

FLEXIBLE STRATEGIC PARTNERSHIPS IN DANISH CONSTRUCTION

Stefan Christoffer Gottlieb¹ and Kresten Storgaard²

¹*Department of Civil Engineering, Section of Planning and Management of Building Processes, Technical University of Denmark, Brovej, Building 115, DK-2800 Kgs. Lyngby, Denmark.*
²*Department of Process and Innovation, Danish Building Research Institute, Dr. Neergaards Vej 15, DK-2970 Hørsholm, Denmark.*

During the past 15 years, a series of public policy instruments aimed at improving the low development of productivity in the Danish construction industry have been initiated. Recent years, focus has been put on the concepts of partnering and strategic partnerships as key drivers in the transition towards a competitive and innovative industry. Partnerships are seen as a way of overcoming, what is perceived as being one of the primary reasons for the developmental problems: the lack of inter-firm co-ordination and utilisation of knowledge and learning. The objective of the research reported was to study extents and types of strategic partnerships in the Danish construction industry, examining inter-organisational collaboration. In doing so a variety of different methods were applied for collecting the data including questionnaire surveys and case studies of construction companies conducting strategic partnerships with parties within and outside the construction industry. The research points to the existence of a number of different partnerships with different aims, ranging from process rationalisation to product and concept development. A common element in all of the observed partnerships is the relatively short life span of the partnerships. The study shows that it often is problematic to realise any first mover advantages of a partnership, making it more attractive for companies to adopt existing products and production concepts rather than invest in expensive development activities. Furthermore it is shown that flexibility is seen as the primary competitive advantage in the construction sector, resulting in partnerships being created, dissolved and re-created.

Keywords: collaboration, Denmark, flexibility, innovation, strategic partnerships.

INTRODUCTION

Danish construction is facing an apparent paradox. On the one hand it is claimed that the sector in the years to come will have to embrace and develop strategic partnerships, not only because of economies of scale, but also since changes in consumer demands and the increasing globalisation put pressure on the companies' abilities to produce innovative solutions (NAEC, 2006). Yet on the other hand, the very core of delivering construction services on the Danish market seems to demand flexibility and the ability to respond individually to opportunities when they arise (Gottlieb and Storgaard, forthcoming).

It is this tension that the present contribution wishes to address. The point-of-departure is the Danish construction companies – ranging from clients and facility operators to consulting engineering companies and material producers.

¹ stg@sbi.dk

The Danish construction sector has been under heavy turbulence in the later years, as a result of new market drivers as well as legislations and public policy programmes. Throughout the last 15 years a wide selection of public policy programmes have been initiated, all aimed at improving the said low development of productivity in the sector. Recent years, particular focus has been put on the concepts of partnering and strategic partnerships or alliances as pioneered by the American and British construction industries (e.g. CII, 1989; AGCA, 1991; Latham, 1994). Although these concepts or different modes of collaboration are gaining increasingly popularity and recognition amongst the different players in the sector little is however known of the actual benefits of forming strategic partnerships. Are they indeed effective, efficient and innovative or are they as Gruneberg and Hughes (2006: 7) ask purely marketing devices adding little value to the process?

Drawing on the findings from the largest case and survey study of strategic partnerships in Danish construction, this paper attempts to establish and examine a 'knowledge base' for the assessment of the impact of strategic partnerships in the Danish construction sector. The paper is structured as follows: Initially a framework for understanding strategic partnerships and the role of public policy instruments is outlined. Based on the finding from the aforementioned survey an analysis of the formation, types and extents of partnerships is then carried out using two grounded (case) studies to discuss and qualify the findings. The paper limits itself to Danish construction; however results will be put in perspective by international surveys where applicable.

METHOD

Theoretically the research draws on economic and organisational sociology. Empirically the research is based on two studies (Bonke *et al.*, forthcoming; Gottlieb and Storgaard, forthcoming) both combining quantitative and qualitative research methods: the first combining social survey (Bryman, 1988) with interviews (e.g. Kvale, 1996) and literature review; the latter employs an official statistics method, analysing previously collected data, (Beissel-Durrant, 2004) in combination with a literature review and interviews with selected representatives from the construction sector.

