The Dutch Construction Industry: An Overview and Its Use of Performance Information

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This paper gives an overview of the Dutch Construction industry and elaborates further on its use of performance information. After giving an overview of the Dutch construction industry depicting size, major contractors, growth, profitability, value added, costs, productivity, this section is concluded by giving future predictions of the industry for the following years. A summary is given of the 2002 Dutch construction collusion as a means to give explanations for the persistent use of procurement based on lowest-bid competition. Although a starting realization is recognizable towards more innovative ways of tendering to restore trust and bilateral relationships between constructors and their clients; change is slow as hard data of performance information is limited. Current available performance information of the Dutch construction industry is discussed, such as failure rate and costs, bottlenecks, procurement methods used, customer satisfaction and selection criteria. As seen throughout this paper, innovative ways of procurement can contribute to the changes aspired to by the Dutch construction industry as well as bring in added value. Government plays a central role as a major client and frontrunner and also with the means of regulating policy on procurement for the industry. Although new initiatives of change towards more innovative ways of tendering are starting to build with cooperation between companies and industry platforms, it remains still in its infancy.

Keywords: Construction industry, Dutch, Performance information

Introduction

The dominant form of acquiring resources in the construction industry is still the transactional exchange (Dubois & Gadde, 2000; Thompson et al, 1998), with a reliance on tendering procedures. Procurement through tendering procedures essentially revolves around inviting project offers and selecting the most suitable one (Duren & Dorée, 2008).

Dubois & Gadde (2000) propose a shift in the construction industry from a coordination of projects to coordination amongst firms. Studies of customer-supplier collaboration, in general, have shown that major benefits may be achieved when firms make adaptations to one another (Hines, 1994; Spekman et al., 1999). Three main types of adaptation may be distinguished (Gadde and Hakansson, 1994): technical adaptations - connecting the production operations of supplier and customer; administrative routines and knowledge-based adaptations.

Beach et al. (2005) argue that the tendency to use fewer subcontractors will continue; 77% of their respondents indicated that they had reduced the number of suppliers they used while 57% had plans to reduce the total number of subcontractors and favour 'partnered' subcontractors in the future. Beach et al. also argue that the concept of "best value" is of importance. Best value can be drawn out of a project by utilising the specialist knowledge and expertise (thus the resources) of suppliers. Doing so can prevent problems, reduce programme complexity, durations and costs, and improve the overall quality of the project (Beach et al., 2005).

Saad et al. (2002) concluded that there is significant awareness of the importance of supply chain management and its main benefits in construction. It can help construction overcome its fragmentation and adversarial culture, improve its relationships and better integrate its processes. PIPS (Performance Information Procurement System) is a procurement method which incorporates these benefits and aims to select the most suitable contractor for the job, to spur this contractor on to highest performance, as well to reduce the client's management and control tasks (Kashiwagi, 2004).

The public sector and the Dutch construction industry could potentially benefit hugely implementing innovative procurement methods such as PIPS. However, resistance to change seems to dominate the Dutch procurement and tendering procedures. Most projects (over 80% of the Dutch construction industry) are still being tendered in the traditional manner; design, bid, and make selection according to lowest bid (Duren & Dorée, 2008). This is also demonstrated by the sparse use of quality related criteria in procurement (Boes and Dorée, 2008).

PIPS moves away from the culture where relationships based solely on market forces are often distrustful, if not antagonistic, and rooted in the fear that the other party might engage in opportunistic behaviour (Johnston & Lawrence, 1998). This fear of opportunistic behaviour turned out to be legitimate in the Netherlands. In 2002, allegations of unethically opportunistic behaviour were being made of bid rigging, collusion and corruption within the Dutch construction industry. A Parliamentary Committee was formed to research the allegations. The Dutch construction collusion was a black episode in the history of the industry and had enormous impact on trust and future interactions between public sector clients and contractors.

This paper aims to describe the changes, within the context of the aftermath of the Dutch construction collusion, towards more innovative procurements procedures in the Dutch construction industry and its current use of performance information. In the first part of this paper a sample overview of the total available information on the Dutch construction industry is given. In the second part, we will describe our desk-research within the context of the above introduction and further elaborate on the use of performance information within the Dutch construction industry.

Statistical information is gathered and processed by the Economisch Instituut voor Bouwnijverheid (EIB; Economic Institute of the Buildingindustry) and Centraal Bureau voor de Statistiek (CBS; Central Bureau of Statistics Netherlands). Industry groups as PSIBouw, PIANOo and Regieraad Bouw provide more qualitative information on the industry.

Overview of the Dutch Construction Industry

Number of companies and employees

The Dutch construction industry is a highly fragmented market. Since 2000 the number of companies has been increasing from 63380 to 96660 in 2008; an increase of over 52% in 9 years time. However, as shown in Table 1, the number of employees (and FTE) in the Dutch construction sector remains fairly stable with an average of 474 thousand employees.

Table 1

Number of Dutch Construction Companies and Number of Employees

Periods	Number of companies	Total employees (absolute x 1000)	Total FTE (absolute x 1000)
2000	63380	474	449
2001	67595	485	455
2002	69440	481	456
2003	71295	472	444
2004	72365	460	430
2005	74025	462	434
2006	81690	484	452
2007	85910	-	-
2008	96660	-	-

Note. Source: EIB 2007; CBS, 2007

The increase of total construction companies can be explained by the entry of companies with only 1 or 2 employees as freelance construction workers (see Table 2) who started their own business. These companies make up almost 80% of the total companies in the Dutch construction industry. The fact that the number of total employees in the industry remains stable is the result of the decrease of the total number of all companies larger than 2 employees.

Table 2

Total Number of Companies and Number of Employees Over 2007, 2008

	1 Januari 2007	1 Januari 2008
Total number of companies	85910	96660
1 employee	53320	64395
2 employees	11565	11875
3 to 5 employees	6405	6565
5 to 10 employees	6385	6015
10 to 20 employees	4295	4085
20 to 50 employees	2865	2700
50 to 100 employees	645	620
100 or more employees	430	405

Note. Source: CBS, 2009

Construction companies in the Netherlands larger than 50 employees make up only just over 1% in 2008 (see Figure 1). The vast majority of construction companies in the Netherlands are medium in size or small.

