Managing Roads 1: The Facts of Life

Looking after roads is something few of us ever think about: it's a bit like water treatment or electricity generation. But like water or electricity, if these things go wrong, we certainly do notice. A sufficient and well-maintained road network acts as an essential economic lubricant for the engine of growth, a vital prerequisite to achieving a competitive and functioning economy. We take them for granted, but there is a great deal involved in providing this infrastructure.

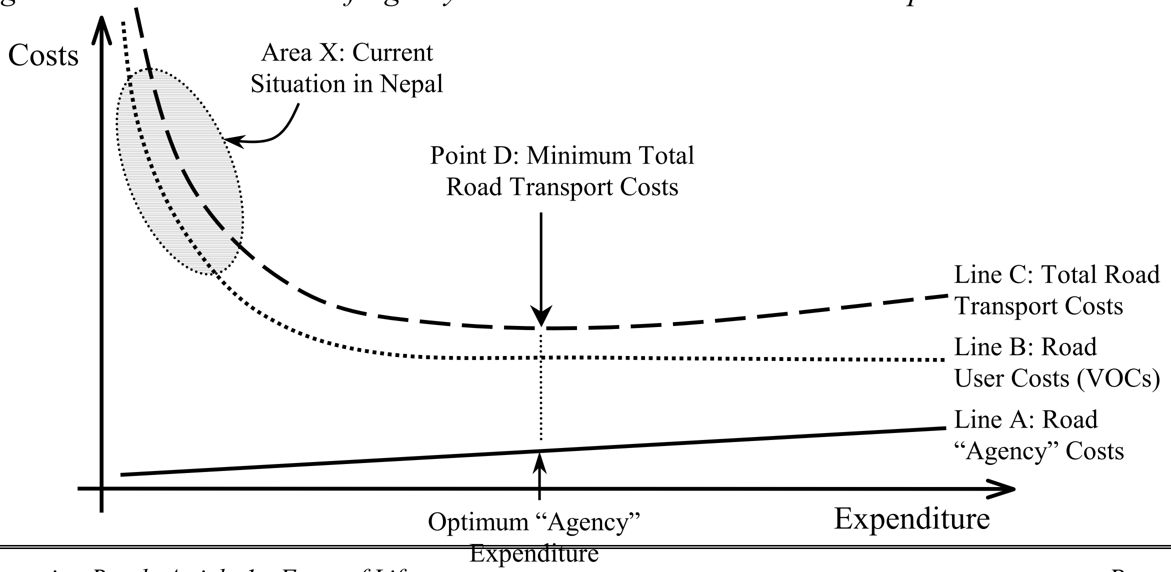
For a start, they are horrendously expensive! For example, the national road network in Nepal (i.e. excluding all local roads) is worth about Rupees 90 billion (US$1.3 billion), which represents almost 20% of the country's GNP or about Rupees 3,500 for every man, woman and child in Nepal. They represent a substantial investment, which like every other investment (such as a car or a house) needs to be maintained if society is to enjoy the benefits from this investment. Typically maintenance costs for roads should be about 3% of their construction costs each year (or Rupees 2.7 billion per year). Roads are therefore very big business, (which is one reason why it is only governments who can afford them).

And yet these massive costs are tiny compared to the costs of running vehicles on the road network. 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 vehicle operating costs (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 lower vehicle operating costs. Better roads mean we use less fuel, 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 imports priced in hard currencies), representing an excellent investment for the whole economy. Bad roads mean that precious national resources are wasted – gigantic amounts of money that literally go up in smoke!

Unfortunately, road maintenance expenditures incurred by the road management organisation, are highly visible (they are a big budget item), whilst the benefits enjoyed from this expenditure is far less visible, being reflected in many, many relatively small savings enjoyed by private motorists and freight companies. However, despite this, collectively these savings are many times greater than the road management and maintenance costs.

An important objective of good road management is therefore to minimise the total cost of road transport to the country as a whole. This can be shown in Figure 1.

Figure 1: The Contribution of Agency & VOC Costs to Total Road Transport Costs.



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). 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. At the moment, the roads in Nepal are not as good as they could be, in part due to insufficient expenditure, and they lie 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.

Eventually, once the roads are 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 it is squandered on poorly conceived or unviable projects, or wasted on unproductive or extravagant activities. It is always important to ensure that the expenditure on road maintenance is utilised to achieve the greatest benefits possible (getting the "biggest bang for your buck"!). No one wishes to see their money wasted and unless those spending it can assure those paying that their funds are being used as wisely as possible, then there will be an understandable resistance to paying. Given the importance that roads play, and the need to maintain them, this is in no-one's interests. The onus is therefore very squarely on those spending the funds to clearly demonstrate that they are being utilised as efficiently and as effectively as possible. This can only be achieved through open and transparent processes, where those paying can see how their funds are being used and why. Those paying have a right to know how their money is being used. In turn, this transparency can only be achieved through the use of sound, businesslike processes, where decisions can be clearly justified, based on benefits and costs that are clear, and problems and weaknesses identified easily and dealt with promptly. This is 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. And where these conditions do not exist, then problems arise, which inevitably result in less than optimal decision making, transparency and accountability, and increased inefficiencies.

What Does "Better" Roads Mean?

When any society is economically "poor", it is particularly important that its very limited resources (i.e. wealth) is used as efficiently as possible, in order to minimise unnecessary waste. Wealthy countries can afford to waste their resources, but it is particularly sad to see that the most inefficient countries are those who can often least afford the level of waste that they suffer (and indeed, this perpetuates their poverty).

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 are also likely to play an important role in determining what actions to take and what expenditures to incur. This is where policies are important, as they should reflect aspects other than economics that society considers to be important. For example, there may be a policy that states 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.

The establishment of such policies can have an important impact on the resulting shape and condition of the road network (as for other areas of the economy too), and hence the cost and level of service that road users and the general population receives. It is therefore important that such 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 suffer the consequence of them. Once again, transparency is important, both in setting policies, and in their implementation.

In summary, the benefits from the provision of a good, well maintained road network in Nepal are many times greater than the costs of providing this service, huge as these costs are. About 90% of road transport costs are incurred by road users. Consequently, any additional expenditure that results in better roads provides returns that are approximately 3 times the cost of maintaining that road. This represents an excellent investment by the 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, to provide the services that they want. This requires clear policies and a businesslike and transparent approach to how their funds are used.

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. Stay tuned!

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