A macro level analysis of strategic partnerships in the Danish construction sector is carried out using statistical data from a survey study on strategic partnerships in 237 Danish construction companies. Statistics on the sector is flawed by the problem of defining what kinds of operations are to be considered as the borderlines between various industrial branches and their affiliation to different sectors, e.g. engineering, manufacturing and construction, are vague. This raises difficulties in describing the sector in figures. The survey study therefore adopts a wide view on the 'construction sector' incorporating all sorts of players having an active role in the procurement process. The micro level analysis draws on a series of intensive expert interviews with selected representatives from the Danish construction sector comprising government agencies, business associations and construction companies. The results of this study will be used in this paper to elaborate and qualify the findings from the survey.

THEORISING STRATEGIC PARTNERSHIPS

As stated in the above introduction a number of public-policy programmes, aimed at the Danish construction sector, have been initiated throughout the past 15 years. One area of attention has been on the somewhat vague term 'new forms of cooperation and

procurement.' Partnering is perhaps the most widely accepted and used 'new form of cooperation' however other concepts and ideas are evolving at policy level these years.

Sparkled by the interest in PPP long-term relationships, or strategic partnerships, have recently been put on the agenda – alongside the question whether the formation of long-term relationships between companies can mitigate a common perceived market failure; that the lack of inter-firm co-ordination and knowledge transfer (Thomassen, 2003) creates a lock-in situation (Clausen, 2002) leading to a sector low on productivity and innovation? Holding this notion for true the next questions that arise are how strategic partnerships are or should be formed and how this differs from other forms of inter-firm cooperation.

In order to answer this question the first step is to define or consider what a strategic partnership is and how this form of cooperation differs from other types of relationships. In a construction sector setting this area have not received much attention neither in Denmark nor internationally. Based on the literature review from the abovementioned studies, it is in the following attempted to establish a brief understanding of strategic partnerships in construction and of the role played by public policy programmes in the development of the sector.

Strategic partnerships in perspective of transaction costs economics

As previously stated 'strategic partnerships' are rather vaguely conceptualised and defined in a Danish context, and as with most of the construction related research and policy making, UK is a dominant source of inspiration in the Danish endeavours. Especially the British development programmes and initiatives established in the wake of the Latham-report 'Constructing the Team' (Latham, 1994) and the Egan-report 'Rethinking Construction' (Egan, 1998) have been the centres of attention. According to Gruneberg and Hughes (2006: 10) there is however a similar loose definition and use of terms of various forms of long-term or strategic relationships in the UK construction industry. Gruneberg and Hughes (2006) lists four types of typical long-term relationships being: consortia, joint ventures, partnering agreements, and special purpose vehicles, all of which can be characterised as contractual relationships and analysed in a transaction cost economics (TCE) perspective (Williamson, 1975; 1985).

TCE is a theory of the firm and the market that addresses governance structures and inter-organisational cooperation, examining the costs of transactions between sellers and buyers when making a contractual agreement – or in other words the economic organisation of firms from a contractual perspective. In the TCE perspective companies are not understood as production units (technological phenomena) but rather as forms of organisation or governance structures that are to be examined and analysed against other governance structures. According to Williamson (1999), market, hierarchical and hybrid (network) forms of organisation are discrete structural alternatives for any transaction, each being supported by a distinctive contract, differing from each other on several key attributes: incentive intensity, administrative control, adaptation, and contract law regime. Hierarchy forms of governance support cooperation by combining low powered incentives, extensive administrative control and internal dispute resolution, whereas the market mode supports autonomy by combining high-powered incentives with little administrative control and a legalistic dispute settling mechanism (Williamson, 1999: 313). Hybrid forms of contracting is localised in between markets and hierarchies in all three respects. Consortia should be seen as hybrid forms of contracting and organisation in which firms seek to integrate vertically. The distinctions between the different types of long-term relationships are

however not very clear in practice where a multitude of variants blur the boundaries of the terms because of the need to tailor relationships in response to the needs of each project (Gruneberg and Hughes, 2006: 10-16).

