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Risk appetite & recognition in early stages of transport investments

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My work in the public and private sectors has encompassed network assets support through development of short and long term service delivery plans for the enhancement of the existing rail network. It is imperative, in this process, to constantly consider all of the different customers such as suburban, metro, regional and freight.

The transport investment project starts with strategic needs assessment considering the future requirements for customers, freight, land use and transport networks. At the same time, it is imperative to provide strategic interface and traceability to city shaping strategies, population planning, expected economic growth to land use. These key parameters are translated to customers' needs for future transport corridors. Initially it is provision of service delivery, as a response to forecast demand, by looking at the strategic level of connectivity. The next step is strategic objectives identification which leads to development of a wide range of strategic options to address strategic needs and project objectives. The outcomes are usually used to improve integrated planning (transport and land use) within key corridors and between precincts or town centres.

One of responsibilities of my role is to facilitate the proper consideration of trade-offs, including analysing engineering, economic, social, financial, funding and, most importantly, customer satisfaction factors. The process then goes further and clarifies infrastructure/assets in order to support service delivery. Today's transport infrastructure requires business cases with risk based decision making. This includes the need to resolve the various elements of safety, reliability, capacity, renewal, complexity, and technologies into a compelling case that supports investment.

"Success is never certain. It never comes without risk" says author Gary John Bishop.

Awareness of risk is the cornerstone from the very beginning of transport investment development. One of the first system categories that the business case needs to clarify is risk appetite.

This paper will describe the risk paradigm of transport investment development from the embryonic state of strategic initiative to the articulated product which will be ready to undergo detail design, construction, operations, maintenance and disposal. The focus will be on the early project development phase looking at the strategic business case and final business case development process.

"Investment asset's life cycle commences from identifying the need, to the time the service delivery is first considered/conceptualised, through specification and analysis including enabling assets, procurement, designing, building, integrating, accepting, operating, maintaining and disposing."(TfNSW AM Framework Overview version 1.0)

This paper will discuss the process and considerations for setting the risk appetite taking in account a framework of overall acceptable levels of risk. It will also explore risk appetite as the amount of risk exposure and talk about qualitative assessments.

Further, it will examine risk tolerance in terms of the investment readiness approach after risk mitigation in order to achieve strategic objectives. Risk tolerance can be expressed in quantitative terms.

Establishment of the risk appetite for strategic business cases needs to consider:

1. Strategy
    - overall long term policy document including strategic plans for particular transport mode or network or place
    - consistency of strategic objectives and goals
2. Customer definition
    - More importantly customer expectations
3. Governance
    - Treating a strategic business case as system of systems with interfaces, dependencies and defined roles
    - Showing consistency
4. The rate of change of
    - Operating industry environment with incorporation of industry market conditions change
    - Technology including improvement of existing technologies and understanding of new technologies
    - Internet of things
5. Organisational capabilities
    - The skills and resources
    - Resources availability and capacity
6. Funding pipeline
    - Committed transport projects
    - Probability and how to align to potential medium term projects

The paper will discuss risk tolerance and describe some lessons learnt.

In the end the major challenges will build a good base for questions such as:

- *Is the transport investment less about consideration of transport projects in isolation or looking to the wider economic benefit?*
- *What is the optimal transport outcome?*
- *How to achieve optimal overall outcomes working across clusters and levels of government?*
- *How do we balance the risks across sectors?*
- *How do we coordinate projects and programs across jurisdictions that coincide in time and space?*

When we consider the transport business case as a large system of systems, early risk recognition and level of risk appetite need to be tailored to provide solid foundation to complex interfaces and different delivery staging/timescales.

The other significant factor is the political environment and flexibility of the client's organisation. **The understanding of multiple layers of risk attached to the transport business cases is imperative in order to protect the investment of high quality transport products for the next 50 years and for the benefit of the people.**

Only those who will risk going too far can possibly find out how far one can go.
T.S. Eliot, poet