic marketing theory by enhancing the understanding of value addition through business model innovation in a commoditized industry facing the backside of enduring arm's length relations and having difficulty of reaching constructive (and mutually beneficent) collaboration. This way, this study contributes to the integration of the theories of service-based value addition (Ulaga and Eggert, 2006), organizational alignment (Beer, Tekie, Leitbold, and Voelpel, 2005) and IMP-based B2B marketing. Our research contributes to existing IMP literature by deepening out and specifying the concept of co-evolution in the context of strategy formulation and implementation. It attempts to link the theory of relationships/networks to a more specific elaboration of strategic dimensions.

For instance, with respect to the IMP-literature our findings are in line with the framework advanced by Ford et al. (2003) on the uncertainties and abilities of buyers and sellers in relationships (see figure 11). In each stage of the development of contractor and contract manufacturer (see figure 9), uncertainties and abilities need to be managed and matched. The uncertainties and abilities of the first stage need to be aligned for the relationship to start off, but this is not nearly sufficient. The level and nature of uncertainties and abilities need to be reassessed at each staircase of the ladder of co-evolution.

Figure 11: The uncertainties and abilities of buyers and sellers



Source: Ford et al., 2003

Let us for example look at the abilities and uncertainties in stage one of development. The buyer wants to contract out some of its production with the aim to save costs. There is, however, 'transaction uncertainty' in this case; will the contract manufacturer be able to deliver the required products at the quality and price demanded? This uncertainty can be tackled by the 'transfer ability' of the contract manufacturer to deliver the promised goods at the promised cost. In this first stage, the buyer is also suffering from 'need uncertainty', namely it has to decide what part of its production it is going to contract out. The supplier can be of help in this issue when he has a strong 'problem solving ability'.

Not only uncertainties of the buyer need to be matched with seller abilities. Vice versa, the same needs to be done. Suppliers are having 'capacity uncertainty', in the sense of not knowing how much additional production capacity to create, and how much of this capacity it will be able to sell in the future. At this time, the buyer needs to have a strong 'demand ability', and give advise to the seller. The seller's 'transaction uncertainty' (does the contractor really need what he says he wants) needs to be solved by the buyer's 'transfer ability' (needs to give enough and correct information about volume, timing, requirements, etc.).

In stage two of development, other uncertainties and abilities of buyers and suppliers need to be matched. It is thus important to re-assess and manage figure 11 in each subsequent stage.

Our research was performed in the metalworking industry and the ideal types and development paths we suggest are thus valid for this specific industry. Our conclusions cannot be generalized nor applied just like that for other industries. We expect that similar models can be made for other industries, but this is a topic for further research.

Another limitation of our study is that the relationship between contractor and contract manufacturer are described in the model of co-evolution and not the network as a whole. This was impossible to do as networks and network pictures differ for each of the actors involved. It is however crucial in advancing along the development path to look at the entire network, their interests and concerns and thus to manage all relationships simultaneously. "The evolution of the relationship between two companies will have effects that will be felt in each of the companies' other relationships" (Ford et al., 1998). These effects need to be assessed, managed (if at all possible), and taken into account while strengthening the relationship with a contractor along the proposed development path.
Networks are inherently unstable and a company also has to be careful not to fully focus on a certain contractor/path. It is very important to find a balance between commitment versus freedom to act, which can be seen as an extra duality that needs to be managed.

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[i] The fact that companies chose deliberately a development route is not contradictory to original IMP thinking that considers networks as organic. Companies can select their (initial) partners and 'ideal' customer relation, and later their network grows and evolves.