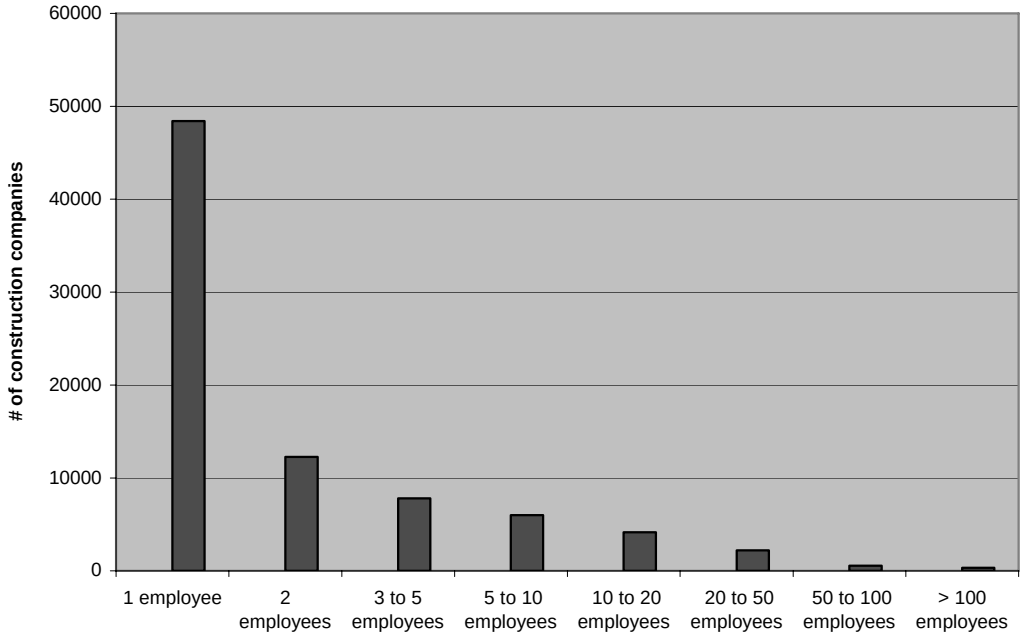

Figure 1: Number of construction firms according to number of employees. Source: CBS Statline 2006

Although the vast majority of the construction market consists of small companies, almost a third of market share can be attributed to only the ten largest construction companies.

Major contractors

The 10 largest Dutch construction companies are listed in Table 3, showing total turnover, net results over 2008, their domestic position in 2007 and 2008 and their European position in the top 100. Their joint turnover is about €29 billion, roughly a third of the € 84 billion Dutch construction industry (as at 2008).

Table 3

Top 10 Dutch Construction Companies

Domestic position in 2008	Domestic position in 2007	Company name	Position in Europa	Turnover 2008 (in million Euro)	Net result 2008 (in million Euro)
1	1	Koninklijke BAM Groep NV	9	8.835	161,9
2	2	Koninklijke Volker Wessels Stevin NV	18	5.393	142
3	3	Heijmans NV	22	3.630	-56,8
4	6	Koninklijke Boskalis Westminster NV	41	2.094	249,1
5	4	TBI Holdings NV	44	2.404	47,8
6	5	Van Oord NV	45	1.896	190
7	7	Ballast Nedam NV	59	1.426	24
8	9	Strukton Groep NV	66	1.249	14,3
9	8	Dura Vermeer Groep NV	68	1.132	7,5
10	10	Koop Holding Europe	91	-	-

Source: Deloitte, 2009; annual reports of construction companies

When comparing the Dutch construction industry and its 10 largest players to the other European construction industries, we can conclude that the Dutch companies are rather dominantly present in the top 100 of largest European construction companies. With one construction company, in the top 10 (BAM Group NV at number 9) and with a total number of 10 Dutch construction companies in the overall 100 largest European construction companies, only Spain and the United Kingdom have a larger market presence in Europe (Deloitte, 2009).

Construction industry growth

In 2003, the turnover of the Dutch construction industry amounted to almost €67 billion and €4,4 billion (6,6% of turnover) in Earnings Before Interest and Tax (EBIT), growing to over €70 billion in turnover and €4,5 billion EBIT (6,4% of turnover) in 2005 (EIB, 2006). Figure 2 shows the growth in the Dutch construction industry in more recent years (CBS, 2008). Until 2005, the Dutch construction industry accounted for about €67 billion turnover on a yearly basis. After an initial drop of over 4% in growth in the first quarter of 2005, the second quarter received an increase of 6,9%. This turned out to be the largest increase of turnover in the Dutch construction industry since September 2003 (De Gelderlander/ANP in Bouwweb, 2005).

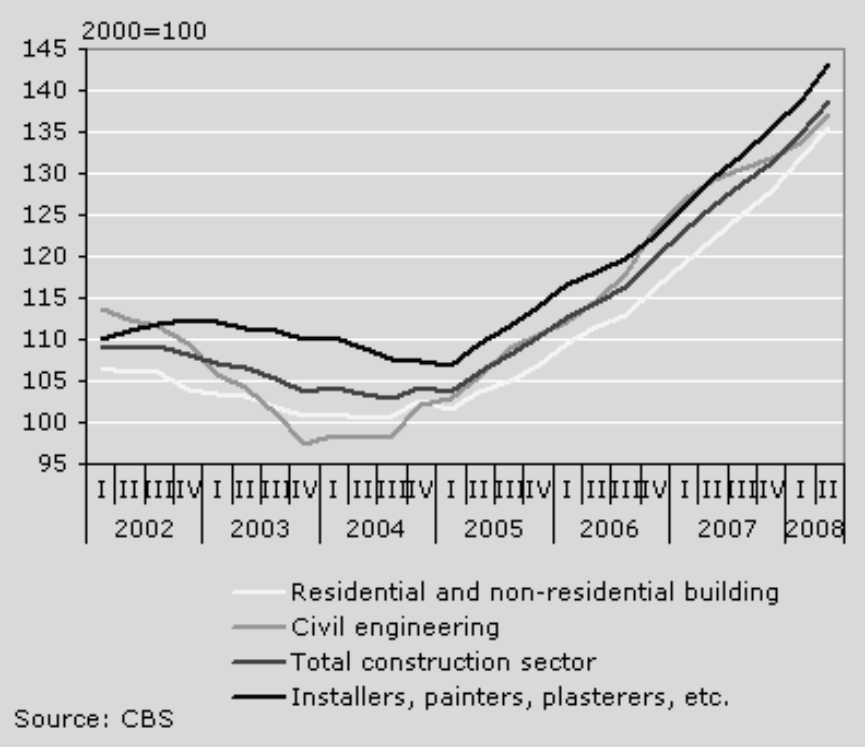

Figure 2: Turnover growth Dutch construction sector; 12 monthly moving average (CBS, 2008)

A consistent increase of yearly turnover continued from the second quarter of 2005 to the first quarter of 2008. This steady growth resulted in an increase of 26% within 3 years time and a total turnover in 2008 of an estimated €84.4 billion. The turnover-uprising comes to a grinding halt in October 2008 with the start of the worldwide financial crisis.

Table 4 and Table 5 show the size of the Dutch construction industry from a GDP perspective. Table 4 shows that the construction industry contributes a consistent yearly average of 5% to the GDP. Of this total average of 5%, about 2% is accounted for by the sector of construction of buildings, 1% by civil engineering and about 2% by the building of installations and completions.

