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Reflections on  
*The First European Infrastructure Procurement Symposium (EIPS) 2012*
In the 1980’s the European Commission (EC) established a strategic policy for Trans European Networks (TEN-T) of motor-, rail-, and waterways, seaports and airports for the social and economic development of the European Community. Over the years this has resulted in a significant number of public transport projects (PTPs). This, however, has also led to a substantial reduction in favourable perceptions of policy makers, stakeholders and the general public, about the large cost overruns and time delays within PTPs.

Confronted with these lower expectations, client organisations have been searching for alternative ways of procuring, constructing, maintaining, operating and financing PTPs. Design & Build (D&B); Design, Build, Finance, Maintain (DBFM); Alliances; Early Contractor Involvement (ECI); Best Value Procurement (BVP) and Public Private Partnership (PPP) are interesting examples of innovative ways of working. Yet, public infrastructure remains a rather traditional field.

Contractual agreements have to fit within the regulations of the European Union. This still leads to a construction industry that is struggling with traditional failure issues, such as poor collaboration, time and cost overruns, lack of quality, and political failure. Besides practical issues, there appears to be friction between the institutional frameworks (EU regulations) and managerial practice that somehow block the roads to success.

Looking for better ways of procuring public transport projects, questions arise on topics such as collaborative intentions, building trust and innovation, performance, professionalism and competence, pricing, multi-party contracts, accessibility of information, risk allocation, supply chain efficiency, contractor selection, and participation of private parties. Throughout Europe numerous practices on non-traditional procurement practices exist in which procurement theory and topics are systematically researched on a broader scale.

On May 8th 2012 in Copenhagen the first European Infrastructure Procurement Symposium (EIPS) took place to connect these scientific findings with practical experience. The meeting was organised by the Network for Large Infrastructure Projects (NETLIPSE) and Next Generation Infrastructures (NGInfra). The Danish Road Directorate was the main sponsor.

The EIPS was part of the 12th bi-annual NETLIPSE Network Meeting focussing on implicit and explicit benchmarking of present and future experience from project clients, practitioners, researchers and scientists from different European countries active in the field of public transport projects. Keynote speakers provided historical and future perspectives on the impact of regulation on current project practice. Participants also discussed emerging topics in Business Arenas that were coordinated by representatives of different member states. In addition, strengths, weaknesses, opportunities and threats on procurement development were gathered for future research.

Results of the discussions that took place during the symposium are presented in this publication. I am very proud to present this first publication on procurement on behalf of NETLIPSE and Next Generation Infrastructures (NGInfra).

I hope you will be inspired after reading this publication to continue with efforts both in research and practice, leading to improved procurement of public transport projects practices. Maybe you will also be inspired to join our discussions on procurement at one of our next meetings.

I am very grateful for the stimulating cooperation with the Danish Road Directorate and NGInfra. In addition, I would like to thank all the keynote speakers, the leaders of the Business Arenas and all participants of the symposium for their invaluable contributions. Due to the enthusiastic input of all persons involved, the symposium was a great success.
The Current State of Procurement in Denmark

Background
The Danish Road Directorate is one of larger client organisations within Denmark with responsibility for 5% of the national road network which however carried 45% of traffic by volume. Funding is provided through government channels – currently 24 major schemes were under way, with many more minor projects also being progressed. In common with the rest of Europe resources are currently very restricted. Each major project requires specific parliamentary approval in a process that involves stringent budget review. External quality assurance and risk analysis form part of the process to ensure that, as far as possible, only viable schemes are supported.

The Road Directorate’s Approach to Contracting
The approach to contracting varies according to the nature of the project and market conditions at the time. A single project can be contracted with:

- several main contractors, each responsible to the client;
- one main contractor responsible for necessary sub contracting, or;
- an overall design and build contract.

Whilst initial cost is important, the overall project cost has to embrace the most economically advantageous outcome – the whole life cost of the asset having to be considered.

Were all the original ‘Netlipse’ contracting themes that had been identified – namely customising the contract approach, embracing all relevant selection criteria, appropriate risk allocation, incentivisation, skill training for contract managers and a collaborative approach – still relevant in the Danish context?

They are, but Jens felt that the impact of quality on life cycle cost was particularly crucial, especially in design and build contracts; with incentivisation also being important in the encouragement of cooperation and innovation.

Public Private Partnerships
Jens then considered his experience of Public Private Partnerships. The approach has been applied to a limited extent – but successfully in its initial application. Speed of delivery provides a big plus and standardisation of approach to, for example, bridge design and drainage systems has enabled savings to be made. The chosen contractor had been keen to get a foothold in Danish market, so quoted a very keen price at a time when market demand conditions were very slack. (Overall tender costs fell by 13% 2004/08 to 2009/11). Current market conditions favour the client with both contractors and consulting engineers very interested in market opportunities that emerged.

