Dynamic effects of business cycles on business relationships

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Abstract

Purpose – The aim of this paper is to identify the effects of business cycles on industrial business-to-business relationships within extremely volatile industries.

Design/methodology/approach – The paper is an in-depth case study on Outotec plc, a leading provider of technologies for the mining and metal industries.

Findings – The study identifies the changes in a business relationship during a business cycle as the dominance between the parties and the cooperative and the competitive nature of the relationship alternate.

Practical implications – The study identifies ways to smooth the effects of business cycles in extremely volatile industries from the viewpoint of a project-based technology provider.

Originality/value – While a significant amount of macroeconomic research on cycles and a few studies on industry-specific business cycles can be found, this study is a rare example of company-specific research on surviving business cycles.

Keywords Business cycles, Project business, Relationship management, Volatile business environment, Business-to-business marketing

Paper type Research paper

Introduction

Business cycles are the most prominent phenomena of business life. For economists they have provided extremely stimulating intellectual exercise but for managers and corporations they are one of the most difficult challenges to be overcome in order to succeed or even to survive. Many companies operating upstream in value chains face an extreme cyclicality, because even the slightest fluctuations in their end-markets (Sheridan, 1997, p. 13; Alajoutsijärvi *et al.*, 2001, p. 487) result in what is called the bullwhip effect (Forrester, 1961; Lee *et al.*, 1997) as quite minor changes to customer demand cause large-scale oscillations along the supply chain. The effect makes firms within many industries lurch and veer off course as if inebriated instead of progressing smoothly forward.

Each phase of a business cycle creates its own managerial challenges (Bigelow and Chan, 1992; Goodell and Martin, 1992). Furthermore, it is easy to neglect the task of reviewing cycles over a term of perhaps several years because managers tend to live by quarters and through annual reports. However, such longer-term views would be an essential component in the developing of recession-proof firms. To date only a few

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studies have aimed to relate organizational control and strategies to business cycles (Alajoutsijärvi *et al.*, 1999, 2005; Pomerleone and Shaw, 2005; Czarniawska-Joerges, 1989; Klint, 1985; Lorange, 2010; Whittington, 1989). While a review of the business cycles literature does reveal a significant amount of macroeconomic research on cycles only a couple of studies on industry-specific business cycles can be found. The recent financial crisis has stimulated a multitude of historical descriptions of the "bubbles" that have plagued the global economy and much research on the financial sector of today (e.g. Akerlof and Shiller, 2009; Reinhart and Rogoff, 2009; Roubini and Mihn, 2010; Johnson and Kwack, 2010; Rajan, 2010). However, the company-specific research on surviving in the face of business cycles that would reveal the actual managerial challenges is still scarce.

This article studies the dynamics of business relationships over business cycles from the perspective of the senior management of a technology provider. From the managerial point of view, business cycles are not objective economic phenomena removed from their observers. On the contrary, to properly understand them, more specific, contextual knowledge of the industry and the actors in the value chain is required. The aim of this study is to identify the effects of business cycles on industrial business-to-business relationships within extremely volatile industries.

We approach the phenomenon from the business relationship viewpoint claiming that understanding the dynamics of business relationships in different phases of a business cycle is the primary managerial challenge for firms in volatile industries. To examine this challenge in depth, we study a company, Outotec plc, a global provider of process solutions and technologies for the mining and metal industries. The metal industries are well-known for their exceptionally cyclical nature (e.g. Bennet, 2005; Kaipainen, 1994; Vinell, 1973).

In the next section we provide an overview of the extant research on the dynamics of business relationships over time and the dimensions of relationship dynamics. The third section presents previous research on business cycles, in general and in the metal industry in particular. This creates the background and context needed to understand the specifics of business relationship dynamics spanning business cycles in a particular industry. Then the methodology of the study is presented. The empirical sections move from a description of Outotec plc and its business towards an analysis of the effects of business cycles on business relationship dynamics as perceived by the company managers. We analyse a typical business cycle faced by Outotec and specify its effects on the company's business relationships. In the concluding section, we discuss ways to smooth the effects of business cycles through the management of customer relationships and the customer portfolio.

