



Project delivery in the mining industry—options and trends

by B. McCosker*

Synopsis

The choice of the appropriate delivery process for a project is often not adequately thought about. The industry needs to be prepared to break its preconceived mind-sets on delivery procedures. Industry should also be prepared, on a project by project basis, to commit to a critical review as to how the assessment and then selection of the best procurement method can best optimize the project outcome for both client and contractor. Conventional standards and biased reliances and experienced based preferences should be challenged. To achieve this requires a paradigm shift in attitude to both the process of tendering and the evaluation of tenders. Tender and contracting practices are dynamic and have moved away from solely cost based assessments. Tendering contracts arise imposing changed duties upon owners. Traditional contract delivery models have shifted, reflected in part by the trend towards relationship contracting. The categories of contract options are not closed. Many are but hybrids of other time-tested models. This paper considers options available for any brownfield or greenfield project. The principles outlined are translatable to supply, upgrade, operation and maintenance arrangements.

Introduction

The industry's commercial and contractual practices can be improved. Traditional 'hard dollar' delivery methods (e.g. construct only) are still prevalent, however there exists a wave of support for the consideration of more non-traditional or 'soft dollar' delivery structures. Focus is readily put upon contractual and legal problems encountered on a project, particularly if the parties fall into dispute. There are a number of alternative methods for delivery of a project which this paper will consider. Loosely, delivery methods may be styled 'traditional' and 'non-traditional'. Performance incentive and relationship contracting models (including project alliance and partnering) are seen by some as the 'new wave'. Although partnering may be considered by some to be on the wane, that is not the case in Asia. If partnering's mantle is being dislodged, new streams of relationship contracting are filling the void. The industry appears less litigious than it was 10 years ago. Relationship contracting is born out of industry

dissatisfaction with often criticised adversarial relationships seen to be encouraged by the traditional model. Relationship contracting models are however, hardly 'new' at all, particularly to the mining industry. Major project infrastructure e.g. North Sea Oil, has seen alliancing models of delivery for many years. Land based mining infrastructure is familiar with key performance indicators, 'pain/gain' structures and incentive based cost reimbursable or gross maximum price arrangements.

The selection process

Is the competitive tender process always the best approach? It is common on construct only contracts, but are staged selection processes in order? Is innovation from contractors, although invited, in fact encouraged by the usual tender process?

The traditional tendering process is designed to produce a set of circumstances to enable price competition followed by direct price comparison. A valuation based solely on price (although a natural and 'safe' tendency) does not necessarily deliver project value nor the necessary information to enable an owner to properly evaluate a whole of life project cost.

The construct only delivery method is most receptive to the open tender issued in an unlimited tender environment. The projects are often fully designed so competitive price can be measured. The effort which contractors devote to the tender process is however likely to be in line with the size of the bid list. A reduced field is likely to result in a tenderer committing more effort. More effort by tenderers in the tendering process must be encouraged because the outcome costs of a project can be detrimentally affected by poor quality bids.

* McCullough Robertson Lawyers, Brisbane, Australia.

© The South African Institute of Mining and Metallurgy, 2002. SA ISSN 0038-223X/3.00 + 0.00. This paper was first presented at the SAIMM Conference XIV International Coal Preparation Congress and Exhibition, Mar. 2002.

Project delivery in the mining industry—options and trends

Owners should want tenderers to compete not only on cost but also to compete on finding novel ways of organizing work methods to minimize construction cost. The tender documentation should encourage this outcome. In the circumstances of a traditional construct only contract, where design is defined, the tenderer's scope to be innovative is commensurately limited by the extent of development of matters including the design. Moreover, unless the owner informs the tenderer of his evaluation criteria and suitably weights innovation a tenderer has little incentive to explore nor to offer innovation in his bid.

Owners are confronted with a duty to tenderers arising from the 'tendering contract' or 'process contract'. All tenderers need to be treated equally and fairly. Owners need to appreciate that if a conforming tender is submitted, a contract arises which is distinct from any contract eventually entered into with the successful tenderer. Obligations arise, not just to consider the tender but to consider it reasonably and fairly. How then can an owner value any individualism exhibited by one tenderer? Must he not in fact disqualify that tender if it does not conform to the prescriptive nature of the invitation documents? In other words, does not the traditional tendering process itself discourage innovation?

