



Relationship Contracting in the Australian Minerals Industry

Optimising Project Outcomes

Contents

1.0 Executive Summary

2.0 The Need for Change

- 2.1 Issues Raised
- 2.2 The Way Forward

3.0 Management of Risks

- 3.1 Traditional Risk Transfer
- 3.2 Risk Sharing Approach

4.0 Relationship Contracting: Defined

- 4.1 Core Values/Guiding Principles
- 4.2 Key Features
- 4.3 Suitability Matrix - Alternative Contract Structures

5.0 Relationship Contracting: The Benefits

6.0 Relationship Contracting: The Fundamentals

- 6.1 Alignment of Goals
- 6.2 Risk Allocation
- 6.3 Clearly Defined Project Goals and Scope
- 6.4 Form of Contract
 - Australian Practice
 - International Practice
- 6.5 Integrated Project Team
- 6.6 Gainshare/Painshare
- 6.7 Open Honest Communications/
Behaviour/Change of Attitude
- 6.8 Facilitators
- 6.9 Legal Advisers
- 6.10 Third Party Advisers

7.0 Relationship Contracting: Practices and Techniques

- 7.1 Contractor Actions
 - 7.1.1 Trust and Openness in Dealings
 - 7.1.2 Appropriate Behaviour
 - 7.1.3 Subcontractors and Suppliers
 - 7.1.4 Techniques
 - Planning/The Mining Plan
 - Controls Engineering
 - Mine Design and Scheduling
Coordination/Integration
 - Value Engineering/Workshopping
 - Systems Engineering
 - Project Alignment Group
 - Monthly Reports
 - Innovation
 - Mining Review/Audit
 - Key Success Factors and Performance
Indicators
 - Stretch Targets

7.2 Client Actions

- 7.2.1 Pre-qualification of Contractors
- 7.2.2 Improved Project Scope
Definition
- 7.2.3 Terms Sheet of Fundamental
Issues in the Contract
- 7.2.4 Risk Allocation
- 7.2.5 Forms of Contract
- 7.2.6 Acceptable Contract Performance
Rewards
- 7.2.7 Contract Documentation
- 7.2.8 Adequate Time to Tender
- 7.2.9 Trust and Openness in Dealings
- 7.2.10 Knowledge Protection
- 7.2.11 Summary Table

8.0 Case Studies

- 8.1 Lewis Underground Gold Mine
Development, Qld
- 8.2 The Jabiluka Project, NT
- 8.3 St Ives Gold Alliance, WA
- 8.4 Mt Owen Mine, NSW

Relationship Contracting

Relationship Contracting is a flexible approach to establish and manage relationships between mine owners and contractors and to implement proven practices and techniques to optimise project outcomes.

“The mining industry is an important driver of Australia’s economic performance, and the continued growth of the sector is vital for our country’s future development and prosperity. Through its member companies, the Australian Constructors Association has endorsed the practices and principles detailed in this publication. The ACA believes that Relationship Contracting within the mining industry offers mine owners and contractors a framework through which project outcomes can be improved to the benefit of all stakeholders. We aim to work closely with the mining industry’s major clients in implementing these key practices and principles in the coming years.”

W M King

President
Australian Constructors Association

“The Minerals Council of Australia is committed to facilitating mutually beneficial stakeholder relationships across the array of the industry’s business activities and in response to its environmental and social stewardship responsibilities. Key among the assets under the industry’s care are the people directly and indirectly involved in the industry, including contractors supplying an essential service to the industry. The principal role of the MCA in assisting the industry in meeting its responsibilities is the development and enhancement of operational principles and practices that provide the foundation for mutual trust, respect and a collective commitment to progress, which companies agree they will not compromise for competitive advantage. This publication on Relationship Contracting is an aspirational guide, which we hope will provide a platform for parties to build mutually beneficial relationships for enhanced risk management, improved safety performance, greater productivity and increased economic and social prosperity for the Australian minerals industry and, in turn, the nation.”

Mitchell H Hooke

Chief Executive
Minerals Council of Australia

Relationship Contracting is defined as a process that establishes and manages the relationship between both the mine owner and contractor. It is designed to remove barriers, encourage maximum contribution, and allow all parties to achieve success and optimise project outcomes.



1.0 Executive Summary

The Australian Constructors Association (ACA), and the Minerals Council of Australia (MCA) consider Relationship Contracting to be a key platform for improved productivity growth and economic and social prosperity for the Australian minerals industry.

The Australian Constructors Association (ACA) is a national organisation formed in 1994 to represent the country's major contractors within the building, construction, mining and engineering industries. ACA is dedicated to making the mining industry safer, more efficient, more competitive and better able to contribute to the development of Australia.

The Minerals Council of Australia (MCA) is the peak, national organisation representing the exploration, mining and minerals processing sectors, as well as companies in product and service provision. MCA member companies produce up to 85 percent of Australia's mineral output and minerals exports.

The MCA's mandate is to promote a business platform conducive to investment, growth and profitability for a minerals industry that is safe, globally competitive, innovative and socially and environmentally responsible.

The MCA's strength in policy leadership is in influencing real change whilst upholding its foundation values of integrity, respect, trust, accountability, inclusiveness and continuous improvement. The MCA achieves this through:

- Advocating pre-competitive or generic public policy on behalf of its membership;
- Identifying operational principles and practices, which companies agree they will not compromise for competitive advantage; and,
- Building a public presence that accurately reflects the socio-economic significance of the industry and its contribution to the quality of life of all Australians, particularly those in rural and regional Australia.

Knowledge Gathering

These two major industry organisations are working together to improve the industry's commercial and contractual practices with the goal of optimising project outcomes for both mine owners/clients, contractors and other suppliers and service providers.

This publication addresses issues that have been highlighted in industry research and surveys, workshops between mine owners and contractors, and the experience of related industry sectors. It is based on the:

- Experience of mine owners and contractors;
- Expectations of mine owners of their contractors and service providers;
- Expectations of contractors in relation to their mine owners; and
- Views on how project outcomes could be improved.

Improving the mining industry's commercial and contractual practices and optimising project outcomes is a key objective.



The impetus for this work was the ACA publication Relationship Contracting – Optimising Project Outcomes (1999). This publication was produced after consultation with clients in the building and construction industry in an endeavour to identify and promote those practices that could contribute to superior construction project outcomes.

In 2001 the ACA embarked on a series of workshops with senior managers representing gold producers and mining contractors to explore the scope for introducing Relationship Contracting concepts into the mining industry.

The first workshop was held in July 2001 with the following key objectives:

- To discuss and understand mine owner expectations of contractors in delivering optimum project outcomes;
- To discuss contractor expectations of mine owners in maximising opportunities for successful project outcomes;
- To discuss how contractors and mine owners could reduce/eliminate adversarial behaviour;
- To discuss the principles and practices set out in the ACA publication Relationship Contracting and their application to the gold mining industry; and,
- To discuss the implementation of Relationship Contracting into the operations of one/some/all Australian gold mining operations.

A second workshop was held in December 2001 during which it was agreed that the production of a mining industry publication outlining the core values and principles of Relationship Contracting would benefit the industry as a whole.

The Minerals Council of Australia subsequently joined this initiative and has participated in the development of this publication.

Relationship Contracting

Relationship Contracting is defined as a process to establish and manage the relationships between parties that aims to remove barriers, encourage maximum contribution and allow all parties to achieve success and optimise project outcomes.

The core values that underpin successful Relationship Contracting are commitment, trust, respect, innovation, fairness and enthusiasm and a key driver is the ongoing and long-term enhancement of these values between all parties.

Relationship Contracting is based on achieving successful project outcomes, which include:

- Completion within cost;
- Completion on time;
- Strong people relationships between the parties resulting from mutual trust and cooperation, open and honest communication and free sharing of information;
- Optimum project life cycle cost; and
- Achieving optimum standards, during execution and in service for safety, quality, industrial relations, environment, and community relations.

The MCA and ACA believe that:

- Successful Relationship Contracting is based on commonsense, open mindedness, adaptability, inventiveness, prudent risk-taking, fairness, commitment, and the reflection of these values in behaviour by the contracting parties; and,
- Proven delivery strategies and techniques exist which optimise project outcomes and deliver optimum commercial benefits to all parties involved.

A mutual appreciation and understanding of the individual and collective duties of the mine owner and contractor, supported by an equitable balance between risk and reward, make for a successful project.

Relationship Contracting principles help bring together the mine owner and contractor into a cohesive unit that raises standards of project operation and further develops the performance and standing of the industry.



Key Messages Identified

There is common agreement in industry surveys and workshops that successful projects are founded on a clear understanding of the individual and collective responsibilities of the mine owner and the contractor supported by an equitable balance between risk and reward.

Fundamental to this proposition is the notion that the mine owner should develop with (potential) contractors, a matrix of all major risks likely to be encountered on the project with the objective of cooperatively determining mutually beneficial risk management strategies, including the allocation of responsibility and ultimate contingent liability and reward.

