Delivering Customer Outcomes Within Different Contract Models: Road Asset Management Case Studies

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Abstract

Over the past 25 years, the delivery of road asset management has evolved from *maintenance management* through to a more mature *whole-of-organisation* endeavour. As a way of driving increased efficiency and cost effectiveness, this has led in many regions to outsourcing of part of road asset management process.

This paper explores how road asset management practises are affected by the type of contract model being used. WSP and Fulton Hogan are leading providers of road asset management and having been involved in these contracts since 1999 throughout Australia. Taking this experience, this paper presents what have been key success factors, inhibiters and focuses to implementing asset management practises. It also points at how the underlying changing nature of road owners' capability leads to the erosion of trust in one contract model and its subsequent replacement by another contract model in a cyclical manner.

1. Introduction

The specialist industry of road asset management has evolved out of works departments and governments bodies over the last 30 years in Australia. Given the high costs involved in both capital and operational funding of roads, the discipline of asset management has been well suited to manage the significant costs, risks and performance issues of such an expensive asset. This has inevitably led to some parts being outsourced to the market under various contract forms. This paper looks at how the different contract models affect the way road asset management is undertaken and what components should be the focus for success.

Fulton Hogan, supported by its asset management partner WSP Australia Pty Limited, are a leading provider of road network management operation and management services. Fulton Hogan acts as asset custodians across Australia with contracts in every Australian state plus the Northern Territory, with services extending back to 1999. WSP Australia have an international reputation for excellence in Asset Management particularly in road network asset management across Australia / New Zealand, North America and in the United Kingdom. Typically, the scope of services spans operational and tactical planning.

This paper examines the contracts undertaken by various states over the past 25 years and evaluates the models by drawing models through the WSP and Fulton Hogan's experience in managing similar contracts. It concludes with suggestions on what should be the focus and what could be the impediment to an asset manager running these contracts.

2. Evolution - From Maintenance Management to Customer Outcomes

Asset Management thinking has evolved over the last 25 years from a maintenance management activity to a whole-of-organisation endeavour. This reflects a broadening in understanding of the cost, risk and performance that asset management effects throughout the business. Road management has followed this progression in its sophistication by expanding its definition from 'delivery of road works' to 'delivery of transportation services'. The risk and performance are now viewed through the lens of the customers and the required customer outcomes rather than merely asphalt and concrete.

Australia has seen this evolution manifest as a progression towards outsourcing of road maintenance as a means of achieving the required efficiency and cost effectiveness, and as a way of managing risk. The introduction of asset management standards and guidance documents is also driving organisations towards the achievement of higher order objectives. The desire to increase the focus on the achievement of organisation objectives rather than being asset centric requires a response from asset managers. The experiences of the state road authorities to achieve this have been varied with different outcomes realised.

Whilst each state and territory are independent, each government tend to have similar objectives in the transport sector. Common objectives of a road network include:

- Public safety
- Compliance to regulations and legislation
- Value-for-money in the provision of services
- Enhancing customer journeys with efficient / reliable travel times
- Satisfactory customer levels of service
- Sustainability
- Appropriate Risk

3. Ways and Means – Contract Models

Governments' preferences for contract models change over time usually depending on the tenor of the current politics. This paper will not discuss the macro-lens that leads different governments to prefer once model over another, apart from noting that over the past 25 years, most forms have been tried at some point.

Common variables in road management contracts are:

- Short-term or long-term contracts
- Narrow scope (pavement only) or wide scope of services (all assets, tolls, emergency response)
- Performance based (metrics) or activity-based contracts (Schedule of Rates)
- Shared delivery (Alliance, Public-Private Partnership) or full outsourcing contracts (Lump Sum)

Contracts may also have various shades of multiple models or have blended forms, such as Lump Sum for routine maintenance and Schedule of Rates for periodic work. Additionally, there are also mega-projects that blend big capital builds with network stewardship. For simplicity, this paper will not address these complex contracts apart from noting that they would require a similar flexibility in their asset management approach.

If we map these contract types again the standard asset lifecycle and leadership, the responsibilities would be set out as per Table 3.1. In road networks, assets are typically replaced rather than disposed of, so this part of the asset lifecycle is therefore not applicable. Due to the size of road assets and road asset contracts, there is a strong element of assurance to leadership, which usually correlates to monetary risk (e.g. who has the highest risk of losing money) so these are an intrinsic part of the asset lifecycle. Risk elements are further compared in Section 5.