It should not be thought that an invitation to tenderers on a design and construct basis is the only answer. The contracting industry has been concerned for some time at the level of costs being incurred by it due to the practice of many owners inviting an unlimited number of tenders on design and construct projects. The consequence of this practice is that this valuable and important delivery mechanism for projects is losing contractor support. Pre-qualification processes, followed by short listing, is recommended to the open list. Protection of tenderer's intellectual property should be offered where appropriate. Clear evaluation criteria can assist to remove the subjectivity in selection of a winner and in establishing more transparent integrity to the bidding process as a whole.

To encourage innovation and to enable assessment of non-price driven factors for selection, the tendering process needs a shake up for both the protection of the owner as well as to encourage the contractor and protect the intellectual property which the contractor's bid might carry with it. This may require a tender based on a 'non-price' selection evaluation or at least a clear statement of a valuation principle in a two-staged process in selection, i.e. a short list or pre-qualification process followed by a final evaluation and award with disclosed weightings preferred. The respective weightings for the short listing criteria are likely to be much different to the weightings for the final evaluation and selection. In this way the process can evaluate price but the process may also drive competition by factors of value other than price.

There are many derivatives used in calling tenders. For instance a number of repeat mine owners and government departments (e.g. the UK Coal Board) invite or invited competitive tenders, but only from, say, 3 tenderers. As these owner groups develop strong in-house expertise both as to what they wanted and knowledge of the equipment proven over years of use to achieve the purpose, specifications were tightly written. Often, the specification includes for guarantees of performance, such as homogeneity checked by

testing for 'co-efficients of variation' in the homogenized product. Process guarantees are a regular feature of coal preparation plant delivery. On other occasions select or nominated suppliers (e.g. as to which supplier of mechanical equipment will be accepted by the owner) are spelt out in the tender documents.

Except for one-off projects by one-off owners there appears to be a noticeable movement away from the open tendering process and a commensurate increase in the enthusiasm to which tenderers respond to such an invitation.

Mention has already been made of design and construct delivery and the tendency, due to the unlimited open list adopted by many owners, that this valuable delivery method may be diminished in so far as its opportunity to encourage innovation is concerned. Different solutions should be encouraged but with different solutions come different difficulties including in comparison for tender evaluation. Owners should not leave matters entirely to the contractors and should, by their documentation, focus the concentration of tenderers on what the owner considers important to it.

Mention has also been briefly made of performance or incentive based delivery methods. To take a project alliance as an example, this method of delivery does not, in the first instance, encourage competition as to price at all. An alliance project is usually bid without reference to money and the choice of contractor is often made before the issue of money is even put on the table. An interim project alliance agreement ('IPAA') may then be entered into to establish the target cost estimate ('TCE'). The task of valuing target cost business as usual ('BAU') estimates may be the subject of internal procedure by the owner team. This is often the case in government projects where probity and value for money considerations with 'Treasury' are paramount. Only subsequently does the project alliance agreement ('PAA') arise. This process may take many months.

This paper has considered the question of tendering before considering the different options available for delivery. This paper has adopted this approach purposely with a view to challenging the way in which the industry considers its options for project delivery from the outset.

Framing the contract for the project

The contract should be tailored to respond to the project. To respond to the project the contract needs to respond to the tenders put forward by the tenderers. Those tenders in turn must respond to the invitation to tender documentation. It can therefore be very much a matter of 'putting the cart before the horse' for an owner to predetermine a method of delivery before considering its project objectives, before stating them in its invitation to tender and before assessing and evaluating tenders received. Most jurisdictions and national and internationally based industries have a range of available forms of contract, the so-called 'standard form'. It is not however, a matter of choosing such a document 'off the shelf'.

It also should not be a matter of trying to fit the delivery method to the form of contract. If that is done then the contract drives the project other than what should drive the project, being the owner's wishes as to outcomes.

