Improving competition and cutting costs

Terry Walker of the LRTA's External Relations Group argues how significant cost savings can be achieved and efficiency improved for light rail development through the use of revised procurement strategies.

Above: LRT schemes can be delivered more cost-effectively and quickly through revised methodologies and contracting processes, Terry Walker argues. Manchester Metrolink is benefiting from a *de facto* tram procurement strategy that is helping to enable Metrolink expand. Work on the line to Oldham is well advanced, as this image from the Featherstall Road bridge shows. Mike Haddon

Providing viable, reliable transport infrastructure is an essential element of any modern nation and is a fundamental requirement if countries are to grow and meet current and future financial challenges. The efficient movement of people to and from their places of work and their leisure activities is critical to the provision of a mobile, flexible and happy workforce.

Currently, it appears that tram and light rail-based transport systems in the UK are failing to reach their full potential in delivering against these objectives. In the last few years several schemes have been promoted, but all of the new-build projects in England have failed to come to fruition. This is because of a combination of factors, but it is felt to be mainly due to costs and the failure to meet estimated initial project budgets.

In reality, the current competitive procurement strategy exacerbates this problem and does not lead to cost-effective solutions. In fact, this approach has led to significant unnecessary costs incurred during the initial stages of the procurement cycle. It is has been mooted by senior industry figures that as much as 10-15% of tram project costs could be saved by altering the acquisition cycle to take advantages of scale. So, if the number of systems proposed over the last decade had been implemented total savings of GBP400-500m could have been made.

This significant sum – much of which has been spent on wasted procurement activities to date – could have been used to build another medium-scale system rather than spent on actions that do not enhance our transport systems or actually reduce costs.

The December 2010 paper *A Response to the Minister's Question* produced by UKTram suggested a number of areas that can lead to increased costs for tram and light rail systems. Amongst the cost drivers identified is the current procurement strategy; I would contend that significant cost reductions can be achieved if a single large-scale strategy is used instead of small-scale individual projects.

Current procurement strategy

The current methodology is based on the assumption that competition stimulates good industrial practice and is key to obtaining low costs. The procurement of tram systems recognises this and is based on the governing rules that all contracts must be:

- Procured as a result of a competitive process.
- Prepared and submitted by the relevant local authority.

It is assumed that these two basic rules provide the basis for cost-effective solutions and local control/responsibility/accountability. But are these assumptions correct?

An alternative competitive strategy

As indicated previously, it is felt that competitive procurement provides for a cost-effective process, provided the scale of the competition is such that the costs of procurement are worthwhile and viable to all parties. However, the implementation of small tram system packages can lead to recurring costs and the loss of benefits associated with the economies of scale.

Purchasing success can result if consolidation of projects is undertaken to give significant repeat orders for the same or similar equipment. Such an action will lead to start-up and procurement costs amortised over a larger number of units and prevent the repeat procurement activities being undertaken when smaller packages are purchased.

A better strategy could be to consolidate projects, thus maximising on the return of experience and the benefits of volume production and supply. In other words, to base the UK procurement strategy on the issue of a term contract for eight to ten systems with 80-plus vehicles. This would allow significant benefits to be accrued.

Reduced sponsor bidding cost

In any project, the following parties incur costs in developing a tram system for approval and purchase:

- Local government bodies (promoters)
- Approval bodies
- The Department for Transport
- Industry (the supply chain)
- Legal support teams
- Consultant groups
- Potential operators

Above: Are UK procurement processes preventing light rail development on the scale seen across the Channel in France? Reims 107 is seen here on the city's recently-opened tramway. Neil Pulling

A single term contract based on a standard solution will significantly reduce the expensive activities of these bodies once the first system of a term contract has been supplied.

In the current supply strategy, many of the above bodies repeat work, so no evidential benefit is achieved in risk reduction or from possible savings. Typically, specifications will be rewritten, contracts modified and many forecasting activities repeated for each project.