In a TCE-perspective different types of strategic relationships can be depicted on a contracting relationship (or make-or-buy) continuum according to their level of integration.

Arm's length transaction	Long-term contracts	Strategic alliances and joint ventures	Parent/subsidiary relationships	Perform activity internally
Less integrated		→ → →		More integrated
Trust based only on contract				Trust based on goodwill and cooperation
No personal relationship				Strong personal relationship
Market	Hybrid forms of contracting and organisation		Hierarchy	

Figure 1: Contracting relationships continuum (Besanko *et al.*, 2000; Cheung *et al.*, 2003).

Vertical integration in terms involves decisions concerning whether firm, through their business units, should provide certain goods or services in-house or purchase them (Harrigan, 1985). In a TCE-perspective the strategy of long-term inter-firm cooperation consists in defining whether a company will make or buy its basic inputs. According to (Shimizu and Cardoso, 2002) the benefits of vertical integration are: reduction of transaction costs, guaranteed supply of features, and improved internal coordination, whereas some disadvantages are: need of high investments, flexibility reduction to demand, and variation of market and specialization loss.

Public policies and strategic partnerships in Denmark

In their study of construction consortia Gruneberg and Hughes (2006: 16-20) describe that consortia (or strategic partnerships) should be seen as attempts to respond to market pressure, giving three reasons for establishing consortia: size of firms relative to projects, risk management, and transaction costs.

In Denmark the recent interest in the development of strategic partnerships is driven primarily by a transaction cost, or rather cost-minimization, agenda put forward by the National Agency of Enterprise and Construction and the Ministry of Social Affairs (Gottlieb and Storgaard, forthcoming). The basic assumption is that by setting pre-contract qualification criteria forcing the supply side to form 'strategic relationships' a number of benefits can be gained ranging from better designed solutions, leading to fewer defects and deficiencies, to economies of scale. Similar with the situation in UK, as reported by Gruneberg and Hughes (2006: 17) in a response to the 'National Procurement Strategy for Local Government' (Office of the Deputy Prime Minister, 2003), evidence given in support of these assertions are yet to be seen in the Danish debate. This however, has not had any impact on the legislative environment, as a recent bill on national framework agreements in social housing (Ministry of Social Affairs, 2005) has been passed. In the remarks to the bill it reads that the combination of strategic partnerships and framework agreements will lead to a more efficient process and lower prices as suppliers will have economies of scale and the opportunity to learn from one another as well as from project to project.

From a theoretical stance the governmental rationale for advancing strategic partnerships are however only addressing the possible benefits of vertical integration

from a client's perspective rather than also discussing benefits as well as disadvantages from the companies' perspective. Furthermore the public policy programme concerning strategic partnerships, which can be seen an institutional framework, or more precisely a procurement regulation, guiding the behaviour of the firms in the sector (Bang *et al.*, 2001), does not contain or support any explicit development of the firms' innovative capabilities, nor does it promote any specific construction technologies. The companies' are in other words expected to be able to act single-handedly or unassisted in order to realise any benefits of establishing strategic partnerships. In the following the current level of activity within the sector is examined when it comes to establishing and working in consortia-like relationships as well as evidence of benefits and disadvantages of the partnerships. This will be done in the following chapters.

TYPES AND EXTENTS OF STRATEGIC PARTNERSHIPS IN DENMARK

The analysis of strategic partnerships draws on statistical data from an internet-based questionnaire survey based on 237 responds (out of a total of 1012) from various types of construction companies. In the following analysis respondents are grouped accordingly to the business associations they are affiliated with, being The Danish Construction Association (DCA), The Danish Mechanical and Electrical Contractors' Association (Tekniq), The Building Materials Industry (BI), Associated Danish Architects (ADA), The Danish Association of Consulting Engineers (FRI), The Danish Association of Construction Clients (DACC), and others.