Business relationship dynamics

The contemporary research on business relationship dynamics is rich in examinations of dyadic interactions that move the business relationship processes forward in time. The studies search for the firm, relationship and network level factors that influence business relationship development (e.g. Halinen and Tähtinen, 2002). A variety of organizational and environmental factors have been suggested to account for the routes and patterns of relationship development within network-like contexts. These context-specific factors condition the individual relationship development. Also processes, such as learning, are studied at both intrafirm and interfirm relationship

levels and then related to a changing network structure over time (Bångens and Araujo, 2002). Often some strategic project, such as the development of integrated solutions (Windahl and Lakemond, 2006), can be seen as connected to the internal organization and the relationships and interactions between the actors. To understand the relationship dynamics, how the two counterparts perceive the dyadic relationship is an essential issue (Holmlund and Strandvik, 1999). This perception has implications on the behaviour of the actors and on the interaction strategies they apply in the relationship.

At the relationship level, the parties to a business relationship may select from four extreme interaction strategies: cooperative, competitive, command and submission (Alajoutsijärvi *et al.*, 1999; Campbell, 1985; Möller and Wilson, 1995). Companies following any of these strategies behave and interact differently towards each other. The competitive strategy relies on the traditional competitive mode of action for deriving the terms of trade (prices, delivery terms) for an individual supplier and buyer. In contrast, cooperative companies intentionally seek common goals and procedures. In the command mode either the supplier or the buyer attempts to achieve significant power over the counterpart's behaviour. Finally, submission is the interaction mode in which either the supplier or the buyer accepts an asymmetrical power balance in the relationship. These four alternative relationship strategies can be placed in a diamond-shaped space based on the competition-cooperation dimension and the buyer versus seller dominance-continuum. This device, which is depicted in Figure 1, can be used for describing and positioning the dyadic relationships. The relationship develops through the interplay of these basic interaction modes. In reality, business relationships are usually combinations of these extreme modes of relational strategies. The interaction modes of relationships can change over time, which can be illustrated as a shift on the diamond's surface (Alajoutsijärvi *et al.*, 1999).

The changes in the degree of cooperation and competitiveness of the relationships and the dominance of the relationships create a specific relationship atmosphere. Trust is an integral part of this atmosphere and the way counter parts trust each other is influenced by knowledge, risk levels and risk bearing capacities of the people involved in the transactions (Laeequiddin and Sardana, 2010). This makes relationship development an evolutionary process in which even emotional dynamics co-evolve along with the business relationship cycle (Andersen and Kumar, 2006).

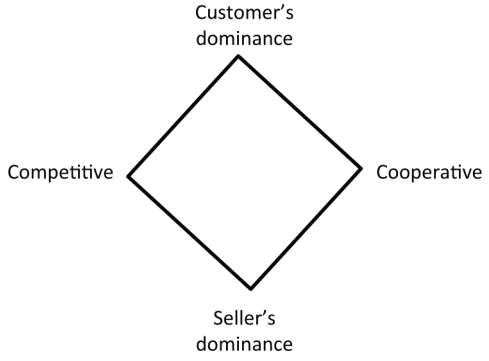

Figure 1.
Dimensions of relationship dynamics

Business cycles in the metal industry

We concentrate on what we call industry-specific business cycles. We therefore make a distinction between the more general macroeconomic business cycles on the one hand, and the cyclicality in specific industries on the other. The business cycles can be seen to have four different phases: boom, recession, depression and recovery (see Alajoutsijärvi *et al.*, 2001). Basically business cycles are seen to be a consequence of one sole cause large enough to cover a multitude of sins (typically end consumption) in the market development or to result from several small events and period-specific factors in the markets (see, e.g. Zarnowitz, 1999; Bruner and Carr, 2007) such as inventories and investments in production capacity (Heng *et al.*, 2005; Dimelis, 2001).

