

VIEWPOINT Andrew Smith & Russell Pell

Maximise efficiency by escaping the 'totex dilemma'

Main line and metro operators in Asia face the challenge of long-term asset renewal while maintaining service quality, especially on networks which have, until recently, been considered relatively new. Arthur D Little offers some options for mitigating the 'totex dilemma'.



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Headlines reporting major rail infrastructure projects across Asia, such as Hong Kong's Express Rail Link, the Kuala Lumpur – Singapore high speed line or China's ubiquitous Belt & Road Initiative, do not struggle to capture the imagination, with promises of reduced journey times and commercial gains. In parallel, digital technology is offering railways new methods for managing and maintaining their assets throughout the whole life cycle. Increasingly, larger operators are embracing predictive and condition-based monitoring techniques to improve asset availability, reduce costs and enhance safety.

Yet to optimise the efficiency and effectiveness of their operations, operators must address the harsh reality of aging asset bases. In Asia, this challenge already looms large for metro operators such as Hong Kong's MTR and SMRT in Singapore, whose extensive networks are approaching 40 and 30 years of service, respectively. Decisions on asset renewal and replacement cannot be perennially postponed. Such operators and their government stakeholders must determine how best to organise their activities to deliver effective decision-making and oversight of major capital expenditure programmes.

This requires careful consideration of various factors, including customer expectations, ownership structures and,

in some cases, a widening gap between revenues and the total cost of operating the railway, which comprises both opex and capex elements.

Asset renewal and replacement are not siloed activities, but integral to other asset management and functional responsibilities. Long-term capex planning must be treated as a functional activity in its own right, with the necessary resources and governance oversight. Some of the key operational and financial drivers include asset life, capacity and obsolescence. There will eventually be a need to recalibrate the balance between operational performance, cost and customer experience.

Effectively forecasting and planning for long-term capex requirements is far from straightforward. While a short- to medium-term plan can serve as a useful roadmap, plans inevitably become less meaningful the further they project into the future. Even if there is a realistic planning horizon, key stakeholders may not be incentivised to formulate accurate long-term forecasts. There may be pressures to 'play' the system in order to secure funds to address immediate operational issues.

Overcoming barriers

Failure to effectively reconcile divergent views on future capex needs — especially between engineering, operations, finance and project managers — may further inhibit the attainment of a realistic view of long-term requirements and, crucially, what can actually be delivered. Shareholders, whether government or private entities, are unlikely to take kindly to sudden changes in long-term capex forecasts.

Left unaddressed, these barriers to effective long-term planning can leave

asset owners and operators in a particularly challenging situation, which can be termed a 'totex dilemma'. This is characterised by an aging asset base, increasing operating costs, and a backlog of capital works. Additional pressures in the form of flat or declining railway revenues, or meeting long-established customer expectations of service standards, may heighten the challenge. While a long-term capex plan may exist, it may well have ceased to be meaningful, such is the disconnect between need, resources and the ability to deliver.

A railway's ability to effectively plan for and execute its long-term capex needs is critical to overall efficiency and effectiveness. We believe there is a set of critical success factors that can help to overcome the 'totex dilemma' and lay foundations for efficient and effective rail operations. These include requirements capture, formally reconciling competing internal perspectives with the 'voice of the customer', as well as governance, control, and the prioritisation of capital funding requests. Also crucial are incentives to address the unintended consequences of prevailing business rules and financial and operational targets, and enablers including maintenance, procurement and technology regimes.

Asset renewal and replacement decisions must battle for organisational attention and resources with other priorities, such as new works, 'lean' continuous improvement programmes, and immediate safety-related prerogatives. A railway's processes and governance must be able to handle a complex mix of needs and decision types. When assessing their ability to effectively and efficiently execute their long-term asset renewal and replacement plans, organisations must consider whether the decision is independent, consistent and accountable. They must also think about targets, capabilities, and controls and incentives for inputs into their budgetary and financial planning processes.

Going forward, the most successful operators will be those that succeed in generating buy-in to realistic long-term capex forecasts and prioritised requirements, which are supported by aligned business processes, governance arrangements, and incentives. Only then can operators escape the 'totex dilemma' and ensure that asset replacement is a stepping stone towards sustainable improvements in operational efficiency and effectiveness. ■

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