

# CO-OPERATION AND COMPETITION IN THE CONSTRUCTION INDUSTRY OF THE NETHERLANDS

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In 2002, a Parliamentary Enquiry Committee exposed widespread collusion practices in the Dutch construction industry. The construction industry in the Netherlands is in turmoil and is seen as not living up to the standards that society requires. There seems to be a culture and an environment that induces and sustains economic offences and malpractices. Furthermore, performance and progress are not keeping pace with other industries. The Parliamentary Enquiry Committee recommended a *rethinking construction* type of reform initiative. In several countries around the globe, there are ongoing efforts to reform construction. International evidence, as presented at the "revaluing construction" conference in February 2003 in Manchester (CIB/UMIST), shows a trend towards more co-operative relationships and integrated procurement. Pivotal in all reform initiatives are changes in the approach towards public sector procurement<sup>1</sup>, with public clients acting as leading clients in the reform. The aim of the project presented in this paper is to study construction industry reform from the theoretical perspective of industrial organisation economics and market dynamics theory. The project connects the construction industry (reform initiatives) with the emerging theoretical insights on dynamic competition. The construction industry might be a good example to test the newly emerging insights in the field of industrial economics. A better understanding of the business systems and market structures, and of lessons learnt abroad, may substantially improve the chances of successful reform of this troublesome industry.

Keywords: performance, competition, innovation, procurement.

## INTRODUCTION

This paper discusses the current shift in the construction industry away from fierce competition towards co-operation-based relationships. The numerous reform

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initiatives taken around the globe reflect this changed outlook on competitive procurement and contractual arrangements.

Sceptics doubt whether increased co-operation will change the construction industry for the better. They argue that, in our neo-liberal economies, markets and competition are the prime driving forces of innovation and growth. Co-operation, in their eyes, goes against healthy market dynamics. A similar debate has raged within the field of industrial organisation economics. Too much competition may inhibit private enterprises from investing in Research & Technology Development (RTD) and new product development. The strong reliance on competition is questioned.

Evidence suggests that the traditional competitive approaches, which most countries are now moving away from, give rise to systemic problems with market dynamics in the construction sector. It is argued that these traditional competition policies, due to the characteristics of the construction industry, create a business environment that encumbers innovation and dynamic efficiency. The construction industry, especially the public works segment, seems highly vulnerable to ruinous competition. Traditional procurement approaches make it difficult for companies to start up new business cycles. Downturns in market volume induce price wars.

The current situation in the Dutch construction industry is analysed from this perspective. The measures proposed by the government aim for tougher procurement, and as such divert from the international trend.

In the final section, it is argued that the concepts of industrial economics are very valuable in the analysis of the dynamics of the construction industry. Such theory may even provide a firmer theoretical underpinning to the, often pragmatic, construction reform initiatives. Furthermore, it might provide a better understanding of innovation and progress in construction, give leads for better competition and innovation policies, and create opportunities for crossovers between the fields of Construction Management and industrial economics.

## **FROM COMPETITIVE TO CO-OPERATIVE RELATIONSHIPS**

Although the recent inquiries into the construction sector have fuelled dissatisfaction and discontent with the performance of the sector, discontent has existed for considerably longer. Studies on this go back over more than four decades (Emmerson, 1962; Bowley, 1966). Enhancing performance through innovation and technological development is also a point of serious concern (Winch, 1998; Gann and Salter, 2000; Pries, 1995; Manseau and Seaden, 2001). "There is still too much short-termism in the sector" (Atkin, 1999). Haselhoff and Rijlaarsdam (1988) described the Dutch construction industry as a web of parties, who seem to find each other on an ad hoc basis. According to these authors, organisations in the construction industry are constantly competing with each other, both within the sector and within individual projects, leading to undesirable practices that repeatedly surface. Van Waarden writes in his dissertation (1989) that competition is fierce and probably the most characteristic feature of the building sector. SMO (1992) studied the economic power of the Dutch construction industry and concluded that "*there is no gain in innovating*" (in Dutch: "innovatie loont niet"). To mitigate competition and to boost innovation many authors have called for more non-conventional procurement methods and less selection based on lowest bid. Latham (1994) and Egan (1998) support this view. Dutch studies and reports substantiated this argument in the early 1990s (Haselhoff and Rijlaarsdam, 1988; SMO, 1992) and also more recently (ArTB, 1998; AWT, 1997). New "Innovative Contracting" policies, and schemes promoting design-

build, rather than the design-bid-build approach, were drafted in the late 1990s. Nationwide policies on innovation have stressed the importance of clusters and supply chain integration (Vollaard and Witteveen, 1998). All these publications stress the need for less fragmentation and for increased quality-driven competition (Dorée and Boes, 2002).