The respondents were asked to answer 49 questions relating to their companies' experiences with strategic partnerships. An enclosed cover letter gave the following brief definition of the concept: "*A strategic partnership is a long-term work relationship between two or more companies, where all parties seek to obtain financial benefits of the mutual performance e.g. through joint product development, joint purchase agreements or delivering building services. A strategic partnership can be based on formal contracts as well as informal unwritten agreements*" (Bonke *et al.*, forthcoming). This definition was selected as it is rooted within the existing Danish discourse on the subject and was adequately operational to be understood by a wider audience in the industry.

The extent of strategic partnerships in Denmark

The survey indicates that long-term cooperative relationships are a rather well-known phenomenon in the Danish construction sector with 51 percent of the survey respondents having participated in a strategic partnership within the last three years. Moreover 28 percent of the respondents have participated in two to five partnerships and an additional 7 percent have participated in more than five long-term partnerships within the same time period. At the same time there is only an insignificant variation of the representation in partnerships across different business associations, however companies organised under the Associated Danish Architects and The Danish Association of Consulting Engineers are generally engaged in more partnerships than the other groups of actors. The results are shown in table 1 below as a future reference for size and affiliation of the different groups of respondents.

The survey furthermore showed that company size does not play any significant factor in the formation of strategic partnerships. Measured in the number of employees only minor differences in the rate of participation were seen across company size with 36

percent of small companies (1-5 employees) and 56 percent of large companies (100-500 employees) having participated in at least one partnerships within a three year period. The same homogenous tendency is seen when comparing participation with different market segment e.g. social housing, private non-housing etc. of the Danish construction sector. Only on the market for civil engineering (public infrastructure projects) there is found a higher rate of participating in long-term partnerships with 62 percent of the respondent reporting that they have been participating in a partnership compared to 45 to 54 percent in the other market segments.

Table 1: Respondents sorted after business associations and past three years participation in strategic partnerships

Number of partnerships	Total	DCA	Tekniq	BI	ADA	FRI	DACC	N/A
None	49%	56%	48%	56%	36%	43%	49%	36%
One	13%	15%	13%	13%	14%	11%	9%	27%
2-5	28%	19%	26%	26%	43%	43%	24%	27%
More than 5	7%	6%	2%	3%	7%	3%	18%	9%
Undisclosed	3%	4%	11%	3%	0%	0%	0%	0%
Other	4%	4%	2%	0%	7%	0%	11%	9%
Total answers	104%	104%	102%	100%	107%	100%	111%	109%
Respondents	235	48	46	39	14	35	45	11

Note: Multiple answers occur

Moreover the survey showed that the average time span of a strategic partnership in the Danish construction sector is app. three years. 14 percent of all partnerships reported have lasted shorter than one year, 34 percent between one and three years, 29 percent between three and five years, and just 13 percent lasting more than five years. There is only little variation between the different market segments, however members of DCA and BI are more represented in longer lasting partnerships than the other groups of respondents. A reason for the relatively short life span of partnerships was given in the by the respondents in the interviews. The current market structure was thus said to play a prohibiting role in the establishment of strategic partnerships as companies are have to be able to adapt to e.g. rapid changes in demand.

Costs of partnerships and choice of partners

Holding the above results in mind that company size does not play any significant factor for companies participating in strategic partnerships, it comes as no surprise that only little investments are needed when establishing and maintaining the partnerships as seen in table 2 below.