As an illustration, significant costs can be incurred in defining the system and procurement documentation. These activities often require the employment of expensive resources to produce data for use in the bidding process. In general, given a promoter's lack of experience (as systems are procured so infrequently), the agreement of a specification tends to be an iterative process throughout project development, with each iteration incurring further costs. A cynic could suggest these costs only benefit those undertaking the work, to whom it represents a significant revenue stream.

So, a single large-scale procurement using standardised vehicle and infrastructure solutions will provide significant cost reduction by elimination of repetitive actions.

As an example, individual project specifications could be limited to those elements unique to the system being proposed. Project actions that reflect only the individual aspects of such a system would reduce the sponsor's workload, and increase overall productivity, consequently achieving cost savings.

Furthermore, applying standardised solutions for common items will reduce the time and effort required for project approval, in turn further reducing costs for both the sponsor and supply base.

Supply base bidding costs

The costs associated with responding to a Request for Qualifications (RFQ) are extensive and expensive in today's procurement environment. This is due to the tendency to have multiple stages and activities with multiple bodies during the bidding, evaluation and approval stages.

The resources required to develop bids, and the associated costs, are approaching such magnitude that many organisations now have to seriously consider whether it is worth bidding for low-value contracts. Experience shows that the costs of bidding for a small project are similar to those for a large-scale one – yet the potential rewards are fewer. Any savings made for smaller contracts are therefore negated as companies recover their bid costs through overheads.

This fact could see major companies leaving the low-volume market. Such an action would be detrimental to the provision of a viable supply base as professional long-term relationships are essential to the provision of transport systems that have lifecycles measured in decades.

So, large-scale term contracts will stimulate major suppliers to expend maximum effort to provide the most competitive solution – in turn leading to significant savings for the sponsor.

Reducing costs of the approval process, improving estimates and out-turn costs

While there will always be areas unique to a specific project, it is sensible to develop common solutions for items such as:

- OHLE fixtures and fittings
- Power supplies
- Control systems and control rooms
- Depot design and supply
- Training and maintenance procedures
- Trams and associated spares
- Obsolescence rectification
- Finance packages

Common solutions enable more accurate cost predictions through the use of evidential data, reduce risk and increase confidence during the public inquires.

It could be argued that defining a set of standards could achieve much of what could be obtained by having a single large-scale term contract. However, as has been seen, agreeing standards is a difficult and time-consuming process and never quite comes to fruition. Having a *de facto* standard set by a single contract can provide a workable solution that will drive out costs.

Above: Blackpool's new Starr Gate depot has been built as part of the EU-supported TramStore21 project to develop cost-effective and sustainable depots for the future using best practice from some of Europe's top operators. Could this be the model for all UK tram depots?
Tony Stevenson

Risk management and mitigation

Much effort is expended during contract negotiations to allocate risk so the sponsor is protected. This increases costs and results in risk being flowed down to elements of the supply chain that do not fully understand, or have the financial muscle to manage, the risk if and when it occurs.

The major failing of the current procurement strategy, when used in conjunction with single supply contracts for single systems, is that it fails to achieve the major risk reductions that can be made by repeating the same design and supply solutions.

By using a stable and deeply involved supply base for multiple projects, lessons can be learnt and the reduction in perceived risks will lead to cost savings as involved parties will not have to set aside inflated contingencies based on 'what if' scenarios. This factor alone is worth pursuing as contingencies in the sponsor and supply chain's calculations can add sizeable project costs.

Management

Risk must be allocated to the group or party with the best potential to manage, resource and mitigate it. Risk management must ensure that the parties involved focus on the main aims of the project and have clear and sensible responsibilities they can take ownership of. Effort and resources must not be wasted by parties wishing to shift responsibility to other parties in the project. A long-term supply contract will enable:

- Sensible allocation of long-term risks to the party that has the skills, resources and capabilities to successfully manage them.
- Removal of risks associated with generating bespoke supply contracts and specifications.
- Increased focus on the unique areas associated with a project, rather than consuming effort on repeat items of supply.
- Relationships to be developed and matured so as to prevent short-term opportunism being used to divert risk to others to the detriment of the long-term relationship and the project.
- A realistic management matrix to be developed and refined so as to drive out risk altogether.