The end consumption of the mining and metal industries is driven by the overall level of activity in industries using metals such as construction and automotive manufacturing. Inventories are seen as one of the causes of fluctuations, since they tend to grow in times of recession and shrink during boom times to reflect the changes in consumption (Vinell, 1973). Although in many process industries demand has been growing consistently, an overly-high capacity has also led to cycles (Sheridan, 1997). Companies also tend to invest surplus money accrued during boom times in new production capacity in reaction to current market growth, although they cannot know the levels of future demand. This leads to surges in investments and, eventually, overcapacity. Furthermore, Fuhrer and Schuh (1998) pinpoint unexpected shocks, for example technological changes as reasons for business cycles. For instance in 2006, Outotec faced a boom period driven by the excessive infrastructure construction in China, which created huge demand for all kinds of metals. Even the smallest ore deposits were utilized by Outotec's customers.

To understand cyclicality in the context of the metal markets we need to define the actors of the value chain (see Figure 2) and the turning points in the course of the industry-specific business cycle. The end consumption of the metals industry is divided into industrial production and consumer end consumption. The industrial production gets its raw materials through merchants and metal exchanges of which the London Metal Exchange (LME) is the global one. Metal producers, such as smelting plants, process the raw material coming from the mining industry. The merchants' role is to sell and deliver various metals, but they can be bypassed in the value chain if the metal producer sells directly to the industrial end customer. LME offers futures and options contracts for aluminium, copper, nickel, tin, zinc and lead. It is also called a market of "last resort", because it can be used to sell excess stock in times of oversupply and as a source of material in times of extreme shortage. Both the mining

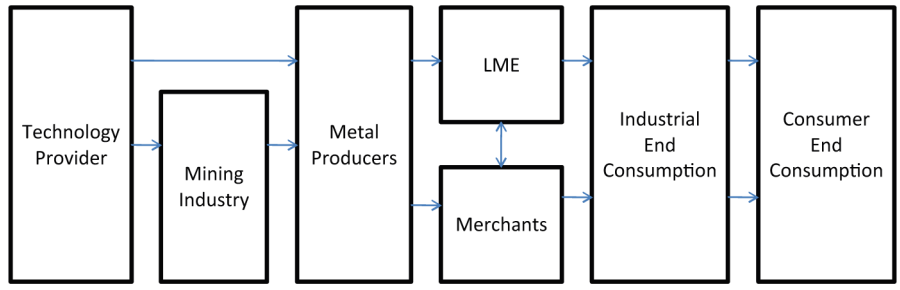

Figure 2.
Value chain in metals industry

industry and the metal producers are customers of the technology providers, such as Outotec.

Certain turning points can predict changes from one phase to another in the business cycle. For example, in the construction industry, markets typically become overheated and there are massive investments just before a recession (Ren and Lin, 1996). A sharp fall in inventories, in turn, characterizes overheated markets and predicts a forthcoming economic downturn (Heng *et al.*, 2005). A potential recovery is marked by the appearance of new buyers on the market and a gradually growing demand (Klint, 1985, 209).

Methodology

The present study is a qualitative single case study. The case company, Outotec plc, is one of the leading global providers of process solutions, technologies and services for the mining and metal industries. Outotec has a long history as a relatively autonomous unit of its mother corporation, Outokumpu plc, the history of which dates back to 1910. The company was organized as a legal consolidated group in 2006. In October 2006 the company was listed as an independent company on the Helsinki Stock Exchange. According to the agreement made with its parent company Outokumpu plc, the former name "Outokumpu Technology" was changed to Outotec in April 2007.

