

Contract Management in the Government Sector

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Abstract:

On 1 July 1996, the NSW Government radically reformed its railway sector. The vertically integrated giant State Rail Authority (SRA) was separated into the Rail Access Corporation (RAC), the Railway Services Authority, FreightCorp and a new SRA. The success of RAC is vital to a sustainable economic future for railways in the state. The RAC has been established to outsource all of its major functions but retains overall control of strategy and infrastructure, maintenance and development using an approach which ensures customer responsiveness. Competition between infrastructure works and maintenance providers is being actively encouraged as part of the creation of a more effective, competitive and efficient rail industry in NSW. The core features of the contracting strategy are the use of "alliance contracts", instead of traditional adversarial forms of contracting, and the use of performance-based specifications or requirements, rather than highly detailed technical specifications by the RAC. The paper will provide a 'snapshot' of a Corporation in a rapidly changing and evolving approach to the management of rail infrastructure.

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Introduction

On July 1 1996, the NSW Government radically reformed its railway sector. The vertically integrated giant State Rail Authority was separated into the Rail Access Corporation, the Railway Services Authority, FreightCorp and a new smaller State Rail Authority. This paper will argue that the sustainable economic future for rail in NSW is reliant on the success of Rail Access Corporation.

Improving the efficiency of the rail sector remains a national priority. Government business account for 10% of Australia's GDP (EPAC, 1993) with rail, electricity, gas and water utilities alone accounting for nearly 5% of GDP (Industry Commission, 1991 and 1992). By any measure, they are a significant part of the economy (Independent Committee of Inquiry, 1993 p. 11).

Historically, government-owned businesses have lagged behind their private sector counterparts in terms of efficiency. In the case of rail, electricity, water and gas utilities, for example, the Industry Commission has identified opportunities for increasing GDP by over 2%, or \$8 billion per annum. (Independent Committee of Inquiry, 1993 p. 129)

In 1993/94, NSW accounted for 31 percent of freight tonnes handled by public rail operators in Australia and was Australia's second largest state freight carrier handling approximately 66 million tonnes.

As a State Owned Corporation, with approximately one hundred employees in its establishment, Rail Access Corporation has the challenge of managing one of Australia's largest transport infrastructures - the NSW rail network.

The Corporation was created out of the NSW Government's commitment to the National Competition Policy which has led to the opening up of the rail network to greater competition. Greater competition will allow ongoing benefits such as increased cost-effectiveness and accountability to be passed on to rail's customers.

For the first time in the NSW Railway's 140 year history, operators are separated from ownership of the State's rail infrastructure and network. The Corporation's principal functions are to provide rail operators with access to the NSW State Rail network and to hold, manage and establish rail infrastructure facilities on behalf of the State (Transport Administration Act 1988).

For rail to be a competitive mode of transport, it must undergo major change. Compared to road, rail is widely perceived as inefficient, expensive and slow. Sims (1996) argued that "Road and rail operate under radically different structures, particularly in freight. The road freight industry is privately owned, nationwide, and highly competitive, with very low entry barriers. The rail industry is the opposite on all fronts: it is run by government-owned monopolies that run enterprises that adhere to State boundaries, and new entrants face enormous barriers to effective operation." The Rail Access Corporation supports this view.

The Rail Access Corporation estimates the rail freight market share for NSW is 31% net tonne kilometres compared to 69% for road.

Rail's problems are deeply ingrained and self reinforcing. Poor economic signals and management systems made rail less efficient and less commercial, which adversely affects its market share. In a high fixed cost business such as rail, a lower market share either raises the costs to the remaining customers, and/or causes even more reliance on Government funding and political decision-making.

An important objective, to reverse the decline in the rail market share, is to encourage efficiency in the rail industry and consistency between the public roading network and the other transport modes, particularly the rail network.

The creation of the proverbial 'level playing field' needs to be central to the achievement of the government's transport vision. Unless each transport mode is treated on a comparable basis, there are likely to be significant price distortions and extra costs within the transport system.

To encourage efficiency in the rail industry, Rail Access Corporation needs to reduce the costs of maintaining the track, and to encourage the greater use of rail network, which will spread the fixed costs.

