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Abstract

Economic liberalisation in 1990s necessitated development of a world class road network to trigger the economic growth trajectory for India. The concept of involving private sector was mooted as the investment required for this task was well beyond the budgetary support. Thus private sector participation in the form of Public Private Partnership emerged in mid nineties and entrenched itself in 2000–10 as the most preferred mode of delivery in the construction of National Highways in India. This paper discusses the evolution of Model Concession Agreement for National Highways, the vital framework on which the success of Public Private Partnership lies. The key learnings of this study would help in further refining the framework for Public Private Partnership in road development and also facilitate in developing the framework for other physical and social infrastructure sectors. There were a series of discussions between Planning Commission and Ministry of Road Transport and Highways and National Highways Authority of India on issues like Grant vs Premium, Site Handover, Omnibus Bipartite State Support Agreement, Specifications and Standards, Supervision, Change of Scope, Security to Lenders, Change in Ownership, Breach of Maintenance Obligations, Variations in Traffic growth, Overloading, Termination etc. The balanced and proactive approach that evolved out of these discussions made the Model Concession Agreement comprehensive, less ambiguous and justifiable for both concessionaire and the Government.

Evolution of Model Concession Agreement for National Highways in India

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Introduction

In 2011-12, the National Highways Authority of India (NHAI) awarded an all time high of 48 Public Private Partnership (PPP) projects for a length of 6380 km. This has been a consequence of a journey of evolving a PPP framework through an appropriately designed Model Concession Agreement (MCA) since the mid nineties.

By 1995-96, road had become the dominant mode of transport with 60% share in freight and 80% share in passenger traffic. 38,500 kilometres (km) of National Highways (NH) formed about 1.93% of the nearly two million km total road network, but carried about 40% of total road traffic [1]. With liberalisation of the Indian economy, it was felt that road infrastructure had to be strengthened. India witnessed great strides in road development especially after the inception of National Highway Development Programme (NHDP) in 1999. Of the 55,448 km of two/four/six/eight lanes earmarked under NHDP Phases I to VII, 14,740 km has been completed, and 9,628 km is under implementation by 2010-11. Among NHDP projects, PPP in the form of Build Own Transfer (BOT) (Toll) projects picked up well since 2005. The share of BOT (Toll) mode of delivery in NHDP projects increased to 89% and 74% respectively in 2009 and 2010 [2] [3]. Increased adoption of BOT (Toll) was facilitated by policy initiatives of Government of India (GoI) and the evolution of MCA for BOT (Toll) road projects into a well balanced document. This paper discusses the various policy initiatives taken by the GoI to improve NH through PPP from early nineties till 2009 and the evolution of MCA for BOT (Toll) projects. This paper also evaluates the improvement in the performance of NH projects on various parameters during the evolution of MCA and draw conclusions thereon.

The Evolution of Public Private Partnership

After realising the need to involve the private sector in the development of roads, in 1992, the GoI amended the National Highways Act 1956 to empower GoI to levy fees for services or benefits rendered in relation to the use of sections of NH, in addition to the existing provisions for the use of ferries, temporary bridges and tunnels. To attract private investment, the GoI initiated measures in 1994-95 like declaration of road sector as industry to facilitate borrowing on easy terms and permission for floating of bonds, relaxation in Monopolies and Restrictive Trade Practice to enable large firms to enter the highway sector and reduction in the custom duties of construction equipment [1].

The Expert Group on the Commercialisation of Infrastructure Projects headed by Rakesh Mohan in 1995-96 estimated that Rs 32,000 cr was required from 1996-97 to 2000-01 and Rs 63,000 cr from 2001-02 to 2005-06, in the road sector alone.

Meanwhile, Ministry of Surface Transport (MoST) had also estimated that Rs 40,000 cr was required to four lane 14,000 km of two lane NH. These studies confirmed that budgetary support alone was not enough to address the task of building NH on this scale and led to the concept of PPP in the form of BOT (Toll). In BOT (Toll), the private operator built the road, maintained and operated it by levying toll from the user for a period of concession, at the end of which the project was transferred to the GoI. Exhibit 1 shows different modes of delivery in NH projects. In 1995, the GoI amended the National Highways Act 1956 to empower itself to enter into an agreement with any person in relation to the development and maintenance of the whole or any part of a NH and entitled the person to collect and retain fees for services rendered regarding expenditure involved in building, maintenance, management and operation of the whole or part of such NH, interest on the capital invested and reasonable return [1]. To streamline the process and to implement the NH development plans of MoST, National Highways Authority of India (NHAI) was established in February 1995 on the basis of National Highways Authority Act enacted in 1988 [4].

The awarding of road projects by NHAI on BOT (Toll) basis begun with three smaller projects including two bypasses and one Road Over Bridge (ROB) in 1995 and 1996 (Exhibit 2). Prior to this, in 1993 the Madhya Pradesh state government had taken initiative to implement what was the first BOT (Toll) project¹. Gujarat followed suit in 1996². However, lack of a legal framework was identified as the reason for the delay in the initiation and large scale expansion of BOT projects in road development [1].

In December 1996, MoST prepared a draft policy paper on 'Development of National Highways and other related issues' in consultation with the Ministry of Finance (MoF). Based on further discussions with M S Ahluwalia, Secretary, MoF and Sundar, Secretary, MoST, Gajendra Haldea, the then Joint Secretary (Infrastructure), Department of Economic Affairs (DEA), prepared a note and presented it to the cabinet for approval. This note, wherein the principles of four laning, BOT, bidding, government grant, tolling (as long as there existed a 'reasonable' non tolled alternative), etc, were specified, was approved by the cabinet in Jan 1997. Further to the cabinet approval, a High Powered Committee (HPC) was constituted in January 1997, under the Chairmanship of Secretary, MoST to formulate BOT terms and conditions for the approval by the cabinet. The task for HPC was to take one or two pilot projects in the expansion of existing NH and construction of new expressways for evolving standard BOT terms and conditions which inter alia included evolving the MCA.

During 1996-97, the GoI took some more measures to speed up NH projects like promulgation of an ordinance for invoking eminent domain for land acquisition, exemption from environmental and forest clearances for widening existing NH, levying toll for road sections funded from the budget, allowing BOT (Annuity) model, permission for NHAI to become partner in the Special Purpose Vehicles (SPV) created

¹ The Government of Madhya Pradesh commissioned the 11.5 km Rau Pithampur stretch in November 1993, the first BOT (Toll) road project involving Madhya Pradesh State Industrial Development Corporation, Madhya Pradesh Audyogik Kendra Vikas Nigam (Indore) Limited and Infrastructure Leasing and Financial Services Ltd (IL&FS).

² The Government of Gujarat's first project, Bharuch Dahej ROB was conceptualised in early 1996 and awarded in 1997. The Government of Gujarat, along with IL&FS, also initiated the Vadodara Halol and Ahmedabad Mehsana BOT (Toll) road projects in 1999 and 2000 respectively .

by private players for road development, compensation to the private players for unforeseen circumstances and external assistance from multilateral agencies [1]. Measures like exempting land acquisition for NH from Land Acquisition Act, 1894 and notification of fee rules for different vehicles based on Wholesale Price Index by the GoI in 1997 facilitated further progress in BOT (Toll) mode of NH development [4].

By 1997-98, 11 BOT projects (bypasses, ROB and river bridges) with an estimated cost of more than Rs 530 cr were awarded and nine more in 1998-99 and 1999-00 [1]. The list of first 20 BOT (Toll) projects awarded by NHAI from 1995-96 to 1999-00 is shown in Exhibit 2. But there was no response for PPPs from developers for regular road stretches. In 1998, the National Democratic Alliance government headed by Atal Bihari Vajpayee announced the first two phases of NHDP. The Phase I was four laning 5952 km of Golden Quadrilateral (GQ) connecting the four metros (with some port connectivity) and Phase II was four laning of 7300 km of North South and East West (NSEW) corridors. The NHDP was formally launched on January 6, 1999 [2]. As there was not enough interest for PPP model, partly due to lack of an approved MCA, the MoST went ahead almost entirely with Item Rate Contract (IRC) for the GQ. Out of the 128 projects of GQ, only six were awarded on BOT (Toll) and seven as BOT (Annuity). PPP gained momentum in NHDP Phase II (NSEW corridors) with 16 on BOT (Toll) and 20 on BOT (Annuity) out of 194 projects (Exhibit 3).