It was also agreed that an important element in the development of a good commercial relationship between mine owners and contractors was the identification and discussion of key contractual issues prior to execution of the contract. These issues might include, but not be limited to:

- The form and scope of the contract;
- Warranties to be provided;
- Securities and performance requirements;
- Time aspects;
- Communication;
- Payment terms;
- Existing conditions/latent conditions;
- Risk identification/allocation (using matrix);
- Dispute resolution procedures;
- Gainsharing/painsharing;
- Contract variations; and,
- Quality requirements etc.

In time many in the industry would like to see a model common form contract developed incorporating the principles and practices discussed in this publication.

It is important to successful relationship contracting that the contract incorporates a risk/reward approach (formula) reinforcing the link between contract profitability and mine profitability, and may include elements such as bonus schemes for outstanding performance. This would require a mutual review of costings to determine whether target project costs are exceeded or reduced.

Mine owners and contractors would also have a better understanding of the risk/margin objectives of the other party.

To succeed, this "open book" approach needs to operate throughout the life of the project.

The Way Forward

A key objective of this publication is to promote and develop within mine owner and contractor organisations, systems that will:

- Deliver projects with significant price advantages and efficiencies, both in capital and operating cost terms, and provide successful project outcomes for investors, mine owners and contractors alike;
- Raise the standard of contract arrangements towards the development of a more efficient, equitable and globally competitive minerals industry; and,
- Foster the development of relationship contracting within a competitively robust industry.



2.0 The Need for Change

The Australian contract mining industry has the opportunity to optimise its performance and that of its contract partners by establishing a more rigorous, mutually determined, risk management strategy as a central plank to mining contract negotiations. The Minerals Council of Australia and the Australian Constructors Association are committed to improving commercial and contract relationships to deliver benefits to all parties.

Contract mining now represents more than \$3 billion per annum of mining work in Australia. This form of mining provides the mine owner with operational flexibility, particularly through its ability to bring extra equipment and personnel to the task, improved use of capital, better cost control and cost efficiency, and the ability to achieve defined outcomes.

When engaging a contractor, mine owners seek a service provider that has the technical, financial, safety and operational capability to deliver services, on time and at the price agreed. The contractor must also have an ability to manage risks throughout all facets of the project.

Mining contractors have succeeded in providing greater flexibility in operations, thereby improving resource utilisation and allowing profitable operation of previously marginal resources. This has been achieved through improved competitiveness, innovation, the reduction of production costs, positive changes in the industrial relations culture and work practices, and the introduction of higher occupational health and safety standards.

However, against this background the industry has been marked by adversarial commercial behaviour which has affected performance.

2.1 Issues Raised

Industry workshops and surveys of clients and contractors have identified a number of issues of concern, which we believe need to be addressed:

- Mine owners and contractors agree that shortcomings, some serious, exist in contractual relationships between owners and contractors and these can have a negative impact on project outcomes;

- Many existing contractual relationships, particularly traditional forms, lead to adversarial behaviour between the parties, which has a negative effect on project outcomes; and,
- The majority of mine owners and contractors agree that the keys to a successful project include:
 - Clarity of definition and understanding of the project scope;
 - A clear understanding of the risks in the project and an appropriate allocation of the responsibility for managing those risks;
 - A gain/pain sharing arrangement that rewards a superior project outcome and attaches a financial risk to sub-optimal performance; and,
 - Clear and well-defined communications through all levels of the contracting parties, with proper empowerment for decision making at all levels of the organisation.

The issues of risk allocation and risk management are constant themes in the government of commercial relations between mine owners and contractors.

- Most mine owners are prepared to consider forms of risk sharing and gain/pain sharing if it can be demonstrated that such a system will benefit the project outcomes. However, in some instances, there is a degree of cynicism that needs to be overcome before “Relationship Contracting” will be entertained by certain mine owners.
- Many mine owners have expressed the view that, if there is to be a progression towards Relationship Contracting, there are a number of shortcomings that contractors need to address. These include:
 - The contractor’s project staff being required to be fully responsible for all aspects of the project and, in particular, for the performance of subcontractors;
 - The contractor’s staff, particularly the project manager, be familiar with the principles of Relationship Contracting and their implementation; and,
 - The contracting company needs to accept responsibility for the selection, training and performance monitoring of its staff.

Most mine owners also acknowledge that these same shortcomings apply to the mine owner’s project staff and need to be addressed similarly.

Relationship Contracting principles and techniques help reduce the risk of adversarial behaviour in the contract mining industry and benefit both contractor and mine owner in the progression of mining projects.

Mine owners and contractors can work together from tender and submission stage to develop a firm and open relationship with one another that will provide win-win outcomes in the long-term.

2.2 The Way Forward

The March 2002 edition of *Australia's Longwalls* conducted a survey of the contracting industry within the mining sector. Respondents were asked a series of questions in relation to the industry, including:

What are the three improvements that you would like to see in the way that customers manage the tendering/proposal process?

In answer to this question, mine owners' expectations of contractors were reported as follows:

- Openness — don't try to hide additional costs, tender the amount accurately so there is little pressure for variations, all-in rates;
- Professionally inspect, research and assess the job up-front;
- Provide all information requested, read and understand the tender document fully; and,
- Answer the tender accurately.

Contractor expectations of mine owners included:

- To engender team approach, work together towards common goals;
- Set more realistic periods for tender preparation;
- Supply clear and meaningful information in the tender package; and,
- Ensure a level playing field during the complete tender process, together with maintaining the transparency of the selection criteria.

From previous research we know that the majority of mine owners are supportive of the concept that, prior to detailed documentation, mine owners and their short-listed tenderers meet to discuss the proposed project. As a result of these meetings, the following documents would be prepared by the mine owners to aid the project's future progress and set the tone of the future relationship between mine owner and contractor:

- A Terms Sheet which sets out in plain English the respective obligations of each party to the fundamental issues in the proposed contract; and,
- A Risk Allocation Matrix in which all risks envisaged in the contract are identified and the responsibility for managing these risks is allocated effectively and productively.

It was generally agreed that this approach should add an additional degree of commercialisation to the project outcomes, a degree missing when documents are prepared by mine owners and their advisers without reference to other parties in the industry.

Mine owners generally agreed that they should devote more resources to improving their definition of the Scope of the Contract.

With the outcomes of the Terms Sheet and Risk Allocation matrix, the contract documentation can be produced which facilitates superior project outcomes and a reduction in adversarial behaviour of the parties.

In general, mine owners were open-minded as to the form the contract could take, such as traditional, some form of relationship contracting, or another form where all issues pertaining to the completion of the contract are addressed with mutually beneficial criteria. Mine owners do see that prior to entering into some form of relationship contracting both parties will need to commit resources to ensure the make-up and composition of the contracting parties is compatible and appropriate for the contract's form and scope.

It is clear that the majority of mine owners are supportive of sharing risk/reward losses. However, some remain cynical about the contractor's willingness to share in any losses. There is a view that contractors tend to become adversarial in such circumstances.

Relationship Contracting is focused on finding realistic and positive solutions to problems and to avoiding adversity and litigation.



3.0 Management of Risks

Traditional risk transfer strategies often fail, due to poor risk allocation. Relationship Contracting provides the approach whereby various project risks are cooperatively determined.

3.1 Traditional Risk Transfer

All mining operations involve inherent risks. At the onset of a mining operation these risks are “owned” and managed by the mine owner. The mine owner has the ability to transfer these risks in a number of ways, including:

- Insurance;
- Hedging;
- Contract operations;
- Equipment lease arrangements; and,
- Off-take agreements.

The traditional risk management strategy adopted by mine owners when engaging contract miners has been to transfer as much of the operational risk as possible to the contractor. This approach is typically evidenced by lump sum and schedule of rates contract structures. It is a strategy that has delivered mixed results to both mine owners and contractors alike over the years. Maximisation of risk transfer is not always the most appropriate strategy.

Mine owners often attempt to transfer risks to contractors that should more often than not be their own responsibility — for example, the “unknown” geotechnical risks. This strategy is often pursued on the assumption that the extremely competitive nature of the Australian contract mining market will allow these risks to be transferred without paying any premium.

However, this strategy often fails, creating an adversarial climate, a high level of commercial disputation, operational inefficiencies and overall poor performance.

Major contributors to the failure of these strategies include:

- Poor project and resource definition;
- Geological and geotechnical environment not well known;
- Inadequate and unreliable documentation;
- Inadequate time allowed for the tender process;
- Inappropriate risk allocation; and,
- Inexperienced and inadequate project staff.

Faced with a risk transfer strategy, it is often not in the contractor’s interest to be flexible.

However, given the adversarial nature of relationships, it may be in its interest to allow a problem to unfold rather than to deal with it proactively. This results from a total misalignment of the commercial and physical objectives of the project. At its worst, the contractor may end up operating in a way that increases the overall cost to the mine owner, rather than put its own margin at risk.

From a relationship point of view and most probably from a commercial point of view, contracts are bound to fail if the mine owner attempts to transfer inappropriate risks to the contractor. If the risks develop and eventually unfold, the contractor may not be able to continue to operate. On the other hand if the contractor seeks higher returns without accepting a greater proportion of risks the relationship is also bound to fail.



The mine owner can better manage risks — rather than trying to transfer them — by embracing them and then managing them within a flexible project delivery environment.