Table 4

Value Added (Gross, Basic Prices) by Industry and Sector: % GDP

	1995	**1996**	**1997**	**1998**	**1999**	**2000**
Construction	4,9	4,8	4,7	4,8	4,9	5,0
Construction of buildings	2,1	2,0	1,9	1,9	2,0	2,0
Civil engineering	1,0	1,0	1,0	1,0	1,0	1,0
Building installation and completion	1,9	1,9	1,8	1,9	2,0	2,0
Value added (gross, basic prices)	90,3	89,8	89,6	89,4	89,2	89,3
Value added (gross, total industries)	305 261	319 755	342 237	362 464	386 193	417 960
	2001	**2002**	**2003**	**2004**	**2005**	**2006**
Construction	5,1	5,1	4,9	4,8	4,8	4,9
Construction of buildings	2,0	2,0	2,0	2,0	2,1	2,1
Civil engineering	1,1	1,0	0,9	0,8	0,8	0,9
Building installation and completion	2,1	2,1	2,0	1,9	1,9	1,9
Value added (gross, basic prices)	88,8	89,1	89,2	88,9	88,8	88,6
Value added (gross, total industries)	447 731	465 214	476 945	491 184	508 964	534 324

Note. EIB, 2006

With a consistent growth of about 3% yearly, the Gross Value Added stood at almost 12,5 billion in 1989 and grew to well over €26 billion in 2006 (Table 5); an increase of 52% in 18 years. The only down-turn in Gross Value Added of the total Dutch construction industry can be seen from 2002 to 2005 and coincidentally (?) parallels with the aftermath of the Dutch construction collusion.

Table 5

Gross Value Added: mln euro

	1989	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**
Construction	12493	12794	13225	13909	14209	14685	14924	15356	16147
Construction of buildings	5786	5740	5833	6092	5981	6 340	6400	6325	6560
Civil engineering	2034	2186	2310	2376	2723	2923	2881	3106	3301
Building installation and completion	4673	4868	5082	5441	5505	5422	5643	5925	6286
	1998	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**
Construction	17238	19044	20891	22672	23698	23557	23468	24406	26249
Construction of buildings	6853	7580	8294	8730	9266	9 507	10029	10594	11359
Civil engineering	3445	3866	4212	4698	4655	4351	4084	4 072	4552
Building installation and completion	6940	7598	8385	9244	9777	9699	9355	9740	10338

Note. EIB, 2006

Labour safety and productivity

Since the early 1970's the labour safety in the Dutch construction industry has gone up considerably with the number of incidents per 100 man-years down to only an average of six (see Figure 3)

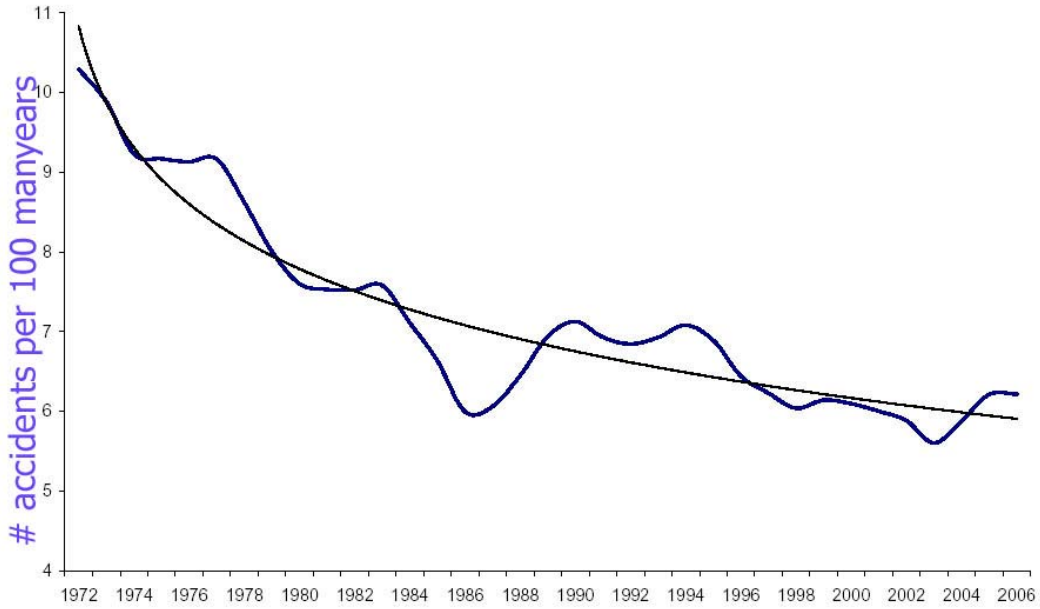

Figure 3: Number of incidents with absence per 100 man-years period 1972-2006 (only personnel on construction site), (Arbouw, 2006).

In 2008, the Dutch construction industry had the highest EU-25 personnel costs, with an average yearly salary of 45.000 euro per employee. Only €600 lower than Norway, which is not a EU member state, which had the highest average personnel costs in the world (Bouwtrefpunt, 2008).

The increase of personnel costs from 2003 to 2005 had an average increase of only 2,2% over 5 years.

Future predictions for the Dutch construction industry

As a result of the financial crisis which started in October of 2008, the next 3 years look rather grim for the Dutch construction industry according to the EIB (See Figure 4). In 2009 and 2010 the construction industry growth will decline with -5,5% in 2009 and -9% in 2010. With a staggering -15% decrease of output, about 50.000 jobs will be lost. Most likely companies with only one or two employees will be the most severely effected. Also in 2011 it is predicted that construction production will still be down by -0,5%. The construction industry will only stabilise and recover during the year 2012. Although an average yearly production growth of 3% in the years 2011-2014 is predicted, the level of output at the end of 2014 will still be likely to remain under the level of 2008.