Identifying lack of standard framework for BOT mode of project execution, in 1998, Haldea prepared and placed a draft Concession Agreement (CA) before Planning Commission (PC) for scrutiny. After further discussion with banks and financial institutions in Mumbai, he published his draft CA titled 'Indian Highways: A Framework for Commercialisation' in 2000 [5]. Meanwhile, NHAI developed two MCAs for projects less than and more than Rs 100 cr respectively. The latter one and Haldea's draft CA had significant commonalities. The HPC had chosen six laning of the 90 km Jaipur Kishangarh stretch in NH 8 in 1998 as a test project for evolving the MCA. The improved version of MCA developed by NHAI for highway projects costing over Rs 100 cr was first put to test on this project. After rebidding and the associated delay, the project was awarded to GVK in late 2002 and was completed in May 2005 [6]. The final version of the CA of this project drew significantly from the Haldea's draft CA.

United Progressive Alliance government in 2004 constituted a Committee on Infrastructure (CoI). This CoI insisted on an MCA for road projects. An Inter Ministerial Group (IMG) was constituted in January 2005 to examine and evolve the MCA for (i) BOT (Toll), (ii) BOT (Annuity) and (iii) Operation, Maintenance and Tolling (OMT) projects. The PC submitted the CA published by Haldea, Advisor (Infrastructure) to the Deputy Chairman, with a few revisions as a draft MCA to the IMG for consideration. Recommended by IMG, the CoI approved the draft MCA of PC as a model framework for road projects. Pursuant to this decision, a Public Private Partnership Approval Committee (PPPAC) was set up under the Chairmanship of Secretary, DEA, Secretary, PC, Secretary, Expenditure, Secretary, Legal Affairs and Secretary of the Department sponsoring a project. It was decided to follow water fall model in awarding contract, whereby a project was first invited under the BOT (Toll) mode. In case of inadequate response, the BOT (Annuity) mode is used. In case even this fails, the project was given on IRC mode. In this backdrop, PC officially published three MCAs for PPPs in National Highways (September 2005), State Highways (September 2006) Operation &

Maintenance of Highways (October 2006). The above measures increased the number of projects awarded in PPP mode of delivery over the years in the development of NH as shown in Exhibit 4.

The CoI announced Phases III to VII of the NHDP in January 2005 with BOT (Toll) as the preferred mode of delivery, followed by BOT (Annuity) and then IRC. This essentially highlighted the confidence in the proposed MCA. Exhibit 5 gives an overview of the NHDP Phases. Until approval of PC's MCA by CoI, NHAH followed the CA of Jaipur Kishangarh, for all projects that were awarded on a BOT basis. The discussions between PC and NHAH from 2006 to 2009 helped in evolving and strengthening the framework for BOT projects. Following these discussions, PC published the improved versions of MCA: PPPs in National Highways (2009), National Highways (six laning) (2009), State Highways (2009) and Operation & Maintenance of Highways (2009). In addition to this, Model Request for Qualification (RFQ) for PPP Projects, Model Request for Proposal (RFP) for PPP Projects, Model RFP for Selection of Technical Consultants, Model RFP for Selection of Legal Advisers, and Model RFP for Selection of Financial Consultants & Transaction Advisers were also published during 2009-2010 for strengthening PPP framework. With the publication of Manual of Specifications & Standards for Two laning and Four laning of Highways, Guidelines on Formulation, Appraisal and Approval of PPP Projects, Guidelines for Financial Support to PPPs in Infrastructure (Viability Gap Funding Scheme) and Scheme for Financing Infrastructure Projects through the India Infrastructure Finance Company Ltd, the process involved in PPP framework became comprehensive, precise, complete and transparent [8].

The Evolution of MCA

Although, the CoI adopted the MCA of PC, it was not followed in its entirety by NHAH till December 2008 due to prolonged discussion between NHAH and PC on various issues. Twelve key issues have been highlighted here to show the evolution of MCA over a period of time. They are:

1. Grant vs Premium (Revenue Sharing vs Negative Grant)
2. Site Handover
3. Omnibus Bipartite State Support Agreement
4. Specifications and Standards
5. Security to Lenders
6. Supervision
7. Change of Scope
8. Change in Ownership
9. Breach of Maintenance Obligations
10. Variations in Traffic Growth
11. Overloading
12. Termination

Each issue is discussed in three phases. The first phase included the pre MCA CAs of three projects, Durg bypass (1997) [10], Jaipur Kishangarh (2002) [11] and Nagpur Kondhali (2005) [12]. The essential features of these three projects are summarised in Exhibit 6. The second phase involving MCA published by Haldea in 2000 and PC in 2006 [13] and 2009 [14] portrayed the evolution of MCA over a decade. The third phase is

post MCA adoption (from 2007 to 2009) for which the projects, Muzaffarnagar Haridwar (September 2008) [15], Farakka Raiganj (April 2009) [16] and Varanasi Gorakhpur (November 2009) [17] are considered.

1. Grant vs Premium (Revenue Sharing vs Negative Grant)

As part of the competitive bid, the concessionaire could either seek a grant or be willing to pay a premium, depending upon his assessment of viability. Durg bypass CA had no provision for Grant or Premium. In Jaipur Kishangarh and Nagpur Kondhali CAs, the Grants were Rs 211 cr and Rs 57.11 cr respectively. In MCA 2000, the cap on grant as 'equity support' was payable at 25% of Total Project Cost (TPC) with stipulations. The balance grant, if any, would be released towards O&M at 1% of TPC per quarter after Commercial Operations Date (COD). MCA 2006 reduced the equity support from 25% to 20% and the release towards Operations and Maintenance (O&M) as 5% of the equity support per quarter after COD. The MCA 2009 retained the same. However, the cap for grant was 40% of TPC in MCA 2006 and MCA 2009. In case there were no bidders seeking lower grant, the project was not given on BOT basis.

For concessionaires willing to pay a premium, the MCA 2000 provided for a revenue share from the 9th year after the appointed date. The MCA 2006 provided for payment in the form of an increasing revenue share (beginning at 2% and increasing by 1% in the following years), starting with a year to be specified by the concessionaire. In case this date was before COD, it would be converted to an equivalent higher revenue share.

During pre MCA period, NHAI used negative grant, since amount and payment schedule was known upfront, providing funds for road projects rather than being linked with toll collection [18]. For two years NHAI insisted on negative grant since revenue sharing was difficult to administer and created uncertainty in the minds of bidders [18][19]. But, past experience indicated that upfront negative grant led to aggressive bidding. PC stated that there was no adverse previous experience for NHAI on revenue sharing. Infrastructure projects in other sectors were bid on revenue share model. Revenue sharing helped in equitable sharing of risk among stakeholders. Upfront payment could delay financial closure of the project. Procuring debt for projects with large upfront payment could be difficult. Increased risk could prompt the concessionaire to put a premium on this risk and make a lower bid to NHAI, resulting in revenue loss to the exchequer [20][21]. Upfront payment received by NHAI would have to be deposited in the consolidated fund and NHAI would receive funds only through the Budget process [21]. PC felt that the revenue sharing model provided the necessary balance in case of extreme events by equitable sharing of both the windfall profits and heavy losses among both the parties. PC stated that this matter was debated in the IMG and settled for revenue sharing after considering all the pros and cons. Reopening such decisions even before they had been tried out was to lead to an open ended debate on MCA which had been approved by CoI [19]. In pre MCA CAs, revenue sharing was not considered as an alternative to Grant. However, it evolved in MCA 2006 and retained in MCA 2009. Among the three post MCA projects, Varanasi Gorakhpur CA followed the negative grant model. And the other two followed revenue sharing model.