3.2 Risk Sharing Approach

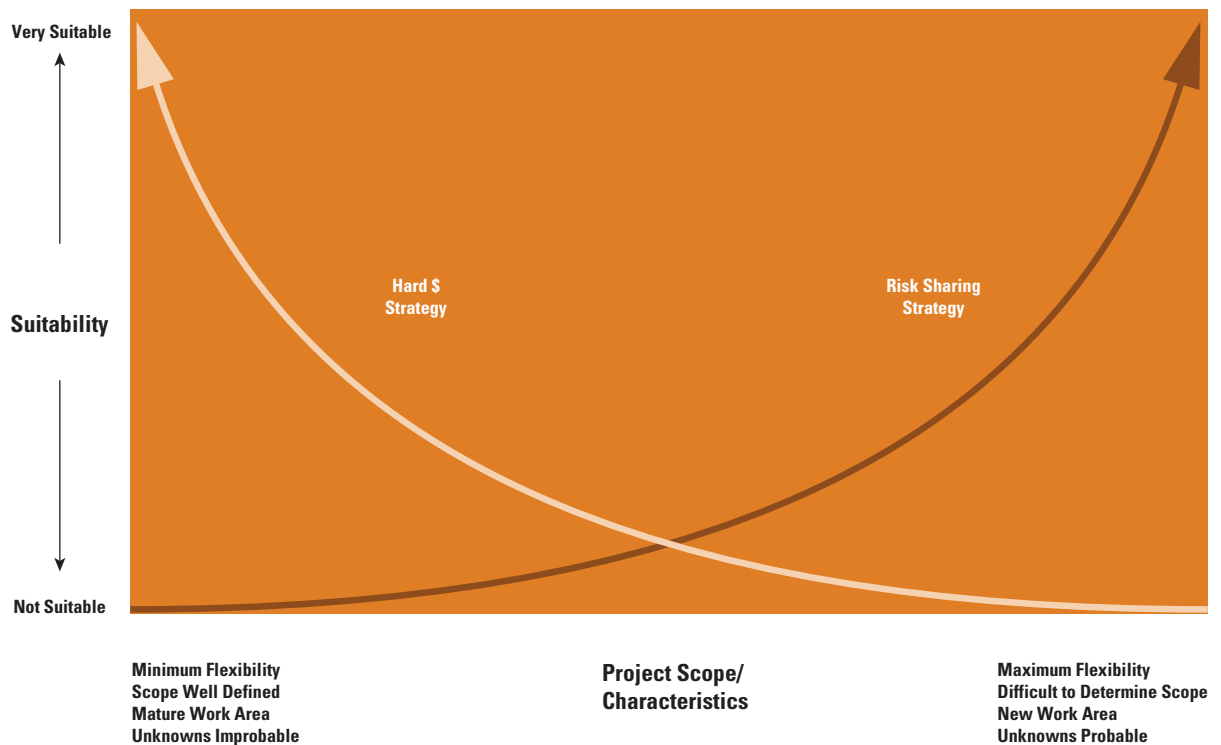
The fundamental rationale for the mine owner to utilise Relationship Contracting is that, in certain circumstances, the mine owner can better manage risks by sharing them (rather than trying to transfer them) and then managing them within a flexible project delivery environment. The success of a contract operation will depend on how effectively the risks are managed and shared by the mine owner.

This requires a clear understanding of the principles of risk management within a contract-operating environment. A properly informed mine owner will be able to recognise whether

the circumstances suit a risk transfer or a risk sharing approach. The mine owner must choose the most appropriate model from risk transfer to risk share, based on the particular scope and circumstances of the work to be performed.

A well-defined scope with minimum flexibility required will be best suited to a risk transfer approach — for example, low-grade stockpile rehandling into a hopper. However, if the fragmentation of the stockpile is unknown and the feed rate and schedule needs to be variable, the project characteristics begin to move along the risk share spectrum as shown in Diagram 1.

Diagram 1: Risk Sharing Strategy



4.0 Relationship Contracting: Defined

Relationship Contracting is established as a business relationship designed to deliver optimum commercial benefits to all parties involved.

4.1 Core Values/Guiding Principles

The relationship between client and contractor cannot be taken for granted. Even where the parties have established a close business relationship on previous projects, it is still important to build the relationship for each specific project.

The relationship must be founded on a set of strong, mutually held core values and guiding principles, which are then supported by a contractual arrangement formalising the most appropriate risk sharing arrangements and reiterating the core values and guiding principles of the parties.

Core Values	Guiding Principles
Commitment	Total commitment to achievement of the project goals – actively promoted by the Chief Executives of all parties
Trust	To work together in a spirit of good faith, openness, cooperation and <i>no blame</i>
Respect	The interests of the project take priority over the interests of any of the parties
Innovation	To couple breakthrough thinking with intelligent risk taking to achieve exceptionally good project outcomes
Fairness	To ensure that neither party is being unfairly disadvantaged
Enthusiasm	To engender enthusiasm for professional duties and the project's social activities

This relationship is also founded on the principle that there is a mutual benefit to the mine owner and the contractor to deliver the project at the lowest cost - when costs increase both the contractor and the mine owner are affected unless the risk has been clearly accepted by either party in the risk share/transfer stage.

Ahead of all other considerations, successful Relationship Contracting is driven by strong people relationships underpinned by appropriate contract structures and risk allocations.

4.2 Key Features

This publication contains case studies of successful projects, which have utilised the fundamentals, practices, and techniques of Relationship Contracting.

In some of these cases the delivery strategy was formalised as a project alliance. The key features of this arrangement were:

- A focus on project results founded on successful business outcomes for all parties including rewards for exceptional performance;
- Innovative contractual arrangements;
- Access to and contribution by the best resources of each participant with an emphasis on working together efficiently;
- A clear understanding of individual and collective responsibilities;
- The success of the project was measured against key performance indicators;
- An emphasis on openness and cooperation between the parties; and,
- An equitable risk/reward balance that aligned the commercial interests of the parties.

A number of models have been used to support Relationship Contracting; each of these models has at its core an agreement detailing the relationship. This establishes the delivery vehicle, sets out the objectives of the parties, establishes the commercial arrangements between the parties, and the organisational structure and decision-making processes.

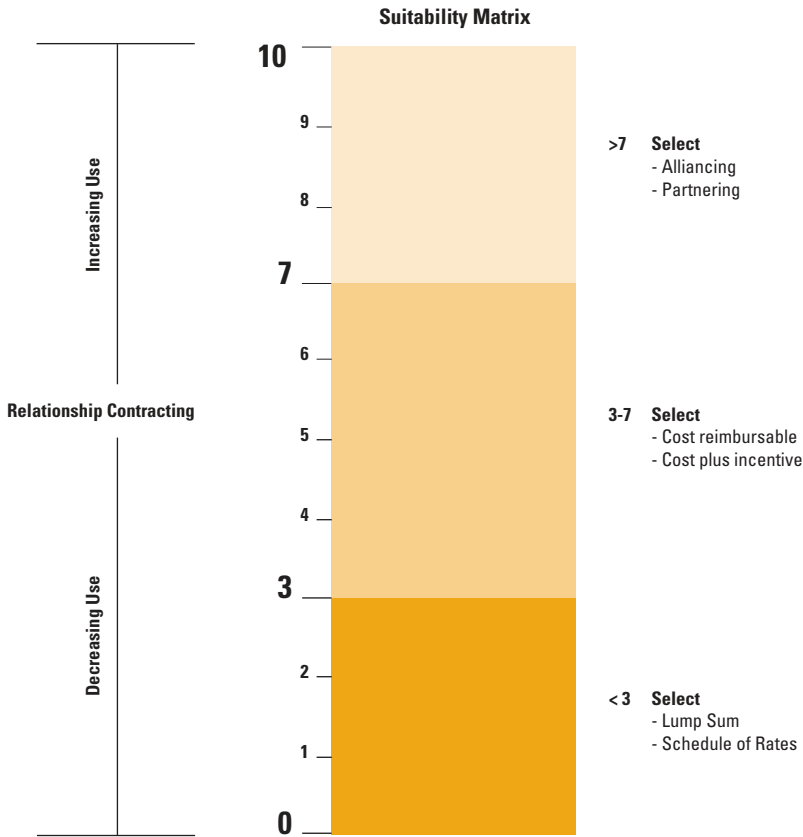
The commercial risk/reward arrangements can be established in a variety of ways taking into consideration the mine owner's strategic plans, goals and budget as well as maintaining an incentive for the contractor.

Typically, the commercial outcome for the various parties will be linked to the achievement (or non-achievement) of key objectives such as:

- Production levels;
- Unit cost;
- Safety;
- Resource development;
- Environmental performance; and,
- Quality compliance.

Relationship Contracting is defined as a process that establishes and manages the relationship between both the mine owner and contractor. It is designed to remove barriers, encourage maximum contribution, and allow all parties to achieve success and optimise project outcomes.