Table 2: Financial investment in strategic partnerships

Financial investment	Total	DCA	Tekniq	BI	ADA	FRI	DACC	N/A
0 – €3.300	42%	50%	67%	39%	11%	53%	23%	29%
€3.300 – €13.150	22%	25%	10%	11%	56%	21%	32%	14%
€13.150 – €65.800	16%	10%	10%	33%	33%	11%	18%	0%
More than €65.800	6%	5%	0%	6%	0%	5%	14%	14%
Don't know	13%	10%	14%	11%	0%	11%	14%	43%
Total answers	100%	100%	100%	100%	100%	100%	100%	100%
Respondents	116	20	21	18	9	19	22	7

42 percent of the respondents report that 'no specific expenditure' (corresponding to no more than DKK 25.000 app. €3300) were invested in the partnership whereas only 22

percent have expenditures in excess of €13.150. Seen in relation to the companies' business association affiliation it is evident that members of primarily DACC, BI and ADA have major expenditures in establishing the partnerships.

However looking at the types of investments made by the companies a plausible explanation for the limited investments are found. One of the most dominant types of investments is 'highly increased time consumption' which is not seen as a direct financial investment in the companies. Apart from increased time consumption the most prevalent types of investments are related to: contractual agreements (29 percent), development activities (26 pct.), external consultants (28 pct.) and education (16 pct.). Especially the members of the 'knowledge intensive' FRI have considerable outgoings on education.

Based on these findings it can be concluded that participation in strategic partnerships not necessarily demands large investments, but that it can be accomplished through an increase in time consumption. Nevertheless the companies report of expenditures stemming from the establishment of contractual agreements.

The interviews gave another explanation for the generally low rates of investment, as the first mover benefits are said to be limited in the Danish construction sector. The majority of the respondents thus state that it often is problematic to realise any tangible benefits of a partnership, which inhibit the companies' willingness to invest large sums in the partnerships, making it more profitable to adopt existing products and production concepts rather than develop new solutions and concepts.

Also the study showed that most of the collaborative arrangements took place inside the building sector itself. Only 5 pct reported of external partnerships. In the sector itself contractors are mentioned as participants in 34 pct. of the reported partnerships. Especially amongst members of BI and DACC contractors are seen as attractive partners with a representation in 50 pct. of the reported partnerships. Architects and engineers almost play a prominent part in the reported partnerships; however the architects are 'preferred' partners especially for other architectural companies. Construction clients are present in 19 pct. of the survey's partnerships and typically in conjunction with consulting engineers and contractors.

Aim and benefits of strategic partnerships

The next topic investigated concerned the aims and benefits of strategic partnerships. The respondents were asked to reflect over the perceived most important partnerships they have participated in. The five most cited aims are summarised below.

Table 3: Five most cited aims of most important partnership

Aim of most important partnership	Total	DCA	Tekniq	BI	ADA	FRI	DACC	N/A
Increase market share	41%	33%	50%	61%	33%	45%	13%	71%
Concept development	32%	19%	9%	39%	44%	35%	52%	29%
Rationalisation	28%	14%	23%	39%	22%	15%	52%	14%
Increase product quality	26%	14%	23%	17%	33%	15%	61%	0%
Product development	19%	24%	9%	22%	22%	30%	17%	0%

Note: Multiple answers occur

At a whole the survey results, backed by the interviews, show that strategic partnerships are established with a wide variety of aims in mind. Focussing on the most important of these aims and the general tendencies seen it can be concluded that

most of the reported partnerships have a short-term financial aim. This is typically partnerships focussed on marketing and development of product or improvement and rationalisation of the production system. In addition the study showed that there was an extensive interest in area of 'concept development' being initiatives and strategies for the development of the construction sector. Concept development activities are executed in industry networks. A lot of the network continues the activities and discussions of the public policy initiatives. Concepts are seen as important competitive parameters on a future global market; as a knowledge product for architects and engineers as well as a general strategic tool for the construction sector. All in all the survey shows that the perceived most important strategic partnerships have an external outlook dealing with the future market rather than internal company processes.

Addressing the benefits of strategic partnerships the survey dealt with the role of partnerships for company turnover as well as development and innovation. The study gave the following results.