Table 3.1 *Common responsibilities as per contract type*

CONTRACT TYPE	PLANNING	PERIODIC WORKS (ACQUIRE)	MAINTENANCE WORKS (OPERATE)	DISPOSAL	LEADERSHIP & ASSURANCE
In house	Owner	Owner	Owner	N/A	Owner
Schedule of Rates	Owner	Contractor	Both	N/A	Owner
Lump Sum or Performance-based	Contractor	Contractor	Contractor	N/A	Contractor
PPP	Contractor	Both	Both	N/A	Contractor
Alliance	Both	Both	Both	N/A	Both

Most road agencies need to maintain a base level of internal capability, with levels different between assets. The type and location of services required are important factors in determining the appropriate contract models. For example, the bundling of all services may not be desirable to the agency to ensure that staff are fully employed.

4. The State of Play – Comparisons of contract forms

State Road Authorities across Australia have transitioned to outsourced maintenance contracting arrangements at different rates. Some agencies have completed multiple contract generations and are moving back to partial insourcing arrangements. Other road agencies that have observed the experiences of other agencies are now commencing outsourcing arrangements.

Australia was one of the earliest countries in the world to implement performance specified maintenance contracts and transitioning into an alliancing type of structure. This developed not only from the Client perspective but also the contract service providers as a means of minimising the adversarial nature that often develops in less sophisticated contract approaches.

A review of the past 25 years of road contracts across Australia at the state-level show the common elements of against the contract model. In the APPENDIX, Table 8.1, Table 8.2 and Table 8.3 also presents a table of ongoing contracts that could be analysed in a similar way in the future.

Table 8.3 show the contracts let out by the major road agencies for road management. Where maintenance contracts are narrow in terms of the asset portfolio, this can lead to complex interactions with other agencies (whether they be insourced or other outsourced providers). For instance, routine maintenance of vegetation by an internal business unit can impact the performance measures related to drainage assets.

As a rough measure of their success, they have been split into contracts that were either extended, not extended or are ongoing. It would be broadly assumed that contracts that were renewed could be viewed to have met a minimum level of "success" for the road owner in order to continue them beyond their original period. Given the significant effort and cost to re-tender a road management contract, it has been assumed that contracts that were not extended can be considered 'less successful'. Table 4.1 shows that overall, most contracts are not extended beyond their original period.

Table 4.1 *Summary of Australian road asset management contracts that have been extended since 2000*

CONTRACT OUTCOME	NUMBER OF CONTRACTS	PERCENTAGE
Extended	8	26.5%
Not extended	14	47%
Ongoing	8	26.5%

5. Perspectives on Success in Delivering Customer Outcomes

In WSP's experience, all contract models can deliver good customer outcomes when the asset management approach is adapted appropriately. The ISO55000 standard stresses the importance of an asset management system being "fit for purpose," and this includes considering the contract model and adapting appropriately.

There is no perfect contract model, but each have some key success factors and impediments to delivering customer outcomes. With every contract model, there will be a risk associated with the cost and performance of the contract. In addition, there is a strong requirement for technical capability for the asset owner. Without sufficient in-house capability, the owner has a risk in providing assurance that the customer outcomes are being met.

When approaching a road management contract, it is best to adapt the approach to drive a successful outcome rather than use template approaches. In many cases, these can lead to significantly different asset management focuses. Table 5.1 presents the approaches that WSP has found to be successful in their experience of the different contract models.

Table 5.1 *Contractor Asset Management Approaches to Different Contract Models*

CONTRACT MODEL	OWNER RISK LEVEL	KEY SUCCESS FACTORS (DO THESE)	KEY IMPEDIMENTS (ELIMINATE THESE)	CONTRACTOR ASSET MANAGEMENT APPROACH
In house	High performance risk High cost risk Low capability risk	Ownership Sole Leadership Strong in-house knowledge Transparency	Political cycles Poor or short-term budgeting Low level of accountability	Focus on leadership Focus on assurance
Schedule of Rates	Medium cost risk Medium performance risk	Control of long term Low risk delivery Need for assurance	Lack of Ownership Lack of leadership No innovation	Focus on operational efficiencies
Lump Sum or Performance-based	Lower cost risk Medium performance risk High capability risk	High management effort High data requirements	Willingness to manage Transparency of processes Limited scope for innovation Poor performance goals	Adopt a long-term view Optimise to performance goals Engage leadership in risks Target assurance processes
Public-Private Partnership (often performance based)	Medium capability risk High cost risk (borrowed money) Medium performance risk	High management effort High data requirements Scope for innovation Transparency	Contractual complexity Increased interfaces Poor performance goals	Have strong interface management Adopt a long-term view Optimise to performance goals Target assurance processes