Diagram 3: Suitability Matrix



The example used in Diagram 2 has a “net total” of 7.3, which suggests that an Alliancing or Partnering structure should be examined. The key issues driving the matrix are the unknown geological and geotechnical environment and the Greenfield nature of the project. A change to some of these circumstances could change the preferred structure to a risk transfer contract. If the circumstances do not change and a risk transfer structure is adopted, the project outcomes could be less than optimal.

Mining contracts involve a range of geological and geotechnical conditions, most of which should be reasonably well understood, but there is always a risk of the unexpected. Ross Seedsman of Seedsman Geotechnics uses the following matrix (Diagram 4) to help mine owners and operators manage geotechnical risks. The same technique could be applied to many of the project circumstances to help understand the management of risks generally.

Diagram 4: Managing Geotechnical Risks

		Occurrence	
		Known	Unknown
Structure	Known	Risk Transfer	Contingency
	Unknown	Contingency/Share	Owner's Risk

In the above matrix it is possible to cost and manage a “known” structure, such as a simple normal fault that is able to be managed and is known to be in existence within the project area. It is possible to cost and manage the risk and therefore transfer to the contractor.

An “unknown” structure is one that is unpredictable from a management point of view.

For an “unknown” structure where the occurrence is known, the question of share is debatable. For an “unknown” structure where the occurrence is unknown the risk, and the cost of managing the risk, must remain with the mine owner.

Similarly, the risk of an “unknown/unknown” circumstance is a mine owner’s risk.

Asking a contractor to gamble and price the odds is not a sensible outcome where there is inadequate information to assess

5.0 Relationship Contracting: The Benefits

Commitment to a common goal and the establishment of a mutually beneficial and open relationship, together with a clearly defined project scope enables mine owners and contractors to deliver optimum project outcomes that go beyond time, cost, safety and quality.

Relationship Contracting is defined as a process that establishes and manages the relationship between both the mine owner and contractor. It is designed to remove barriers, encourage maximum contribution, and allow all parties to achieve success and optimise project outcomes.

One of the key aspects of the Relationship Contracting process is selection and implementation by the parties of the most appropriate contract structure and risk profile. The contract structure should allow for continuous review and realignment as necessary to maximise value to both parties in an environment that is not adversarial.

The core values underpinning successful Relationship Contracting are common to all contract structures, from hard dollar risk transfer right through to alliance contracting. The benefits offered by Relationship Contracting to mine owners and contractors include:

Time

- Certainty of production outcomes in a “no surprise” environment; and,
- Alignment of scheduling objectives.

Cost

- Ability to jointly review and reduce capital expenditures;
- Acceptable financial results for both owners and contractors commensurate with the inputs and the risks assumed by each party; and,
- Incentive to improve operating performance and costs of production.

Risks

- Better management of inherent risks, both known and unknown; and,
- Clearly defined risk allocation/sharing at outset.

Relationships

- Enhanced business relationships;
- Establishment and achievement of common/aligned goals;
- Improved behaviour of the parties to the contract, especially where either party experiences practical and/or financial difficulties;
- A greater personal satisfaction for all project parties; and,
- Avenue for repeat business with resulting benefits to owners and contractors.

Flexibility

- Ability to build in flexibility to match changing production requirements; and,
- Contract structure to allow the introduction of change during the contract term.

Technology/Innovation

- Greater incentive and encouragement to innovate in mine design, planning and production techniques; and,
- Encouragement to introduce and share in the benefits of new technology, systems and processes.

Optimum Standards

- Optimum standards of quality, safety, industrial relations, community relations and environmental performance introduced and maintained during the development, operation and rehabilitation of the mining project;
- Development of the industry’s professionals and workforce;
- Increased industry research and development as a result of improved financial certainty; and,
- World best standards of mine development and operation.

Key benefits of Relationship Contracting include certainty of production outputs, reduced capital expenditures, greater incentive for innovation and promotion of world’s best mining practices and operational processes.



6.0 Relationship Contracting: The Fundamentals

The success of Relationship Contracting depends on the willingness of both mine owners and contractors to commit to change at an individual and project level.

6.1 Alignment of Goals

Relationship Contracting requires that all parties to the contract agree to align their individual goals, thereby establishing common or aligned goals for the project.

Agreement to these project aligned goals and the establishment of an effective integrated project team will facilitate achieving total commitment from the parties and their staff to successfully complete the project. The proven technique of workshopping is critical to achieving agreement between the parties.

Parties work in a cooperative environment with common goals as opposed to a “conflict” environment.

Alignment of goals is best achieved by the parties taking a share of the project’s risk. Even taking a 10 percent share of the project’s risk can produce a significant change in the attitude of the parties at all levels. They cooperate to reduce costs rather than to increase costs. Relationships become enjoyable and productive rather than adversarial and negative.

One of the common project goals as a direct result will be the agreed Project Target Cost. The gainshare/painshare mechanism is structured so that the parties will either win or lose together. There can be no blame — success or failure is a joint responsibility. This is a significant departure from traditional project practice.

6.2 Risk Allocation

As highlighted in Section 3.0, equitable risk allocation is at the core of successful Relationship Contracting, with cooperatively determined risk management strategies. To ensure appropriate risk allocation, a risk management analysis should be carried out.

The nature and scope of the project risks must be evaluated. Requests for tender documents should include either a risk allocation schedule or require tenderers to complete their own risk allocation schedule as part of the tender. The Relationship Contracting agreement is then structured to reflect the agreed risk allocation.

The relationship contracting agreement relies on realistic and sensible expectations on both sides. The agreement will fail if mine owners attempt to transfer all project risk to the contractor, or if the contractor seeks higher returns without accepting a greater proportion of project risk.

6.3 Clearly Defined Project Goals and Scope

The importance of complete and unambiguous project goals and a project scope cannot be over-emphasised — they set the direction for all subsequent work. When the outcomes of a project are less than satisfactory, it is often due more to unclear goals and scope, rather than poor project management.

The work required to achieve the goals and scope of the project is carried out by a number of parties. It is critical to define completely and unambiguously the extent of the work to be carried out. This serves as a basis for the agreement/contract carried out by each party to identify all interfaces.

When the works relate specifically to the mining of materials then it is imperative that flexibility be incorporated into the project scope. This will enable a change mechanism that is equitable to all parties to be triggered when all the vagaries of mine product supply and demand are imposed on the works.

The alignment of goals combined with attaining equitable risk allocation are at the core of successful relationship contracting.

The underlying philosophy of relationship contracting is to encourage efficient and effective project management on mining projects. Trust and communication between all parties are prerequisites of for project success.

6.4 Form of Contract Australian Practice

Currently, Australian construction contracts use unamended or modified versions of the traditional Standard Forms of Contract, eg *AS 4000-1997 General Conditions of Contract*, or forms of contract developed by the mine owner's legal advisers. These latter forms and modified versions of Standard Forms of Contract tend to be adversarial in nature and, as such, do not facilitate optimum project outcomes. Whilst the tendency is recognised in Australia little has been done to improve the contract form.

International Practice

In the United Kingdom the Institution of Civil Engineers has produced an alternative form of contract, the New Engineering Contract, that is gaining wide industry support. This contract form incorporates a number of recommendations relevant to the development of Relationship Contracting. These recommendations include:

- Fair dealings between all stakeholders to the project;
- Firm duties of teamwork, shared financial motivation to achieve goals and win-win solutions to projects;
- Clear roles and duties definitions for the parties. Defined project manager, contract administrator and arbiter roles and clearly nominated mine owner's representative;
- Appropriate risk allocation amongst the parties;
- Minimal changes to pre-planned works and a mechanism to evaluate such changes, including an independent adjudication where required;
- Agreed methods and times for progress payments. Not solely by monthly valuations, ie upon achieving milestones;
- Providing for speedy dispute resolution if any conflict arises; and,
- Incorporating incentives for exceptional performance.

The underlying philosophy of the New Engineering Contract is to encourage efficient and effective project management on construction contracts, and it particularly encourages trust and effective communication between the parties. The style is plain English and it is markedly different to the standard Australian forms.

6.5 Integrated Project Team

The Integrated Project Team is comprised of senior member(s) from each of the parties involved in a project. The mine owner is a member of this team. This Integrated Project Team approach eliminates the traditional client/client representative/contractor hierarchies.

The team has the responsibility and accountability to make all key decisions and to drive the project to achieve the aligned goals. It is therefore important that there is a clear understanding of the individual and collective responsibilities and accountabilities.

The selection of parties to Relationship Contracting is crucial to achieving successful project outcomes. The selection needs to be based on criteria including, but not limited to, commercial and technical competence.

The criteria must include less tangible competencies associated with attitudes and receptiveness to cooperation, such as:

- Appropriate behaviour as members of a team;
- Establishing relationships with suppliers and subcontractors;
- Making available key personnel and their personal commitment to achieving project goals;
- Integrating staff from one party into another where it best suits project needs;
- Continuous performance improvement program; and,
- Eliminating inefficiencies at all interfaces.

The Integrated Project Team must be committed to achieving the project goals. It must operate on mutual trust that puts the best interests of the project ahead of individual objectives and gains.

Training and guidance by an experienced consultant facilitator is essential to achieve and maintain an effective Integrated Project Team.