Could Jens identify a key factor in the success of this initial venture?
Market conditions at the time of contract letting had been a crucial success factor in the outcome of the initial PPP application. However, he was aware that the contractor’s experience had not been so good. It was important to ensure that in the long term a balance between client and contractor experiences was maintained. Dialogue is crucial – it is important to understand the difference between the ideal outcome and what is practical. Put another way – the best should not be the enemy of the good.

This first PPP project application has been relatively small scale – but was valuable in terms of gaining experience. Background information obtained at the time of the bid would provide a basis for organisation and evaluation of future bids – irrespective of the process chosen. Other general considerations also apply. There was a need to ensure the maintenance of a pool of bidders willing to commit resources to the tendering processes – work had to be spread around to ensure this, otherwise contenders would lose heart. So far a pool of six bidders for large schemes has been maintained. Fragmentation might draw benefits from specialist skills but at the cost of economies of scale. In specifying, the client needs to spell out required functionality rather than prescribe specific approaches or solutions. Solutions depend on the expertise of the engineers, not on the skill of the client.

Current Issues
What are the current key issues facing Jens?
As far as Jens is concerned the current top three procurement issues in the Danish construction market are:

- Maintenance of market awareness – cost trends need continual monitoring, and timing of contracting needs to take this into account.
- Engagement with contractors and consultants – to ensure their continuing participation in the Danish market
- Exploring means by which innovation could be encouraged. It is however necessary to strike a balance between uncertainty associated with innovation and certainty associated with tried and tested approaches.

Reference has been made to the problems facing public sector procurement organisations as cuts in available funding resulted in resources being reduced – is this a problem in Denmark? Jens recognised that this might be a problem in smaller organisations but so far this has not manifested itself in the development of public sector major works within the Directorate.

Increasingly rigid procedural frameworks are being highlighted as an obstacle to innovation, speed of delivery and entrepreneurial skill. What is his experience? Jens accepts that this might be true but feels that rather than expending energy on trying to eliminate the problem it is more realistic to accept the constraints as a fact of life – and to find ways to work within them in the most effective way.
Background
Three types of innovation can be distinguished in major infrastructure projects: in product, process and organisation. New collaborative practices are obvious examples of organisational innovation, but it is unclear whether these are associated with an increase in product and process innovation in projects. Many practitioners have acknowledged good effects of a raised degree of project collaboration - however “Too much trust is death to innovation” is a provocative statement found in the literature. A balance between creativity and control has to be established.

How collaborative intentions are translated into processes and ultimately into outcomes is an important topic for research. Complications may arise from unwise risk allocation among project participants, weak or wrong incentives, excessive ambitions, failure to understand that group processes have their own timetable, as well as vulnerability to external disruptions. All this should be possible to avoid by engaging in learning from earlier experiments in collaborative practices. The Business Arena began with a presentation of the case of the City Line Project, followed by an academic conceptualization. Participants then reflected on their experiences, relating to the case and the theoretical framework.

Case study
The City Line, with about 6 km in tunnels, doubles rail capacity through central Stockholm. The Swedish Transport Administration finances the railway infrastructure while the Stockholm County Council and the City of Stockholm share the responsibility for two new stations. Contract No B4-9523, Norrström Tunnel, drives a rock tunnel including rock excavation for track tunnels and station area, service tunnel, concrete works such as vaults, walls, lift shafts, escalator shafts and steps as well as water/wastewater facilities and ducts. Although the design in the tender documents was incomplete, the form of a Construction Contract was chosen. Design continues throughout the period of this collaboration contract, where the Contractor is assumed to be active in proposing methods, solutions and purchases. One year before starting production, specialist staff from the client, the consultants and the contractor was co-located in order to begin developing the design.

Discussion statement and outcomes of the discussion
The initial discussion statement was formulated as such: Which types of collaborative arrangements with consultants and contractors encourage them to introduce design changes in major infrastructure projects?

Dutch experiences were brought forward, emphasizing that innovative design changes suggested by the contractor might lead to a decrease in quality, unless there were also clear project goals for quality, time and cost. If contractors wish to build as cheaply as they can, it is a good idea to ensure they will have to maintain the project for 5-10 years. However, it was pointed out that an efficient scale for a construction project might be much less than an efficient scale of operation for maintenance activities. The City Line has shown that it takes time to create a project culture of openness; however, the advantage lies in the many discussions to find best solutions, not in achieving major innovation. Bonuses are better than penalties, and it would be good to see that incentives also reached the construction workers. During the discussion Leendert Bouter notably stated: “There should be clear goals for all parties and also rewards for all parties. As to knowledge, instead of competing on expertise, ask: What is your expertise? What is our expertise?”

As a result of the discussion the final positioning statement can be articulated as: “Construct Contracts allow creativity, provided specifications are not too detailed, the Contractor is competent, committed to project goals and properly rewarded.”

Jan Bröchner
Chair Professor of Organisation of Construction, Chalmers University of Technology in Sweden. His research, often based on a services approach, includes public procurement issues and construction innovation.