Nowadays Outotec operates globally with 2000 employees in 18 countries around the world. The company's solutions range from single equipment deliveries to production lines and turnkey deliveries of entire process plants. The long experience, wide range of projects, large number of actors and the extreme cyclicality in the customer industries makes Outotec plc an appropriate and especially revealing empirical case to be analysed. Interestingly, we began the research in 2005 during an exceptionally strong boom period and during the four years of study we witnessed a downturn and deep depression, allowing us to follow a whole cycle alongside the core managers of the case company.

The empirical material used in the present study consists of 12 interviews with the managers of the case firm, two focus group interviews and one workshop. In addition, we have utilized archive material, company documents and professional articles dealing with the case company to obtain the important details of the company and its business. The personal interviews provided us with individual perceptions of the events, structures and processes underlying the business cycles as seen in the operational work of the manager in question. In the focus group interviews, the managers compared their own experiences against the experiences of others. Based on the data we developed a sketch of a typical business cycle, mapping the managerial levels of those involved and the events typical of each phase. This sketch was presented to four managers for their evaluation, and later further revised after another workshop where a larger group of managers offered their opinions on how our interpretation corresponded with their reality.

Analysis of a typical business cycle from Outotec's viewpoint

Dramatic business cycles seriously endanger the position of the technology provider operating upstream in the metal industry value chain. The following section recalls the events and actions related to a typical business cycle as interpreted by the managers of Outotec (see Figure 3). We describe the cycle starting from a recovery period that was

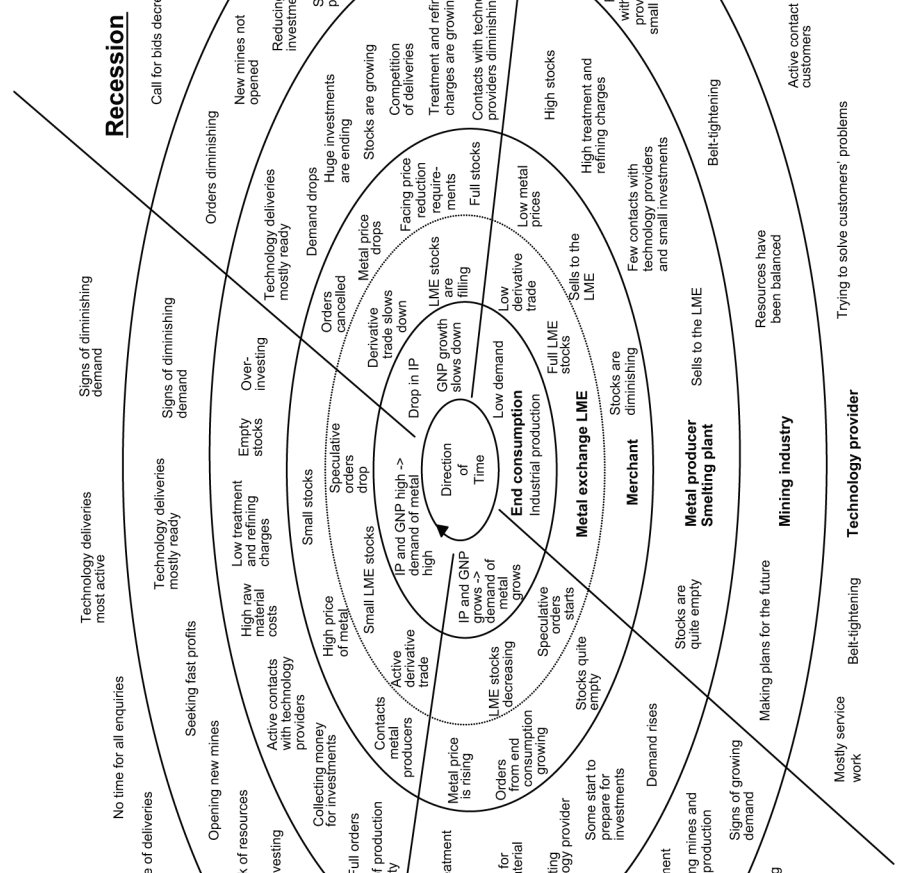

Figure 3.
The key actors and events during different phases of the business cycle in the base metal industry

followed by a boom, a recession and finally a depression. When considering demand it is important to see the difference between real end consumption and apparent consumption, in this case the receipt of an order for a technology provider, the mining industry or metal producers. Typically changes in real end consumption are much smaller than in apparent consumption upstream in the value chain.