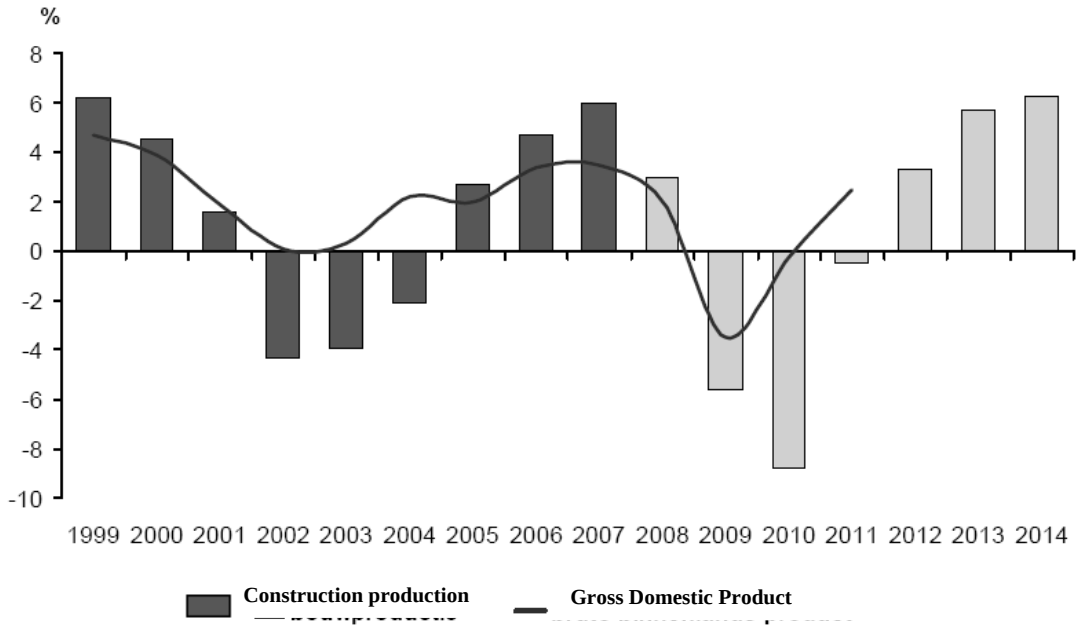

Figure 4: Future growth predictions of the Dutch construction industry (EIB, 2009)

Collusion in the Dutch construction industry

To fully understand the current Dutch construction industry dilemma of 'willingness' versus 'resistance to change' towards more innovative ways of procurement; we should shortly review the history of the Dutch construction collusion and its impact on the industry and its current state.

In 2002, the procurement of construction work in the public sector became a major issue in the Netherlands after a media documentary had suggested that the tax payer was yearly robbed of about €500 million through collusive behavior, bid rigging, and corrupt practices among construction companies and civil servants. After the largest invasion in Dutch legal history, the

Parliamentary Inquiry Committee publicly questioned around 45 people. Investigations focused predominantly on national public clients, however Ferguson et al. (1995) notes that client-contractor relationships were also often recurrent among Dutch municipalities. Only 2-3% of projects saw the formation of new client-contractor relationships (Dorée, 1997). The high rate of recurrent contracts in local procurement practice was suspected to be the result of over close relationships, which were vulnerable to corruption and collusion.

The final report drafted by the Parliamentary Inquiry Committee did not substantiate the earlier allegations of corruption, however confirmed the structural nature of cartels and bid rigging. It was also concluded that the government had neglected its responsibilities and had failed to draft a consistent policy for the construction industry (Dorée, 2004). Although claims of excess profitability on the part of the contractors were not substantiated, the existence of cartels and bid rigging were never denied by the associations of contractors.

The investigations and allegations have had a major impact on trust, and the relationship between public sector clients and the construction industry (Dorée, 2004). As a response, the Netherlands' Parliamentary Inquiry Committee on construction collusion adopted the guiding principle of 'competition is good' and urged the restoration of the proper functioning of the market (Dorée, 2004). Since 2002 the proposed default approach to public sector procurement has been selection of the lowest price. As Dorée (2004) concludes; a tougher public sector procurement policy and the continued reliance on lowest bid prices may not contribute to the reform of the Dutch construction industry as intended.

Performance Information in the Dutch construction industry

Performance information and past performance is a current topic within the Dutch construction industry. A logical effect of the heavy 'lowest-bid' competition institutionalised by the Parliamentary Committee after the construction collusion. There is much discussion on how to tender on different criteria than only price. Not surprisingly, when looking at the major bottlenecks (see Table 6) in the construction sector of buildings and civil engineering, according to the construction companies themselves, the number one bottleneck is the 'heavy competition on price'.

Table 6

Top Five of Most Mentioned Bottlenecks per Sector in 2006

Bottleneck sector construction of buildings			**Bottlenecks sector civil engineering**		
		Mentioned by companies %			**Mentioned by companies %**
1.	Heavy competition on price	74	1	Heavy competition on price	80
2.	Rules & regulation	67	2	Administrative burden	69
3.	Permission policy	67	3	High labor costs	63
4.	Administrative burden	65	4	Delivery systems policy	63
5.	High labor costs	62	5	Rules & regulation	59

Note. Source: EIB; 2006

A growing number of publications show that there is a great potential to increase the quality of tender processes and project results. Many publications promote integrated project delivery schemes (e.g., turn-key and design-build), and propose selection on quality-based criteria rather than just low-bid (Barret, 2007; Courtney, 2004). Another trend involves the consideration of past performance as a selection parameter (Duren & Dorée, 2008).

In a PIPS tender both variables are being considered. PIPS can be described as a predominantly information-based system which can make predictions about expected result based on performance (Duren & Dorée, 2008). Contractors appear to embrace the challenge to find clever solutions as a way of distinguishing themselves. Within a PIPS tender, then, contractors compete on quality in addition to costs, which contributes to the professionalization of the construction industry. In addition, PIPS creates an environment that focuses and encourages the alignment of goals and gives a real boost to cooperation (Duren & Dorée, 2008). Therefore the application of PIPS by clients should make the problem of heavily competing on price less important as 'quality' is the distinguishable criterion, albeit only to notice for the competent construction firms.

Costs of failure

Failure costs of projects are large in the Dutch construction industry. A growing awareness is starting to dawn in the Dutch construction industry that the old methods have to be discarded and new, more innovative and effective ways have to be adopted to restore trust and bilateral relationships between constructors, their suppliers and their clients. Especially after the events of 2002 of the Dutch construction collusion.

The cost of failure rate was 7.7% of the total turnover in 2001, in 2005 this percentage increased to 10.3% (Bouwkennis; USP Marketing Consultancy, 2007). USP Marketing Consultancy states that this percentage has even risen to 11.4% in 2008 (USP Marketing Consultancy, 2008). Table 7 shows reasons for the costs of failure (USP Marketing Consultancy, 2007). The top 3 reasons mentioned are 'lack of communication and information transfer', 'inadequate attention for feasibility during design phase' and 'the delivery of quality to end user as not being the highest priority'. All these reasons underline the current state of a win-lose relationship with clients instead of working together for the benefit of mutual gain to finish projects on time, within budget for a reasonable price. Indirect costs are not taken into account.

Table 7

Reasons for Costs of Failure

	Total	Architect & Engineering	Contractors (General & Sub)	Clients
Lack of communication and information transfer	21%	20%	26%	12%
During design phase inadequate attention for feasibility	20%	19%	22%	19%
Delivering quality to end user is not the highest priority	10%	15%	5%	14%
Requirements list unsatisfactory: lot of changes needed	9%	13%	7%	9%
No application of experience previous projects	6%	4%	7%	7%
Tender model not aimed at integral process procedure	5%	6%	4%	6%
Appointments not followed	5%	3%	6%	6%
Information behind on schedule	4%	4%	6%	2%
No synchronization between architecture & installation	4%	6%	3%	3%
Licenses not on time	4%	3%	2%	7%
Contract unclear and incomplete	2%	0%	2%	2%
Lack of logistic communication during realization	1%	1%	1%	2%
Other, namely	3%	3%	3%	2%
Don't know	7%	5%	7%	10%
Total	100%	100%	100%	100%

Note. Source: USP Marketing Consultancy 2007

A new approach to public sector procurement such as PIPS should tempt the industry into changing. Not only to rethink more effective ways of procurement approaches which can improve project delivery and business performance, but also to raise industry performance as a whole. The new, innovative forms of procurement must lead to closer co-ordination of design and construction within the whole industry. This will in turn, contribute to substantial savings in terms of time as well as costs (…) (Boes & Dorée, 2008).