The process should therefore be firstly for the owner to

Project delivery in the mining industry—options and trends

decide its fundamental commercial principles and objectives and for the contract document to then be shaped to reflect this.

Lawyers should not promote the legal structure for the delivery. Lawyers should listen to the client and his consultants and advisers rather than to the sound of their own voice. Before any draft document is prepared, a relatively simple list of project and risk questions should be asked to assist selection of the best fitting approach to procurement. A suitability matrix to assist evaluation and selection of the procurement model often assists.

The contract document should therefore be self-informed by the underlying business risk principles pre-agreed and then identified in the invitation to tender and responded to and addressed in the tenders.

The conversion of a construct only tender process to a contract document is relatively straightforward. For more 'non-traditional' delivery methods, the conversion of a preferred offer into a properly reflective signed contract can be more iterative. The owner has put out his original requirements but the tenderer may have offered solutions, alternatives or innovations. The challenge for the owner, the lawyer and the owner's contractual team is then to merge the original requirements of the brief with any innovations, alternatives or solutions on offer. This can be a very challenging exercise particularly if the owner wishes to maintain a number of its core performance requirements and policy commercial terms.

The choice of contract delivery models

This paper has suggested the importance of tendering to the delivery process. An understanding of the contracting options which are open for choice to procure a supply and a willingness (in appropriate circumstances) of parties to be innovative and to adapt existing delivery options can drive and directly influence the success of a project. The starting point is risk allocation. It is a trite principle of contracting that he who controls the risk should carry the risk. However, more than this is needed. A contractor will often carry a risk whether he controls it or not—but at a price. Is this the best solution? Is a shared risk (and this does not mean an allocation) a better approach? This paper has averred to project delivery options as either being of a category of 'traditional' or 'non-traditional'. Another term of delivery method is either 'hard dollar' or 'soft dollar'. The terms appear interchangeable but like any 'tag' can be dangerous. Contract descriptions can mean different things to different people at different times at different places. It is accordingly proposed to identify some competing procurement methods. It must be stressed, however, that categories should not be considered closed.

Much has been written and is generally understood by industry, concerning the different procurement methods available. Accordingly this paper will focus upon the 'newer wave' and will aim to inform the industry of developments in infrastructure delivery techniques.

Construct only

This is the traditional/hard dollar delivery method. The contractor agrees to construct in return for a lump sum price.

The owner has often already designed the project and it is on this basis that tenders are invited. The contractor carries ultimate responsibility for the construction and has general control over the methods and speed of construction to the original design.

In construct only contracts owners carry the risk of interface management and there is low commercial incentive for the original designers, acting for the owner, to optimize their designs. There is very little mechanism for a contractor to influence buildability or to link design with available equipment. There is often ample scope for claim and blame passing from the contractor to the designer and vice versa. Variation and time risk occasioned by matters such as poor quality documentation can be insulated by adjustable target cost or gross maximum price ('GMP') ceilings.

This approach to procurement is commonplace for purchases of stacker/reclaimer systems where select and approved contractors are approached.

Design and construct ('D & C')

In a true design and construct project the owner satisfies himself with a description as to the outcome he seeks and leaves it to the industry to respond. For this reason, design and construct project delivery can be said to be most successfully implemented for relatively simple building work. It is, however, regularly used for process projects where input and output can be readily defined and measured. Indeed, design and construct has become so prevalent that it could almost be itself described as a traditional delivery method. Design and construct is regularly used for delivery of wash plant projects and upgrades.

Design and construct is said to offer an owner 'single point responsibility'. Unlike a construct only delivery method, the contractor cannot blame the designer for problems which arise because typically the contractor warrants that the product as built will be fit for its purpose. Owners usually want a 'look and sniff' right and a 'touch but no responsibility' entitlement in respect to design compliance. However, apart from this, the owner in essence hands over control of detailed design to the contractor in return for the contractor's assumption of risk. Despite this, owners readily fall into problems because of apparent 'selective memory' when it comes to information exchange. This reluctance should be overcome because it is misplaced.