6.6 Gainshare/Painshare

The parties (mine owner, contractor, etc) to an agreement should be aligned not only through common goals, but also through shared business interests in the project's success, firmly linking profitability to performance. This approach, to be successful, must operate at all levels of the project, not just at the top.

By aligning parties to the project's goals, they can be motivated to question costs, pursue best value and to innovate. It is possible to provide an environment that both promotes behavioural change and fosters technical excellence.

This behavioural change requires the parties to operate with open books and the mutual review of all parties' costings. This methodology is used to establish the Project Target Cost and continues throughout the life of the project.

Under a reward and risk approach — a gainshare/painshare mechanism — the profit of the parties would be reduced in the case that the Project Target Cost is exceeded and increased in the case where the actual costs are less than Project Target Cost, in accordance with agreed formulae.

The gainshare/painshare split between the parties is generally based on a 50 percent allocation to the client and 50 percent divided in proportion to the other parties' contribution in the Project Target Cost. This mechanism is structured so that the parties will either win or lose together.

It can also:

- Incorporate other key performance indicators and a performance guarantee for the completed project; and,
- Provide a key motivator and opportunity for the Relationship Contracting parties to achieve exceptional performance.

6.7 Open Honest Communications/ Behaviour/Change of Attitude

For Relationship Contracting to be successful, all parties need a positive change in habits, behaviour and attitudes towards project outcomes and towards one another.

This is achieved by formulation and agreement of project aligned goals, establishment of the Integrated Project Team and implementation of training techniques and skills development to sustain a team-building environment and overall project performance. This includes:

- Comprehensive induction of all new members joining the team;
- External coaching and guidance to assist and reinforce the team approach; and,
- Workshop sessions to identify concerns and pinpoint key issues which need resolution, and setting stretch targets.

Open and honest communication between all individuals is driven by their belief that they are members of the team and that the entire team is focused on achieving the project's aligned goals.

6.8 Facilitators

Facilitators have been valuable contributors to the successful establishment and ongoing performance of the Integrated Project Team.

The facilitator should assist and work with the Integrated Project Team to:

- Build best practice behaviours;
- Develop an environment of trust, cooperation and open communication throughout the team;
- Develop the goal of achieving excellent results; and,
- Maintain a focus on common project goals and the team.

Project goals will be achieved via a mutual, open and trusting relationship between contractor and client. The best interests of the project must take priority over individual objectives and gains.



Relationship Contracting can assist in developing contracts where both mine owners and contractors have a common incentive to minimise the cost of the project.

Third party advisers have been valuable contributors to the successful establishment and ongoing performance of the integrated project team thereby enhancing the prospects of success.

6.9 Legal Advisers

The traditional role of lawyers in drafting contracts has been to advise the mine owner as to the relevant allocation of risks in any given project, and to ensure that the mine owner's objectives are reflected properly in the contract documentation. The very nature of that role has often led to a one-sided perspective in the drafting and negotiation of contract documentation. Mine owners' and contractors' attitudes to the contracting process have also driven this approach.

The challenge to legal advisers in the implementation of Relationship Contracting will be to fully embrace the new approach to the relationships between contractors and mine owners. Lawyers must recognise that the type of documentation and language used can greatly assist in the development of open and honest relationships between mine owners and contractors and optimise project outcomes. This will involve a substantial shift in perspective in advising mine owners and contractors. Lawyers have an important role to play in advising their mine owners as to the benefits and implications of Relationship Contracting models.

With the commitment of their mine owners to the objectives of Relationship Contracting, legal representatives will then be able to assist the process by drafting more appropriate documentation to reflect the common goals of the mine owner and contractor with an equitable risk allocation.

The key to successful Relationship Contracting will be to ensure that the form of contract documentation is appropriate to the business relationship between the mine owners and the contractors, which assists in administration of the contract and achievement of project outcomes. These documents also need to provide adequate forums for discussion, teamwork and open and honest communications which lie at the core of a successful project. Mine owners and contractors must direct lawyers to prepare contract documentation which operates as a management tool designed to facilitate the business relationship.

6.10 Third Party Advisers

The most valuable input from third-party advisers typically occurs at the outset of discussions between the parties about a proposed relationship contracting project delivery strategy, during project formation and definition, or during the development of formal contractual and commercial arrangements. There is also a useful role for independent reporting on performance and progress.

The specific role of third-party advisers typically includes:

- Reviewing the operation of proposed commercial arrangements between parties to the Relationship Contracting project delivery strategy;
- Advising on suitable contractual and commercial arrangements, including allocation of responsibilities and the structure of risk/reward sharing mechanisms;
- Implementing workshop approaches for developing a group approach to identification of goals and objectives, stakeholder interests, functional performance requirements, and risk and constraints; and,
- Reviewing and reporting on progress and achievement of outputs during the project.

Third-party advisers must be able to effectively communicate suggestions and opinions to all parties and to achieve a high level of confidence by the group in the result of its activities.

7.0 Relationship Contracting: Practices and Techniques

Depending on the procurement and delivery system adopted, the practices and techniques of Relationship Contracting can be implemented at the initiation and concept stage of the mining project through to final operations.

7.1 Contractor Actions

The achievement and maintenance of the relationship utilises the following practices and techniques.

7.1.1 Trust and Openness in Dealings

For Relationship Contracting to be successful, both mine owners and contractors need to be open and trusting in their dealings with each other and to resolve all issues as they occur. This is not currently common practice, but examples exist of this occurring and have resulted in superior outcomes being achieved as opposed to those gained using traditional contract structures. The project case studies included in this publication illustrate examples of relationship contracts in place today.

7.1.2 Appropriate Behaviour

The majority of both contractors' and mine owners' staff have gained professional experience on either owner-mining (non-contract) operations or have been involved in projects using traditional forms of contract. As a result, they have had either limited exposure to contracting, or have been involved in contracts fundamentally adversarial in structure. As the industry progresses towards Relationship Contracting, behaviour associated with traditional contracting is not totally appropriate for this new method of contract development. Behavioural modification is required to maximise the benefits of this new contracting form.

Companies will need to train and educate their staff and the staff of their subcontractors and suppliers in the particular management and social disciplines required for successful Relationship Contracting.

In this training, particular emphasis will be placed on additional criteria to the usual bottom line profit at the expense of any other parties' outcome. These additional criteria would include mine owner relationships, mine owner attitude to repeat business, community attitudes, environmental performance and occupational health and safety performance.

7.1.3 Subcontractors and Suppliers

Contractors must manage and work with subcontractors and suppliers to create a team environment that will achieve the optimum project outcomes, without compromising safety and quality and which will not erode the subcontractors' and suppliers' profit.

A greater emphasis on "best value" strategy rather than "lowest price" strategy is therefore required. The implementation of progressive reviews of subcontractors' work and operating systems rather than historical assessment, enables more cost effective and timely solutions to problems and the early rectification of substandard work or performance to be achieved to the benefit of all parties.

7.1.4 Techniques

Set out below are brief descriptions of successful relationship contracting techniques.

Planning/The Mining Plan

Sound planning to provide a structured, documented and monitorable approach to managing the required works, (eg mine design), infrastructure establishment, mining and processing activities, and rehabilitation, while meeting all required outcomes including time, cost, production schedules, quality, safety, industrial and environmental requirements.

Controls Engineering

The tools and systems developed and implemented to monitor, review and report on performance to achieve improvements, based on agreed deliverables and key performance indicators.

Mine Design and Scheduling Coordination/Integration

Coordination/integration of all mine design and production scheduling activities for the mining activities to meet defined operational, time, cost, quality, safety and environmental requirements.

Value Engineering/Workshopping

An Integrated Team workshop that identifies/defines and provides value solutions for the mining works, or elements for the works, or addresses significant issues arising during any stage of the mining contract.

Systems Engineering

A planned, structured, documented and monitorable approach to manage the development, implementation and ongoing improvement of all necessary mining operating systems including statutory authority

Training project staff to recognise and accept the principles of Relationship Contracting is a critical task for both the mine owner and contractor. Both parties must realise that an open and honest project partnership from day one is a prerequisite for success.

Incentive forums should be established to drive innovation and provide improved design, practices, processes, systems and techniques which will provide improved mining outcomes.

approvals, interfaces with all parties, maintenance and operation procedures, inspections and auditing tasks to meet the requirements agreed with the client and to other defined contract requirements.

Project Alignment Group

Regular meeting of all parties to the mining agreement. "Empowered" senior management forum for technical and commercial interaction to ensure leadership and timely decision making.

Monthly Reports

Reports specifically developed for each mining operation to provide concise and accurate reporting to the Project Alignment Group, focusing on critical issues, priorities for action and performance against key performances indicators.

Innovation

Provision of incentive forums and adequate time for all the parties to be innovative in their organisation and management of people, markets, monies, materials and technology. This can result in new or improved design, practices, processes, products, systems and techniques which will provide improved mining outcomes.

Mining Review/Audit

Mining Review/Audit provides an independent and structured review of mining performance. The Review/Audit is carried out by an independent party to review operational, cost, time, quality, safety, environmental and reporting performance against agreed/contract requirements.