Björn Kruse
Head of Procurement for the City Line Project, a major project within the Swedish Transport Administration. Björn Kruse has 25 years of experience in procurement, private as well as public.
In the scale of providing infrastructure, this was a sea change from any previous experience or implementable plan in the State. From the inception of the NDP it was recognised that Public Private Partnerships would provide a possible solution to the rapid implementation of this badly needed infrastructure. Indeed, in terms of capital expenditure for comparable PPP and procurement experience. Buying infrastructure is a barrier to growth.

For states with challenging economic conditions, infrastructure investment is attractive because:

- PPP is the most expensive way to procure Infrastructure. We know this from basic economics and procurement experience. Buying on credit will always cost you more and the capital expenditure for comparable PPP and design and construct procurement routes does not compensate for this.
- PPP is extremely useful in bringing large projects to tender in as short a time period as possible.
- The regular periodic nature of PPP payment attract private enterprises which find the predictability of this advantageous. These tend to be international organisations which introduce expertise and competition into the local market.
- Operational repair and maintenance costs are predictable and can be budget for in a longer term, planned manner.
- PPP payments will place an unavoidable burden on public budgets for a period of several decades no matter what the economic performance of the State. This may take a disproportionate amount of infrastructure budget spend should there be a significant downturn in the economy.

The position today
Today, the UK and Ireland are in the deepest recession for decades where the financial crisis has caused economic and traffic growth to stall or fall. However, China and Asia are still growing strongly and in these areas increased demand for infrastructure is likely to continue linked to trends of population growth, urbanisation, rising income and higher expectations.

For states with challenging economic conditions, infrastructure is a barrier to growth.

Conclusions from the Irish PPP experience
- PPP is the most expensive way to procure Infrastructure. We know this from basic economics and procurement experience. Buying on credit will always cost you more and the capital expenditure for comparable PPP and design and construct procurement routes does not compensate for this.

Additionally, for government agencies, infrastructure investment is attractive because:

- Politically – it is still a sign of progress, development;
- Economically – it plays a hugely important role in facilitating economic growth, productivity, and competitiveness (China, Asia);
- Technically – it has had a remarkably successful track record in engineering terms;
- Financially – it can be seen as part of the “infrastructure” asset class – attractive to players looking for long term, “stable” returns.

Discussion - The critical success factors for a successful PPP programme
- Have clear objectives: both strategic and for the project.
- Don’t try and “outsource” the impossible - understand the market’s capability and capacity to deliver.
- Think programme not just projects? What synergies, economies could be captured? What are the impacts of other infrastructure on the project in question?
- Build coalitions.
- Create a centre of expertise, involve the private sector – leadership.
- Build confidence in the process – generate early wins and celebrate success.

Future of the Anglo Saxon PPP
(United Kingdom)

Background
On 15th November 1999 Ireland launched a National Development Plan (NDP) for 2000 – 2006. The NDP was the blueprint for Ireland’s economic progress and provided for the investment of EUR 57 billion over seven years in infrastructure, productive investment, education and training, regional development and social inclusion.

In scarcely 10 years, all of these 11 schemes from the previously published Roads Need Study as being suitable for procurement by PPP. In scarcely 10 years, 10 of these 11 schemes have been procured through this route with the remaining scheme ‘shovel ready’. Within this period, Arup in Ireland designed over 240 bridges and been involved in over 650 km of road schemes including several landmark and award winning structures.

This familiarity allows us to review the Irish experience and compare the use of PPP against other forms of procurement utilised simultaneously and forecast the future of the Anglo Saxon PPP model.

The Future
The Future for Anglo Saxon PPP is therefore bright!

There has been a rapid expansion in the use of PPP procurement in China, Russia, India and Turkey in the last decade with these states accounting for approximately 36% of PPP capital spend over that period. This trend is set to continue.

Additionally projected capital spend on infrastructure, in areas experiencing both growth and more challenged economies, remains healthy. Governments are planning to use a mix of funding options to deliver infrastructure projects. However, given current constraints on government funding, significant private finance will be required to deliver even minimal infrastructural requirements over the next decade. PPP is attractive to lenders, due to low default history, proven risk model, strong European and global pipeline, long term stable contracts, and proven good reward for the risk profile. Future trends may well be seen in the secondary PPP Market, the sale of existing assets to fund new construction; and using existing assets to create a revenue stream.

The Future for Anglo Saxon PPP is therefore bright!

Mike Evans
Infrastructure Leader
Europe, ARUP

Peter Adams
Associate Director
ARUP
Perspective on Procurement from Recent Practices, Now and in the Future

Background
The Femern Links refers to a recent Danish experience of building cross-water links represented an escalation in the complexity of the project context:
- The Great Belt - a project involving 100% Danish sponsorship, legal framework and location.
- The Øresund – a project involving a 50:50 split of client input, legal framework and territorial involvement between Sweden and Denmark, founded on an international treaty.
- The Femern – a 100% Danish sponsored and treaty based project. However 50% of the project was subject to German territorial and legal constraints.

