The Delhi Metro, which has been under construction and operation continuously for over a decade, is widely viewed as a ‘miracle’ infrastructure mega-project. It has been built in a densely populated city within 14 years and is set to exceed 400 kilometres in length over the next decade. At a time when several major infrastructure projects are stalled or suffering long delays across India, the project raises questions about the extent of its success and whether this can be replicated elsewhere within the country.

What next

In order for an infrastructure project to succeed in India, it requires local, state and central support without political interference in its everyday activities. Executive and legislative accountability can be achieved through an independent regulatory body to monitor the project. Visibility through mass media helps keep the project in the public eye, forcing some political transparency and better legal compliance.

Analysis

The Delhi Metro has been seen as a ‘miracle’ project and come to symbolise progress in India. It provides an alternative swift, safe, comfortable and fairly inexpensive means of travelling within the city and the National Capital Region, and has increased people's access to economic opportunities within an even larger geographic region. It has suffered no major delays, and remained free of corruption allegations and concerns about quality.

Reasons for success

The success of the project is attributable to several factors:

- **Political convergence.** The Metro promises major economic returns for Delhi and its neighbouring states. Hence, it received support from both the central and Delhi governments (and the surrounding state governments) from its inception -- no matter which political party was in power. Moreover, the project benefitted from its geographical location in the capital, and the Delhi government's limited state powers. As a result, it enjoyed the support of the central locus of power and remained immune to state-level political intrusions.

- **Cohesive partnership.** Once the cabinet approved the project in 1996, the Delhi Metro Rail Corporation (DMRC) was formed as a 50:50 partnership of the Delhi and central governments, which kept them both equally involved in the crucial, initial stages of the project.

- **Managerial independence.** Under the 2002 Metro law, the DMRC is classified as an autonomous body under the Central Ministry of Urban Development, insulating the project from any potential attempts by the central or state government to claim predatory control.

Impact

- Convergence of state and national-level economic interests provides crucial impetus to large-scale infrastructure projects.

- Social surveys and concerted efforts to galvanise public support may help remove hurdles to land acquisition and resettlement.

- The Metro will create wider economic benefits and set an example for new corporate-style management in Indian public institutions.
Delhi Metro offers lessons for infrastructure plans

- **New corporate ethic.** Strong leadership, adoption of a new corporate work culture and the formation of a public relations department galvanised public support for the project and militated against political interference. Moreover, funding through a Japan Bank of International Cooperation (JBIC) loan ensured that the organisation was alert about efficiency and international standards.

- **Land acquisition.** The Delhi government, rather than the DMRC, is responsible for land acquisition for the metro project. Hence, unlike several major infrastructure projects, the DMRC has remained largely isolated from hurdles related to this problem (see INDIA: Land disputes pit judiciary against state - December 23, 2011).

**Weaknesses**

However, the project is not without weaknesses.

**Commercial lack of viability**

The Delhi Metro is not a commercially viable project (in terms of cost-benefit analysis) and remains heavily dependent on government subsidies, which include concessions on imports, equipment, excise duty, sales tax and work contract tax, power, water and security. Indeed, by May 2003, the Metro rail project had received at least 3,000 crore rupees (538.5 million dollars) in subsidies or 30% of the cost of the first phase of the project. If these subsidies were added to the project cost, the total contribution by the Delhi and central governments would be over 50% for the project.

Ultimately, if it is able to make a real profit, it will have to be from areas such as property development and transit-oriented development, which will also increase its ridership. However, the likelihood is that it will never break even.

Yet this may be acceptable. Infrastructure projects are almost always public projects, not only because the cost of such projects cannot be borne by private companies but also because their benefits go beyond financial gain. In fact, the project was approved in 1996 as a social-sector project, with the Public Investment Board pointing out that it had an economic rate of return of 214% but a financial rate of return of only 2.8%.

**Environmental standards**

The JBIC, which provided a loan covering 60% of the project cost, required that an environmental impact assessment report be completed and submitted as part of the loan agreement. The assessment covered issues such as resettlement and compensation, afforestation, mitigation of noise, water and soil pollution and environment-friendly stations.

In terms of addressing these issues, the DMRC’s record appears mixed:

- It claims that it has done "its best" with regard to noise, water and soil pollution, and deforestation and afforestation.

- However, these claims have not been verified by an independent regulatory body.

This lack of accountability, and central and Delhi government backing, has prevented mitigation of environmental impact in a world-class manner. Nonetheless, the DMRC, keen to preserve its public image and avoid an official backlash, is becoming more transparent and proactive about its environmental impact.
Design flaws

In terms of network design, the project has turned its back on low-income neighbourhoods, slums and squatter settlements near stations, especially in its first phase. In station design, the stations have either blocked access or made it difficult for poorer neighbourhoods, thereby denying some economic benefits of the Metro to those sections of society that need them most.

Ridership numbers

The project, like most urban rail transit projects, has shown less than a stellar performance in its ridership numbers. In 2008, the comptroller and auditor general reported it at 20% of its original projections. In 2011, the DMRC annual report sets it at 72% of original projections. However, a major part of this shortfall is attributable to the missing public transport links or last-mile connectivity.

Land issues

Resettlement and compensation for those affected by the project was handled by the Delhi government. Even though there are some concerns that this may not have been carried out fairly or properly, the DMRC itself has not faced criticism over this issue. Nonetheless, more recently, the DMRC has tried to facilitate a smoother transition for those affected by better communication and social surveys -- an indirect effect of its success and public image.

Labour practices

The heavy workload and unsafe site conditions have in some cases resulted in fatalities of labourers and children. Although this aspect of the project has elicited some criticism, it is reflective of a wider trend concerning lack of oversight over labour conditions in India (see INDIA: Deregulation will not resolve labour problems - May 18, 2012).

Word Count (approx): 1199