Key Success Factors and Performance Indicators

Key success factors and performance indicators, would include mine production, performance operating standards, environmental, health and safety, cost, time, quality, industrial relations and other factors/indicators.

Stretch Targets

Stretch Targets are defined as very ambitious targets that are committed to without the parties fully understanding how they can be achieved. Achieving a stretch target requires a critical change in the previous ways of doing things, high levels of performance and problem solving, and being innovative and using the latest technology.

7.2 Mine Owner Actions

There are a number of mine owner-initiated practices that can also contribute to improved project outcomes and which are consistent with Relationship Contracting. These practices are described below and summarised in a table included in Section 7.2.11.

7.2.1 Pre-qualification of Contractors

The parties agree that the most efficient project delivery will be achieved when bids are sought from a short list of tenderers who are competent and equipped for the project. The selection criteria will be determined by mine owners but the contractors could provide input to these required criteria, such as comments on the proposed criteria to be adopted.

Adopting a pre-qualification process and a short-listing of tenderers would ensure that the selected tenderers would commit to dedicating sufficient resources to their tender as they would assess their chances of success as higher than in an open tender. Further, the tender evaluation process by the mine owner should be more efficient than in a larger and more disparate field of tenderers.



From an industry viewpoint, short-listing of contractors will benefit the industry by reducing the costs of preparation/submission of abortive tenders. The cost of tender preparation is a major component in any contractor's head office cost and reducing this cost can only benefit the mine owners in the medium to long-term.

7.2.2 Improved Project Scope Definition

The more detailed the definition of the scope of the project and the better the degree of pre planning and investigation, the more accurate will be the tender price. In addition, the contingency allowance that the contractor must include in its tender for unknown/fill-defined aspects of the project will be reduced. This should result in a reduced and more appropriate tender price with improved certainty of outcome.

7.2.3 Terms Sheet of Fundamental Issues in the Contract

In any contractual relationship there are a small number of issues that are fundamental to the establishment of the relationship. Below is a list of issues that could be discussed and agreed between the mine owner and the pre-qualified contractors and included in the Terms Sheet. Agreement to these issues would bring an additional degree of commercialisation to the project outcome — a degree which could be missing if the contract is documented without contractor input. Contractors would agree to be open and frank in their input to these discussions — a result of Relationship Contracting where trust and openness is an essential ingredient. The issues include:

- Form and scope of contract — refer to Section 7.2.5;
- Warranties to be provided;
- Securities, retentions and performance requirements;
- Client representative/powers and duties;
- Management regimes/forums/reporting requirements/project communication;
- Insurance requirements;
- Time aspects, including risks, extensions of time, cost and responsibilities;
- Payment terms, certainty of payment;
- Variations — cost responsibilities;
- Default, suspension, termination;
- Force majeure;
- Existing conditions/latent conditions;
- Risk identification/allocation — capping of contractor's risk acceptance/reward/loss if appropriate as in an alliance contract;

- Dispute resolution procedures;
- Quality requirements; and,
- Environmental standards.

7.2.4 Risk Allocation

As a part of the development of the Terms Sheet in Section 7.2.3, it is important that all the risks that are likely to be encountered in the contract, and which will require management, are identified. Following identification, discussion between the mine owner and contractor will determine mutual risk management strategies, including the allocation of responsibility and ultimate contingent liability and reward. Further details are included in Section 6.2

7.2.5 Forms of Contract

There are a number of possible Forms of Contract and in each circumstance the most appropriate form should be adopted. Further details are included in Section 6.4

7.2.6 Acceptable Contract Performance Rewards

In discussions on any form of relationship contracting, it is critical that both parties understand and accept that the contractor is entitled to an industry acceptable level of reward for an industry standard project, an increased reward for a superior project performance, and an inferior or nil reward for an inferior performance.

It is also fundamental that the mine owner benefits from the relationship arrangement by sharing in the project performance results. Therefore, before any contract is entered into, formulae should be established providing appropriate compensation for actual performance.

This generally requires that the contract is performed in an "open book" manner, with the contractor risking an agreed portion of total margin (profit plus head office overheads) in exchange for the opportunity to increase the margin for superior project outcome.

7.2.7 Contract Documentation

Having progressed all of the above matters to agreed conclusions, the point by point agreements could then be provided to the contract drafters for forming into contract documents which would be accepted and "owned" by all parties. This would likely result in a much less adversarial approach to the contract, and a superior commercial outcome for the mine owner, and other parties

Improving the project scope definition should result in reduced and more appropriate tender pricing, with improved certainty of outcome.

7.2.8 Adequate Time to Tender

The time allowed for tenderers to prepare tenders and for mine owners to evaluate and select tenders must be reasonable in order that the evaluation process can be professionally and competently carried out. Times will of course vary depending on factors such as project size, complexity and delivery method.

7.2.9 Trust and Openness in Dealings

For Relationship Contracting to be successful, both mine owners and contractors need to be open and trusting in their dealings with each other and to resolve all issues as they occur. This is not currently common practice, but examples exist of this occurring and have resulted in superior outcomes being achieved as opposed to those gained using traditional contract structures. The project case studies included in this publication illustrate examples of relationship contracts in place today.

7.2.10 Knowledge Protection

In any tendering situation after pre-qualification, mine owners should provide adequate processes to ensure that any tenderer that provides intellectual property, innovation or other exclusive benefit, remains as a “commercial in confidence” matter between the specific tenderer and the mine owner during the tender process. This will ensure that the selected tenderers will provide their best offers in the tendering process resulting in the best commercial outcome for the mine owner. Refer also to Section 7.1.2

7.2.11 Summary Table

The following table summarises the practices required for successful relationship contracting, as set out in 7.2.1 to 7.2.10

Requirements for Improving Client Actions	Project Outcomes
1.Pre-qualification of contractors	Mine owners to develop criteria using contractor input as required and pre-qualify contractors at earliest appropriate time based on nominated mine owner criteria.
2.Improved project scope definition	Mine owners to improve detail of scope definition, increasing up-front resources to ensure scope definition is appropriate.
3.Terms Sheet of fundamental issues in the contact	Mine owners to initiate and develop, in conjunction with the short listed contractors, as considered necessary either separately or collectively.
4.Risk Allocation Matrix	Mine owners to initiate and develop in discussion with contractors - either separately or collectively.
5.Forms of Contract eg. lump sum, schedule of rates, alliancing, gain/loss sharing, partnering etc.	Mine owners to select form of contract, following input from contractors as necessary to optimise the outcomes.
6.Acceptable contract rewards	Mine owners to nominate, following discussions with contractors: – Base level return for industry standard result – Gain/loss sharing for superior/inferior results.
7.Contract documentation	Mine owners to provide documents based on previously agreed Terms Sheet and other criteria. Standard documentation to be used wherever feasible.
8.Trust and openness in dealings	Mine owners to work to develop improved openness and trust in contract dealings.
9.Appropriate behaviour	Mine owners to establish processes to ensure commercial confidentiality of tenderer’s intellectual property and innovation. Mine owners to educate and train their staff and third parties in appropriate behaviour in Relationship Contracting.



8.0 Case Studies

8.1 Lewis Underground Gold Mine Development, Qld

Contractor

Roche Mining Pty Ltd

Owner

Gympie Eldorado Gold Mines Pty Ltd

Project Delivery Method

Alliancing-Gain Share

Project Description

To develop a new underground gold mine in the previously worked gold mining region of Gympie, Queensland. This Greenfield site, known as Lewis mine, was to be developed with infrastructure to enable the potential reserves of gold ore to be mined at a rate of 1 million tonnes per annum.

Gympie Eldorado Gold Mines was already working the lower ore bodies through the neighbouring Monkland mine.

The potential ore reserves in the Lewis Mine were to be further identified as the capital development was undertaken directly under the town of Gympie. This required flexibility to change the mine design as ore bodies were better identified, or old workings were intersected that had economic resources unmined.

The contract included the development of 25km of decline and level development, as well as the mining and haulage of approximately 1 million tonnes of ore.

Project Period

The project commenced in May 2000 and is due to continue through to May 2005 and beyond with the discovery of additional gold reserves

Project Cost

\$60 million.

Project Process

Gympie Eldorado Gold Mines selected Roche Mining after submitting a request for an expression of interest from other potential contractors. The concept of the project was to develop a new mine from the surface to establish drilling platforms to better define ore reserves and secure the mine's operating future.

A target zone was established from surface drilling to define the first mining block. However, the surface infrastructure in the town of Gympie

and the additional costs associated with surface drilling, required an investment in underground development by the Owner and contractor to support the development of the mining field. Roche Mining and Gympie Eldorado Gold Mines entered into an arrangement that shared their respective project financial models. This enabled a full understanding of the drivers for both organisations and provided confidence that the capital and operating risk profile would be managed in the relationship.

In providing financial assistance to the project, the contractor funded the capital development of the project, together with assistance in the hedging of future gold sales through the strong balance sheet of its organisation. In this respect, the contractor was sharing some of the risk of the project with the Owner. The benefit to the Gympie Eldorado Gold Mine was the deferment of costs until revenue was available from the sale of gold. In return Roche Mining was provided with a share in the profits from the gold sales, giving it a return on investment, together with a long-term contract at the mine.