Øresund’s Success
Øresund has been a huge project, delivered on budget and ahead of time without formal arbitration or dispute between the parties. What were the crucial success factors?
Peter identifies the following key aspects in the project’s success:
- The client managed the process framework, not the detail of execution, in a proactive fashion with clear delegation of responsibility.
  - The contract specification provided functionality requirements and illustrative design. Bidders were free to develop their own responses to meeting the project requirements.
  - Partnership was encouraged with all stakeholders – and had been successfully maintained throughout the project’s duration.
  - The process was based on total openness from its commencement. Unsuccessful bidders were told why they failed. Subsequently the process continued to apply true partnership principles with conscious effort by all to ensure that all benefited from the project.
  - “No surprises, reasonable profits and quality inputs and outputs” was a continuing theme. The owner/client sought to be part of the process of solution, not part of the problem – and was successful in this aim.
  - Risk was carefully and continually evaluated with controllable risks remaining with those best suited to manage them. Uncontrollable “gambling” risk remained with the client.
In the Femern context many of the perceived Øresund success factors of ‘Keeping it simple’, ‘Client partnerships’ etc. were more difficult to sustain. The link was far more important to Denmark (and Scandinavia as a whole) than it was to Germany. In crude terms – although the project was underpinned by treaty – in attitude Denmark was committed, Germany was involved.

Femernbelt Planning
To what extent has it proved possible to ‘read across’ lessons from Øresund to Femern?
Femernbelt planning is based on the lessons of Øresund but the framework is far more complicated. Reference has already been made to the attitudinal differences between the Danish and German authorities. In addition, with the passage of time, the Design and Build environment had become far more challenging. Environmental Impact Assessment (EIA) requires many details – which logically would be finalised after tender (during the design development phase) – to be spelt out in detail prior to completion of tendering. Femernbelt planning timescales on totally prudent, pessimistic assumptions would extend over nine years.
Current planning, whilst not reckless, assumes a timescale of seven years from treaty to construction commencement.

In addition to EIA framework constraints, corporate responsibility and health and safety regimes place restrictions on innovation and entrepreneurial flair. Risk aversion is endemic amongst regulators – institutionally there was little premium for stimulating change or imaginative approaches. There was no blame for following precedent – but the possibility of criticism if innovation is sanctioned.

Do these issues stimulate or inhibit innovation?
In Peter’s view, given an open partnership approach, these problems can stimulate project participants to work as a team to find innovative approaches working within constraints imposed by the framework. However effort, which could best be spent innovating towards achievement of project goals, is diverted to overcoming artificially imposed obstacles.

Current Issues
Given the prominent place that Øresund occupied in the original studies it is not surprising that many of the lessons from that project found their way into NETLIPSE ‘best practice’. Were they still as applicable? Yes, perhaps even more so. However in putting the principles into practice the power of personality - the human factor - cannot be overestimated. The crucial ingredient for project success is the enthusiasm and commitment of the partnership team.

Did Peter see any signs of a more flexible attitude emerging from the setters of the various frameworks at national and supra-national level?
No – on the contrary – the project environment was becoming ever more risk averse. If anything rigidity was increasing.

Was it worth expending effort to try and effect an attitudinal change in those responsible? No – not in the timescale of existing project planning processes. Effort was best directed at working locally as smartly as possible within the constraints imposed by the various frameworks and directives.

Against this background – somewhat pessimistic – are there grounds for optimism?
Yes certainly. Firstly there was an ever growing demand for infrastructure improvement, leading to a constant stream of challenging and exciting projects. Secondly the partnership model provided a clear platform for delivery success. The challenge was to ensure a positive attitude towards project delivery – not just within the immediate partnership, but across the entire spectrum of stakeholders.
Alliance contracting – one for all and all for one (Finland)

**Background**

Project alliance is a project delivery method based on a multi-party contract between the key players in a project whereby the parties assume joint responsibility for the design and construction of the project to be implemented through a joint organisation, which includes the owner or client, and where the players share both positive and negative risks related to the project and observe principles of openness in pursuing close cooperation.

The basic idea is that risk is borne jointly and reward is shared on the basis of the success of the entire project. This makes the parties take each other’s views into account and collaborate more efficiently for the benefit of the project. The method also allows combination of a wide range of expertise needed to foster innovation and to make demanding ventures successful. That, again, necessitates early selection of the players and makes offering services at a fixed price impossible. The solution to that challenge is selection based on a thorough review of team performance and capacity.

Project alliancing and its use have developed strongly in recent years, especially in Australia, from where the method found its way to Finland. The Finnish Transport Agency (FTA) adopted it first for the renovation of the Lielahti–Kokemäki railway section and later on for the construction of the Tampere lakeshore road tunnel. Governed by public procurement legislation, the procurement was based on a step by step negotiated procedure where overall economic benefit was the selection criterion.