2. Site Handover

The Durg bypass CA provided for site handover within 60 days from the date of agreement but not for compensation in case of default. Jaipur Kishangarh and Nagpur Kondhali provided for site handover within 150 days from the date of agreement. Clause 10.3.4 of MCA (2006) provided for 80% site on or before the appointed date and procurement of permits related to environmental protection and conservation of the site. NHAI said that land acquisition was time consuming as it was to be done by the state revenue authorities and despite best efforts, this clause was likely to lead to heavy damages being paid to the concessionaire by NHAI. The process of acquisition was further compounded where buildings were involved [18]. NHAI said that in over 40 BOT projects upto 2006, 50% to 55% site had been handed over on or before the appointed date. This was accepted in the industry and facilitated start of construction without much delay. PC preferred handing over of 80% as any revenue loss on account of delayed commencement of toll collection would be claimed from NHAI. Delay in handover could either delay completion of project or the users would be paying toll to the concessionaire for the partially completed stretch [19]. PC disagreed with NHAI's plea for inclusion of the concessionaire in the land acquisition process stating that land acquisition was a sovereign function. PC stated that risks were to be allotted to the parties best suited to manage them and NHAI was better positioned to bear the risks of land acquisition.

In 2008, NHAI expressed a concern that majority of the stretches to be taken up for upgradation under NHDP Phase III were isolated stretches, many with less than 30 meters right of way, but had to be upgraded to have 60 meters right of way. 80% site handover at the first instance was therefore difficult [18]. PC insisted on 80%. However, considering the request of DoRTH³, the CoI decided that 80% may be reduced to 50% till 31st December 2008. Since 2009, the 80% site handover has been incorporated, as in the Varanasi Gorakhpur CA.

Clause 4.3 of Durg bypass CA had a provision for compensation for delay in site handover in the form of extension of concession period. In Jaipur Kishangarh and Nagpur Kondhali CAs, as per clause 13.5, NHAI had to pay damages at the rate of Rs 1000 per month per 1000 sq meters for the area that was not handed over. Such damages could be raised to Rs 2000 per month after COD. The 2000 MCA published by Haldea recommended Rs 100 per day per 1000 square meters from the appointed day. The 2006 MCA specified damages of Rs 50 per day to be applicable from 91st day after the appointed day. However a Group of Joint Secretaries examining this issue recommended just Rs 25 per day [20]. PC did not agree to this. MCA 2009 and post MCA CA's retained the damages at Rs 50 per day.

The Durg bypass CA did not mention about linking provisional certificate with delay in Site handover. In Jaipur Kishangarh and Nagpur Kondhali CAs, the issue of provisional

³ MoST was bifurcated into Ministry of Road Transport and Highways (MoRTH) and Ministry of Shipping (MoS) on November 17, 2000. On September 02, 2004, these two were merged and renamed as Ministry of Shipping, Road Transport and Highways (MoSRTTH) with two Departments, Department of Shipping and Department of Road Transport and Highways (DoRTH) [7]. In May 2009, MoSRTTH was again bifurcated into MoRTH and MoS [9].

certificate was not to be delayed due to delay in site handover. Clauses 10.3.3 and 14.3 of MCA (2000) and Clauses 10.35 and 14.3 of the MCA (2006) concurred with the same. NHAI stated that this would permit the concessionaire to start tolling with unfinished road inviting public criticism. But, PC said that if litigation held up a small part of land acquisition and as a result if the concessionaire was not allowed to collect toll, he might claim the resulting revenue loss from NHAI. The clause on provisional certificate remained undisturbed in MCA 2009 and post MCA CAs.

3. Omnibus Bipartite State Support Agreement

The State Support Agreement (SSA) was an all inclusive agreement that called for necessary support from the state, in the matters of land acquisition, right of way, removing encroachments, shifting of utilities, rehabilitation, maintaining local law and order, etc. In the pre MCA period, in the absence of SSA, MoSRTTH / NHAI had to approach states for approval for different issues in every project. To standardise the whole process, PC through its MCA 2006, proposed an Omnibus Bipartite SSA (OBSSA) between MoSRTTH / NHAI and state governments. This agreement would be valid for all future highway projects in that state and prohibited states from construction of 'competing roads' in general. The NHAI said that the state governments were reluctant to sign this OBSSA unless they were informed about the specific competing roads. The SSA used by NHAI was tripartite between NHAI, concessionaire and state government. The state governments had accepted and signed these agreements without much difficulty. NHAI stated that therefore there was no need to introduce an OBSSA. The PC suggested an omnibus bipartite on the logic that the party that was better to handle the risks was to be assigned the corresponding risks and to avoid repetitive processes. It volunteered to secure the consent of the state governments for an umbrella SSA.

There was no mention about SSA in the Durg bypass CA. The other two pre MCA CAs had a tripartite SSA. MCA 2000 also insisted on a tripartite agreement. The MCA 2006 adopted the omnibus bipartite agreement. But, NHAI continued with their version of a tripartite SSA even after adopting the MCA of PC, as seen in Muzaffarnagar Haridwar and Farakka Raiganj CAs. In Varanasi Gorakhpur, NHAI adopted the bipartite umbrella agreement.

4. Specifications and Standards

Non availability of a comprehensive set of specifications and standards was an issue NHAI had been raising even after the CoI approved MCA in 2005. This MCA referred to a manual of specifications and standards prepared by the PC with the help of the Indian Roads Congress. The same manual was published as a book in 2008 [23].

5. Security to Lenders

Project financing for road projects (and in general for infrastructure) under BOT has been perceived to be tricky by the lenders. The concessionaire had no ownership over the assets that were created or upgraded and had to recover the investment (both equity and debt) by collecting toll over the concession period. This subjected the lenders to higher provisioning and capital adequacy norms with quantitative

restrictions consequently restricting the availability of debt, making it more expensive. The MCA 2000 provided for collateral of concessionaire's assets other than the specific project assets and assignment of rights and obligations covered by the substitution agreement when lenders could substitute a defaulting concessionaire. MCA 2006 and 2009 retained the same.

6. Supervision

Supervision of the project through Independent Engineer (IE) was indispensable for proper execution of the project. There was no provision regarding IE in the CA of Durg bypass. The inspecting authority consisting representatives of NHAI and lenders (and Railways for ROB), inspected the progress and quality of construction and informed the concessionaire the deviations, if any, for implementation of corrective action within 90 days. MCA 2000 incorporated various aspects of supervision in a separate article elaborating the appointment of IE with his duties and functions, period of tenure, remuneration, and termination of appointment among other things. Jaipur Kishangarh CA followed MCA 2000 with little modifications and Nagpur Kondhali followed Jaipur Kishangarh CA with few changes. In the selection of IE, MCA 2000 offered the role of IE to the firm that quoted the lowest financial bid among the shortlisted three eligible firms. MCA improved this aspect by offering IE to the firm which scored highest on technical and financial scores (with the weightage of 80:20) among the top three technically scored firms. The fee for the IE doubled from 1% of the TPC in MCA 2000 to 2% of the TPC in MCA 2006. In addition, MCA 2006 streamlined other aspects of supervision as given below and it was retained in MCA 2009.

- The IE was to be appointed from a panel of 10 firms constituted by the Authority not later than 90 days from the date of CA for a period of three years. The process of selection of IE was given in a separate schedule.
- Terms of Reference (ToR) pertaining to duties and functions of the IE were clearly elaborated and IE was to submit regular periodic reports (at least once every month) to the Authority in respect of its duties and functions as specified by the Authority. The ToR was given in a separate schedule.
- The remuneration for the IE was to be equally shared by the concessionaire and the Authority.
- The Concessionaire was given the provision to make a written representation to seek termination of appointment of IE, on which the Authority was to hold a tripartite meeting of all the three to resolve the representation.
- For any dispute on advice, instruction, decision, direction, the dispute was to be resolved in accordance with the Dispute Resolution Procedure.

All the three post MCA CAs followed MCA 2006.

7. Change of Scope

Durg bypass CA mentioned the change of scope without elaborating it. Jaipur Kishangarh and Nagpur Kondhali CAs added clauses on maximum change of scope and procedure and payment for the same. MCAs 2006 and 2009 saw increased clarity in the

basic definition and procedure for change of scope. The four components that affected the material nature of the change of scope are explained below.