Developing the Relationship

Unlike many other underground contract relationships, the Lewis Mine was set up with the Contractor having responsibility for provision of all statutory management at the mine, including the Senior Site Executive and Underground Manager. As such, Roche Mining had control of all operations at the mine.

This Owner-contractor relationship was further developed with the contractor being involved in the mine's planning sessions; an approach that shared both risk and reward, and enabled the development of a new project operating in an alliance arrangement.

Regular workshops were held between senior and operational management, to ensure that all parties understood the progress of the project, the planned exploration program, which underpinned the future success of the project, and the investment and performance of the project. These workshops provided the basis from which the next period of the project would be managed and any risks that either party could envisage were discussed and processes implemented to manage the risk immediately. This process ensured that neither party experienced any untimely surprises during the project.

Project Flexibility

The nature of the ore bodies and exploration within an old gold mine is such that there needs to be a high level of flexibility allowed in the mine plan. For the Lewis mine, this meant a larger, more flexible fleet of equipment needed to be available to mine the varying widths of ore bodies.

The variation in the mine schedule was accommodated with an agreed process in which the Owner was able to direct the work as required, depending on the exploration results, while the contractor had a mechanism for payment within one of three pricing relationships based on the quantity of work required. This enabled changes in the quantity of work to be managed through an agreed relationship model as opposed to the rigid nature of a hard dollar contract.

The performance of a project is very much dependant on the successful planning and exploration of the resource. The coordinated approach and regular Owner-contractor contact on the hedging and financing of the project, resulted in both parties understanding the drivers of the other's business. This then led to the cooperative development of alternative pricing mechanisms through the contract that reflected the stage of the project, and the certainty in the projected work schedule.

To this end, while exploration for the ore bodies has been successful overall, there are periods in which the definition of new production blocks has been delayed. In these instances a mining services type arrangement is enacted that enables the Owner to direct the works on a day-by-day basis. In this arrangement the contractor is assured that costs are met on the project with the mechanisms in place to enable the transition between the various stages to be managed without the mine productivity or contractual relationship being strained.

In the three years of the project to date, three different approaches have been used in the contract, and all have been implemented using the relationship contracting principles of risk and gain sharing.

Incentive Delivery Method

The risk and gain sharing on the Lewis project extended to an incentive scheme in the contract covering the areas of safety, environmental and ore-dilution performances. This provided for payments to be made to the respective party based on the achievement of agreed key performance indicators. In addition, the whole project was driven by a continuous improvement process with the sharing of realised gains from any such improvements.

Why Relationship Contracting?

The gold field in which the Lewis mine was to be developed was such that there were old workings that had already been mined and ore bodies which were not continuous in nature. This required exploration drilling from underground drill platforms and the nature of the funding for the project required the parties to understand their respective partners' risk profile.

In addition, the scope of work for the project was conceptual as the mine design was not able to be developed much further than six months ahead of the workings. It was also very dependant on the success of the exploration program. In effect, this project required a "leap of faith" by both parties with the contractor having its investment underwritten by the production from the Owner's other gold mine operating in the field, while the Owner had a partner that was prepared to develop the mine in a partnering arrangement understanding its risk profile and maintaining flexibility.

This relationship enabled the mine to be developed within a risk sharing arrangement that included not only the operational aspects of the project but also extended to the Statutory management, gold sales and funding arrangements. The contract format/arrangement provided the opportunity to develop the mine with minimum conflict occurring through a very flexible relationship.

The use of a number of pricing relationships within the one project enables the Owner to maintain a flexible approach to the management of its ore body resource, while the contractor has agreed relationships through which it is able to manage its own resources and investment.



8.2 The Jabiluka Project, NT

Contractor

Henry Walker Eltin

Owner

Energy Resources Australia Ltd (ERA Ltd)

Project Delivery Method

Open Tender revised to Alliance

Project Description

The project was to develop the decline to the ore body (uranium) and to carry out a diamond drilling program to allow the Owner to define the ore body at the Jabiluka Underground Mine in the Kakadu region of the Northern Territory.

The sensitive location of the mine meant that work at the site needed to be undertaken in a culturally, environmentally and politically sensitive manner. These issues presented a unique range of project risks namely:

- Protestor activity (site blockade, sabotage activity);
- Political impact potentially influencing the viability of the project; and,
- Wet weather season impacting on access, productivity and environmental controls.

Project Period

The project was designed and conceptualised to be constructed in a two stage 22-month period. The impact of the political and approval processes resulted in the project being truncated to Stage 1 over a 10-month period.

Project Cost – Stage 1

The total budget for Stage 1 was \$33.35 million. This included the environmental monitoring, civil works, site services and facilities.

Project Process – Contract Implementation

The initial project development was founded on an open tender, rates-based contract. However, following a detailed analysis by the Owner a decision was made to use an alternative style of contract to manage the project.

The decline development contract was converted to an Alliance with a single Integrated Project Management Team. This allowed for both parties (Owner and contractor) to focus on producing results linked to a common set of values. The outcome being to adopt an open

book approach linked to performance based incentives which produced the following deliverables:

- An open book arrangement/cost-plus approach with performance based incentives;
- Full commitment from senior management and project staff of both the Owner and the contractor;
- Determination of a profit and loss sharing formula
- Sharing of risks and rewards;
- Agreed Key Performance Indicators (KPIs) and method of measurement;
- Jointly planning and scheduling the work to negate problems and minimise costs; and,
- Regular progress review meetings.

Why Relationship Contracting?

Several key risk areas were identified on the project and there were clear needs for superior performance by all parties to ensure a positive outcome to the operations. To mitigate these risks there needed to be a contract in place built around trust and a clear understanding of each parties' (HWE and ERA) requirements.

The risk areas encountered were:

- Project disruption due to protest action; and
- Project delays due to:
 - Government approvals
 - Inclement weather
 - Onerous environmental requirements, and
 - Cost overruns.

The alliance arrangement provided the flexibility to manage these risks and a method of managing delays. This resulted in no claims being made in association with the project.

An alliance was set up to work towards achieving extraordinary results and establish new working relationships and structures. The need for a new approach to deliver the project outcome was a key objective of the Owner's senior management.

A joint single team (Integrated Project Management Team) was established based on technical competence and alignment to the goal of the Alliance. A common recording/reporting system was set up for managing financial control, safety and environmental data.

The Alliance team was sponsored by a Steering Committee consisting of two senior managers from each of the three organisations:

- ERA (The Owner);
- North Technical Services; and,
- Henry Walker Eltin.

The Steering Committee was charged with the responsibility of setting the direction for the project team. Initial team meetings were facilitated by an external consultant to foster and develop the required culture and working relationships.

The Steering Committee became actively involved with the alliance team and provided ongoing leadership and participated in high level project reviews. Critical areas reviewed in this assessment included project scope, work methods and management systems. These reviews, involving the Owner, contractor and consultant, led to a number of significant breakthroughs in scope and work methodology. The clear focus was to achieve project goals whilst minimising risks associated with external factors. Through the Steering Committee the following was achieved:

- Disputes were settled and resolved at site level;
- Progress/performance was monitored;
- Stretch targets were set and aggressively pursued;
- A "One Team" approach was fostered and developed; and,
- Focus was maintained on cost reduction.

Commercial Drivers

The initial unit rates-based contract was modified to a cost plus basis with a target estimate. Scrutiny of all expenditure was subject to review by both alliance partners as well as an independent audit. Further upside of this alliance arrangement saw the original contract (100 plus pages) replaced by a 10-page Supplemental Deed of Understanding detailing the principles of the relationship between the Owner and contractor. A Risk/Reward Model was implemented with the critical drivers being:

- The contractor's margin was capped; and,
- A mechanism for sharing (50/50) of both gain and pain around an agreed stretch cost based target.

Client Satisfaction

The project was a clear success delivering a 14 percent underrun of the budget scope. Coupled with this significant financial result the other key result areas of safety and environmental performance targets were also exceeded.

Both the Owner and contractor reaped the benefits associated with the alliance formed on the Jabiluka Project through:

- A continually improving safety and environmental performance;
- An excellent financial outcome including a process for gain/pain sharing;
- Sound people relationships built on trust; and,
- Optimisation of people resources from both alliance partners to deliver continuous improvement and a sustained high level of performance.

In summary the concept of alliancing brought two parties together on a difficult and demanding project to deliver an excellent result through people working together in a consultative, cooperative manner for a common goal.



8.3 St Ives Gold Alliance, WA

Contractor

Leighton Contractors Pty Ltd

Owner

St Ives Gold Mining Company (wholly owned subsidiary of Goldfields of South Africa)

Project Delivery Method

Schedule of Rates Alliance Contract

Project Description

The Owner purchased the Kambalda and Agnew gold assets of WMC Resources and took over operations at the site in December 2001. An alliance agreement was then entered into with Leighton Contractors to mine its deposits in the gold-rich Kambalda/Lake Lefroy area of Western Australia.

The mining operations on the project were difficult and entailed the mining of significant amounts of lake sediment on Lake Lefroy (salt lake) in numerous pits. The operation had severe water and salt issues to deal with and some pits required significant imported sheeting to permit trafficability.