At present, it spends approximately \$250 million per year in developing new rail infrastructure, \$200 million per year on routine maintenance and \$350 million per year on major periodic (cyclical) maintenance.

The Corporation's projects range from day-to-day rail track maintenance to the construction of major new railways, such as the \$600 million project with the Transfield Bouygues Joint Venture to construct the first Australian rail link between the Sydney central business district and Sydney airport.

An important phase of the reforms is the staged introduction of competition for infrastructure work and maintenance contracts and the opportunity for a progressive reduction in costs. Commercial forces will be brought to bear on the actual delivery of infrastructure work and maintenance so that prices reflect the true cost of delivery.

By reducing the costs of delivering infrastructure work and maintenance, access prices will be reduced, allowing operators to compete with operators from the other transport modes. This will have widespread benefits for the whole community.

What we inherited

Sims (1996) argued that with the best will it is hard to be at world's best practice when you have labour practices built up over 140 years in an environment of monopoly.

supply, when the organisation has a culture that places a higher priority on engineering imperatives than the commercial ones that would apply in a competitive environment, and when there is always the possibility that tough management decisions can be appealed in a political arena.

Prior to 1 July 1996, the vertically integrated and monopoly structure, which was heavily reliant on fluctuating yearly Government recurrent funding, provided poor signals for decision-making and led to poor management systems.

Virtually all routine maintenance and major periodic maintenance were kept as an in-house function with the risks basically carried by the State Rail Authority. Internalising those risks resulted in a very large organisation to plan, design, program, construct, certify, inspect and set standards. The management requirement in that environment was immense.

Infrastructure maintenance was often characterised by inefficiencies, delays, budget overruns and operational disruptions.

The distinction between capital and recurrent funding was blurred. The system favoured more politically saleable "capital" spending so recurrent spending was often wrapped into so called capital projects. NSW Government still clearly has the prerogative to make capital grants for infrastructure projects. The difference now is that the distinctions between commercial and non commercial capital and capital and recurrent expenditure are transparent.

In the past non commercial capital projects and recurrent expenditure were often funded through commercial borrowings. Of course, there was no prospect of a repayment or a return on investment.

Infrastructure costs and usage were not reliably recorded by line section, so basic asset management was impossible.

The Chief Executive Officer of old State Rail Authority reported to both the Minister of Transport and the Board. The role and responsibility between the Minister of Transport and the Board for identifying requirements for infrastructure maintenance and growth and the necessary funding was, therefore, unclear. Due to this it could not be expected for the decisions on the asset management plans to be conducted within a cohesive and sustainable framework.

A 'free capital' mentality - the use of treasury capital in lieu of accumulated internal maintenance funding - had not always resulted in the planned reductions in recurrent budget that had justified the original investment. Post audits were not rigorously undertaken to confirm whether the savings forecasted in the initial evaluation of the project were realised.

These points are illustrated with the following example. In 1990 two separate, yet closely inter-related major projects, comprising a total of five subordinate projects for improving train control in the Sydney Metropolitan area were initiated.

The train describer and train signalling project was designed to replace the existing system, which was then twenty years old, and provide greater efficiency in train operations.

The Network Control Centre project was dependent upon the train describer project to provide information on train movements. This information would enable the majority of Sydney's trains to be controlled from one location, currently the interim centre at Queen Street.

The establishment of the Network Control Centre could have had significant cost and productivity benefits, as most suburban signal boxes were to be closed, and better management information was to be available to improve on-time running.

The operational needs of the system were not initially agreed upon, and the 'requirement creep' was not managed in a systematic way. An operational concept document was not written until January 1996 and although a commendable activity, was too late to affect the course of the project. The liquidation of Ferranti, the original contractor, in December 1993 was also a very serious disruption to the course of the project.

The risk in developing a large software project was probably not fully understood by the then State Rail Authority staff. The contract set out too many specifications, and not enough performance requirements and detailed functional needs, ie, how to do the job was specified, instead of what was required and how it should perform.

Time has shown that the contractors seriously underestimated the complexity of the project.

The Rail Access Corporation has identified that the forecast project totalled \$55 million. Of this, \$46 million had been committed when the Rail Access Corporation was established.