Table 4: Effect of strategic partnerships on company turnover

Effect on turnover form strategic partnerships	Total	DCA	Tekniq	BI	ADA	FRI	DACC	N/A
Less than 1 pct. of turnover	11%	18%	8%	6%	11%	5%	17%	17%
1-10 pct. of turnover	43%	37%	37%	44%	78%	47%	39%	34%
11-20 pct. of turnover	18%	27%	17%	28%	0%	29%	4%	0%
21-50 pct. of turnover	10%	0%	13%	6%	11%	14%	13%	17%
More than 51 pct of turnover	5%	9%	0%	11%	0%	5%	4%	0%
Don't know	14%	9%	25%	6%	0%	0%	35%	33%
Total answers	101%	100%	100%	100%	100%	100%	113%	100%
Respondents	122	22	24	18	9	21	23	6

Note: Multiple answers occur

It is seen that for one third of the respondents participation in strategic partnerships contributes to more than 10 percent of their company's turnover. For 15 percent of the companies partnerships contribute with more than 20 percent and for 5 percent of the companies the contribution is more than 50 percent. However for the main part of the companies partnerships contribute to less than 10 percent of the total turnover. Moreover for the majority of the respondents strategic partnerships are considered to have lead to innovation in the companies. However for 15 percent the influence is only minor and only for 23 percent it is high or very high.

Table 5: Effects of strategic partnerships on innovation in the firm

Influences on innovation in the firm	Total	DCA	Tekniq	BI	ADA	FRI	DACC	N/A
Very little	15%	29%	18%	11%	0%	10%	17%	0%
Little	16%	10%	14%	22%	11%	25%	13%	14%
Some	40%	33%	41%	50%	78%	35%	30%	29%
Large	19%	19%	18%	11%	11%	20%	30%	14%
Very large	4%	5%	0%	0%	0%	5%	9%	14%
Don't know, other	8%	5%	9%	6%	0%	10%	4%	29%
Total answers	120	21	22	18	9	20	23	7

Note: Multiple answers occur

It can thus be concluded that partnerships in generally do not play any crucial role for the majority of the companies in the survey, which perhaps explains that only 51

percent of the respondent have participated in a strategic partnership during the past three years. In the other end of the spectrum is a noticeable group of companies (15 percent) where strategic partnerships are of considerable importance for the turnover.

Contractual regulation of partnerships

A final element of the study which will be addressed in this paper is the contractual regulation of the strategic partnerships. The survey shows that the dominant mode of contractual regulation between partners (in 72 percent of all instances) is a traditional written contract no matter the aim of the partnership. In 13 percent of the reported partnerships a verbal agreement is the basis of the contractual regulation, whereas 7 percent of the partnerships use a combination of written and verbal contract to govern the partnership. These findings however somehow contradict the theoretical assumption that strategic partnerships, through increased vertical integration, reduce the contractual regulation or layers between companies, as goodwill, trust and mutual dependencies reduce the need for contracts (Cheung *et al.*, 2003).

CONCLUSIONS

The reported case study of strategic partnerships is the first of its type in the Danish construction sector. It is not representative for the whole industry; however it gives a good impression of the 237 companies in the survey. Among these companies 48 percent had participated in what they consider can be labelled strategic partnerships. One of the interesting findings is that only little variation in the types and extents of strategic partnerships exists when analysing the results across different market segments, company sizes, and business areas. In addition it is seen that construction companies mainly partner with other construction companies, whereas cross-sector collaboration with firms outside the Building–Construction-Complex only seldom occurs. Furthermore only one out of seven companies reports that working in strategic partnerships is crucial to their turnover.

The study shows that although many companies work together in relatively close constellations not very many of them form what in a traditional theoretic perspective might be labelled strategic partnerships – i.e. with vertical integration and formal long-term commitment to one another. An interesting feature or characteristic of the companies in the study is that they apparently are reluctant to integrate vertically as the benefits of remaining distinct separate units or companies is seen as a competitive advantage. Two reasons for this are given: first that the current market structure demands flexibility of the companies to rapid demand-side changes; second that the first-mover advantage is limited making it more plausible to adopt and reproduce existing solutions rather than developing new.