Payment for change of scope: Durg bypass CA had no clause for payment for scope change. In Jaipur Kishangarh and Nagpur Kondhali CAs, NHAI had to pay the concessionaire an amount equal to the costs that were certified by the Independent Consultant (IC) for the change of scope. In MCA 2000, the authority was expected to pay for all costs related to change of scope, as assessed by the IC. 20% of the cost was to be paid in advance and the balance within 30 days of submission of bills. MCA 2006 assigned all costs arising from change of scope order issued during the construction period to the concessionaire, subject to a ceiling of 0.25% of the TPC (part of actual capital cost) and any costs beyond this to be reimbursed by NHAI. If change of scope was less than 0.25%, the balance was to be credited to a safety fund by the concessionaire. For change of scope exceeding 0.25% during construction period or orders issued after COD, the authority had to make payments as stated. These conditions were retained in the MCA 2009 and post MCA CAs.

Restriction on certain works: The pre MCA CAs had no clauses on this. In MCA 2000, either the concessionaire was not required to undertake 'change of scope' work or if it did, the delay arising from the change of scope was not to be reckoned for determining the completion of project. The concessionaire could refuse to take up works, if the change of scope orders during the preceding three years cumulatively added up to 5% of the TPC. MCA 2006 added a clause where the concessionaire could refuse the work if the cumulative change of scope exceeded 20% of the TPC at any time during the concession period. These clauses were retained in the MCA 2009 and post MCA CAs.

Power of the authority to undertake works: The pre MCA CAs had no clauses on this. In the MCA 2000, the authority could in its discretion undertake change of scope works by itself or award to any party on the basis of open competitive bidding. The MCA 2006 added that the concessionaire would have the option of matching the first ranked bid subject to (i) their participation in the bid and not varying from the first ranked bid by more than 10% and (ii) payment of 2% of bid amount to the authority. These conditions were retained in MCA 2009 and post MCA CAs.

Reduction in scope of the project: This issue was not envisaged in any of the pre MCA CAs or MCA 2000. The MCA 2006 introduced a clause that if the concessionaire 'failed' to complete the construction on account of force majeure or reasons solely attributable to the authority, the authority may, in its discretion, require the concessionaire to pay 80% of the cost saved. If this happened, the obligations of the concessionaire would be deemed to have been fulfilled. This was retained in MCA 2009 and post MCA CAs

8. Change in Ownership

In the Jaipur Kishangarh CA, there was a clause which prescribed that the consortium members representing the concessionaire should have at least 51% holding in equity during the construction period and one year following COD. In the Nagpur Kondhali CA, the one year following COD was modified to three years for 51% equity. There was also a stipulation of 26% equity for the rest of the concession period. MCA 2000 stipulated that the concessionaire was not to undertake or permit change of ownership except

with prior written approval of the authority. The MCA 2006's stipulated acquisitions of more than 15% of total equity of the concessionaire anytime during concession period were regarded as change in ownership. The selected bidder/consortium members' were to hold at least 51% share in the equity on the date of the CA and upto COD, 33% for the next three years, and 26% for the remaining concession period. Each consortium member whose technical and financial capacity was evaluated for the purposes of pre qualification and short listing in response to the RFQ was to hold at least 26% of such equity during the construction period (until COD). The MCA 2009 retained them. Muzafarnagar Haridwar CA specified this percentage as 10% of equity for consortium members and 26% for lead member. Farakka Raiganj followed MCA 2006.

9. Breach of Maintenance Obligations

There were no clauses in the pre MCA CAs pertaining to breach of maintenance obligations. MCA 2000 introduced clauses for 'damages for breach of maintenance obligations' with penalty of 1% of average daily fee or 0.1% of the cost of repair as estimated by the IC, whichever was higher, for each day of delay. These clauses were modified in MCA 2006 with a penalty of 0.5% of average daily fee or 0.1% of the cost of repair, whichever was higher. This was retained in MCA 2009. The CAs of post MCA followed the same.

10. Variations in Traffic Growth

Durg bypass CA had a clause that required the concessionaire to convert the two lane bypass to four lane either when the traffic crossed two lane capacity or 12 years and six months, whichever was later by the concessionaire. Jaipur Kishangarh and Nagpur Kondhali CAs were almost silent on how to handle the variations in the traffic growth. The MCA 2000 linked Gross Domestic Product (GDP) growth rate, a proxy variable for traffic growth, with change in concession period. But, there was no clause on termination of concession for traffic exceeding designed capacity and remedy for exceeding designed capacity. The MCA 2006 refined these features with the use of 'target date' and 'target traffic' rather than GDP growth and added clauses on 'termination of concession for traffic exceeding designed capacity' and 'remedy for exceeding designed capacity'. The same was retained in MCA 2009.

MCA 2006 proposed that after ten years of concession period or three years prior to the end of the concession period, whichever was earlier, the actual traffic would be compared with the target traffic. If the change was more than 2.5%, then for every 1% shortfall with respect to target, the concession period would be increased by 1.5% and for every 1% excess with respect to target the concession period would be decreased by 0.75% with a limit of 20% increase and 10% decrease in the concession period. DoRTH proposed that the risk attributable to the rise and fall in traffic be equitably shared by the concessionaire and the authority and suggested that the norm for increase and decrease of concession period be 1% for either a 1% shortfall or excess in traffic. PC stated that the stipulation mentioned in MCA 2006 would give a similar Financial Internal Rate of Return for both increase and decrease in traffic.

11. Overloading

Clause 113 and Clause 114 of the Motor Vehicles Act 1988 prohibited overloaded vehicles on the road and authorises any officer of the Motor Vehicles Department to take punitive action against overloaded vehicles [24]. The issue of overloading was not mentioned in the pre MCA CAs. Although MCA 2000 included a clause on overloading, it prescribed an additional fee for two levels of overloading and did not ban overloading. The state governments were also issuing gold card/tokens permitting overloading of trucks for a fee. In 2005, the Supreme Court (SC) quashed the issuance of gold card/tokens by the state governments and ordered the strict adherence of sections 113 and 114 of the Motor Vehicles Act, 1988 and the rules made thereunder. The SC ordered categorically that “the offence of overloading of trucks cannot be allowed to perpetuate by permitting the goods carriage to proceed on its further journey with an excess load by compounding of the offence” [25].

MCA 2006 empowered the concessionaire to prevent the overloaded vehicle from using the project highway until the excess load was removed, in line with the provisions of the Motor Vehicles Act, 1988 and SC judgement. But, this was in addition to retaining the clause that prescribed additional fee for two levels of overloading. MCA 2009 provided both for stopping the overloaded vehicle and recovering fee at the rate applicable to the next higher category of vehicles by the concessionaire. The spirit of SC judgement is thus violated in MCAs. Among the three CAs studied in the post MCA period, Muzaffarnagar Haridwar CA removed the clauses on overloading, thus becoming silent on this issue. The other two post MCA CAs, followed the MCA 2009.

12. Termination

The key aspects of evolution of termination clauses can be grouped broadly under the following five categories.

Termination process: In Durg CA, once the default occurred either by the authority or the concessionaire, a notice was to be given by the aggrieved party to the defaulter. The Authority and the concessionaire were to consult and for 30 days or longer period as they agreed in writing to decide on the steps to prevent termination. Upon the expiry of the consultation period, if the default was not cured, the aggrieved party was entitled to terminate the agreement and promptly provide copies to the Lenders or Lenders’ representative.

Rather than prescribing a common procedure for the termination process, Durg CA prescribed cures for different defaults of the concessionaire, which ultimately became the onus of the authority. For instance, if the concessionaire’s did not acquire comprehensive insurance policies to cover various risks in the execution of the project, the authority was to obtain the required insurance policies and intimate the concessionaire to promptly reimburse the costs to the authority with interest @ 17% per annum within six months of intimation. If the concessionaire failed to reimburse the costs, then it became concessionaire’s default. If the concessionaire did not maintain the road at specified standards as given in the agreement, the authority was to carry out the required repairs and intimate the concessionaire of the amount incurred on such repairs. Failure of the concessionaire to reimburse the amount with interest @17% per

annum within six months of intimation was amounted to concessionaire's default. There was no mention of appropriation of performance security in the case of termination due to concessionaire's default.