In the procedure, the selected tenderers receive a “Request for Proposal”. After tender narratives have been submitted, the number of tenderers is reduced based on an assessment process including interviews. Thereafter, two competing teams continue to the next stage involving workshop tasks that are evaluated, which together with the combined team fee (incl. overhead plus profit) forms the basis for selection of the best tender. The member companies of the selected team enter in a “development agreement” with the client for the design of the project in order, for instance, that the project’s target cost can be set and jointly agreed. Only then can the actual ‘implementation contract’ be signed.

**Case studies**

The first two alliance projects by the Finnish Transport Agency (FTA) that were presented as case studies to set up the discussion are:

- **The Lielahti-Kokemäki rail section.** The section extends from the City of Tampere nearly 100 km towards the west. It is a replacement and modernization investment required by the decades old railway superstructure with a total cost of nearly €100 million.
- **The Tampere lakeshore road.** The road serves as a major entry road to the city as well as a thorough road for long distance traffic. The aim is to bury part of the lakeshore road in two 2.3 km tunnels of three lanes in each direction (passing under the city’s buildings and structure), to widen the rest of it, etc. The project is estimated to cost €185 million.

The first rail project is by nature more of a normal reinvestment carrying no extraordinary risks or difficulties. Thus, it may not be ideal for implementation through project alliance. Yet, it was suitable as the first pilot project to increase experience since it could be too risky to start experimenting with more difficult projects.

The road project is, by contrast, a challenging one. Tunnelling works involving all the junctions, temporary traffic arrangements and the stakeholder issues related to urban development pose challenges.

At the time of the conference the rail project has progressed to late development phase while the tunnelling project is just about to finish the team selection and alliance formation stage. Therefore, although all the alliancing practices were targeted in the business arena presentation and discussion, a special emphasis was given on the team selection and establishment procedures preceding actual joint development and implementation phases.

**Possible obstacles**

Numerous obstacles may well appear to the introduction of the novel type of project practice:

**Team selection**

- During early stages the project is fraught with uncertainty which makes it difficult to estimate costs reliably. Price criteria as such cannot be used in selection and this makes public clients cautious.
- Design proposals are not prepared and team selection is largely based on the estimated team competence which may be challenging and prone to misappraisal due to the subjective nature of measurement.
- The competition precedes the design, permitting the incoming alliance to utilise the ideas of a proposer not selected. This could be seen as unfair and thereby limit the interest of firms in entering a competition on an alliance basis.

**Collaborative culture**

- Successful realization of an alliance requires the players to create open and trustful relations which may be a challenge for parties having their background in the traditional ‘zero-sum game’, where one wins at the cost of others.
- Parties to a multi-party contract enter in an agreement stating ‘we shall do it together’ without a clear scope of liabilities – this may not be acceptable to all stakeholders since parties carry a risk from other parties’ work.
- Alliance members agree to unanimous decision-making and rules out litigation or arbitration although different views are likely to arise later on due to the complexity of the project and the differing fundamental interests of the parties.

**Value for money**

- Due to the one-off nature of the projects and lack of price competition proving ‘value for money’ is challenging which may be a problem when it comes to probity auditing and could weaken public support for the use of the model.
The target cost is negotiated only after the selection and joint design, and therefore, despite the open accessibility of cost information, the approach may not expose all cost items unambiguously and in a fail-safe way, e.g. pricing of own equipment.

The parties to an alliance form a joint organisation which may become a challenge due to lack of skilled people on the client’s side as a result of downsizing of client organisations and increasing outsourcing of their duties.

**Overcoming the challenges**

It is clear that definitive, universal conclusions cannot be drawn. Possible conflicts are dependent on the application whilst the use of the approach by the FTA is in its early phases. Yet, potential ways to overcome the obstacles were discussed.

- **Team selection** for an alliance is surely different from the general practice, but it does not mean that the cost viewpoint is neglected. In addition to the team fee, the cost viewpoint is reflected in the selection through the proposed methods for cost control, critiques of the budgets presented and development possibilities suggested. As remarked in the discussion, the weighting of the team fee in the selection criteria has to be relatively small in order to avoid the temptation to lower the fee and try to compensate for that in the subsequent pricing. The assessment of team ability, again, is very thorough including workshop activities over several days and a statement given by an observing psychologist; in addition to more normal assessment of interviews and proposal narratives. To compensate for abortive effort and options ideated for the client, in the latter project FTA has paid small honorariums to tenderers that were not selected. Both projects have also attracted numerous competitors to apply and tender. All in all, the FTA’s view is that the best team can in all probability be found although it is difficult totally to remove all shadow of doubt.

- **Collaborative culture** is not an expression typically associated with the traditional practices of the construction industry. Therefore a lot of training was considered necessary prior to the adoption of alliance contracting in FTA projects. In the discussion, it was however believed that there are likely to be differences between countries as to how straightforward and easy a change might be. Whilst there were no legal or other impediments for the FTA to enter in a contract targeting in a joint organisation and risk-sharing basis there are signs that the situation may well be different with some foreign owners / clients. Unanimous decision-making and the absence of litigation or arbitration that have been included in the agreements are issues that will be only tested later. However the fact that ‘down under’ hundreds of projects have been implemented by using alliance contracting with minimal outward problems indicates, however, that we can avoid major disagreements emerging.