Therefore, there is a growing demand for more collaboration between partners in the value chain to lower the failure costs in the industry. In Table 8 results of a Dutch questionnaire are shown for the statement: "further collaboration in the construction industry will lower the cost of failure". Slightly surprisingly only 47% of all respondents fully agreed on the statement, 30% was 'neutral' or 'did not know' or had 'no opinion'. Therefore the 'disagreement' percentage was less than a quarter of all respondents.

Table 8

Percentage Agree on Statement "Further collaboration in the construction industry will lower the cost of failure"

	Highly agree	Agree	Neutral	Disagree	Highly disagree	Don't know / no opinion
Architects	2	50	12	29	0	7
Building contractors	5	38	23	26	2	7
Handymans	2	45	18	25	1	9
Building completion companies	1	43	31	13	5	8
Providers of technical services	5	46	17	22	1	9
Total	3	44	22	21	2	8

Note. Source: Bouwkennis, 2006

Use of Performance Information

In the Netherlands innovative procurement and integrated contracts are adopted at different paces. As seen in Table 9, the traditional way of working is still the most used way (total of 71%) in the Dutch construction industry, with only 4% of the total tenders using PPS.

Table 9

Application of Procurement Methods in Various Divisions of Construction

	Traditional	Construction team	Design & Construct	Turn Key	PPS	Total
Utility	73%	18%	5%	2%	2%	100%
Infrastructural work	81%	8%	9%	2%	0%	100%
Specialized	76%	17%	4%	1%	2%	100%
Electro technical	69%	8%	5%	13%	5%	100%
Other installations	61%	19%	5%	3%	11%	100%
Total	71%	16%	5%	3%	4%	100%

Note. Source: EIB 2006

However, PIPS or Best Value Procurement has recently been implemented in The Netherlands at private companies such as construction companies Ballast Nedam (a.o procurement of acoustic fencing along railway track) and Heijmans (a.o: bitumen emulsion). The research of Boes & Dorée (2008) shows that up till now local authorities have been reluctant to move away from tradition, however the national agencies are the frontrunners in this regard. Currently, Rijkswaterstaat (the national government agency whose role is the practical execution of the public works and water management, including the construction and maintenance of waterways and roads) is implementing the methodology. Rijkswaterstaat is a part of the Dutch Ministry of Transport, Public Works and Water Management. Rijkswaterstaat has done a pilot on Best Value Procurement (on a small scale) and will now be using the process to procure circa € 800 mln on infrastructure.

Rijkswaterstaat is using the concept of Most Economically Advantageous Tender (MEAT), as known from European Tender law, more and more. Instead of using points or percentages

(fictitious) monetary values are used. The methodology of Most Economically Advantageous Tender gives the client the possibility to not just select based on the lowest price, but to take other criteria into account. In table 10 an analysis is given of the number of projects tendered by Rijkswaterstaat over 2006 en 2007 using either the MEAT process or Lowest Bid (LB; selection based just on the lowest price). In 2007, more than half of the volumic share of tenders by Rijkswaterstaat is based on MEAT, however the number of tenders remains less than a third of the total.

Table 10

Analysis of Projects Using Most Economically Advantages Tender (MEAT) Versus Lowest Bid (LB), 2007 and 2006 of Published Tenders Rijkswaterstaat.

	2007		**2006**	
	Most Economically Advantages Tender (MEAT)	**Lowest Bid (LB)**	**Most Economically Advantages Tender (MEAT)**	**Lowest Bid (LB)**
Project volume (in million €)	787*	660	1243	Unknown
Number of tenders	41	106	37	Ca. 133
Volumic share	54%	46%	Unknown	Unknown
Numeric share	28%	72%	22%	78%
Average project budget (in million €)	19,2	6,2	33,6	Unknown
Average number of suppliers	3,8	3,9	3,6	Unknown
Numeric share 'LB is not MEAT'	34%	n/a	41%	n/a
Volumic share 'LB is not MEAT'	21%	n/a	36%	n/a

Note. Source: RWS, 2007 (with permission)
* excluding 2nd Coentunnel

As the table shows, in 34% of the cases in 2007 the awarded contractor did not have the lowest price (thus the award was based on other criteria then price).
Changes towards more innovative procurement methods in the Dutch construction industry are only just beginning. Therefore the industry still suffers from a lack of hard data on the use of Performance Information along the lines of the PIPS methodology. Rijkswaterstaat is not using the Past Performance filter because the Past Performance system for the construction industry is not yet in place. Although Rijkswaterstaat is increasingly using the methodology to procure, unfortunately no data has been collected of the quality of the process and the finished projects. This means that no public data is available on the performance of the projects awarded by the process of "lowest price" vs the projects awarded by the process of MEAT.

Nevertheless, there are ways for construction companies to get insight in their performance through the eyes of their clients. Table 11 shows that the majority of construction firms register 3 types of performance indicators; 1) the number of repeat orders they receive, 2) using 1-on-1 talks with clients after delivery and 3) through employees.

Table 11

Ways of Getting Insight in the Level of Customer Satisfaction

Ways of getting insight	% of companies
Number of repeat orders	70
1-on-1 talks with client after delivery	62
Via employees	51
Complaints registration	25
Regular measurements of customer satisfaction	13
No particular method	4

Note. Source: EIB 2006

By making use of questionnaires, it is possible to show the average customer satisfaction over cooperation with contractors. Figure 5 shows an average customer satisfaction of about 6,7. Only the 'small private firms' and 'private citizens' seem to grade the cooperation with contractors higher. Their satisfaction level over 2005-2007 averaged around a 7,7. All and all, the satisfaction levels of cooperation with contractors are at 'pass' level if it were an examination.