The current contractor has now carried out testing of the systems, but has, to date, been unable to demonstrate that the software developed for the train control and train signalling project is working satisfactorily. Without the software working effectively, the Network Control Centre is operationally unusable.

It is evident that the development of software is both costly and risky, and that such risk needs to be effectively managed. Specialised software development skills are also needed. Consequently, the Rail Access Corporation will be seeking best practice techniques for the implementation of future projects.

Our response

The formation of Rail Access Corporation provided an opportunity to conduct a sweeping strategic review of our management systems and contracting strategy.

The effectiveness of the contracting strategy will be measured by its ability to meet Rail Access Corporation's goals. Cost reduction is and will remain the key objective. The use of key performance indicators for this process is normal practice provided that they are designed to drive the contractor to meet our goals.

In order to achieve transparent access prices which Rail Access Corporation can offer to new and existing operators, the Corporation has been forced to overhaul the management systems it inherited from the former State Rail Authority. For example, the Rail Access Corporation must know its revenues and full operating costs for each activity, and for each line section, to comply with the NSW Rail Access Regime. As Sims (1996) concluded potential operators have the right to take Rail Access Corporation to arbitration over the level of its access fees, therefore, the Corporation must be able to demonstrate to its customers and regulators that rigorous cost recording and control systems have been implemented.

Sufficient time is sought to allow the Rail Access Corporation and the Railway Services Authority to shift their relationship from an internal understanding, prior to 1 July 1996, to an arm's length agreement and ultimately a fully legal contract, post 1 July 1996.

Rather than having a large organisation to administer a raft of small contracts Rail Access Corporation is seeking to administer a small number of contracts as we believe that asset management can be effectively managed by maintaining a tightly focused team to concentrate on its core business and to manage its core risks.

To achieve its strategic directions without creating a substantial staff structure, Rail Access Corporation must rely heavily on the ability of other parties to provide the resources and skills needed. The Corporation is faced with the challenge and responsibility of creating an environment that fosters an external rail industry able to deliver an infrastructure which meets its business needs. Therefore, Rail Access Corporation sought to minimise the barriers to entry in its contracting strategy.

In addition, competition between the infrastructure work and maintenance providers needed to be actively encouraged to ensure a more effective, competitive and efficient rail industry in NSW.

The success of any enterprise, private or public, depends upon its ability to manage the risks inherent in its industry. The optimal long term strategy for Rail Access Corporation is to divest itself of those asset management and delivery risks it cannot fully manage and to concentrate its resources on the areas of risk which it can control by virtue of its powers and skills. Therefore in developing its contracting strategy, the Rail

Access Corporation sought to ensure that asset management and delivery risks would be allocated to the participants best able to manage them.

Therefore, the contracts need to be of sufficient value and length to ensure that:

- significant fragmentation of and turmoil in the industry is not caused with many new players attempting to enter the market and later exiting with significant losses;
- total costs are not higher in the industry due to increased bidding expense and the gearing up costs may also be prohibitive;
- the larger players, who are best able to accept and manage risk, are encouraged to contest the market;
- Rail Access Corporation is not forced to increase resources whether internal or via external infrastructure managers;
- Rail Access Corporation's internalised risks are not increased.

The Corporation sought to combine capital works, major periodic maintenance and routine maintenance within a given geography, to minimise interface problems, maximise efficient use of track possessions, and achieve single point responsibility. In addition, by combining whole of life cycle costs the relationship between capital, routine maintenance and major periodic maintenance can be established ensuring the optimal investment allocation.

We, also, sought to ensure that flexibility was built in to its contracting strategy to allow for continuous improvements and future adjustments

Objectives

To summarise the long term expectations of the Corporation we set strategic objectives. If the contracting strategy achieves these objectives it will enable the Corporation to achieve its desired end result - maximising its asset management cost performance while enhancing the rail network's safety and integrity, as well as, protecting and enhancing the environment.