Nevertheless the study shows that there is a 'readiness' in the sector to further advance strategic partnerships, as many companies participate in industry networks where new concepts and strategies for the development of the sector is on the agenda. The networks facilitate the transfer of new knowledge and competencies across the sector.

Lastly, it can be concluded that the expert interviews showed that the Danish construction sector has developed a tradition for, and competencies to, cooperation with many different partners throughout the sector – in what could be named a pattern of flexible strategic cooperative relationships.

REFERENCES

- Beissel-Durrant, G. (2004) *A Typology of Research Methods Within the Social Sciences*. NCRM Working Paper, November 2004. ESRC National Centre for Research Methods (NCRM) and Southampton Statistical Sciences Research Institute (S3RI).
- Besanko, D., Dranove, D., and Shanley, M. (1999) *Economics of Strategy*, Second Edition, New York, N.Y.: John Wiley and Sons,
- Bonke, S., Egebjerg, C., Kristiansen, K. and Storgaard, K. (forthcoming) *Strategiske partnerskaber i dansk byggeri (Strategic partnerships in Danish construction)*. Hørsholm: Danish Building Research Institute.
- Bryman, A. (1988) *Quantity and Quality in Social Research*. London: Unwin Hyman.
- Cheung, S.O., Ng, T.S.T., Wong, S.P. and Suen, H.C.H. (2003) Behavioral aspects in construction partnering, *International Journal of Project Management*, **21**, 333-343.
- Clausen, L. (2002) Innovationsprocessen i byggeriet – Fra idé til implementering i praksis (The innovation process in construction – From idea to implementation in practice). Report, BYG.DTU R-031, PhD Thesis, Department of Civil Engineering, Technical University of Denmark, Lyngby.
- Colombo, M. (1998) The choice of the form of strategic alliances: Transaction costs and beyond. *Paper prepared for the DRUID Conference on 'Competencies, Governance and Entrepreneurship'*, 9-11 June 1998, Copenhagen.
- Egan, J (1998) *Rethinking construction: the report of the Construction Task Force to the Deputy Prime Minister, John Prescott, on the scope for improving the quality and efficiency of UK construction*. London: Department of the Environment, Transport and the Regions Construction Task Force.
- Gottlieb, S.C., and Storgaard, K. (forthcoming) *Politikinstrumenter til fremme af længerevarende samarbejder (Advancing long term relationships through public-policy instruments)*. Hørsholm: Danish Building Research Institute.
- Grunenberg, S. and Hughes, W. (2006) Understanding construction consortia: theory, practice and opinions, *RICS Research paper series*, **6**(1), London: RICS.
- Harrigan, K.R. (1985) Vertical integration and corporate strategy. *Academy of Management Journal*, **28**(2), 397-425.
- Latham, M., (1994) *Constructing the Team - Final Reports of the Government Industry Review of Procurement and Contractual Arrangements in the UK Construction Industry*. London: HMSO.
- NAEC (2006) *Vision 2020 – Byggeri med mening (Vision 2020 – Meaningful construction)*. Copenhagen: National Agency for Enterprise and Construction.
- Shimizu1, J.Y. and Cardoso, F.F. (2002) Subcontracting and cooperation network in building construction: A literature review. In Formoso, C.T. and Ballard G. (Eds.) *Proceedings of the 10th annual conference on Lean Construction*, Aug. 2002. Gramado, Brazil.
- Thomassen, M.A. (2003) *The economic organisation of building processes. On specialisation and coordination in interfirm relations*. PhD Thesis, Department of Civil Engineering, Technical University of Denmark, Lyngby.
- Williamson, O.E. (1975) *Markets and Hierarchies: Analysis and Anti-trust Implications. A Study in the Economics of Internal Organization*, New York: The Free Press.
- Williamson, O.E. (1985) *The Economic Institutions of Capitalism*. New York: The Free Press.
- Williamson, O.E. (1999) Public and Private Bureaucracies: A Transaction Cost Economics Perspective, *Journal of Law, Economics, and Organization*, **15**(1), 306-342.