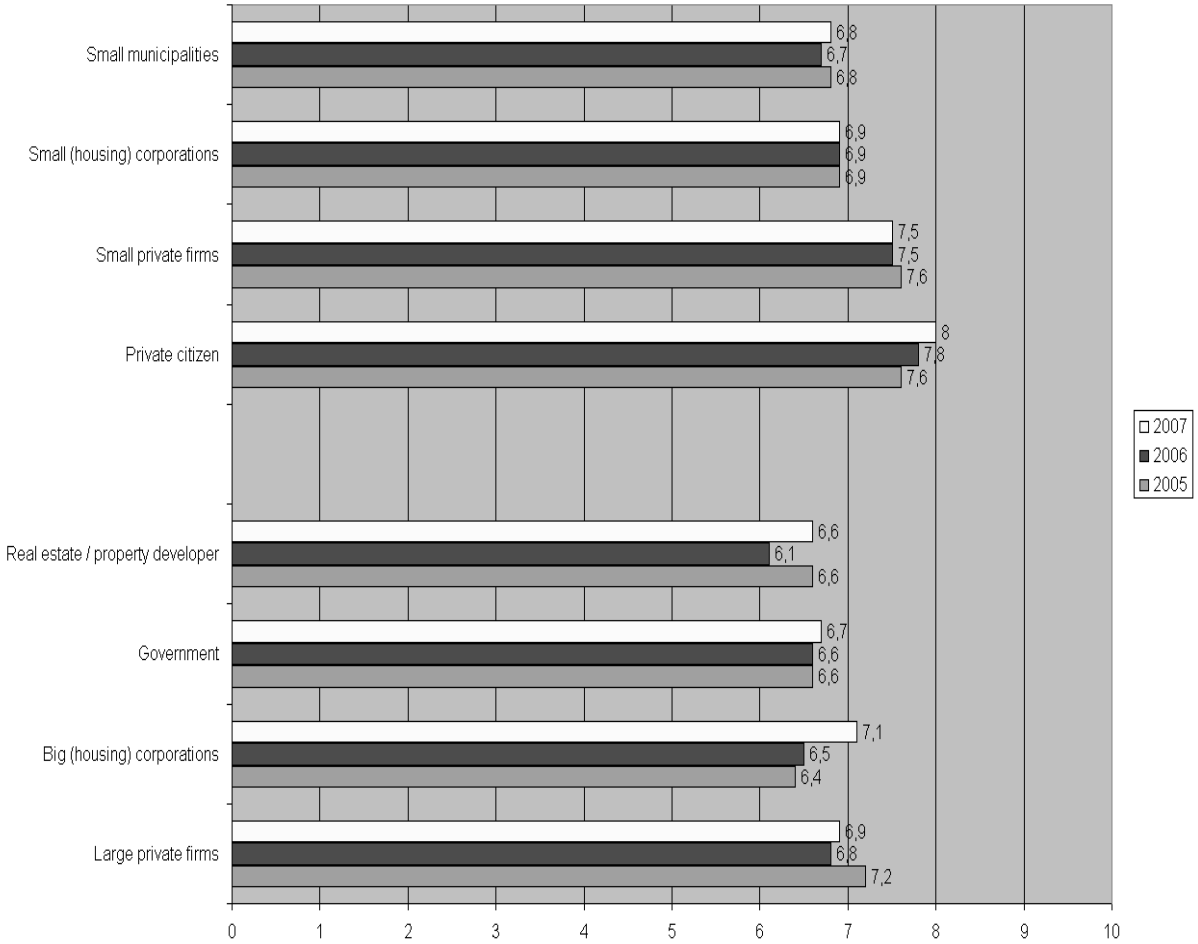

Figure 5: Average grade of customer satisfaction over cooperation with contractors for the years 2005-2007 (scale 1-10) (EIB; 2006)

Selection criteria

The selection criteria that clients use to select a contractor give information on the focus points of the procurement procedure and behaviours of Dutch organisations. Table 12 shows that Large vs. Small clients have different focus points of selection. Where the large clients firstly look at financial data, such as 'price' and 'financial stability', the small clients focus on 'reliability' and 'quality' of the contractor. The small client is also focussed on 'the contractor being customer oriented'. A variable which the small client does not initially considers but is by the large client is the 'financial stability of the contractor'.

Table 12

Top 5 Most Important Selection Criteria

	Large clients	**Small clients**
1	Price	Reliability of contractor
2	Financial stability	Quality of contractor
3	Reliability of contractor	Price
4	Quality of contractor	Contractor being customer oriented
5	Experience of contractor	Experience of contractor

Note. Source: EIB 2006

The previous outcome seems to be confirmed by looking at Figure 6. The figure shows that Corporations and Government both agree for about 75% that their buying behaviour is mainly aimed at lowest execution costs. Private firms (33%) and Developers (40%) are not predominantly aimed at low execution costs (see Figure 6) but presumably also focus on 'reliability' and 'quality'.

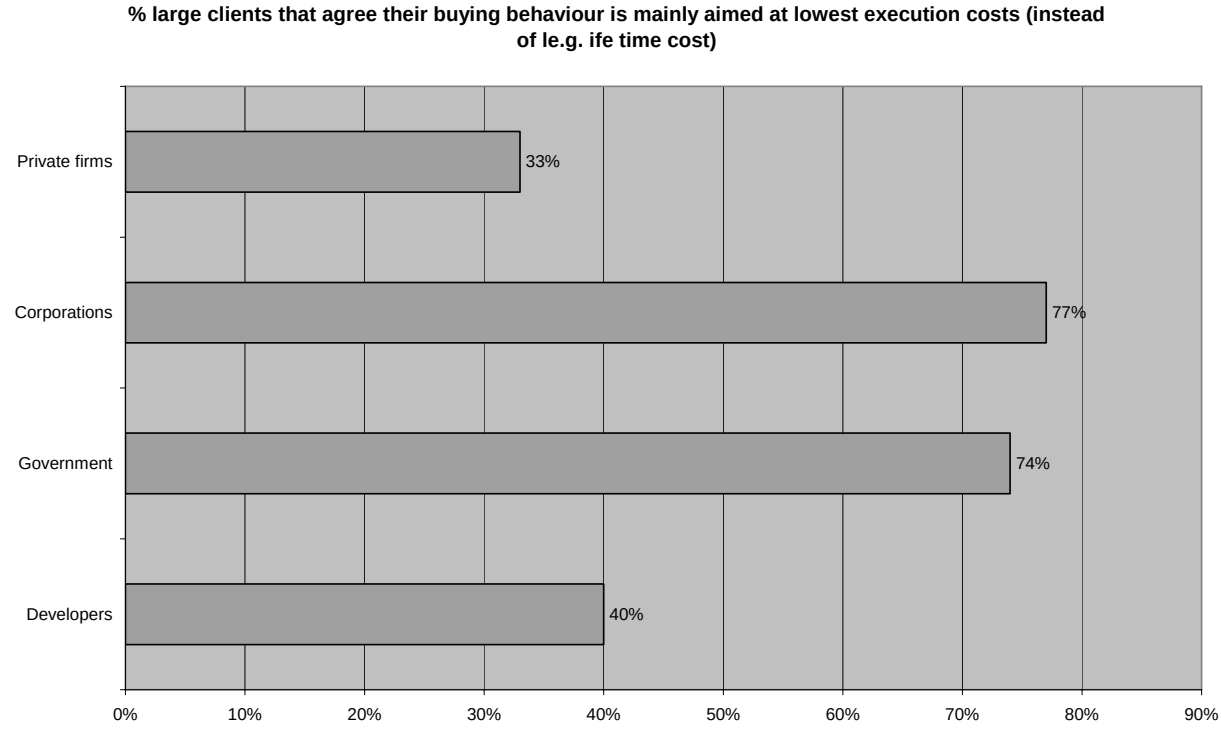

Figure 6: Percentage of large clients that agree their buying behaviour is mainly aimed at lowest execution costs (instead of e.g. life time cost) (EIB (adapted); 2006)

In about 3 out of the 4 instances will Private firms and Corporations archive the performance of contractors (see Figure 7). This data will be used in the future when allocating assignments. Developers only archive this data in 60% of the time and Government, surprisingly as one of the major players in the construction industry, only archives and uses this data for future tenders in 41% of the instances.