MCA 2000 outlined the process of termination for concessionaire's default with more clarity. Once concessionaire's default occurred, the authority was entitled to appropriate performance security as damages and give notice to concessionaire to provide fresh performance security within 30 days. If the concessionaire provided fresh performance security within 30 days, he was to get 90 days to cure the default, failing which the authority was to appropriate performance security for the second time. But, it was not clear whether the concessionaire was to be given some time to cure the default had he provided fresh performance security for the second time. MCA 2006 cleared this ambiguity and streamlined the termination process for the concessionaire's default and this was retained in MCA 2009, as given below:

- Once default occurred, the authority was to appropriate performance security fully or partially and give 30 days time for the concessionaire to provide either fresh performance security or replenish performance security as the case may be.
- If the concessionaire fulfilled the same, he was given 90 days time for curing the default. Otherwise, the agreement was to be terminated.
- If the concessionaire failed to cure the default in the given time, the performance security was to be appropriated and the agreement was to be terminated by the authority.

Jaipur Kishangarh CA followed the streamlined termination process with three changes, namely full appropriation of performance security, 60 days cure period and no mention about appropriation of performance security before termination which was due to failure in curing the default in 60 days. Nagpur Kondhali CA followed the Jaipur Kishangarh CA with 15 days time for the concessionaire to provide fresh performance security. Once the cure period expired without remedying the concessionaire's default, the authority had to send a notice to the concessionaire and grant 15 days time to make its representation. After the expiry of 15 days, irrespective of the representation, the authority was entitled to terminate the agreement. In the event of occurrence and continuation of authority's default (except for the authority's default resulted from concessionaire's default and force majeure), the concessionaire had to send a notice to the authority giving 90 days time, the concessionaire was to terminate the agreement. Nagpur Kondhali CA followed the Jaipur Kishangarh CA. All the three post MCA CAs followed MCA 2006.

Concessionaire's default: Material breach that resulted in material adverse effect and remain uncertified for more than specific days, suspension by the concessionaire of the performance of the services for more than 45 days (other than force majeure), continued deviation from the standards of the agreement (for construction and O&M), over charging of the user fee, repudiation of the agreement by the concessionaire and non adherence to conditions of financial agreements with all lenders, etc were listed as defaults in Durg CA. Jaipur Kishangarh CA expanded the scope of concessionaire's default by including failure on financial closure, failure to achieve projects as agreed upon, creating encumbrance, charges or lien without prior approval of the authority, concessionaire failing to hold equity as agreed upon as mentioned in representations

and warranties and failing to cure it within 90 days, transfer of rights and obligations by the concessionaire to the third party that affected the performance, shareholders winding up of the concessionaire, concessionaire becoming bankrupt, financial default, loan recalling by senior lenders, abandoning construction or operation without prior permission, order of execution levied on any assets of concessionaire, payment to the authority delayed by more than 90 days and default in repaying revenue shortfall loan. Nagpur Kondhali CA followed the Jaipur Kishangarh CA.

MCA 2000 included, concessionaire failing to provide fresh performance security within 30 days, failure to cure the default within 90 days of providing performance security, failing to achieve milestone as per project completion schedule, concessionaire abandoning construction or operation without prior permission, failure to achieve COD within 180 days of scheduled completion date, failing to complete punch list within 60 days of provisional certificate without damages and next 120 days with penalty, breach of maintenance requirements, failing to make any payment to the authority within the period specified, escrow default and failing to cure within 15 days, financial default, material adverse effect resulting from breach of agreement, transfer of rights and obligations or the assets and undertakings of the concessionaire, order of execution levied on any assets of concessionaire and concessionaire being in the process of liquidation, wound up, reconstituted, dissolved, encumbrance created from breach of agreement, concessionaire repudiating agreement, concessionaire's action that amounted to irrevocable intention not to be bound by the agreement, change in ownership without prior written permission of the authority, concessionaire becoming bankrupt and concessionaire's material default with no provision for cure period, as concessionaire's default that lead to termination.

MCA 2006 reduced the scheduled four laning date to 650 days from the appointed date in lieu of 730 days in MCA 2000, but increased the grace period from 180 days to 270 days, thereby making 920 days for project completion from the appointment date. MCA 2006 also introduced a grace period of 90 days for achieving project milestones as specified in Schedule G. MCA 2006 increased the grace period for completing punch list to 90 days from provisional certificate without penalty from 60 days of MCA 2000. MCA 2006 prescribed a cure period as mentioned in the substitution agreement in lieu of three months of cure period as mentioned in MCA 2000, leaving it open to decide among the senior lenders and concessionaire. MCA 2006 clearly defined change in ownership at various stages of concession period. When the acquirer acquired 15% or more of total equity without the approval of the authority, it amounted to concessionaire's default in MCA 2006. False representation or warranty of the concessionaire or concessionaire in breach of representation or warranty, statement submitted to the authority by the concessionaire containing false material particulars or creating material effect on the authority and concessionaire failing to fulfill any obligation for which termination had been specified were also added to the concessionaire's default in MCA 2006.

MCA 2009 retained the clauses on concessionaire's default of MCA 2006 but increased the grace period for achieving project milestones to 120 days. MCA 2009 also introduced breach of safety requirements on the part of concessionaire as concessionaire's default. All the three post MCA CAs followed MCA 2006.

Authority's default: Durg CA mentioned material adverse effect caused by the material breach and breach of any representation or warranty by the authority, suspension of the performance of its obligations by the authority for more than 45 days, repudiation of the agreement by the authority or the evidence of an intention of the authority not to be bound by the agreement as authority's defaults. For the default causing material adverse effect, the authority was to be given 30 days time to cure the default and additional 120 days, given that the authority exercised due diligence to cure the default.

Jaipur Kishangarh CA modified the additional time to 90 days and included the failure of the payment by the authority to the concessionaire beyond 90 days as authority's default. Nagpur Kondhali CA followed Jaipur Kishangarh CA.

MCA 2000 listed the following as material default committed by the authority with no explicit mention of cure period: Failing to make any payment to the concessionaire within the period specified, repudiation of the agreement by the authority, concessionaire's action that amounted to irrevocable intention not to be bound by the agreement, default of the State and authority or the State failing to cure it, authority becoming bankrupt and change in the structure of the authority or dissolution of the authority that caused material adverse effect to the concessionaire as authority's defaults. Failing to cure any of the above defaults by the authority within 60 days led to termination.

MCA 2006 modified the cure period to 90 days. MCA 2006 stipulated that the material default committed either by the authority or the State was to have material adverse effect to deem it as authority's default. MCA 2006 removed the clauses of authority becoming bankrupt and change in the structure of the authority or dissolution of the authority from the authority's default. All the three post MCA CAs followed MCA 2006.

Termination payment for authority's default: In Durg CA, for the agreement terminated due to authority's default, the authority had to pay cost of construction, uplift @17% per annum compounded quarterly thereon minus net revenue already received by the concessionaire within 30 days of termination. The lenders had the first charge on this payment. NHAI had to return the performance security also. In Jaipur Kishangarh CA, the authority had to pay debt due plus 100% of equity subscribed and paid in cash plus interest on equity subscribed and paid in cash @ State Bank of India Primary Lending Rate+3% till date of termination during construction period. During operations period, the authority had to pay debt due plus 100% of net present value of future cash flows to equity as mentioned in schedule Y of the agreement, computed at 17.95% on the date of termination less due cash balance on the date of termination with a restriction that the compensation was not to exceed 1.5 times of the amount arrived at by subtracting the NHAI grant from the TPC. In Nagpur Kondhali CA, the authority had to pay total debt due plus 120% of the total subordinated debt plus 150% of the equity (subscribed in cash and actually spent on the project but excluding the amount of equity support provided by the authority) for termination due to authority's default at any time during three years commencing from the appointed date.

MCA 2000 provided for termination payment as debt due plus 140% of adjusted equity plus 140% adjusted foreign equity for termination due to authority's default. MCA 2006

streamlined the same as debt due plus 150% of adjusted equity and MCA 2009 retained the same. All the three post MCA CAs followed MCA 2006.