Some previous contracts had ended in claims and dissatisfactions from both parties on performance and relationships and it was vital that the contract structure was such that a long-term, mutually beneficial relationship was achievable.

The contract represented a return for Leighton Contractors to the region, some 600km east of Perth, where it mined the first open pit gold mine, Revenge, on the lake sediments in 1991–92.

Project Period

The contract was awarded in February 2002 and has an estimated duration of 22 months with completion scheduled for January 2004.

Project Cost

The total contract is valued at \$90 million.

Project Process

The contract involved blasting and mining about 17.5 million bank cubic metres of ore and waste from nine separate pits on the mining lease. These pits were spread over an area of 20km, with six of the pits located in the Lake Lefroy salt lake.

Under the contract Leighton was responsible for:

- Drilling and blasting;
- Loading, hauling and dumping to stockpile;
- Haul road and dump maintenance; and,
- Pit dewatering.

Why Relationship Contracting?

The Alliance Agreement provided for a very close working relationship and a gain/pain sharing facility whereby the contractor placed its entire profit at risk prior to the Owner sharing any increase in costs. Performance was measured via KPIs and the contractor could reap bonuses for good performance and penalties for poor performance.

Dispute resolution was staged in such a way that each level of the Alliance management could only present issues to a higher management level jointly if and when they could not resolve the issue.

The Owner had complete and unfettered access to the Contractor's project accounts and also participated in the financial reporting processes of the Contractor.

Plant rates were fixed. However, the Owner had access to the plant accounts to see and understand how each item of plant was performing both mechanically and financially. Review of ongoing usage or otherwise of each plant item was conducted jointly at the end of each contract term.



Benefits of the relationship

Numerous advantages and benefits were experienced on the St Ives Gold Alliance. These included the following:

- Benefits to Owner
 - Much closer working relationship with the Contractor;
 - Significantly reduced confrontational behaviour;
 - Did not have to pay for poor performance;
 - Increased level of flexibility for complex project;
 - Increased level of understanding and control of contractors cost drivers; and,
 - Removed potential for windfall gains by Contractor.
- Benefits to Contractor
 - Much closer working relationship with the mine owner;
 - Reduced downside risk;
 - Was able to improve financial position for good performance;
 - Mechanical process to cater for scope changes; and
 - Significantly reduced confrontational behaviour.

Owner satisfaction and key success factors

The open relationship resulted in a much more focused and clear approach being attained on the project. This approach led to significant positive outcomes in all aspects of the project including health and safety, environment, productivity and cost-effectiveness. The table below illustrates these key outcomes:

Key Success Factors

Safety	Zero Class 1 Damage Target zero LTI/MTI
Environmental	Zero Class 1 Damage
Productivity	Conformance to mine schedule
Financial	Target Fair Price < Adjusted Contract Price
Relationship	Seamless integration of contractor to operation



8.4 Mt Owen Mine, NSW

Contractor

Thiess Pty Ltd

Client

Hunter Valley Coal Corporation Pty Ltd
(100% subsidiary of Xstrata Coal Australia Pty Ltd)

Project Delivery Method

Partnering Agreement

Project Description

Mt Owen Mine is an open cut coal mine located 20km north of Singleton in the Hunter Valley of New South Wales. The project is owned by Xstrata subsidiary Hunter Valley Coal Corporation (HVCC) and is operated by Thiess Pty Ltd under a 15-year agreement, which commenced in 1996. HVCC, then privately owned, commenced operations at Mt Owen in 1994 with contractor DML Pty Ltd producing 1Mtpa. The mine was subsequently sold to BHP in 1995 and BHP contracted with Thiess

to develop and operate the project under a development contract and subsequently a mining contract. Thiess completed construction of the mine, including infrastructure and coal handling and preparation plant with first coal in October 1996. BHP sold the mine to Glencore (now Xstrata) in May 1998.

Today, Mt Owen is a highly productive mine consistently achieving good safety outcomes, high productivity and competitive cost of production.

Until April 2001, the mine produced at the rate of 3.5 million tonne per annum of product from 5 million tonne Run of Mine (ROM) and 22 million bank cubic metres (bcm) of overburden.

From April 2001, by direction of HVCC, mine output was increased by 50 percent to 5 million tonnes saleable from 7.2 million tonnes ROM, which requires annual removal of 34 million bcm of overburden. Thiess operates the mine with three 600 tonne hydraulic excavators and 220 tonne trucks for overburden, and two 240 tonne hydraulic excavators and 150 tonne trucks for coal.

The coal handling and preparation plant was designed as two 600 tonne per hour modules with dense medium circuits, screens and spirals. The plant has consistently operated at 1100 tonnes per hour during its life.

In addition to operating the mine as part of the contract agreement, Thiess has designed and constructed the mine infrastructure and purchased the mobile plant and equipment.

Current rates of production at the mine are:

- 33 million bcm of waste per year; and,
- 7.4 million tonnes of ROM coal per year.

The deposit consists of multiple seams of coal dipping at angles between 2 and 45 degrees and varying in thickness between 0.6 and 9 metres. Most of the coal to be mined dips at an angle greater than 10 degrees. Mining is carried out to a depth below surface of 270 metres with the mining of the deposit being essentially similar to mining an ore body rather than a typical strip mine.

The coal is treated in a Coal Preparation Plant with a current capacity of 8 million tonnes Run of Mine per annum. The average yield is 65 percent giving a current annual production rate of 4.8 million tonnes of product coal, which is loaded onto trains for export through the Port of Newcastle. Most coal is shipped to Japan, Taiwan and Korea, with some shipments to Europe.

Project Period

The project commenced in April 1995 and has a remaining life of 16 years at current production levels.

Project Cost

\$136 million per annum.

Why Relationship Contracting?

The agreement is for a term of 15 years with five-year review periods. Review and revision of the agreement or any aspects of the agreement is possible through a Project Review Group which is made up of equal numbers from the Contractor and Owner, with the Group meeting on a monthly basis.

Issues that are not resolved at this level are directed to the Senior Executives of Xstrata Coal Australia and Thiess Pty Ltd.

Mt Owen's success results from Xstrata's marketing expertise and Thiess' operating expertise. The parties recognise that the success of the project delivers success for each party. If one party is not achieving its objectives then ultimately both will fail. The respective expertise of the parties is used in a complementary way to maximise project outcomes.

The agreement successfully aligns the parties to maximise revenue and minimise cost. The payment mechanism results in a sharing of costs and a sharing of the risks associated with coal sale revenue. This alignment encourages the parties to jointly identify and correct detrimental trends within the project.

The Partnering Agreement suits the complexity of the deposit and allows for flexibility to match the vagaries of the market place.

The Service Fee is split into various elements to reflect the sharing of costs, cost escalation, coal revenues, finance, depreciation and margins.

This Fee was constructed as per 1995 market conditions and needs to be monitored with time to ensure the anticipated balance between Contractor and Owner returns remains.

Risk Sharing

The sharing of risks associated with the project has benefited mine operations and production and strengthened the relationship between the project partners.

Shared risks include:

- Environment;
- Productivity;
- Utilisation;
- Recovery;
- Yield;
- Geotechnical; and,
- Geology.

Revenue risk is shared to a lesser extent.

Risks not shared include:

- Fixed Capital;
- Exploration; and,
- Mobile Plant Capital.

Key Success Factors

The service fee and long-term project has driven Thiess to pursue a range of innovations aimed at reducing the long term mining costs and increasing coal recovery. These innovations include: use of large scale hydraulic excavators as primary mining tool; through-seam-blasting, which facilitates mining efficiency in steeply dipping seams; electronic detonators to reduce blasting costs; techniques for cleaning upper and lower surfaces of coal seams.

Despite the geological complexities of the mine, world's best practices have been achieved and have ensured the mine remains economically viable. Noteworthy success factors gained from the relationship include:

- Long-term alignment of goals (Ensuring that the contract structure aligns the contractor with the long-term performance of the mine, so that the contractor is rewarded for achieving the results sought by the owner);
- Flexibility (Creating the ability to respond quickly in upturn or downturn in demand without severe distortion of production costs. This means that the drivers for the contract must be capable of responding to the unknown. There is generally less prescription associated with flexible contracts and this can cause nervousness for both parties);
- Ability to review and amend the contract (Periodic review of the contract during its term helps focus the parties on the project's long-term objectives. The contract structure must be such that it can adapt to the ever-changing world around it to ensure continued alignment of both the project's and the project partners' objectives); and,
- Formulating a joint approach to problem solving and improvement in contract delivery to enable all goals to be met.





Australian Constructors Association

ACN 065 806 948 ABN 63 065 806 948

Level 4
51 Walker Street
North Sydney NSW 2060
Australia

Telephone: (02) 9466 5566

Facsimile: (02) 9466 5599

www.constructors.com.au



**MINERALS
COUNCIL**
OF AUSTRALIA

Minerals Council of Australia

ACN 008 455 141 ABN 21 191 309 229

44 Sydney Avenue
Forrest ACT 2603
Australia

Telephone: (02) 6233 0600

Facsimile: (02) 6233 0699

www.minerals.org.au