A criticism often heard of design and construct is that a contractor has the opportunity to deliver cost savings and hence profit increases to itself within the promised lump sum. It is often said that the contractor has this opportunity by under-designing aspects of the project particularly where the owner's design brief inadequately defines performance and quality parameters. Some owners (with deep pockets) go some way to prepare design to deliver on construct only and then transfer to design and construct to insulate this risk. This approach is more commonplace where the owner works closely with proven consultants, then passing the supervision risk to the consultant.

An advantage of design and construct is that it often reduces overall project duration because a complete design need not be waited for. The project can still be delivered on a fixed cost or lump sum basis. It is also said that value is improved because design and construct captures the

Project delivery in the mining industry—options and trends

designer's and contractor's combined skills as common drivers (compared to then being competing drivers in a construct only contract). The common drivers for designers and contractors can include innovation, optimization of the design, reduction of claims opportunity and reduction of owner supervision cost.

Owners must spend time with their performance brief. Depending upon the project it can become more prescriptive than descriptive. Issues of performance criteria both technical and operational (as well as aesthetic standards) must be clearly articulated. Each project will have different criteria, whether it be a sporting stadium, a water treatment plant, a power station, a highway or a processing plant e.g. durability, design life, maintenance, community, environment, safety. Identification of risks to be accepted by the contractor and of risks to be retained by the owner, is integral to a project outcome satisfactory to both parties. The owner will (or ought to) know what the end product is to achieve. The owner should articulate this. A failure to do so is a common source of disputation. How good is a 'fit for purpose' warranty unless the purpose is articulated and measurable? The criteria ought to be sensible e.g. design life, against the anticipated mine life.

Intellectual property rights of the winning contractor must be transferred to the owner. It is preferable that unsuccessful tenderers be allowed to retain their intellectual property rights unless purchased by the owner.

Common problems with design and construct projects can arise if there is conflict in the design approval process (a project review is recommended), where the owner's appointed approval engineer disagrees with the methodology (the role of a certifier may be important for independence at this stage) and where the issue of variations (both identification and quantification) arise. Variations (and their delay and disruptive effect) are a common area of disagreement. Despite contractor 'ideology' a design change is of itself not necessarily a variation. Hold points for design once approval is achieved and a locking in for any subsequent change measurement is one often heard recommendation (perhaps more so by contractors). As variations represent a risk to the relationship the contract document should deal with it upfront. Agree a process and stick to the rules. Avoid intervention as much as possible.

Document and construct

This method is but a variant of design and construct. It is most often used where the owner has developed the design beyond concept and wishes to have the benefit of this work. The owner may invite the contractor to take over responsibility for the design, usually through a novation of the owner's design consultant's engagement terms. In this fashion, the owner can use a design consultant of his choice and with whom he is comfortable before novating. A difficulty is that a contractor can find it hard to price the design risk into his tender without considerable contingency addition or float. Owners often have a high level of interest for this delivery method for critical operations e.g. stackers and reclaimers.

Operate and maintain ('O & M')

This is really just an out-sourcing arrangement for the

running of a facility and most usually its maintenance as well. It is quite commonly found for delivery of a variety of coal handling components e.g. conveyors. It is therefore not so much a delivery method but a management method. It casts upon the contractor a 'through life responsibility'. Due to a likely range of inputs (due to factors beyond the operator's direct control) there is less certainty of product compared with a greenfield delivery and so there are different options of payment available. Key performance indicator incentives comparing the cost element of the fee structure to the out turn costs of running the infrastructure i.e. the true business interests of the purchaser, is one methodology. Availability targets are also applicable, as may be maintenance downtime.

Design, construct and maintain ('DCM')/Design construct and operate ('DCO')

These methods, too, are just derivatives of a design and construct methodology including a maintenance and operation component. It embraces a combination of ownership interests between the purchaser and the contractor. It is relatively commonplace in a number of projects, in particular long-standing infrastructure e.g. motorway upgrades and reticulation treatment schemes. It requires a prediction over a significant period of time of operation and maintenance costs. An advantage of the method is said to be that it can avoid the contractor delivering at the lowest cost (a criticism of design and construct) because the contractor has an ongoing obligation. Long-term relationships should also include 'windows' to renegotiate or to accommodate technological or scientific advances e.g. a process such as waste treatment or ash or dust handling.

