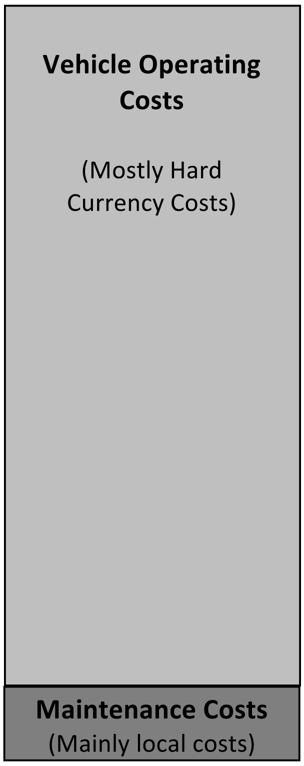
Managing Roads 1: The Facts of Life

Providing roads is rather like water supply or electricity generation: it's something that we all take for granted and never really think about, until things go wrong and we realise just how much we rely on it. An adequate and well-maintained road network is an essential economic lubricant for the engine of growth, a vital prerequisite to achieving a competitive and functioning economy. But, although most of us may take them for granted, there is a great deal involved in providing road infrastructure.

For a start, they are horrendously expensive! For example, even in a very poor country such as Nepal, its National road network alone is worth about US$1.3 billion (excluding the value of the land on which they stand). This represents almost 20% of the country's GNP or about US$50 for every man, woman and child in the country (where the GNP per capita is less than US$300 per year). In many countries, the value of Local roads is about the same again. So providing roads represents a substantial investment. And like every other investment (such as a car or a house), roads need to be maintained. Typically, this should be about 3% of their construction costs each year. Without this ongoing maintenance, this investment is gradually lost, as are the benefits arising from their use. Roads are therefore very big business, which is one reason why it is only governments who can afford them.

Figure 1: What Contributes to Overall Road Transport Costs



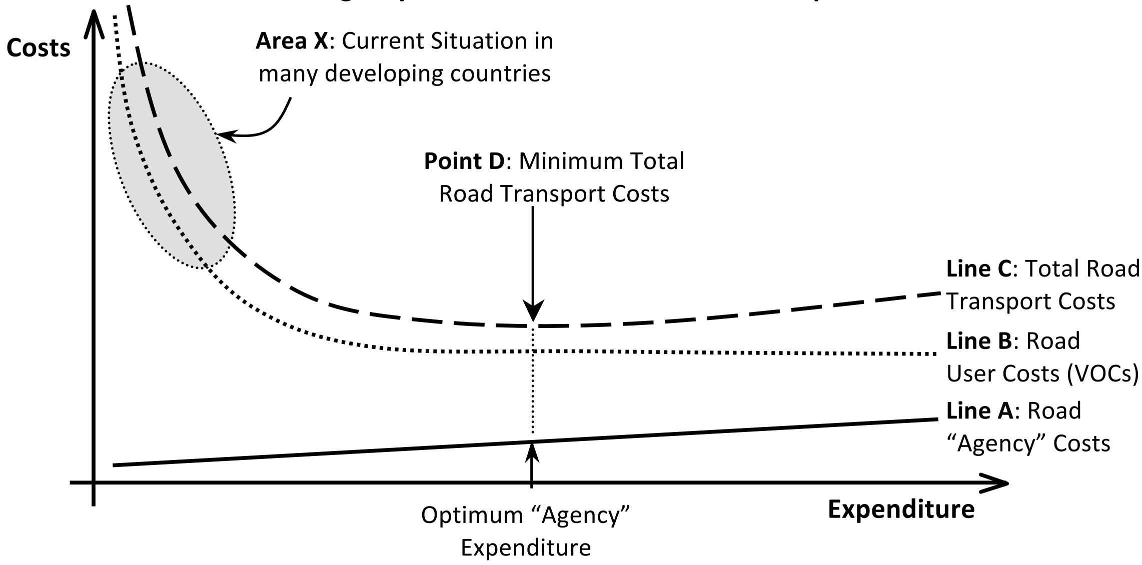
And yet these massive construction and maintenance costs are tiny compared to the cumulative costs of running vehicles on the road network (see Figure 1). Substantial international research has demonstrated that typically, if a road network is properly maintained, then the maintenance costs of the roads represent only about 10% of the total cost of operating vehicles on them (vehicle operating costs, or VOCs). About 90% of road transport costs are incurred by those using the roads. Consequently, when roads are in a poor condition, spending more to improve their condition often results in much bigger savings to the country's economy, due to much lower vehicle operating costs. Better roads mean we use less fuel, tyres and suspensions last longer, our vehicles need less frequent servicing and repairs, and we spend less time travelling. Typically, for every extra dollar spent to improve roads (which promotes the local economy), the country saves about three times that amount (predominantly in the form of imports, priced in hard currencies). Investing in better roads therefore represents excellent value for the whole economy; whereas bad roads mean that precious national resources are wasted – gigantic amounts of money that literally go up in smoke! (And lets not even include the environmental damage caused by bad roads.)