- **Value for money**, or rather proving it, tends to be a special concern due to the failure to present price competition in the process as described. However, the practice follows an ‘open book’ principle in the actualization phase: the costs of any party are known to others and a business case comparison has to be made before own labour may be employed in any major works in the project. In most cases a comparative quote can be obtained prior to decision on launching the work while ‘the best for the project’ principle will be followed without exception. For this to succeed requires, however, deep involvement of the client’s representatives in the team. This seems to be a challenge due to previous downsizing: the client now employs consultants for taking the project into competition and they continue as a part of the client’s contribution to the alliance organisation when established. Another feature that supports achieving value for money in the FTA alliance projects is the phased contracting method. Once the selection of the best team has been completed the subsequent contract is only to develop the project jointly and estimate the target cost of the project. The parties may decide to continue the design until a target cost is arrived at that satisfies both the client and the service providers. Or if they fail, the client may terminate the agreement by paying the accumulated costs while it holds the right to the design. That, again, enables, subsequent market testing by asking for quotes from the market. If the parties agree on the target cost, risk premiums will be less than in normally tendered fixed price contracts, and change orders will not cause significant cost increase as often happens in a case of a competitive lump sum contract. Thus, the apparent spending in a case of collaborative involvement maybe expected to lead to lower cost than competitive tendering, especially if the target costing systems ends up with savings in the implementation phase.

**Conclusions**

On the basis of the discussions during the business arena it seems obvious that ‘alliance’ is commonly used as a general concept to describe collaborative arrangements in general: different countries and people have different meaning for an ‘alliance’. Therefore, whenever alliance has previously been referred to in the European context it is most likely to mean something other than the ‘pure alliance’ that is in use in the FTA projects and the subject of the business arena discussions and this report.

Different countries also have different cultures and in some countries the industry is more adversarial than in some others. Consequently, this may hinder the introduction of alliance contracting in them. In any case any introduction will require a lot of work. The change of culture is a real challenge. Enough time and resources should be reserved to enable stakeholders to be trained to understand the context of the aligning philosophy. Subject to these conditions it can be concluded that alliance contracting offers a novel option for the owner/client. However projects are different and alliance contracting is not for every project. Alliance contracting is, first and foremost, a procurement method for projects that involve a lot of challenge, uncertainty and interfaces. These challenges make the integration of competencies profitable. Early team involvement emphasizing team competence is a major vehicle in this procedure in addition to the joint sharing of risk that serves to align the interests of the parties for the good of the project. Thus, with appropriate preparation we may expect it to offer good value for money in challenging projects. At the same time it offers a means to develop the culture and performance of the construction sector more widely in Europe.
Future perspectives on PPP in the UK

Background
The scope for Public Private Partnerships within the United Kingdom is less than in many European countries, since many projects – which would be suitable for a PPP approach elsewhere – were effectively the responsibility of fully privatised enterprises. So for example the expansion of the port of Felixstowe; or the development of Heathrow’s Terminal 5, and associated renovation of other terminal facilities, were funded as commercial opportunities by the facility owners using appropriate funding mechanisms available to private sector companies.

It is however noteworthy that as a condition of planning consent – a national or local government responsibility – supporting infrastructure, normally provided via the state such as access roads to airport terminals or expansion of rail link capacity, could become a condition for planning consent. This transferred the financing burden to the private sector.

Across the world, politicians could be averse to current spending – with the immediate burden on the public purse that ensues - and therefore attracted to finance schemes where the burden of payment falls on future generations. PPP has met this sentiment and, in addition, has offered early delivery, but sometimes at the cost of restricting future flexibility as funds will need to be diverted to meeting past debt obligations. Thus the paradox of new hospitals, with state of the art equipment, unable to be fully utilised because of staff shortages. These have arisen because significant elements of operating funds are pre-empted by the need to meet PPP costs from past capital investment. Consideration of PPP schemes might not give sufficient weight to future priorities when immediate political considerations are concerned.

In addition some projects by their nature are unsuited to a PPP approach. For example maintenance and / or renewal of existing assets which remained in use whilst being updated present huge challenges. Within the UK, two PPPs associated with renewal of London Transport infrastructure had come to grief – one partner falling into bankruptcy, the other relinquishing the contract with the responsibility having to be brought back ‘in house’.

According to Stuart “an unsuitable PPP has the same impact on longer term financial performance as swimming with lead boots on!”

Rationale for a PPP Approach
Stuart, are all PPP projects therefore ‘a bad thing’?
No, not all PPP projects are flawed. Providing the project offers a solid cost-benefit ratio with returns that can legitimately be represented in cash terms – for example in toll or fare income, realisable internal operating efficiencies, or quantifiable societal benefits – such as reduced congestion – then PPP can represent a sensible approach.

In addition – and even in the current stringent financial climate, in contrast to many pure private schemes – funding has remained available. An implicit (or explicit) government-backed guarantee had served to further reduce the cost of funds.