Prime contracting ('PC')

Prime contracting (so called by proponents, including Defence Estates in the United Kingdom) describes a relationship where the prime contractor has overall responsibility for the management and delivery of a project, including the co-ordination and integration of the activities of a number of subcontractors to meet the overall specification efficiently, economically and to time. The prime contractor will be responsible for subcontract selection, procurement management, design, co-ordination and overall system engineering and testing, planning, programming and cost control. Accordingly, the prime contract warrants total delivery, fitness for purpose and performance or output in line with through life cost predictions.

Principles with respect to prime contracting may include:

- the overriding requirement for the potential prime contractor to demonstrate the excellence of the project and supply chain management
- fitness for purpose of the solution as an absolute compliance issue
- fair dealing between prime contractors and subcontractors; and
- a clearly written contract which clearly specifies the responsibilities and obligations on both the prime contractor and the client.

The delivery 'tag' of prime contracting may just be 'fancy

Project delivery in the mining industry—options and trends

dress' for an overall design, procure, construct and commission arrangement.

Somewhere between prime contracting and relationship contracting (dealt with later) lies the practice adopted where numerous facilities/plants are required. In these circumstances a prime cost or guaranteed maximum price may be set with the contractor to receive agreed overhead and profit margins, but with the owner's right to check on orders for prices of equipment, labour rates, payment, etc. For instance, this was a practice adopted by the National Coal Board (UK).

Engineer, procure, construct ('EPC') and maintain ('EPCM')

EPC and EPCM contracts are familiar to the international scene. The delivery method appears in 'vogue' at least in the United Kingdom and the United States. Australia has followed suit in recent smelter expansion and generation projects.

As the name suggests, EPC procurement is well suited where there is a significant procurement element (e.g. turbine purchases). Unless bank balance funded, these contracts are overlaid with financier's requirements. Where the banker's risk is 'minimized' this is invariably to the significant detriment of the construction contract and hence to the contractor. Unfortunately, due to the specialist nature of these projects, their value and duration (often equating the project to a 'first prize' for zealous tenderers) EPC and EPCM contracts are often drafted in terms oppressive to contractors and largely non-negotiable.

Build own operate ('BOO') and transfer ('BOOT')

BOO and BOOT are most often used, once again, for major private sector infrastructure (e.g. the Sydney Harbour Tunnel). It is particularly prevalent where the project is to be income producing so as to encourage private sector investment. The private sector assumes the financial burden and the financing risk. For BOOT projects there is a transfer back to the public sector after the income stream has been managed for some period of time. It is not a 'licence to print money' and the 'cash cow' reputation which BOOT's have experienced (e.g. with some major toll roads) is not always the case (e.g. city to airport fast rail).

Relationship contracting

Relationship contracting has been born out of a dissatisfaction with the adversarial relationship between owner and contractor said to be encouraged by traditional project delivery models. The so-called adversarial relationship is often due to the combination of price as the overriding determinative factor (meaning low margins) as well as unrealistic risk allocation.

There are 3 main categories of so-called 'relationship contracting'.

- ▶ **Partnering**—Partnering is a management method based on the idea that the adversarial phase of contracting should end the moment a competitive bid is accepted and the contract is signed. Partnering has been widely used in some industries in the United States of

America (in particular by Defence and subsequently the Arizona Department of Transport) for government and military works as well as for roads. The concept is also well known in the United Kingdom and Australia. Asia is quickly catching on. In the early 1990s Colonel Cowan (US Army (retired)) was sponsored into Australia by the Master Builders Association and partnering was quickly embraced by the contracting sectors of the industry. The philosophy of involvement of stakeholders, open communication and shared objectives so as to enable flexibility and to encourage ongoing improvement cannot be cavilled with. Difficulties arose in that promises were not embraced in the commercial arrangement at all but sat outside or over the top of the contractual arrangement. A lack of commitment to the process inevitably has left a number of Australian experiences unsatisfactory. Partnering is still, however, full of momentum, particularly in northern Asia. The idea of partnering is the capturing of sensible project management options. It only works, however, with total commitment. Often the behavioural promises which are made are different to the contractual promises. This is because the contractual promises exist in the commercial arrangement and as mentioned the charter (or covenant) may lie outside of that.