Unfortunately, road maintenance expenditures are incurred by road management organisations, and are therefore highly visible (they are a big budget item); whereas the benefits enjoyed from this expenditure are far less visible, being reflected in many relatively small savings enjoyed by private motorists and freight companies. Together, these savings are many times greater than the road maintenance costs incurred by governments.

An important objective of good road management is therefore to minimise the total cost of road transport to the country as a whole. This is illustrated in Figure 2.

As the government (through its road organisations) spends more on the road network, (shown by the solid line A), the condition of the network should improve (assuming of course, that they are spending their revenues in the right places and on the right things). A better road network will result in lower vehicle operating costs (represented by the dotted line B). The dashed line (C) shows the total cost of road transport to the economy as a whole. In many countries, the roads are not as good as they could be, due to insufficient and ineffective expenditure, and their condition lies in the region shown in Figure 1 (Area X). The gradient of the line C (total transport costs) at this point indicates the substantial savings that should be possible from greater expenditure on road maintenance.

Figure 2: The Contribution of Agency & VOC Costs to Total Road Transport Costs.



If on the other hand, the roads are already in a very good condition, then the benefits to the community from spending ever more money on them reduces (the law of diminishing returns). The trick is to find that point where the total transport costs are the minimum, as represented by point D in Figure 1.

Ensuring that More Funding Results in Better Roads

Increasing the budget for road maintenance does not automatically result in better quality roads, if this additional money is squandered on poorly conceived or uneconomic projects, or wasted through corruption and inefficiencies. Given the importance that roads play, any such waste is not in the interests of any society. It is essential that the expenditure on road maintenance is used to achieve the greatest benefits possible (getting the "*biggest bang for your buck*"!).

No one likes seeing their money wasted, especially if they have little control over its use; and they have a right to know how their money is being used. The onus is therefore very much on those spending the money to demonstrate to those paying, that their funds are being used as efficiently and as effectively as possible. Otherwise, there is an understandable resistance to paying anything at all. This accountability can only be achieved through open and transparent processes, requiring the use of sound, businesslike processes, where decisions can be clearly justified, based on benefits and costs that are clear. Problems and weaknesses need to be identified early and dealt with promptly. Such practices are especially important for those services (such as the provision of road infrastructure) where those paying can not use alternative suppliers instead.

The implication of this is that any organisation spending money on roads (or for that matter, any other service), must ensure that they can achieve this businesslike transparency. Where these conditions do not exist, problems arise, resulting inevitably in less than optimal decision making, transparency and accountability, and greater inefficiencies.

What Does "Better" Roads Mean?

Wealthy countries can afford to waste their resources (but should not do so anyway!), poor ones can not. So it is particularly sad to see that the most inefficient countries are those who can least afford the level of waste that they incur. In part, this helps perpetuate their poverty. In an economically "poor" society, it is particularly important that its very limited resources are used as efficiently as possible, in order to minimise unnecessary waste.

However, it is perfectly reasonable that not all decisions and actions are based solely on maximising economic benefits (although these should always be considered). Other issues also play an important role in determining what actions to take and hence what expenditures to incur. This is where policies are important, as they should reflect all the aspects that society considers to be important. For example, there may be a policy stating that for environmental and health reasons, all roads in urban areas are to be paved in order to reduce dust, regardless of the economic viability. Such a policy will influence what actions are taken, with these actions reflecting society's values. "Better" roads would therefore be defined in terms of what society thinks is "better", as reflected in the policies that influence the construction and maintenance of the road network.

Similar to other areas of the economy, the policies set can have an important impact on the resulting shape and condition of the road network. This influences the costs and levels of service that road users and the general population receives. It is therefore important that the policies are well considered and made known, both to those who must implement them, as well as to those who are being asked to pay for them and to live with the consequence of them. Once again, transparency is important in this process, as this builds understanding and (assuming they are appropriate) public support for them.

In summary, when roads are in a sub-optimal condition, the benefits of providing a good, well maintained road network are many times greater than the costs of providing this service, huge as these provision costs are. Commonly, about 90% of road transport costs are incurred by road users, so any additional expenditure that improves the roads' condition provides returns that are many times greater than the cost of maintaining that road. (Typically, the benefit are approximately 3 times greater than the costs). This represents an excellent investment by a community. It is however, imperative that appropriate institutional and organisational arrangements are put in place to ensure that those paying for the roads have confidence that their money is being used wisely, and to provide the services that they want. This requires clear policies and a businesslike and transparent approach to how their funds are used in delivering better roads.

The next article in this series will discuss alternative ways for funding roads: who should pay for them, how should they could pay, and what problems can arise.

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