- *Fit for purpose infrastructure:* the level of investment in any given part of the network needs to be directed to supporting the Corporation's core business of providing and creating train paths in order for it to earn an income.
- *Maintain or enhance safety:* Rail Access Corporation has a public duty to provide infrastructure to regulated safety criteria and, where appropriate, to improve on them.
- *Comply with National Competition Policy:* Rail Access Corporation needs to comply with the National Competition Policy both in regard to achieving

competition for operators as well as in the creation and maintenance of its infrastructure asset

- *Comply with environmental/heritage obligations:* as a public body Rail Access Corporation has a duty to achieve its objectives in a manner which complies with the overarching community goals in respect of the environment and heritage.
- *And of course reduce costs* Cost reduction is both an immediate and continual improvement. To be internationally competitive the structure of Rail Access Corporation and its contracts must enable the Corporation to respond and adapt to continual change within its operating environment.

Alternative contracting options

Options for the contracting out of infrastructure work and maintenance fall into a spectrum characterised by the level and manner of control exerted over the contractor. The following characteristics illustrate this spectrum:

- *Subcontracting* (including day labour) allows for all work, except specialised functions, to be planned and supervised by Rail Access Corporation which also undertakes all maintenance work.
- The *production specification* approach enables Rail Access Corporation to set the program and technical standards while contracting out all production including local supervision.
- The *technical specification approach* enables Rail Access Corporation to set detailed technical specifications and the Contractor to set the work program and resource all activities other than finance.
- The *performance specification approach* enables Rail Access Corporation to set detailed performance specifications and the contractor to determine the technical response, plans and work program and resource all activities other than finance.
- The *performance requirement approach* enables Rail Access Corporation to set more broadly defined performance requirements (e.g. for availability, safety, environment, consistency of standards across system). The Contractor develops detailed performance specifications, and then develops and implements the technical response and work program.

This spectrum also represents the shift in the level of resources required to be inside Rail Access Corporation or to be contracted to the Corporation in the form of infrastructure management resources, ie maximum to minimum. The technical specification approach would require in the order of 1,000 staff to manage the infrastructure work and

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maintenance contracts as opposed to in the order of 100 staff using the performance requirement approach. Figure A illustrates this spectrum and evaluates alternative options against the objectives set by Rail Access Corporation

Figure A Broad categorisation of contract types (source: Ove Arup & Partners (1996))

Objectives	Status Quo (prior 1 July 1996)	Production Specifications	Technical Specifications	Performance Specification	Performance Requirements
Fit infrastructure to purpose	<ul style="list-style-type: none"> multiple agendas uncoordinated investment 	<ul style="list-style-type: none"> investment decision fully internal not necessarily commercially driven 	<ul style="list-style-type: none"> investment decisions fully internal RAC fix detailed requirements commercial trade-offs limited 	<ul style="list-style-type: none"> investment decisions increasingly outsourced greater commerciality market-driven rewards / penalties 	<ul style="list-style-type: none"> maximum investment freedom outsourced maximum rationalisation of capital vs maintenance dollars
Reduce Costs	<ul style="list-style-type: none"> fragmented responsibilities no cost reduction 	<ul style="list-style-type: none"> more skills than now maximum costs 	<ul style="list-style-type: none"> competitive tendering frequently capital vs maintenance trade-offs difficult 	<ul style="list-style-type: none"> cost of specifications high but reducing cost of infrastructure 	<ul style="list-style-type: none"> minimum information management services function maximum potential and reduction
Safety and Environmental Objectives	<ul style="list-style-type: none"> 100% SRA responsibility 	100% RAC responsibility	<ul style="list-style-type: none"> majority stay with RAC contractor takes some risks 	<ul style="list-style-type: none"> increased diversification of responsibility away from RAC 	<ul style="list-style-type: none"> maximum outsourced responsibility within clear policy requirements
Competition Policy	<ul style="list-style-type: none"> non-compliance 	<ul style="list-style-type: none"> at the lowest level of compliance 	<ul style="list-style-type: none"> large number of contracts competitive bidding significant barriers to entry 	<ul style="list-style-type: none"> if contracts too small, limited new contracts due to entry cost barriers to entry significant exit costs significant 	<ul style="list-style-type: none"> maximum compliance with principle contract size will dictate number of competitors barriers to entry significant exit costs significant
RAC resource implication	<ul style="list-style-type: none"> As per old SRA 	> 1000 staff ?	> 500 staff ?	> 300 staff ?	>100 staff?