- ▶ **Project Alliancing**—Project alliancing can be distinguished from a strategic alliance on the basis that a project alliance concerns a particular project rather than a strategic alliance which calls for a longer commitment. A project alliance can be defined as an agreement between 2 or more entities which undertake work co-operatively. Work is undertaken on the basis of sharing the project risk and reward. It is based on principles of good faith and trust with an open book approach to costs.

Alliancing is no quick fix and a change in business paradigm between stakeholders and a promise of continued improvement is essential. Alliancing endeavours to overcome some of the problems encountered in partnering. Unlike partnering which can be considered too 'soft' and for which the rhetoric was rarely matched by the contract (which still uses an adversarial risk allocation), alliancing uses hard construction issues to provide a financial incentive for co-operation.

The alliance wave is in full flush. It reflects a quite radical reform of contractual delivery as known to the industry, yet with hard dollar risks. The arrangement is effectively a cost plus arrangement where costs are paid regardless of performance but the 'plus' (profit and most often overhead) is at risk. Some essential features of a project alliance are that:

- there is a 'no blame, no disputes' philosophy such that disputation in a formal sense between the parties is not allowed outside of a usual escalation process. Litigation or arbitration rights are denied. Disputation is replaced with unanimous decision making;
- there are hard commercial incentives and hard commercial drivers unlike in partnering. As the

Project delivery in the mining industry—options and trends

- contract reflects a performance based remuneration, the contractor's financial interests with those of the owner become more closely aligned. The sharing of hard contractual risk allocations which may directly affect both parties' bottom lines are used to encourage the co-operation. Some risks are treated as risks of the project, as distinct from of a party. The risk reward curve can be as simple or as complex as the project demands. The most simple would be a risk reward curve with key performance indicators ('KPIs') concerning perhaps just time, cost and rework. For more complicated delivery, issues such as environment, industrial, safety, community, availability and any number of other issues (dependent upon the project and the owner's risk profile) can be weighted
- further to the no disputes/no blame philosophy, the parties give up their rights to go to formal dispute except for in the event of a wilful default or any insolvency event. What is a wilful default is a matter of conjecture but requires something intentional. This approach means that the parties are in fact paid their costs of what would otherwise be ordinary defaults in another delivery structure
- good faith—this is a principle which is difficult to define unless it is codified or the subject of definition in the Project Alliance Agreement ('PAA'). Good faith is entrenched in American law by virtue of the restatement of the law contract (1981) S205:
'Every contract imposes upon each party a duty of good faith and fair dealing in its performance and its enforcement',
and is also codified for instance in French and German law.

There is no codified statement of good faith in Australian or English law. However, the way in which Australian law has developed means that if there are promises of reasonableness then a duty of good faith, both in performing obligations and in exercising rights, can by implication be imposed upon the parties to the contract.

Good faith at least means that there are these related notions to be embraced:

- ▶ an obligation on the parties to co-operate and achieve in the contractual objects (loyalty to the promise itself)
- ▶ compliance with honest standards of conduct; and
- ▶ compliance with standards of conduct which are reasonable having regard to the interests of the parties.

It may also be suggested that the following objective can be added:

'To give as much weight to the interests of the project as to one's own self interests'.

- ▶ **Strategic Alliances**—This is an alliance which extends beyond one project, e.g. for a period of a number of years. It is usually for a series of similar supplies or deliveries of similar projects. It is once again essentially an outsourcing, for instance in respect to a maintenance and operation obligation or alternatively in respect to the delivery of a single infrastructure project. The service provider, in exchange for a

committed 'book' and confirmed cash flow accrues expertise and knowledge of the purchaser's requirements allowing continuous improvement over the term of the contract which should reflect in improved profit return. In response to a 'core workload' the contractor commits resources on a long term and often prioritized basis. It is usual that the parties have a history of working together harmoniously and the relationship must be strong because of the perceived special relationship which arises. Margins can be low because of the guaranteed workload and if the work programme does not materialize then the contractor has committed resources for which it cannot get reasonable returns.