Termination payment for concessionaire's default: In Durg bypass CA, for the agreement terminated due to concessionaire's default, there was no liability for the authority to pay damages but the authority had to discharge all the debt service obligations of concessionaire on the date of termination. MCA 2000 stipulated that the authority had to pay 90% of the debt due less insurance claims. For any of the insurance claims that were not admitted and paid, the authority had to pay 90% of such unpaid claims. Jaipur Kishangarh CA and Nagpur Kondhali CA followed MCA 2000 with a cap of 80% for unpaid insurance claims.

MCA 2006 prescribed no termination payment on account of concessionaire's default occurring prior to COD and retained termination payment prescribed in MCA 2000 with a cap of 80% for unpaid insurance claims. MCA 2009 retained MCA 2006. All the three post MCA CAs followed MCA 2006.

B K Chaturvedi Committee

B K Chaturvedi Committee (BKCC) was constituted in 2009 to develop a revised strategy for implementation of the NHDP in terms of framework and financing. The major recommendations of BKCC pertaining to MCA are as follows [26]:

Grant vs Premium (Revenue Sharing vs Negative Grant): BKCC proposed that the entire grant be given as 'equity support' with a cap of 40% and a limit of twice the concessionaire's equity, subject to existing disbursement conditions. PC accepted this with a condition that the amount above 20% should be against an irrevocable bank guarantee, should the concessionaire default.

Variations in Traffic Growth: The BKCC felt that it is unfair to terminate the CA, if the average daily traffic of passenger car units exceeded the designed capacity for four consecutive accounting years and may not attract private players into BOT mode. In lieu of this, the existing concessionaire should be given an opportunity to augment the capacity in such a way that the concessionaire gets a 16% post tax return on equity per annum, by extending the concession period with a cap of five years. The PC accepted this change.

Breach of Maintenance Obligations: The BKCC recommended that the damages to be paid by the concessionaire for the breach of maintenance obligations had to be tenfold, if the actual traffic exceeded the designed capacity even for a year or part thereof. PC did not agree on this stating that the issue of traffic exceeding the designed capacity had already been dealt with through a reduction in concession period.

Change in Ownership: The SPV is answerable for the project performance, irrespective of the share of the promoters. Hence, BKCC stated that there was no need to insist on minimum holding of equity by the original promoter in the long run. If the developer companies are allowed to divest their equity holding without any lower limit at the end of construction phase to O&M companies, it would result in faster rotation of capital for construction companies that would invite more investment for infrastructure projects

under BOT (Toll) mode. So BKCC redefined the change of ownership as the bidders' share in equity dropping below 51% any time until two years after COD. Further, it said each member of the consortium evaluated for the purposes of pre qualification and short listing in response to the RFQ should hold at least 26% of such equity until two years after COD. While requiring the bidder to hold 51% until two years after COD, BKCC relaxed the need to hold any equity after this. PC accepted the changes except that they wanted the bidder to continue to hold 26% equity from two years after COD for the rest of the concession period with the permission of the authority and as per prevailing regulations.

Security to Lenders: To provide easy access to debt at a reduced cost, BKCC felt that the lenders of BOT projects should have the first claim over the escrow account, thus bringing credibility to the debt and encouraging lenders to finance BOT projects. The BKCC recommended that a charge on the escrow by the lenders should also be included in the permitted assignments and charges. While accepting this, the PC wanted only senior lenders be given entitlement to create a lien on the escrow account of the project.

Evaluation of Performance of BOT Projects

The benefits that were expected to accrue from the introduction and evolution of MCA for BOT (Toll) projects were identified as reduced construction time, reduced cost overrun, reduction in litigation in the form of reduced number of projects that went for Arbitrary Tribunal (AT) and courts for dispute resolution and compensation, reduced amount awarded by AT and courts as compensation, increased interest of bidders at RFQ and RFP stages. The benefits were measured as follows.

Reduced construction time: A comparative analysis of time overrun for IRC, BOT (Toll), and BOT (Annuity) modes for completed projects and projects under implementation was done as shown in Exhibit 7. In case of completed projects, the average time overrun was 18.60 months, 6.84 months and 5 months respectively for IRC, BOT (Toll) and BOT (Annuity). In case of projects under implementation, the anticipated average time overrun was 34.86 months, 6.21 months and 12.67 months respectively for IRC, BOT (Toll) and BOT (Annuity). In terms of total projects, BOT (Toll) projects was found to have lower average time overrun of 6.48 months compared to 23.04 months of IRC and 8.94 months of BOT (Annuity) projects. In terms of total projects, the average time overrun for IRC projects was more than thrice the time overrun for BOT (Toll) projects. The inherent structure of BOT (Toll) agreement that provided incentive for the concessionaire to complete projects fast so as to collect tolls from COD appeared to be the reason for the reduced construction time for BOT (Toll) projects.

There was no improvement in average time overrun between the BOT (Toll) projects awarded up to Dec 2005 (with no approved MCA) and between Jan 2006 to Oct 2011 (with approved MCA) for completed projects and total projects. But, the anticipated average time overrun for the BOT (Toll) projects awarded from Jan 2009 to Oct 2011, (following strengthened MCA with 80% site handover) which were under implementation was 1.09 months for 44 projects. Whether the anticipated time overrun matched with the actual time overrun would be known only upon completion of the projects under implementation. If both the time overruns are more or less same, it may

be inferred that the evolution of MCA contributed to the improvement in reduced construction time for BOT (Toll) projects.

Exhibit 8 shows the time overrun/anticipated time overrun for projects awarded under various modes of delivery from 1998 to 2011. It indicates that the time overrun decreased across all modes of delivery for projects executed under various modes of delivery. The average time overrun for BOT (Toll) and BOT (Annuity) projects was lower during the formative years of 1998-2008 and had been diminishing more during 2009-2011. As this time overrun was an anticipated one, the time overrun may change in future. If not, adoption of 80% site handover before the appointed date for BOT (Toll) and BOT (Annuity) projects from Jan 2009 could be the reason for such drastic reduction in the time overrun given that delay in land acquisitions has been identified as one of the most crucial reason for the delay in the execution of the road projects.

Reduced cost overrun: Exhibit 9 shows the cost overrun along with time overrun for the completed projects of IRC mode of delivery from 1996 to 2009. The projects under implementation were not considered here as the cost overrun data would be known only when the projects were completed. Cost overrun was not applicable in BOT (Toll) and BOT (Annuity) projects as the construction risk was borne by the concessionaire, unless there was a significant change in the scope of work. The analysis of 228 completed projects executed through IRC mode of delivery between 1999 and 2009 showed that the percent cost overrun over contracted amount was hovering between 18% and 86% with an average value of 30%. The corresponding time overrun was upto 31 months with an average value of 16.48 months. The cost overrun partly emanated from time overrun, although a perfect relationship between the two could not be observed.

The delays in the completion of IRC projects deny toll revenues till COD. Assuming that the annual toll revenues would be about 15% of the capital costs with revenue sharing model, the total revenue loss over 16 months for the authority would add up to 20% of the capital costs. Further, assuming interest during delay would cost about 10% of the project costs, the total loss to the exchequer would be about 60% (30%+20%+10%) of project costs.

Reduction in litigation: The litigation before AT and courts for projects executed in various modes of delivery is shown in Exhibits 10 and 11. The share of completed IRC projects that went to AT for dispute resolution was 37.28%, whereas it was 4.55% for completed BOT (Toll) projects. The average amount pending before AT for completed IRC projects was 18.05 cr, whereas it was about 1.92 cr for completed BOT (Toll) projects. Although the share of completed BOT projects that went to AT for dispute resolution decreased from 9.09% to 3.03% with the adoption of MCA, the average amount pending increased from 0.13 cr to 2.52 cr with the adoption of MCA. The share of completed IRC projects that went to court for dispute resolution was 22.37%, it was nil for BOT (Toll) projects.

The share of IRC projects under implementation that went to AT was 23.46%. It was nil for BOT (Toll) projects. The average amount pending before AT for IRC projects under implementation was 50.46 cr. The share of IRC projects under implementation that

went to court was 11.11% and it was nil for BOT (Toll) projects. The average amount pending before court for IRC projects under implementation was 1.09 cr.