The main events of the recovery period

The deepest point of depression occurs when apparent demand is at its lowest level. When turning the corner towards recovery, the confidence among the actors along the whole value chain gradually improves. Some buyers may anticipate a future price increase and start placing speculative orders hoping to make additional profit from their expanded inventories.

The growing order intake is visible to the smelting plants and mining industry at an early stage of the recovery. The mining industry reacts fairly quickly after the first signs of the recovery once the growing order intake is noticeable. Many of the mines that were mothballed during the depression are reopened and help raise the production level. When the recovery starts, merchants' stocks are typically at their lowest level. Because of the growth in end consumption and apparent consumption and the shortage of supply from the mining industry, smelting plants and merchants, the prices of metals rise. This encourages the mining industry to start planning new investments. Buyers in the mining industry and the metal producers start contacting technology providers. The situation differs from the previous period when the technology provider was the most active in the contact process. This is particularly the time for strategic and resource allocation planning as the deliveries to the customer will not start immediately.

Meanwhile, mineral resources in the mining industry begin to diminish, prompting a search for ore and utilization of the smaller deposits. Reduction of stocks in LME is one of the most significant signals of an imbalance of supply and demand. In addition, as recovery strengthens, smelting plants start to compete for the raw material arriving from the mining industry. At this point a buyer's market becomes a seller's market, which means higher raw material prices. Gradually the technology provider also finds itself in a stronger position in relation to its customers, as the customers need different kinds of services and new equipment and finally order major projects.

The main events of a boom period

The boom period is characterized by growing gross national production. This relates to the fact that both industrial and consumer consumption is peaking, as are metal prices. At the beginning of the boom, derivative trade is very active. Merchants actively contact metal producers as they face the issue of high order intake and low stocks. At the same time, the metal producers tend to lack production capacity while having very depleted stocks. The higher prices and high volumes strengthen the balance sheet and enable metal producers to finance investments.

The early phases of a boom period can be difficult, especially for the smelting plants since the prices of their raw materials, ores, are high and prices of their end products, metals, are still low. The mining industry typically does better in this phase since its cost structure stays relatively stable. One problem for the mining industry is to predict price developments. On one hand, it is preferable to close the deals and set the price as

early as possible in order to secure cash flow. On the other hand, the market prices can be higher at the point of an actual deal. Many of the technology provider's customers are evaluating project scopes and prices. As a consequence many project feasibility studies are underway, which may turn into new orders. Some customers may still face difficulties in arranging financing. New prospects emerge because of the stronger cash position of the mining and metals companies.

During this period the major metal and mining companies will have updated their investment plans for several years in anticipation of continuing growth in the global consumption of metals. Now the mining industries', merchants' and LME stocks are empty, and thus the price of metal is very high. Since the technology providers' order book is now full, they tend to focus on the most current and the most attractive prospects, neglecting the unknown or lesser customer with inadequate deposits. This is the time when mines are seeking fast profits and new market entrants may even emerge.

The technology providers' order books are full, delivery times are long and there is simply no time to deal with all enquiries. However, speculative orders begin to drop, which is the first sign of the beginning of recession. Typically the metal producer's investments are completed which creates more supply capacity on the market. Even though not all technology deliveries are ready by the end of the boom, the smelting plants find themselves over-capitalized. This can speed up the onset of recession.

The main events of a recession

The onset of a recession is the sum of many conditions, such as high inventory levels and exceptionally high price levels, and one or more other tipping points, such as major capacity increases or general uncertainties in the global economy. The combination of these factors can create negative confidence or market sentiment among actors. Orders drop gradually at all levels of the value chain. Therefore, recession can also be triggered by many factors other than a decline in end consumption.