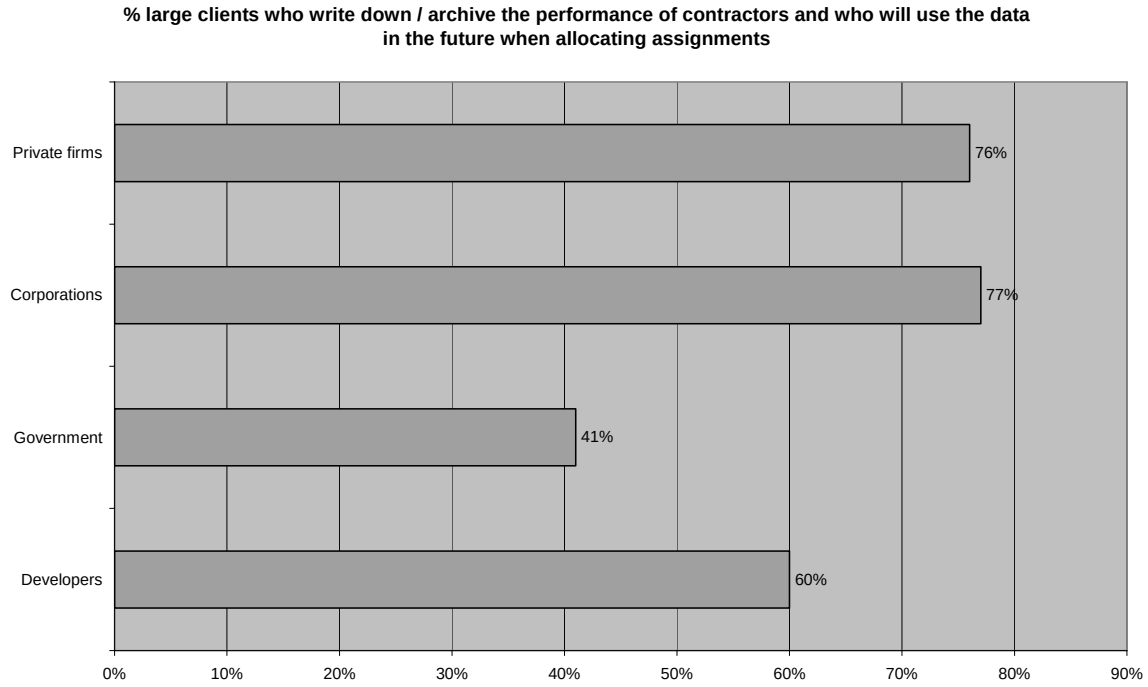

Figure 7: Percentage of large clients who write down / archive the performance of contractors and who will use the data in the future when allocating assignments (EIB; 2006)

Not surprisingly (see Figure 8), it is 50% of Private firms and 40% of the Developers who make use of performance-based contracts. In Figure 5 and consistent with this finding, it were the Private firms and the Developers who were not predominantly focussed on lowest execution costs, but most likely, also quality related criteria. On the contrary, Corporations only use performance-based contracts in 23% of the time. Government only in 16% of the cases.

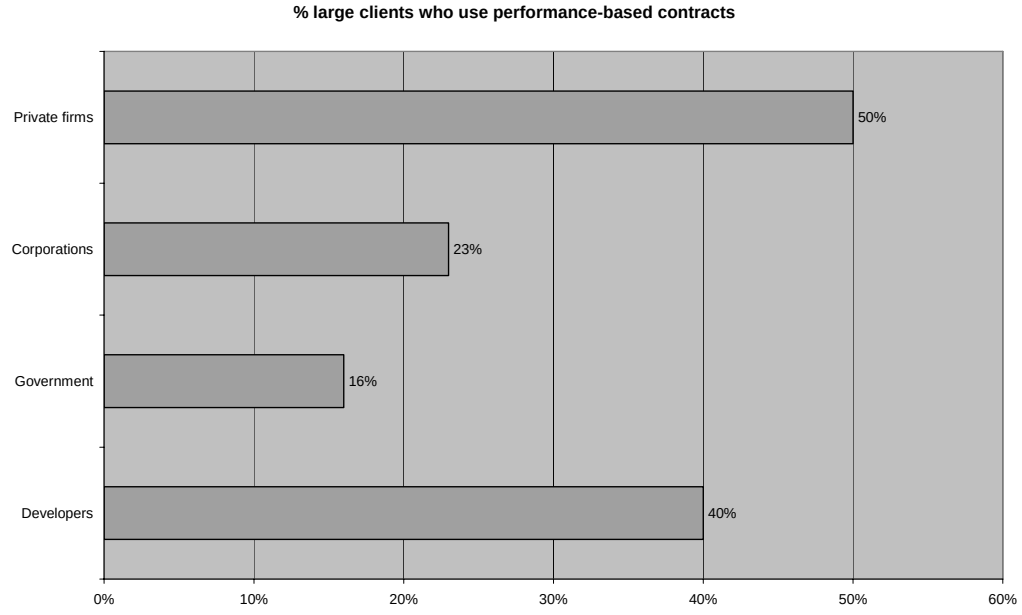

Figure 8: Percentage of large clients who use performance-based contracts (EIB, 2006)

Initiatives of change towards innovative ways of tendering

Competition policies have to strike a balance between competition and cooperation (Dorée, 2004). Competition does not only have to imply lowest price, as quality related criteria are also viable options. Cooperation does not always have to turn in to collusion and corruption, as legal win-win situations can also be attained. As seen throughout this paper, PIPS can contribute to these changes aspired to by the Dutch construction industry as well as bring in added value. However, in the construction sector, this delicate task is further complicated by the fact that government itself is a dominant market player (WRR, 1991 in Dorée, 2004).