CONTRACT MODEL	OWNER RISK LEVEL	KEY SUCCESS FACTORS (DO THESE)	KEY IMPEDIMENTS (ELIMINATE THESE)	CONTRACTOR ASSET MANAGEMENT APPROACH
Alliance	Higher initial cost risk Lower performance risk Lower capability risk	Encourage innovation Focus stewardship Delivers capability transfer Takes a long-term view	Human factors, lack of trust Lack of data Inequity in alliance members	Target strong oversight and leadership Adopt a long-term view Build capability Build transparency

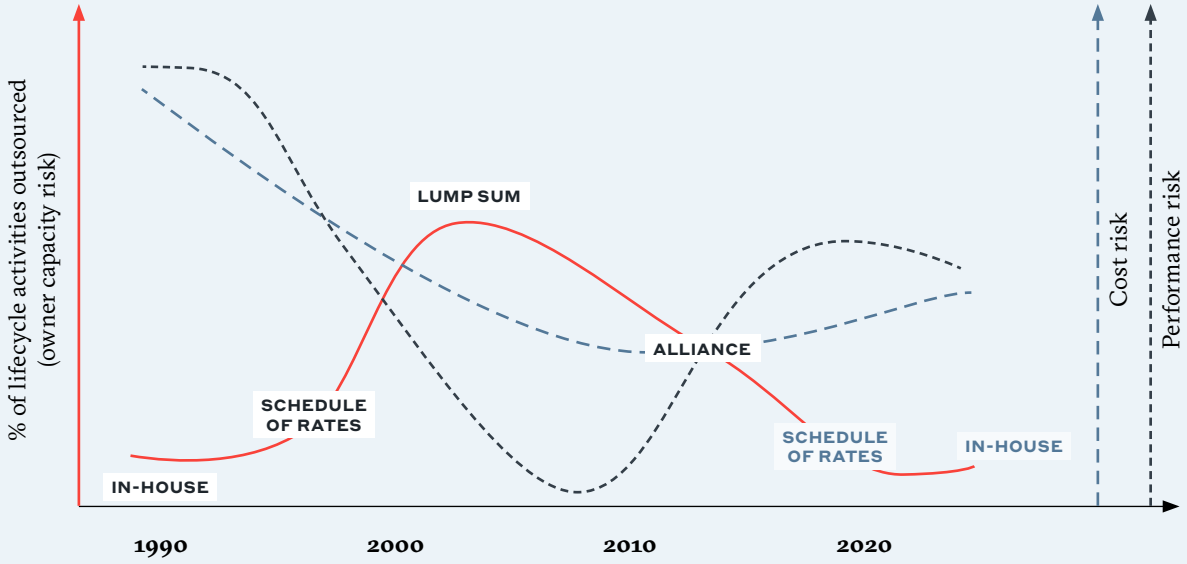
6. The Risk Driving the Cycle

Section 4 illustrated that there seems to be a cyclical nature in the deployment of contracts. Figure 6.1 shows a graphical representation of how these models evolve over time (note that the timeline is arbitrary to give scale). In-house contracts evolve into Schedule of Rates to help manage capacity; Schedule of Rates evolve into Lump Sum to reduce financial overrun; Lump Sum evolve into PPP and Alliances to spread capability; and Alliances are disbanded to bring control closer to the owner.

For example, in Western Australia they are reverting towards in-house road management as they have lower risk appetite for low capability which reflects their remote nature (they want to have skills available). By comparison in New South Wales and Victoria, the risk of not having capability is lower due to larger markets but have a lower cost risk appetite because of tighter budgets.

In rural networks, there is a realisation that having capability in the asset owner is an important part of running the network. Keeping some inhouse expertise allows owners to reduce risk when managing external factors such as fires, floods, or droughts that require an immediate reaction. For urban network or high-population areas, there is an increased need to reduce performance risk (e.g., reliability of freight network) so Lump Sum, Alliances or Schedule of Rates are a preferred contract model.