In its desire to change the construction industry, the Netherlands is not alone. Reform initiatives in several countries show that such reform requires committed national initiatives including Public Sector Procurement policies. The construction reform policies that have been adopted stress the movement away from adversarial relationships and lowest price selection (NAO, 2001; Strategic forum for construction, 2002; Revaluing Construction, 2003). Based on the proceedings of the *Revaluing Construction* conference an international trend can be distilled. This trend is towards value and quality driven competition, integrated team delivery, long-term commitments, public - client leadership, development of benchmark instruments, and joint initiatives by public agencies, private enterprises, and universities.

Thus, the historical and international contexts show a consistent move away from traditional contracting. Industry reform rests on more co-operation and less competition. To an extent, this is an acknowledgement that the neoclassical notion "*competition is good, more competition is better*", is unfit for the construction industry. What is happening in the construction industry can serve as an illustration for a more generic debate on competition policy: what form of competition policy is needed to create the right industry dynamics? The next section examines this debate, and then we return to the reform of the construction industry.

## **THE COMPETITION POLICY DEBATE**

A generic debate on the "appropriate" type of competition has recently developed in the field of industrial organisation economics. Academics on technological change have also looked into the influence of anti-trust regulations on technology development (Dosi et al., 1988) but, in their discussions, these policies were more or less accepted as given (an exogenous factor). Competition policies and subsequent laws focus too much on static efficiency (Audretsch et al, 2001). The authors conclude that the dynamics of the competitive process are far more complex than the static structure normally assumed in competition policies and laws - a conclusion also put forward in a comprehensive OECD working paper on competition, innovation, and productivity growth by Ahn (2002). Amongst policymakers, the ethos "competition is good" rules (Audretsch et al., 2001). The central idea of competition policies is to promote rivalry and avoid monopolies (Audretsch et al., 2001; Davies and Lyons, 1992). The underlying conceptual framework is built upon Bain's (1956) scheme of Structure-Conduct-Performance (see also the next section). Current policies and laws do not take into account the dynamics within economies. In promoting competition, these policies stress *static efficiency*, and overlook the need for long-term "enhancement of welfare" (*dynamic efficiency*). Audretsch et al. (2001) refer to the Austrian school led by authors such as Schumpeter (1949), Shackle (1971), and Kirzner (1973). This school urges us to see competition in a longer time frame, providing firms with the opportunity to constantly create new products and processes, and to start up new business cycles (see also Section 4), in order to gain competitive advantage (Egidi, 1995). Companies need brief periods of relative monopoly to gain the incomes to fuel this process of renewal. Shortsighted competition, aimed at static

efficiency, attacks any monopoly position. As such, the process of business renewal may be hampered, and progress inhibited. Furthermore, highly competitive environments may even lead to ruinous competition and "a race to the bottom" (van Waarden, 1996) leading to problems with quality, safety, and compliance with the law.

The renewal of business cycles is central in this perspective on industry dynamics and business renewal. In Section 5, we will look at the opportunities for firms in the construction industry to start up new business cycles, but first the business cycle and the Structure-Conduct-Performance paradigm are explained in the next section.

## **THE STRUCTURE-CONDUCT-PERFORMANCE PARADIGM**

In industrial organisation economics, positive market dynamics are seen as the driving force for progress (Schumpeter, 1949). Positive market dynamics ensure a sequence of business cycles in which organisations: [1] improve existing products and processes and, [2] in parallel, develop and introduce new products and processes. Each cycle has the following phases: introduction, expansion, maturity, and stagnation (decline).

Each phase has specific characteristics in terms of structure, behaviour, and performance (Bain's SCP paradigm). Collaboration and competition strategies also differ from phase to phase (see Table 1).

Insert Table 1 around here.

In the dynamics described above, suppliers focus their product development on the needs of potential customers. They gather and develop knowledge about demands, wishes, and the needs of the target customers. In doing so, latent needs are discovered, and gates to new or improved products are opened (Tidd et al., 2001). To be competitive, market dynamics force suppliers to focus on customer needs and to continuously offer improved solutions.

In an ideal situation, market dynamics encourage organisations to compete in these development cycles and to make progress. In reality, perfect competition and entirely free markets do not exist. For some products, the market fails (Dollery and Wallis, 2001). Such products are not produced on the initiative of private enterprise and, in some such cases, governments can act as the "creator" of these products. These goods are often referred to as public goods. Good examples of these are the lighthouse and infrastructure. In our neo-liberal market economies, governments regulate and supervise demand and supply processes. By doing so they try to stimulate economic growth.