Early efforts to de-risk PPP projects from the standpoint of the public sector proved excessively expensive as the private sector partners sought to compensate for greater uncertainty. Risk has now generally been allocated to the party best able to manage it and careful consideration of the factors involved could ensure the right balance being struck between ‘cheaply’ funded public sector risk and expensive risk transfer to private partners. However it has to be recognised that, in contrast to some European environments, the legal framework for UK based PPPs is extremely complex (and expensive)

The Future
As already has been noted the PPP approach does not represent a cheap option – it remains the high finance equivalent of a credit card, with same advantages and disadvantages.

Yes, gratification could come more quickly – but payment remains inevitable and more expensive and has to be funded from current operating funds. According to Stuart “Live now, pay later” remains a mantra to be repeated throughout the process.

Could Stuart convert the mantra into more practical terms?
The PPP plan needed to be examined rigorously and critically to establish:
- Could future benefits really be quantified in realisable cash terms?
- What risks were there to achieving those benefits?
- Was it vital to invest NOW? Could investment be cost-effectively deferred?
- Had the true transactional and long term finance costs of PPP been exposed to all concerned? Ignorance was never bliss!
- Were you ready to do the project well - was the right framework for project delivery in place?

It was then necessary to think twice, and then think yet again. Then, and only then, should a PPP be undertaken!
Background
Best Value Procurement (BVP) is a procurement method that aims to select the most suitable vendor for the project considering both price and performance instead of just price (Kashiwagi 1991, 2010). The results of over more than 1000 BVP-pilots worth $ 4.4, billion are: 98% customer satisfaction, less than 1% vendor deviations, 5% increase in vendor profit and up to 90% less transactions. Price based awards, which do not recognize or give credit to differences in supplier quality, value and performance will fail to motivate contractors to be more proactive, to offer higher quality, to pre-plan or to utilize experience. To move from low performance to higher performance, efficiency in the supply chain must increase, and cost, management, direction and control from the client must be minimized. The level of supplier expertise must increase which will only come with increased supplier accountability, preplanning, measurement of performance and quality and risk management.

The implementation of BVP in the Netherlands required modification in the process to fit within European procurement law. The main advantage of the approach is based on deductive logic of the Information Measurement Theory (IMT) minimized management, direction and control by clients of expert suppliers. The logic defines why things can happen only one way and how that can be used to predict the capability of experts. Experts can predict the future outcome, explain it very simply, pre-plan the project to minimize risks and costs and optimizing profit by efficiently undertaking the process.

Case study
Rijkswaterstaat has adopted BVP for 16 of 30 bottlenecks projects (€ 600 million) in order to resolve highway congestion as quickly as possible. In 2009 the tender capacity in the Dutch market was limited; political pressure was high. The 16 projects were divided into 6 clusters. The projects had to be awarded to the contractors that best understood the projects from beginning to end because of the need for speed. Following the logic of BVP: only the best value vendor is able to pre-plan and define the scope of work within the constraints of early contractor involvement. An expert vendor has less risk and can deliver quality at a lower price. This has been the largest pilot in sixteen years development of Best Value Process and the first within European Legislation. The transaction costs were reduced by 50% and many roads were opened before schedule.

Discussion statement
Best Value Procurement adds value in any delivery model but needs a directed paradigm change.
Background
Since 2005 the Chair of Project Management at the University of Kassel has developed a guideline for partnership between client and contractor in German infrastructure projects. The principal target of the project was to develop a partnering model for public infrastructure projects respecting the specific conditions of public financed road and railway projects in Germany. The aims included a reduction of conflicts, avoidance of litigation, optimization of the project in sense of value engineering, raising the level of efficiency and finally the reduction of construction time and saving of money. The guideline had to be capable of use without changing the rules required by legislation. This led to a concept which included Early Contractor Involvement.

Case study
During the Business Arena at EIPS several concepts arising from the guideline were discussed. First, the term ‘early involvement’ was discussed. Two types of early involvement were distinguished:

1. Use of knowledge and experience from construction companies, and
2. Involvement of the contractor in the planning phase, on the one hand to use his special knowledge and experience and also to give him influence on the product and the processes for which he is responsible later.

This lead to a revised definition of early: Generally prior to the execution phase, different from D&B, but with two variances: - at a very early stage of the project or, - only at advanced (to be defined) stage of the project.

Employing the ideas and experience of the construction companies (executing companies), innovation, optimization, direct influence on the design, certainty of costs and time certainty and no or less conflicts about scope, contract etc. were identified as important advantages of early contractor involvement. However if the contractor was involved early in the project, the disadvantages could be that the company is not independent (pursues its entrepreneurial interests), the company will be excluded from bidding because of participation in the design phase, the contractor will not be involved in design and the company may act strategically. If the contractor were involved in an advanced stage of the project, price competition could be severely restricted.