The Netherlands, like France and Germany, sees a central role for government as regulator in the market place (Van Waarden, 1996). However, there is little policy drafted especially aimed at transforming the construction industry (Boes & Dorée, 2008). After the parliamentary inquiry into collusion in the construction industry as reported by Dorée (2004), national organizations RegieRaad (Organisation appointed to stimulate change in the construction industry in The Netherlands, 2005) and PsiBouw (Organisation made up of clients, the Construction industry, advisors and researchers to share knowledge and experience around innovation, 2004) were formed to institutionalize and support the change of procurement policy and overall reform in the construction industry. Initiatives were started, e.g. by PIANOo (Public client network for transfer of professional & innovative procurement knowledge) (2004) and Stadswerk (Organisation established for the transfer of knowledge around municipal issues, 1990), to encourage a transfer of knowledge between public clients responsible for tender procedures and purchasing (Boes & Dorée, 2008).

A joint effort of PIANOo, Bouwend Nederland, PSIB and Regieraad Bouw has led to a first pilot of a performance measurement system in the construction industry, with a website called www.pastperformancebouw.nl. In the first half of 2007, test measurements took place. Currently the discussion is on tuning the judicial rules into the system. The taskgroup Past Performance within PIANOo, is currently writing a business plan to further finance the initiative. The current bottleneck is the financing of an independent auditor. The intention is to set up a sector wide benchmark system with independent auditors.

The method currently used is based on a national and international survey of comparable systems and methods prototype designs of the instrument, the related discussion in several workshops, involving experts from both public clients on national and municipal levels and contractors, and the discussion of the interim results in a broad platform of actors involved, such as PIANOo, Bouwend Nederland, Regieraad and PSIB (Geraedts & Wamelink, 2007). Bilateral discussions with external experts and several trial measurements were performed on location-specific practical projects to test and evaluate the instrument's workability and expressiveness.

In order to make the performance measurement system work, there needs to be:

- Objective measurements and data

- Performance criteria being verifiable
- Contractual documents
- Dialogue; a willingness to listen to each others' standpoints
- Tribunal; a way to solve differences
- A solution for newcomers in the industry

The effort is aimed at getting some kind of an industry standard.

In the mean time there are also initiatives at company level. KWS Infra (a subsidiary of Volker Wessels) is studying the merits of Best Value Procurement. Heijmans NV is also implementing the PIPS methodology. Scenter introduced the methodology at IHC Merwede, the world's market leader in the design, fabrication and supply of equipment and services for the dredging and alluvial mining industries. Scenter also executed a market-consultation before the start of the formal tender procedures for Rijkswaterstaat to see how the Dutch construction market would react to the rather new way (in the Netherlands) of tendering based on Best Value Procurement.

The main reason for Rijkswaterstaat for using the Best Value process is that the procurement of 'Design and Build'-contracts usually leads to high transaction costs (efforts of all possible suppliers). At this time the tender capacity in the market is limited. Therefore suppliers have asked Rijkswaterstaat to develop a procurement strategy based on quality aspect to lower the transaction costs. Rijkswaterstaat has adopted Best Value Procurement to address this issue and tender major infrastructural works valued at €800 million. The outcome of the market-consultation showed that almost all suppliers are happy to see that quality (and not price) will be the major criterion in the process of awarding a supplier.

Also seven of the largest construction firms in the Netherlands have set up a kind of code of conduct. BAM, Volker Wessels, Heijmans, TBI, Ballast Nedam, Dura Vermeer en Strukton are well willing to cooperate more and better with their subcontractors and suppliers. A press release in Cobouw on the 30th of januari 2008 confirmed this. Experience of former projects with optimal cooperation show that the cost of failure can be reduced to the minimum and major cost reduction can be achieved. This way the construction industry will be more professional, social responsible and transparent and subcontractors will be chosen not only by price but *also* on quality. Suppliers and specialized contractors will be stimulated to develop themselves into co-makers or preferred suppliers (Cobouw: January 30, 2008).

Conclusion and Discussion

In reaction to the construction collusion of 2002, the Parliamentary Committee proposed tougher public sector procurement procedures and put its trust in the cleansing capacity of competition. This resulted in a natural defensive approach within the construction industry – focusing on control and preventing potential problems on accountability, legitimacy and reputation (Boes & Dorée, 2008). Collusions and cartels are viewed by most authorities as the single most serious violation of competition laws (OECD glossary, 1999). However the boundaries brought about by legislation need consideration. Duren & Dorée (2008) argue that European tender rules and laws do not allow the integrated application of PIPS (…). According to them there is a certain friction

between the tender principles (non-discrimination, transparency and objectivity) (…) (Duren & Dorée, 2008) and the application of PIPS in its original form. But, whether the EU legislation is biased toward traditional contracting, or whether it is just perceived that way, should be debated.

Although officials as well as managers are aware of the "pressures" towards more innovative procurement routes, the old practices are persistent. General managers in the construction industry seem as much engineers now as they were a decade ago. An explorative quantitative study shows that the mainstream paradigm of construction industry leaders today is much as it was in the past: technology- and project-oriented. (Pries, Dorée, van der Veen and Vrijhoef, 2004)

MacMillon (2001) points to the central role that governments have in supporting innovation via the regulatory framework. This study shows an analysis of 55 years of publications in two leading Dutch professional journals (Pries and Dorée). Innovations in construction remains to be technology- rather than market-driven. But regulations have a surprising impact, as over one-third of all counted new innovations are related to new regulations (Pries and Dorée, 2005). This finding can thus also be applied to regulations on procurement and tendering procedures with a obligatory broader focus on quality criteria in addition to lowest price. In addition, government itself, as mentioned before, is the major client in the Dutch construction industry and therefore can set the pace of change. Rijkswaterstaat is a good example of a national agency taking its front-runner position for change towards more innovative procurement procedures.

Adopting new and more innovative ways of procurement via tendering procedures such as PIPS does give rise to tension within the industry. The larger contractors – specifically those working for state agencies – are quick to acknowledge the changes in the market and to act (Boes & Dorée, 2008). But the SME's (Small and Medium Enterprises) are at risk of being pushed out of a market traditionally theirs. In the Netherlands this already resulted in the birth of a new contractors association for SME's in construction, taking a position against the larger contractors and policies that favor larger contractors (Boes & Dorée, 2008).

There is an explicit need for Performance Information on the industry as a whole, yet little 'hard' data is available. Resistance to change to potentially better ways of procurement are being strengthened by the fact that such 'hard' data does not exist. A few initiatives are being started of which one initiative is sector-wide while another initiative is at company-level, however more initiatives are needed to provide an objective and significant scope on this topic within the Dutch construction industry.

A movement to new integrated contracts and quality based selection is visible in certain regions but is still in its infancy (Boes & Dorée, 2008) in the Dutch construction industry. As in other industries, firms in the construction industry need to become more client- and market-oriented and innovative ways of procurement procedures, such as PIPS, are seen as a crucial factor in these change processes. The added value consists of better project results (more projects within planning, budget and clients' expectations, more value for money) and cooperation (Duren & Dorée, 2008).

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