Evolutionary economics (or market dynamics) focuses on what has to be done to create these positive market dynamics. Here, a distinction must be made between dynamic efficiency (aimed at progress over the long term) and static efficiency (aimed at cost control of individual transactions). Measures for static efficiency may be counterproductive in terms of dynamic efficiency. Conditions for a healthy market process can change over time for a sector. To realise positive market dynamics, governments must actively direct and act. Reports (Van Waarden, 1996; AWT, 1997) on the relationships between regulation, competition, and innovation point out that technology and competition policies must be in balance, but that it is difficult to indicate what type of rules are required. Two logics collide. On the one hand, competition is seen as the key to innovation; on the other, collaboration is seen as essential for innovation and technological breakthroughs (joint efforts, clusters, supply chain integration). Anti-trust regulations and innovation policies often seek the same outcome with strategies that contradict each other. The appropriate action needs to be assessed case by case (AWT, 1997).

In drafting competition policies, governments have to balance innovation and anti-trust policies (AWT, 1997). In the construction sector, this delicate task is complicated by the fact that governmental organisations are themselves dominant market players (WRR, 1991). Recent Dutch policies favour competition over co-operation.

## **CURRENT DYNAMICS IN THE CONSTRUCTION SECTOR**

The initiatives to reform the construction industry often take troublesome market dynamics as their starting point. Problems with respect to innovation, collusion, competition, and concentration appear to be symptoms of a stagnant market (see the last column in Table 1). These are most visible in market segments where public tendering and selection on lowest price dominate. The construction industry seems to struggle to start new business cycles, visible in a number of phenomena:

- The traditional “design-bid-build” approach leaves little space for developing new products and technologies (see, for example: ARTB, 1998; AWT, 1997). Clients dictate solutions, and there is no real demand for creativity.
- Clients (especially smaller and non-recurrent ones) sometimes lack the knowledge to work with new products and new market concepts.
- Selection on price suppresses competition on quality. It assumes that all suppliers offer products of equal value, and ignores the fact that competing firms may be encouraged to find solutions that create higher value for customers. As a result, contractors do not develop sensitivity for the wishes and latent needs of the clients.
- The final consumer of a construction product is generally not involved in the transaction process, and therefore the added value to them is left out of the competition equation.
- Since no branding strategies exist, there is little possibility of translating reputation and goodwill into market power.
- When the acknowledgement of quality and reputation is not possible, cost control will become the dominant strategy.
- A cost focus drives organisations towards lean cost structures (“anorexia”). Stock buffers are not an option to protect against upturns and downturns. A discontinuity in workload means that resources are immediately idle. Consequently, firms invest as little as possible in capital goods, outsource as much as possible, and share risks by working in consortia. To limit problems, and to control progress in projects, methods and materials are standardised. As a consequence, construction firms are almost interchangeable and price is the only way left to compete.
- Fragmented production structures and bilateral contracting lead to sub-optimisation.
- Production-on-location hinders scale benefits and makes advance production (buffer stock) impossible.
- Reactive market positions lead to short-term strategies.
- Floating capacities cause bullwhip effects (when the market shrinks, orders will also shrink and, as a result, more firms will bid for the fewer available tenders. This reduces the likelihood of gaining an order, which leads to even more firms bidding for each tender etc.)
- Fear of discontinuity leads to collusion.
- Project-based production and the allocation of human resources based on availability destroy the possibilities for learning and innovating. Learning and innovating occurs by looking back and by chance.

- Building processes are extremely transparent. Since imitating is cheaper than innovating, investing in R&D and innovation is left to competitors. If all firms reason along these lines (and they seem to) a deadlock arises.

For the reasons given above, the building sector barely succeeds in developing positive market dynamics. One-dimensional competition and strategy drive the market into a stagnation phase. Short-term and project-based thinking is part of the dominant, reactive, strategy for survival. A strong focus on costs, high interchangeability, and transparency keep organisations in this phase. Single firms are not capable of breaking this negative spiral. In some segments, uncertainty about continuity has led to structural collusion (that further supports conservatism).

Without intervention, the probability is high that many segments will remain stuck in the stagnation phase. Since organisations are insufficiently encouraged to focus on customers, the potential, in the building sector, for customer-focus, creativity, and progress remain weak.

## **THE TURMOIL IN THE DUTCH CONSTRUCTION INDUSTRY**

In 2002, the procurement practices in public sector construction projects became a major issue in the Netherlands. Never before had so much money and effort been spent on uncovering the (mal)practices in public sector procurement. In November 2001, a national television channel had shown a documentary providing evidence of collusive behaviour, bid-rigging, and corrupt practices amongst construction companies and civil servants (VARA, 2001). This claim resulted in political controversy and led to extensive investigations by the Cabinet, the Department of Justice, and the Dutch anti-trust agency (NMa). Furthermore, it gave rise to a Parliamentary Enquiry. A central theme in all the investigations was the spread and effect of cartel structures.