Figure 6.1 *Cost, Performance and Capability Risk Cycle*



7. Conclusions – Reflections on Asset Management Practises

This paper has examined how different contract models for road asset management are influenced by cyclical trends, and how a successful asset management approach can be tailored to achieve desired customer outcomes. approaches to road asset management. This can be achieved by prioritising specific success factors and addressing key impediments depending on the contract model.

IN HOUSE

If maintaining road management in-house, the best asset management outcomes are usually derived from focusing on engaging leadership in understanding the risks and opportunities and developing suitable strategies to guide the in-house teams. A reliable assurance program should be undertaken to ensure that teams and processes are aligned in their delivery. Complexity and inefficiency generally arise when there is a lack of accountability.

SCHEDULE OF RATES

If managing your assets on a schedule of rates, asset management focus should be directed to maximising operational efficiencies such as reduced mobilisation, works packaging and clear lead-times for the works crews. Complexity arises with trying to bring innovation to this model of contract.

LUMP SUM (PERFORMANCE-BASED)

If working to a fixed price, asset management should be focused on understand the long-term view and engaging with leadership to manage those risks. Significant effort should be put into modelling and being clear about optimisation goals. Complexity arises when this model becomes rigid and unable to accommodate external factors (weather, politics).

PUBLIC-PRIVATE PARTNERSHIPS

If managing in partnership with a road owner, asset management should focus on the long-term view, link in a Lump Sum contract, but with the added complexity of interface management. A robust assurance program will help identify inefficiencies and give certainty to the financing partners. Complexity arises when there is a lack of clarity and transparency among partners in the process.

ALLIANCES

If working through an Alliance arrangement, optimal outcomes are achieved by establishing clear lines of responsibility within the leadership structure and a clear understanding of the long-term goals. Having that structure will allow Alliances to bring innovation and capability transference to an Alliance. Complexity arises when owners perceive inequity in the processes (lack of trust).

8. APPENDIX

Table 8.1 *Contracts that were extended*

STATE	CONTRACT MODEL	NUMBER OF CONTRACTS	TERM (YEARS)	ASSET PORTFOLIO	COMPLETED TERM	EXTENDED
Victoria Rural	Alliance	3	7	Wide	Yes	Yes
Victoria Urban	Schedule of Rates	3	3	Wide	Ongoing	Yes
Queensland RAMC Gen 2	Lump Sum	1	Urban	Narrow	Ongoing	Yes
New South Wales - Sydney North	Performance	1	Urban	Wide	1995-2005 2010 -2021	Yes

Table 8.2 *Contracts that were not extended*

STATE	CONTRACT MODEL	NUMBER OF CONTRACTS	RURAL / URBAN	ASSET PORTFOLIO	COMPLETED TERM	EXTENDED
Queensland RAMC Contract 1	Lump Sum	1	Urban	Narrow		No
Queensland RAMC	Lump Sum	2	Urban / Fringe	Narrow		No
Tasmania	Lump Sum	3	Urban/rural	Narrow		No
Tasmania North East	Schedule of Rates	1	Rural	Narrow		No
Tasmania North West	Schedule of Rates	1	Rural	Narrow		No
Western Australia	Schedule of Rates	1	5		1995-1999	No
Western Australia	Lump Sum	1	10	Wide	2000-2009	No
Western Australia	Mixed LS +SoR	1	10	Wide	2010-2019	No
Western Australia	Schedule of Rates	1	3	Wide	2019-2022	No
New South Wales - South and West Zones	Performance	1	Urban	Wide	2000 – 2021	No

Table 8.3 also presents a table of ongoing contracts that could be analysed in a similar way in the future.

Table 8.3 *Contracts that are ongoing*

STATE	CONTRACT MODEL	NUMBER OF CONTRACTS	TERM (YEARS)	ASSET PORTFOLIO	COMPLETED TERM	EXTENDED
Victoria	Schedule of Rates	3	Urban	Wide	Ongoing	Yes
Victoria	PPP	1	Urban	Wide	Ongoing	NA
Queensland RAMC Gen 2	Lump Sum	1	Urban	Narrow	Ongoing	Yes
Queensland RAMC Gen 2	Lump Sum	1	Urban / Fringe	Narrow	Ongoing	N/A
New South Wales	Single invite SOR	1	Rural	Wide	2000 -	Yes
New South Wales	Lump Sum	1	9+3+3	Wide	2021-2030	N/A

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