It is clear from Figure A, if Rail Access Corporation is to meet its core organisational objectives, its strategy needs to be to the right of centre of the spectrum. Therefore, the proposed strategy should be directed in the vicinity of technical specification to performance requirements.

Prior to finalising its contracting strategy Rail Access Corporation undertook in-depth interviews to assess each of the alternative contracting options with:

- public sector infrastructure owners already outsourcing their maintenance - Westrail, WA Water, SA Water, RIA, RAAF;
- private sector owners - Ampolex (Wandoo Alliances), Shell;
- private sector contractors - Henry Walker Contracting, North West Water Australia, SWR Engineers, Bechtel Australia, Currie and Brown Consulting.

Without exception all have adopted a form of "alliance contracting" and all believed that this delivers goals with greater assurance than the more traditional forms of contracting.

According to Clayton Utz (1995) the primary reason cited by clients and commentators for establishing strategic alliances is the client's drive to reduce overheads by employing contractors to carry out designing and engineering work previously carried out by in-house engineering departments. Rail Access Corporation shared this objective.

Our approach to efficient asset management

Firstly, Rail Access Corporation has adopted "alliance contracts", instead of traditional adversarial forms of contracting, and performance-based specifications, rather than highly detailed technical specifications.

Secondly, we have developed forward looking asset management strategies and plans that are responsive to the customers needs.

Thirdly, a benchmarking project has been initiated to identify effective and comparable benchmarks for the establishment of a platform for continuous review and improvement to infrastructure maintenance.

The contracting strategy

Fourteen geographical contracts with a value of around \$50 million per annum, contractors appointed for 5 -7 years and performance based contracts we believe will ensure that contestability is maximised.

We have separated out system-wide assets such as signalling and communications into a single package to avoid fragmentation of the system technologies and to reduce interface.

management and coordination which could result from the lack of consistency of the proposed geographic boundaries from the logical boundaries of the network systems.

Beginning with the East Hills line, the Corporation is offering the private sector the opportunity to compete with the incumbent, the Railway Services Authority, for each of the contract bundles covering the NSW rail network's infrastructure. Contracts will be let at the rate of one every three months for the three years beginning 1 July 1997.

The Corporation will form an alliance with its infrastructure works and maintenance providers which has as its basis an agreement to join forces to meet common objectives which will reward both parties with their achievements.

The Rail Access Corporation is seeking alliance partners who are prepared to make a commitment to a relationship with the purpose of achieving the Corporation's infrastructure management goals. This commitment will require a shared culture and a willingness from both parties to base the relationship on trust and a dedication to achieve these objectives. It follows that a relationship based on trust will require transparency of all transactions relevant to the contract.

The provider will be expected to offer a complete range of services to meet the Rail Access Corporation's objectives. The provider will be in full control of the service delivery and will effectively take ownership of the deliverables.

Selection of the alliance partner(s) is a process requiring stringent application as it is likely to be the area of greatest risk. Beyond selection on the grounds of capability is the need to select a partner who can be trusted, with whom Rail Access Corporation believes it can work and whose culture can best adapt to that of the Rail Access Corporation, so that goal setting is mutual and on common ground.

The essential features of the "alliance" contract to be negotiated between the Rail Access Corporation and each successful infrastructure works and maintenance provider tenderer will include:

- a sharing of risks and rewards;
- common commercial goals, with a commitment by the contractor to achieving the Corporation's objectives as a way of achieving its own business objectives;
- the establishment of a composite team with team accountability, to use the best resources of each party, eliminate interfaces, avoid duplication of effort and provide a common location for the key participants;
- the establishment of a shared common budget, with "open book" accounting;
- complete sharing of information;
- opportunities for exceptional efforts to receive exceptional rewards;
- cost control rather than mere cost monitoring.

Asset management plans

It is the Rail Access Corporation's responsibility to work with the rail operators identify short, medium and long term requirements for infrastructure maintenance and growth, and to secure funding to support these requirements

The Line Management Plans and Asset Management Plans for Rail Access Corporation form a significant part of a business planning model that relates high level strategic plans to detailed investment plans in a sequence of stages. The approach is to produce Line Management and Asset Management Plans using a two phase planning process.