From the above analysis, it could be inferred that there was a clear reduction in the percent share of projects that went for dispute resolution and the average amount pending before AT and court for BOT (Toll) mode of delivery in comparison with IRC.

Increased interest of bidders at RFQ and RFP stages: The summary of response of private players at RFQ and RFP stages for projects executed in various modes of delivery is shown in Exhibit 12. Out of 415 projects that were awarded till October 2011, details on RFQ and RFP of only 40 projects were available from NHAI. Moreover, RFQ data was not available on IRC projects awarded from Jan 2006 to Dec 2011 and on BOT projects awarded upto Dec 2005. RFP data was also not available for BOT projects awarded upto Dec 2005. Hence this analysis needs to be read with caution. The average number of bidder shortlisted at RFQ stage for IRC and BOT projects were 32 and 15.37 respectively.

Increase in PPP projects awarded: The year wise growth of PPP projects in terms of numbers and length is shown in Exhibit 4. The approval of MCA by the IMG in 2005 and the subsequent publishing of MCA for PPPs in National Highways gave a fillip to PPP projects in 2005-06 with 29 projects totalling 1686 km. Due to global economic depression, there was a lull in 2007-08 and 2008-09 with 10 and 8 projects on BOT (Toll) and BOT (Annuity) mode. With the improved MCA published in 2009, the PPP projects awarded in 2009-10, 2010-11 and 2011-12 went to 41, 44 and 48, with longer stretches. The average length of stretch awarded on PPP mode has been increasing from 50 km in 2002-03 to 100 to 130 km during 2009-12. India's success with PPP, which mainly came from NH development among others, was acknowledged by a recent World Bank note [27]. The note recognized India's progress in PPP mode and highlighted that India was the top recipient of Private Participation in Infrastructure (PPI) since 2006, the year in which the structured MCA was made available with CoI approval. The note has mentioned that India's 43 new projects on PPI in the first semester of 2011 were almost half of the investment in new PPI projects in developing countries.

The definite conclusion that can be drawn from the evaluation of performance of various modes of delivery is that BOT (Toll) performed substantially well on time overrun, cost overrun, and reduction in litigation and increase in number of PPP projects awarded.

Issues to be Addressed

As per MCA 2009, the concessionaire started collecting tolls with the issuance of the provisional certificate. But there was no provision in MCA 2009 that stipulated the concessionaire to complete the work on the remaining 20% land as and when it is handed over. The MCA should include clauses that spell out clearly the schedule for completing the work on the remaining land as and when it is handed over to the concessionaire. MCA should remove the clause that prescribed additional fee for overloaded vehicles to discourage truckers preferring paying penalties.

Safety on Indian roads is a critical issue. Article 18 and Schedule L of MCA 2009 (MCA 2009 and MCA 2000 also) dealt with the safety requirements. The salient features of the same were

- Guiding principles aiming at reduction in injuries, loss of life and damage to property resulting from accidents, irrespective of the persons at fault.
- Categorisation of pedestrians motorised two wheelers, bicycles and other vehicles with inadequate protection as vulnerable road users.
- Application of safety requirements to phases of construction and O&M
- Providing safety measures like road signs, pavement marking, traffic control devices, roadside furniture, highway design elements, enforcement and emergency response.
- Appointment of safety consultant comprising one road safety expert and one traffic planner to undertake safety audit of the project highway during development period within 90 days of the date of the agreement and during construction period four months prior to the expected project completion date.
- During the development period, based on the analysis of accident data of the preceding two years and design details, the safety consultant was to generate a package of recommendations consisting of safety related measures for the project highway.
- During the development period, the concessionaire was to incorporate the recommendations of the safety consultant in accordance with the obligations of the concessionaire related to safety of the users, as prescribed in Schedule L. If the recommendations fall beyond the scope of development of the project highway, project facilities, specifications and standards as mentioned in Schedule B, C and D respectively, the concessionaire was to make a report on that and seek the permission of the authority in using dedicated safety fund to carry out the recommendations.
- During the construction period, the safety consultant was to analyse the accident data for the preceding two years and safety report submitted by the safety consultant of the development period and recommend additional road safety measures, if any, to reduce accidental hazards on the project highway.
- During the operation period, the concessionaire was to establish a Highway Safety Management Unit (HSMU) and designate one of its officers with specialist knowledge on road safety to be in charge of the HSMU. The concessionaire was to collect all the accidental data, major and minor, FIR recorded and others and submit the same to the authority and the safety consultant at the conclusion of every quarter. On 31st May every year, the concessionaire was to submit to the authority an annual report containing a detailed listing and analysis of all accidents of the preceding accounting year and the measures taken by them for averting or minimising such accidents in future. The safety consultant was also to carry out safety audit once in every accounting year and submit a safety report with recommendations, if any. The concessionaire was to act upon the recommendations within the provisions of CA.

In spite of the measures that were incorporated in CA, statistics on road accidents shows that the safety on Indian highways has been rapidly deteriorating over the years. The number of reported road accidental deaths in 1991 was 56,600 and in 1998, it stood at 76,700 [28]. In 2007, fatalities in road accidents had increased to 114,590 [29].

Fatality risk factor, defined as number of deaths per lakh population, which was about 6.7 in 1991, rose to 7.9 in 1998 and 9.97 in 2007. Half the fatalities, and more than half the injuries incurred, involved pedestrians. Several of these continued to be hit-and-run cases, leaving pedestrians to the mercy of personal accident insurance policies, by and large themselves tied to vehicle ownership, for marginal compensation and huge medical spends. The accident severity, number of persons killed per 100 accidents has also increased from 19.9 in 2001 to 24.7 in 2008 [28]. It has to borne in mind that this was the period when India witnessed four / six laning of about 13000 kms of high traffic NH.

Transport ministry estimates that fatalities from road accidents were to climb to 150,000 by 2015 (with a fatality risk factor of approximately 11.49) due to the rapid growth of vehicle ownership (NHAI). For an instance, around 120 people died on road accidents between June 2008 and Dec 2009 in the 15 km stretch between Palpanni and Thuvakkudi of NH 67 connecting Thanjavur - Trichy executed out by Madhucon Projects Ltd on BOT (Toll) mainly attributed to non provision of service lanes across this densely populated stretch [30].

In this background, it is essential to incorporate clauses of the safety requirements of the MCA that incentivise concessionaires for improved safety on their stretches (measured by appropriate indicators) so that they proactively (i) identify the safety measures that avoid accidents (ii) propose appropriate additional works like service lanes, flyovers and underpasses to prevent such accidents, and (iii) carry out measures to mitigate the negative post-accidental impacts, even it results in substantial increase in TPC and increased contribution to the safety fund by the authority.

A truck in India can cover only 250-300 km a day as per the study carried out in 2007 compared to 700-800 km in US and Europe [31]. The transport cost of a cargo container over one km in India is 50% higher than what it costs in the US [32]. In the existing MCA, the concessionaire is not responsible for traffic delays for which the concessionaire may be held responsible. The MCA should make concessionaire accountable in achieving target average speeds measured by appropriate indicators. Compatible E tolling across BOT projects should become a requirement in the MCA.

Conclusion

A paradigm shift in favour of BOT (Toll) is evident over the last two decades. This is mainly due to strong framework developed in the form of MCA. The key contribution of MCA in various aspects of BOT (Toll) projects is summarised as follows.

- With the introduction of revenue sharing model in lieu of upfront negative grant, the road projects implemented under BOT (Toll) have become the perennial source of revenue for the government. This also ensured that the windfall profit is shared among the concessionaire and government and the reduced revenue for unexpected reasons did not affect the concessionaire much.
- By and large, the delay in projects is mainly due to delayed availability of site for construction. By insisting 80% availability of project site on the appointed date and ensuring that the authority accepted this clause, the MCA assured there was no delay in projects due to site handover.
- With OBSSA, the repetitive process of signing SSA with state governments and the delay associated with it became extinct.