As an outsourcing proposition, there is nothing new in this. The Romans outsourced their perimeter defences in the second century and it is understood that the construction of the 'First Fleet' to Australia was outsourced.

There is debate in the industry as to whether alliance is an input or an output. Scepticism heard from owners and in some sectors of government suggests it is regarded as an input. Government does not appear to care so much if it wakes up in the morning disliking a contractor because it is output that matters. Like government, an owner looks for outputs. The contracting industry appears to strongly reject the interpretation of an alliance as an input. Rather, contractors say that the aim of an alliance is to meet the requirements of owners in respect to output, and that the alliancing output is something from which value can be reasonably measured. The debate continues.

Public private partnership ('PPP') and private funded infrastructure ('PFI')

PPPs and PFIs are infrastructure partnership arrangements designed to compliment other types of contractual relationships. Given the surge in corporate commentary on 'triple bottom lines' PPIs and PFIs require special mention. Under a PPP or PFI model the public sector delivers the services. The advantages for government include a reduction of cash flow spikes in overall capital works expenditure and the opportunity to deliver infrastructure projects sooner than otherwise may have been the case. For the private sector there is an increased development opportunity and flexibility in the provision of government infrastructure. State governments in Australia are embracing PPPs and PFIs for the reason of individual advantage referred to above. PPP and PFI projects introduce new challenges because of the private sector financing or equity elements. The government or any other owner considering an equity investment by industry to their project ought to have thoroughly worked through and clearly stated its objectives for the project. It is critical to understand the private sector forces which drive consortium bids. The active development of the PPP is a new but useful label to something that has also been going on for some years. From an Australian point of view observing some European policy, it appears that it is one of Tony Blair's 'favourite' policies. Australia is now, in certain circumstances at least, becoming a 'big fan'. In Blair's first term, PFIs were

Project delivery in the mining industry—options and trends

mainly used to get the private sector to put up the capital for major transport or infrastructure projects, being paid back by taxpayers over time. Over the past 4 to 5 years contracts have been signed for many projects including 35 hospitals, over 500 schools, as well as for prisons, roads and railways.

It is this kind of 'partnership' that Blair appears to want to take further and which Australia is watching closely, well informed that the model has not worked in all instances in Britain. In the UK the union movement appears ever willing to mobilize against the plan. The Australian union movement is equally insistent that PPPs have a very limited place in the policy mix. Australia and presumably other countries will be looking and learning from Blair's more recent political headaches.

Conclusions

There is a wide range of methods of delivery for both the public and private sector and the options are becoming more eclectic. Tailored transactions are becoming more common as 'usual' delivery and procurement methods fail or fall into disputation and as the understanding levels rise that an appreciation and adaptation of available options can be critical to the success of a project. The parties must consider the particular requirements of the project from invitation, to tender, to selection, to contract and not let the contract drive the project. The selection of the correct method of project delivery may however still be described as more an art than a science.

Project objectives of quality, time and cost fit every

project. However, to risk manage a project it is important to identify, analyse and respond to the weighted risks. For instance, for the Sydney Olympics time was paramount. This is not to say that quality and cost was not important but the fact was that for the Sydney Olympics infrastructure had to be ready by September 2000 so this was the most heavily weighted risk and this was what drove the procurement method. In a number of instances there was no prospect of running the risk of designing down through a design and construct delivery method and so the government elected to fast track with lump sum contracts. Procurement was well established before the documents were submitted to the industry to tender.

Careful selection of the delivery process is one of the most important decisions that an owner will make in the development of a project. No one delivery process is suitable for every eventuality. A suitability matrix for evaluating and selecting the appropriate project delivery system is a useful tool and one which can be worked through to establish whether or not a traditional/hard dollar or more non-traditional/soft dollar delivery method may work best and so should be chosen.

The objective of this paper has been to promote discussion on delivery strategies and to identify issues and proposed strategies to improve the performance of project delivery. If this objective can be achieved then benefits of improved efficiency and effectiveness (including reduced disputation) concerning the delivery of projects for and within the mining industry is also more likely to be achieved. ♦