Discussion
The discussion during the BA led to two variants of the early contractor model:

1. Basic early contractor involvement (not preferred)
   Involvement in a very early project stage/early planning phase, construction companies are required to participate in the planning and bring in their know-how. They have to be paid for their services, since they will be excluded from bidding for the same project because of their designer-knowledge. This variant was not considered viable, because there were many disadvantages, especially excluding the construction companies from bidding. It was also thought that companies probably will not fully participate and maybe not commit their ideas in full, because this would give advantages to their competitors.

2. Advanced contractor involvement (preferred)
   Involvement in advanced planning stage/design phase, e.g. legal permission/planning permission or calculable planning permission (progress about 70/80%). During the tendering process (no competitive dialogue, but a negotiation process with pre-qualification) further detailed definition is provided by the bidders. They have to do this in terms of the offer’s functionality and take it into account regarding the price. The client may demand additional works and may negotiate with the individual bidders during the negotiation process. The evaluation is based on price, quality and evaluation of the proposed solutions. Thus a target price with an optimization potential is agreed. It has to be negotiated until the client and the bidders agree that the functionality, desired by the client, can be achieved by the jointly defined works. On this basis, the decision is made, the price is agreed and the contract is concluded.
Reflections on the First European Infrastructure Procurement Symposium 2012

With 55 participants from 13 different countries, three key-note speakers and five business arenas, we consider the first European Infrastructure Procurement Symposium (EIPS) to have been a very successful combined NETLIPSE – NGInfra activity. We hope that all participants enjoyed the programme and discussions as much as we did.

Conflicts between institutional frameworks and managerial practice

The presentations and business arenas prompted many participants to share their thoughts about the future of the procurement of large complex infrastructure projects. Our ‘wish tree’ was covered with colourful notes representing the strengths, weaknesses, opportunities and threats of the current procurement climate for infrastructure projects. This input offered an excellent basis for an outlook on the future of infrastructure projects. Our ‘wish tree’ was covered with colourful notes representing the strengths, weaknesses, opportunities and threats of the current procurement climate for infrastructure projects. This input offered an excellent basis for an outlook on the future of infrastructure projects.

Strengths

According to the participants the strengths of the current procurement climate relate to the fact that the value for money approach puts focus on quality instead of lowest price, and creates an efficient and effective way to realize projects with mutual benefits. There are equal chances for market parties and an equal level of playing field for bidders, with fair opportunities for negotiation and discussion about the conditions. This enables the development of trust between the parties involved in the realization of infrastructure projects. Possibilities exist for alternative contractual agreements, improvements and innovations, and experiences can be shared with other countries and different sectors. The fact that clients are forced to take responsibilities and think about the execution of a project is also considered as a strong point of current procurement practice.

Weaknesses

Nevertheless, the notes indicated that we also have to be aware of the diverse weaknesses of current procurement practice. These mainly relate to the lack of real collaboration and trust between the partners. Transaction costs are still high and incomplete contracts often lead to a culture of conflict after contract close. Including private money does not lead to an increase of the level of expertise within the projects, and SME’s still have a hard time getting contracts awarded for large infrastructure projects because they do not have the right experience. On the client’s side, expertise and knowledge about project delivery is leaking and trust in contractors is hard to find.

Threats

The weaknesses are strongly related to the threats that were noted by the participants. Although trying hard, it will be tough for clients to keep up the right level of expertise within their organisations in times of restricted budgets and governance crises. From the client side this could lead to a technical brain drain of (public) client expertise and a higher failure rate in projects. But also for private organisations it could be harder to develop a business case and find investors under the right conditions. EU legislation could develop in a very rigid and strict direction and complicate project practice even further. There will be a large demand for professional tenderers, which places the challenge of educating enough experts on all parties. On a project level the impact of layers could increase, which would decrease the pace of the projects due to complex discussions about fulfilment of the contract. Furthermore, the diversity of projects could lead to increased transaction costs for the project delivery organisations and complications in execution and maintenance of infrastructure.

Opportunities

Fortunately, the current situation also offers many opportunities. By involving contractors and consultants early in the process, their expertise can be utilized in engineering the tender processes. Their expertise can be used to transfer the management of the construction process to the market, while clients can focus on portfolio management and strategic asset management. Learning from other projects and other sectors will also increase the quality and competences of clients and other parties that are involved in infrastructure. Sustaining knowledge exchange networks, such as NETLIPSE and NGInfra, will be vital in this perspective. The multi-disciplinary character of the sector and new contributors offer new perspectives on traditional processes and open up scope for change. Correct application of standardization and qualification processes could contribute to the creation of a common language. This would also stimulate optimizing and integrating the supply chain. New procurement and contracting methods, such as best value procurement and the competitive dialogue, show that more interaction between parties in the tender phase pays off in terms of transaction costs and social collaboration. This gives reason to believe in the development of a specific procurement profession.

This first European Infrastructure Procurement Symposium was an eventful happening with much lively discussion. Sharing experiences in this matter has once again proved to be an effective way to generate new ideas and increase knowledge. We look forward to many more such meetings.