Phase 1: focuses on a top down approach beginning with the strategic development and progressively working at greater levels of detail

Phase 2: focuses on a bottom up approach to ensure that changes in specific asset management detail as a result of implementation constraints are reflected in the higher level plans.

Between the two phases is a period of consultation in which the preliminary plans are reviewed particularly by customers, and then the Rail Access Corporation Board and other stakeholders. Customers are requested to sign off on the strategic plan ensuring that their requirements will be met through the investment process.

The decision to internalise the allocation of investment between capital, major periodic maintenance and routine maintenance imports significant risk to the Corporation, which if contracts were to be longer could be exported. However, to ensure that Rail Access Corporation retains the overall control of strategy, infrastructure, maintenance and development using an approach which ensures customer responsiveness it will provide this service in-house.

Benchmarking

Benchmarking is the third important plank of our approach. A benchmarking study has been initiated to undertake a review of the current performance of the infrastructure maintenance function, benchmark this performance against selected partners and identify improvements for achieving best practice.

The first stage included the identification, measuring and recommendation of key processes and activities for benchmarking. Activities, from all disciplines civil, electrical, and signal, that account for a high percentage of maintenance expenditure have been identified.

The second stage involves investigating those activities identified in stage one and benchmarking them against partners chosen from local and international maintenance organisations.

A network of 44 partner organisations and individuals who will participate in this project has been established. Of these there are 29 overseas and 8 Australian organisations that Rail Access Corporation is benchmarking with. Only 9 of these organisations have been selected to participate in all fifteen areas of the study.

This study represents the opportunity for Rail Access Corporation to position itself at the forefront of the railway industry through identification and implementation of the worlds best practice.

Standards and compliance

Cost reductions cannot be achieved without reference to standards. Standards will form the natural checks and balances on the ambition to reduce costs and it therefore follows that the achievement and maintenance of standards is a dominant objective of maintenance practices and thus must form part of the performance measures. Compliance to standards requires a level of verification by audit and a key performance indicator based on the degree of compliance will apply.

While the achievement and maintenance of standards has its own critical role, the alliance will be encouraged to challenge such standards where they are perceived to be cost drivers. The challenge process will be formal with the correct authorities being involved.

Probity in competitive tendering

A key element of the strategy is the emphasis on keeping the process transparent, and avoiding the old-style adversarial relationships between the two parties.

To ensure the integrity of the new contracts, the Rail Access Corporation has involved the Independent Commission Against Corruption and the Audit Office in the process. Both parties have contributed to the strategy, and the Corporation believes that this is a significant component in ensuring the probity of the strategy.

In addition, an independent Probity Auditor has been monitoring the process since its inception. This will continue through to the letting of the final contract bundle.

While attention has been placed on processes behind the strategy, the Corporation has balanced this by involving its shareholders, stakeholders and industry, to ensure the overall focus has not been lost.

Conclusion

While "alliance" contracting is new to the NSW rail industry, it is well proven in other industry sectors around the world, including the water, oil, petroleum, mining, minerals processing, roads and electricity generation industries.

Initial analyses suggest the new system will produce substantial efficiency improvements and cost reductions in rail infrastructure maintenance and construction. In selecting its contractors, Rail Access Corporation will focus on their innovation, initiative and pursuit of process efficiencies and cost reductions and their corporate culture.

The Government has deliberately established Rail Access Corporation as an agency that will outsource its major needs. This structure provides it with clear objectives. Sims (1996) argued that clearer objectives can energise an organisation and allow performance to be more easily measured

The Corporation has the character to develop into an enterprise with the reach, resources, knowledge and strength of a large company while embracing the flexibility, speed of action, the hunger to learn and bias for action of smaller companies

As the organisational structure and management processes of the Corporation are refined it is essential that we maintain responsiveness to our market and customer needs. We must continuously seek to be open to others by re-thinking limits, finding new meaning and changing directions and behaviour.

Rail Access Corporation, with its customers and suppliers, will work to ensure that rail reverses its current declining trend. "The national economic benefits of a truly viable rail industry are immense - a far more productive use of resources, less impact on the environment and a safe mode of transport" (Rail Access Corporation, 1997 p 2). All resulting in an industry which is sustainable and competitive.

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