Mitigation

Learning from experience is key to a project's success. The current procurement strategy does not encourage, stimulate or reward the benefits that can be achieved for maximising on the feedback from projects. A large-scale contract covering several projects can achieve:

- Reduced risk by using proven, successful, solutions.
- Reduction in project start-up costs.
- Retention of the design and supply teams for an extended period, enabling the maximum use to be made on the experience gained in project supply.

Reducing the cost of ownership

The business model for a project is significantly impacted by the envisaged through-life costs associated with operating and maintaining the proposed system.

It has been stated, again by industry insiders, that the current approach does not encourage the driving out of through-life costs or enhancing the performance of systems. The present purchasing model does not enable operators and maintainers to take advantage of economies of scale on common items or reap the benefits of large-scale operations.

A single order covering several systems will reduce through-life costs by enabling operators to:

- Develop common driver and maintainer procedures.
- Shared maintainer and spares pools and facilities to cover major overhauls.
- Acquire common operating processes and procedures.
- Design and share safety cases for common actions.
- Share rolling stock to enable spare vehicles to be hired for short periods to cover accident repair, major overhauls periods or catering for special events.
- Develop common approaches to obsolescence.

Such actions drive out costs and improve the return on investment by reducing capital expenditure.

Finance costs

In any scheme, the provision of finance contributes significant costs. Finance houses look at the returns, the risk and the total value of the contract amongst other considerations.

A single large-scale, long-term project should lead to a reduction in finance costs as the risks are reduced through a common supply base; the potential rewards should also be enhanced due to the total value of a larger contract.

The above factors will increase the attractiveness in the finance market for tram and light rail projects, and could result in increased competitive forces for long-term, high value term contracts as they are let.

Debunking a few myths

The cost-cutting benefits of using single term contracts could lead to important procurement savings for tram and light rail systems. Realising this potential could enhance the ability of light rail schemes to contribute to integrated transport solutions for more of our cities. The question is whether such a term contract is possible.

The first reaction may be that it won't be viable because:

- **It will reduce the competitive base.** In fact, such an action will lead to increased competitive effort as all major suppliers will wish to be involved. It will also prevent major suppliers drifting away from the market, which could happen if only small projects are let.
- **The winning companies may fail at some time in the future.** Long-term commitments will encourage companies to stay in the market. In addition, arrangements already exist in other term contracts to deal with early termination; these can be transferred.
- **Term contracts do not work.** Other countries use such contracts, as illustrated in the French market where a single contract was placed for the development and supply of a family of tram-trains for the Pays de la Loire and Rhône-Alpes regions, with a total volume of 200 units.
- **A single term contract will not allow individual sponsors to influence the solution for their project.** In reality, they will enable individual sponsors to focus on the unique aspects of their scheme without concerns over whether the base technical solution will work. In addition, they will still be able to display their branding, provided the key elements of the contract allow a degree of flexibility in key areas such as tram nose cones etc.
- **Central government support for large-scale term contracts may be low.** The economic factors of providing viable transport systems will inevitably increase with the need for growth and the increasing costs associated with relying on fossil fuels – this will lead to further consideration of mass transit systems.

As previously stated, having a term contract could lead to savings of 10-15% of the costs associated with individual projects. This potential saving could help to enhance the business case of light rail systems and justify the use of a term contract.

Manchester Metrolink's purchase of new trams also proves the benefits achieved by using a *de facto* large-scale procurement. TAUT

Top left: It could be argued that insufficient clarity in risk management and mitigation has led to many of the issues related to the much-delayed tram project for Edinburgh.
Murdoch Currie

Top: Drawing on experience from other systems and the implementation of common standards and practices – as is done in France – reduces risk and project costs.
Neil Pulling

Above: Manchester Metrolink's options for Bombardier *M5000* trams for future extensions shows how increased buying power can bring down the costs per vehicle.
John Symons