In parallel with a negative market sentiment, the growth of gross national product slows. Highly active derivative trade volumes become inactive, which can further accelerate recession. The negative market sentiment leads to a situation where merchants, metal producers, and finally mining industries and technology providers face order cancellations and price reduction requirements. When the mining industry reduces investment, new mines are no longer opened. Naturally, this has an effect on the technology provider, who follows the other actors closely. The recession begins for them as a decreasing number of enquiry phone calls. Nevertheless, they will continue their deliveries for a few years after the start of the recession. Gradually many actors start to consider limiting production, but particularly those who have just made new investments are reluctant to do so. Typically in this phase, technology providers receive fewer and fewer customer enquiries. The investments made are only minor and tend to focus on cost efficiency and maintenance.

Since both the mining industry and metal producers have reduced their investments, the technology provider faces sharpened competition for a few major deliveries. In the recession the technology provider starts contacting new prospects. Even those who have been reluctant to limit their production need to do it eventually. These events lead to a striking filling of stocks at merchants and the traders at the LME and remarkable price drops.

Main events of a depression

A low demand for metals, low industrial production, as well as inactive derivative trade characterizes the beginning of a depression. The prices of metals approach their lowest point and stock its peak. Smelting plants can still maintain quite high treatment and refining charges relative to the prices of metals, but their volumes are also low. Neither metal producers nor mining companies invest in, or actively stay in touch with, the technology provider. Because the business is inactive among metal producers and mining companies the top management has time for strategic planning.

LME stocks are full because other actors want to shed their own stocks. For example, merchants are eager to sell their stocks to the LME and, as a consequence, their stocks diminish to the lowest point. After that even metal producers begin to sell to the LME in order to get an immediate cashflow.

Despite the reduced amount of contact from the metal producers and the mining industry, the technology provider pursues an active selling strategy during the depression. The attitude to existing customers is very service oriented and in this phase less attractive customers are also considered seriously. Survival is the main aim for the technology provider under these conditions. Since industrial and consumer end consumption is relatively high, the LME stocks decrease despite the depression. This is the first sign of potential recovery.

Figure 3 – illustrating the key actors and events during different phases – sums up the major events during the cycle, however, it does not highlight the minor events, such as occur when, for example, mines do not have enough minerals to deliver to the metal producer and therefore smelting plants have to temporarily decrease production. In addition, one must bear in mind that even though the events are marked at one point of time in the figure, the events may in reality take place over a longer period.

The dynamics of customer relationships during a business cycle

The present section describes the typical effects of business cycles on customer-supplier relationships in terms of the continuum of power dependence and that of the competitive versus cooperative nature of interaction (see Figure 4). Business cycles tend to change the mode of interaction behaviour and as a result the nature of the dyadic business relationship is changed. Figure 4 illustrates the typical development of a relationship between a technology provider and its strategic customer during the business cycle. The Figure 4 starts from the deepest depression when the business relationships tend to be very customer dominated (1).

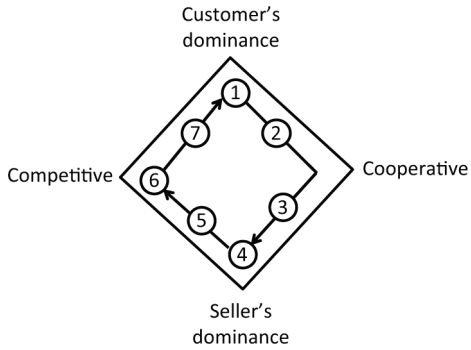

Figure 4.
Relationship types between technology provider and customer during the business cycle

In the last phase of a depression period the first signs of increasing confidence in future development and growth are perceived in the industry. However, no one can be sure that recovery is on a stable track. In any case, this uncertainty makes the power relationship between the business counterparts more equal. Although the customers start actively planning investments and contacting sellers as a result, the latter are still desperately looking for orders since their order books are at their emptiest.