As with the historical and international trend described in Section 2, the Parliamentary Enquiry Committee on fraud in construction (PEC, 2002) sees competition as a key element in its analysis and recommendations. According to the PEC (2002), the exposed collusion breached competition rules and had two negative economic effects: (1) the conspirators benefited from a monopoly situation; (2) less competition meant less innovation and therefore less progress. The PEC (2002) reasoned that competition should be promoted and assumes that restored competition will cure the problems of the construction industry. The PEC (2002) recommends increased traditional design-bid-build procurement, selection based on lowest price, public clients should deal in a more remote way with construction firms, and the strengthening of agencies and instruments to investigate and prosecute fraud.

Looking at the findings of recent studies (PWS, 2002; Bereschot, 2002; CapAnalysis, 2002), the conclusion seems justified that Dutch public sector procurement is still largely ruled by public tendering and lowest bid selection. The tougher public sector procurement proposed by the PEC (2002) will reinforce this position. However, competitive environments, as endorsed by the PEC (2002), frequently miss opportunities to improve an industry's performance, and give rise to problems in project control.

From an industrial organisation economics viewpoint, the Public Sector Procurement policy as now recommended is based on a static efficiency perspective. The dynamics in a longer time frame, and the effects on innovation, technology development, and the creation of welfare are not explicitly taken into consideration. The objective of the

PEC (2002) is to create a highly competitive market, driven by one-dimensional cost competition. Such an auction type market may result in the Bertrand paradox (Maks and de Haan, 1997): in the event of a downturn, prices can be forced down to the level of variable costs (bidders cease to cover their fixed costs); firms, in such situations, then dig deep into their resources leading to a “race to the bottom”. This then leads to vertical co-ordination through mergers and takeovers (concentration towards oligopoly), or horizontal co-ordination by collusion (Van Waarden, 1996). In either case, the survival strategies prohibit firms from investing in innovation and R&D. Table 2 gives an overview of the differences between the strategy proposed by the Dutch PEC and the international trend towards more co-operative relations.

Insert Table 2 around here

The theory suggests that the causality assumed by the PEC (2002) is oversimplified. Collusion is not simply the single root of the problems in the construction industry. Collusion seems to be the effect as well as the cause of imperfect market functioning. Industrial economics suggests that any segment of the construction industry dominated by a highly competitive price-driven public sector procurement approach will have a natural tendency to drift towards ruinous competition: a market state prone to concentration and collusion. Seen from the market dynamics theory perspective, the proposed strategy to restore market functioning in the Netherlands will put a strain on R&D, innovation, and the creation of welfare, and might also backfire and enhance collusion pressure.

## CONCLUSION

This paper is an initial attempt to frame the problems of construction industry, and the subsequent reform initiatives, in the theoretical concepts of industrial organisation economics. The concepts of industrial organisation economics have proved useful in describing and understanding the problems facing the Dutch construction industry. The reasoning around the idea of an appropriate type and amount of competition also seems useful in understanding industry reform. In the long run, more appropriate competition policies, and subsequently public sector procurement policies, can help in providing the construction industry with the dynamics seen in other industries. The business cycle concept can provide policymakers, clients, and firms with a better understanding of, and levers to improve, Research and Technology Development in the construction industry. The concepts of industrial organisation economics might also provide a sounder theoretical underpinning to the, frequently pragmatically drafted, construction reform initiatives (which seems to be urgently required).

## EPILOGUE

The material and ideas described in this paper are the starting points for an elaborate five-year research programme that will begin this year. It is expected to expand to an annual budget of approximately €1-1.5 million. The research projects and the research actions to be taken are in the process of being detailed. The first projects will commence in June 2003. Further actions will be determined in the second half of 2003. Topics to be addressed are:

- International research on instruments/tools used for performance benchmarking and industry reform.

- A comparison of the Dutch construction industry with other construction industries in terms of market structure, behaviour, concentration rate, profitability, innovation, static and dynamic efficiencies.
- Identification of examples of ruinous competition in the construction industry in order to analyse the triggers, mechanisms, and effects of such events.
- An international comparison of the way in which European governments handle and balance their policies on innovation, competition, procurement, and integrity.
- An inquiry into 'Co-opetition' in Construction – various combinations of co-operation and competition among companies in the Dutch construction industry.
- An international comparison of the way in which European countries use and interpret the European directives on procurement, and the effect on static and dynamic competition.

Whether a structured initiative along the lines of *Rethinking Construction* will be introduced in the Netherlands is as yet unclear. We will have to await the formation of a new cabinet. The exposed collusion practices have damaged the reputation of the construction industry.

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For large parts of the building sector, market processes are tightly linked to public employers. Here, the government is the most important party in several market segments. The way in which the public employer approaches the market has a strong impact on market processes in these segments. The market approach is influenced by different interdependent policies: [1] procurement policy, [2] anti-trust policy, [3] innovation and technology policy, and [4] integrity policy. These policies are all related to the understanding of markets and competition.