Increasingly the mood of recovery starts to dominate. As a result, levels of customer domination diminish. At the same time, sellers who have been doing business on their customers' terms for a relatively long time, are eager to take advantage of the new situation. In the recovery period, previously customer-dominated relationships develop towards something more akin to a cooperative mode of behaviour (2). In addition to a more equal power balance, the cooperative nature of the business relationship is more apparent, since both parties are oriented towards future investments.

In a boom period, the customer becomes increasingly dependent on the technology provider, since the seller is overburdened with requests for tenders and orders. The seller's mode of interaction can be described as a combination of domination and competitive strategies, and the business relationship comes to mimic it in nature (3). Of course, the customer can attempt to use a competitive strategy as well, but in reality the customer has to behave rather submissively. Naturally, the key customers tend to remind the seller about the long partnership relationship to which the astute seller responds with good service, despite the limited resources for the maintenance of the customer relationship. The prices of all investment goods and service are at their highest. Just before the last phase of the boom the customers are at their most dependent on the sellers (4).

At the end of the boom period uncertainty about future development spreads among the managers throughout the value chain. It is impossible to be sure that the turn of the cycle is continuing and the situation is unstable. The uncertainty brings more equality to the power balance and, may prompt changes like salespeople becoming more active in contacting their customers. Sooner or later the recessionary mood starts to dominate. As a result, the power balance of the business relationships reverses; the sellers feel more and more dependent on the customers (5). On the other hand, since the customers have had to bear the dominant sellers' terms for a relatively long time, they may be eager to get even.

Since the sellers have large backlogs they do not change their mode of behaviour immediately, although it is already clear in the industry that the cycle is turning to recession. Knowing that the number of new orders for the sellers is plunging, customers quickly start using competitive strategies. Therefore it is during a recession that the relationship is in its purest competitive form (6).

When sellers' backlogs start to decrease and recession is turning to depression, the sellers start to accept their weakened power position in relation to their key customers, incrementally adopting a submissive mode of behaviour. The customers may exploit this situation opportunistically. In the deepest depression business relationships are extremely customer dominated although the major technology providers will take the opportunity to remind the customers of their mutual partnership (7). In addition, major technology providers will have ongoing development projects with their key customers that are largely immune to the effects of business cycles. Therefore, just as the relationships between salesmen and buyers change in nature, so the relationships

between R&D departments are long term and very cooperative, since the best results may only be achieved in an atmosphere of mutual trust and joint responsibility for the budget.

It is essential to bear in mind that the projects of a technology provider are typically of a long duration, starting from the tendering phase and ending with the project completion and the guarantee period. Thus during the project completion phase, different cycle phases can be found, but their impact at the project level bears little similarity to that observable during the tendering phase of a new project; our analysis is focused on the tendering process for new projects.

Conclusions

The purpose of the present study was to identify the effects of business cycles on industrial business-to-business relationships within extremely volatile industries. The empirical analysis illustrates the effects in the case of a major technology provider to the metals and mining industries through describing the primary events and changes in its typical business relationships. Along the cycle the relationships move from cooperation to competition and from seller dominance to customer dominance and back again. The study indicates that it is the level of confidence among the actors that underlies their behaviours, which then amplify the cyclical nature of the business.

Usually the term confidence encapsulates what is meant by trust or belief. Most economists suggest that confidence is rational; people use the information at hand to make rational predictions and then make rational decisions on the basis of the rational predictions. However, there is more to the notion of confidence (see Akerlof and Shiller, 2009, pp. 11-13). It goes beyond the purely rational since truly trusting people often discard or discount certain information that would appear salient to the objective observer. When defining confidence in this way, it is easy to see that it varies over time and plays a major role in the business cycle. As a consequence, in the boom period people have confidence and they make quick, and even impulsive decisions, since they believe that these will be successful. When confidence disappears the tide goes out and managers lacking confidence withdraw from the fray. The metal and mining industries are very prone to cycles created by changes in confidence.

Another central concept related to business cycles, illustrated in the empirical analysis, is firm vulnerability (Glen, 2005; see also O'Connell, 2001). To illustrate the notion of firm vulnerability we can use an analogy of the collapse of a building during an earthquake. While the proximate cause of the collapse is the earthquake, the underlying cause may better be attributed to poor construction techniques. Because of its structural defects, the building was going to collapse when the right shock came along (Fuhrer and Schuh, 1998). Similarly, corporations and industries should be sufficiently robust to be able to survive recessions and even absorb and smooth fluctuations. The most important managerial question is then how to build recession-proof firms.

In our case analysis, we identified how business relationships change during different phases of a business cycle. Managers who understand the changes would be better prepared to help their firms not only to survive but also to manage long term customer relationships so as to absorb and damp the effects of the business cycle. A crucial issue for the technology provider is to maintain a satisfactory service level for its key customers even in the most hectic of boom periods (see Bennet, 2005; Bigelow

and Chan, 1992), nor is it to the long term advantage of the customer to over exploit the vulnerability of its technology partners in the deepest depression.

Ultimately, the technology provider should manage portfolios of relationships and projects. If the entire account portfolio of a seller consists of predominantly competitive customer relationships, the company is much more vulnerable to business cycles. Customers that rely heavily on a competitive interaction strategy typically have several alternative suppliers, exhibit a strong tendency for using spot markets in their purchasing, for example, and show no particular interest in developing personal, future-oriented relationships with their suppliers. Generally, these customer relationships are heavily affected by business cycles and vice versa – competitive behaviour reinforces cyclicality.

On the other hand, it is usually costly and difficult for a supplier to make competitive customer relationships more cooperative. Therefore, the supplier should be sensitive to identifying the customers that are really worth investing in and should also assess the attractiveness of customers' business areas. It is essential to identify, how cyclical, counter-cyclical or noncyclical the customer's business is. Even in the volatile sector of our case, a firm can supply its technology and products into industries and customer corporations that are counter-cyclical or even noncyclical.

Outotec has actively sought less cyclical customer industries such as water business. In 2010, Outotec and another company, Kemira, plc entered strategic cooperation in developing solutions for water-intensive industrial applications. Kemira is an international corporation, which offers a large selection of chemicals and process solutions for various industries. They signed a strategic cooperation agreement to develop, promote and support the companies' businesses in industrial water treatment solutions. This cooperation combines Outotec's competence in minerals and oil sands processing technology with Kemira's know-how in water treatment and related applications to offer customers process optimization enabling cost-efficiency, sustainability and quality improvements. The cooperation aims to develop unique water knowledge and new technology to enhance the water usage and recycling in water-intensive industries and thus to create new business opportunities for companies in the environmental technology sector.

Previous research on industry-specific business cycles has shown that people act in similar ways in similar market situations (Senge, 1990). In many cases, systems of value chains cause their own crises. As with the metal and mining industries, the actions of the actors feed the business cycles. It follows that to smooth business cycles, organizations must adopt new and creative ways of thinking, which go beyond the short term quartile or annual management thinking.

To sum up the main findings of the present study, the following managerial implications with respect to smoothing the effects of business cycles through the management of customer relationships and the customer portfolio can be suggested:

- Managers should understand that it is the confidence among the industry actors that influences the behaviours of the firms and actually creates the business cycles.
- To create a recession-proof firm a balanced customer portfolio with counter-cyclical or noncyclical customer businesses is needed.

- To create long-lasting customer relationships that endure business cycles managers need to understand the changes in the interdependencies and level of cooperation in customer relationships during business cycles and avoid opportunistic behaviour. Even in the hectic boom period, suppliers need to maintain a satisfactory service level for their key customers.

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