- By making specifications and standards as a standard document along with MCA, the standardisation of framework was completed and made accessible to the competing concessionaires.
- The lenders' risk associated with financing BOT (Toll) projects was mitigated substantially by including substitution agreement in the MCA.
- The comprehensive clauses for the appointment, duties and functions, period of tenure, remuneration and termination of supervisor ensured fair and independent monitoring of the project.
- The MCA envisaged various possibilities of change of scope that could occur in a project and accordingly included detailed clauses on various aspects of change of scope. By giving equal footing for the concessionaire and the authority, the MCA ensured that the concession agreement is well balanced for both the parties.
- The reformist clauses in change in ownerships stems from the fact that the parties associated with development and OMT of roads have different expertise and hence the developers should be partly allowed to disinvest from the projects any time after COD in order for them reinvest in development of projects.
- By introducing penalty for breach of maintenance obligations, the MCA ensured that the maintenance of road during the concession period is taken with all the seriousness it deserves.
- By financially validating the relationship between increase/decrease in the concession period for the shortfall/excess with respect to target traffic, the MCA ensured that the agreement is well balanced and attractive for both the concessionaire and authority.
- By comprehensively including clauses on termination process, concessionaire's default, authority's default, termination payment for authority's default and concessionaire's default and making them equally poised for the concessionaire and authority, the MCA encouraged unleashing the entrepreneurial energy of private players in taking up road projects on BOT (Toll) mode of delivery.

The palpable benefits accrued from BOT (toll) projects like reduction in time and cost overrun, reduced litigations, increased interest of bidders at RFQ and RFP stages, may be attributed to the contribution of MCA in bringing out the best aspects and practices of BOT (Toll) mode. As a result, the number of PPP projects awarded and their lengths has also increased substantially. BOT (toll) projects create no economic distortion as the users and not the tax payers pay for the improved infrastructure. This coupled with strong framework in the form MCA provided by PC facilitated policy makers to prescribe BOT (Toll) as the first choice of mode of delivery, followed by BOT (Annuity) in a water fall model. Thus, a consistent and comprehensive framework, which evolved in the form of MCA since 1998, facilitated the effective implementation of policy prescriptions of Gol. The evolution of CA from a non comprehensive document in mid nineties to a highly structured document as MCA has been analysed in this paper in detail. The process of involving multiple stakeholders in the evolution of the MCA has led to an acceptable document building confidence in the road sector development. The MCA covers all the essential details and in the very of act of structuring it, a contestable framework has been provided for continuous improvement. In the process of developing the MCA, a fine balancing act was performed in a manner that gave comfort and commercial return to the concessionaire (thus attracting many players to this sector with aggressive bidding), while at the same time generated maximum value for the Gol.

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List of abbreviations

AT	Arbitrary Tribunal
BKCC	B K Chaturvedi Committee
BOT	Build Own Transfer
COD	Commercial Operations Date
CoI	Committee on Infrastructure
CA	Concession Agreement
DEA	Department of Economic Affairs
DoRTH	Department of Road Transport and Highways
GoI	Government of India
GDB	Gross Domestic Product
HPC	High Powered Committee
HSMU	Highway Safety Management Unit
IC	Independent Consultant
IE	Independent Engineer
IL&FS	Infrastructure Leasing and Financial Services Ltd
IMG	Inter Ministerial Group
IRC	Item Rate Contract
Km	kilometres (km)
MoRTH	Ministry of Road Transport and Highways
MoS	Ministry of Shipping
MoSRTH	Ministry of Shipping, Road Transport and Highways
MOST	Ministry of Surface Transport
MCA	Model Concession Agreement
NH	National Highways
NHAI	National Highways Authority of India
NHDP	National Highway Development Programme
NSEW	North South and East West
OBSSA	Omnibus Bipartite SSA
O&M	Operations and Maintenance
OMT	Operation, Maintenance and Tolling
PC	Planning Commission
PPP	Public Private Partnership
PPPAC	Public Private Partnership Approval Committee
RFP	Request for Proposal
RFQ	Request for Qualification
ROB	Road Over Bridge (ROB)
SPV	Special Purpose Vehicles
SSA	State Support Agreement
SC	Supreme Court
ToR	Terms of Reference
TPC	Total Project Cost

Exhibit 1: Different modes of delivery in NH projects

Mode	Nature of mode
Item Rate Contract	It is a common form of contracting arrangement within the construction industry. Under an IRC, the contractor will design the installation, procure the necessary materials and construct it, either through own labour or by subcontracting part of the work. Till fifteen years back, most of the road projects were carried out in IRC mode in India.
Build Operate Transfer (Annuity)	The concessionaire meets the construction cost and the expenditure on annual maintenance. Since, no grant is paid by the client (GoI/NHAI), the concessionaire recovers the entire investment and a fixed cost of return out of the annuities payable by the client on a yearly basis. The risk with respect to traffic (toll) is borne by the client.
Special Purpose Vehicle (SPV)	NHAI also funds road projects through SPVs. They involve very less cash support from the NHAI in the form of equity/debt as most of the funds are provided in the form of equity and debt by the financial institutions and beneficiary organizations. In the initial years of NHDP programme, some road projects were carried out. Most of the port connectivity roads were constructed by SPV. The well known Ahmedabad Vadodara Expressway was constructed by a SPV called PT Sumber Mitra Jaya Indonesian. This mode had been popular till sometime back. However, most of the projects are now being awarded on toll and annuity mode.
Build Operate Transfer (Toll)	The concessionaire (private sector) meets the construction cost and the expenditure on annual maintenance. Later, the amount including interest and the return on investment is recovered by the concessionaire from the toll collection. In order to maximize the project viability, capital grant up to a maximum of 40% of the project cost is provided under NHDP.

Exhibit 2: List of first 20 BOT (Toll) projects awarded by NHAI from 1995-96 to 1999-00

Sl.No.	Name of the Project	NH	State	Length (Km)	Cost (Rs Cr)	Concession Period	Construction Period	Date of Signing
1	Thane Bhiwandi bypass (two lane)	3	Maharashtra	24	103	18 years 6 months	36 months	09.12.1995
2	Udaipur Bypass	8	Rajasthan	11	24	11 years 8 months	18 months	July 96
3	Chalthan ROB	8	Gujarat	NA	10	41 months 22 days	18 months	19.09.1996
4	Six bridges	5	Andhra Pradesh	NA	50	19 years 60 days	48 months	09.04.1997
5	Coimbatore bypass	47	Tamil Nadu	33	90	32 years	24 months	03.10.1997
6	Second Narmada bridge	8	Gujarat	NA	113	15 years	36 months	21.11.1997
7	Durg bypass	6	Madhya Pradesh	18	68	32 years 6 months	30 months	05.11.1997
8	Nardhana ROB	3	Maharashtra	NA	34	15 years 10 months	36 months	25.11.1997
9	Patalganga river bridge	17	Maharashtra	NA	33	17 years 9 months	33 months	29.11.1997
10	Hubli Dharwar bypass	4	Karnataka	30	68	26 years	42 months	05.02.1998
11	Nellore bypass	5	Andhra Pradesh	18	73	31 years 6 months	30 months	17.02.1998
12	Koratalaiyar bridge	5	Tamil Nadu	NA	30	9 years 11 months & 16 days	24 months	28.10.1998
13	Khambatki Ghat tunnel and road	8	Maharashtra	8	38	9 years 9 months	24 months	16.11.1998
14	Nasirabad ROB	6	Maharashtra	NA	10	10 years 11 months	12 months	16.11.1998
15	Wainganga bridge	6	Maharashtra	NA	33	18 years 9 months	30 months	16.11.1998
16	Mahi bridge	8	Gujarat	NA	42	7 years 8 months	18 months	16.11.1998
17	Kishangarh bypass and ROB	8	Rajasthan	NA	17	51 months	15 months	27.11.1998
18	Watrak bridge	8	Gujarat	NA	48	11 years	25 months	01.03.1999
19	Moradabad bypass	24	UP	18	100	Not available	38 months	23.04.1999
20	Derabassi ROB	22	Punjab	NA	36	7 years 5 months and 25 days	24 months	08.09.1999

[Source: Economic Survey, 1996 -97, 1997-98, 1998-99, 1999- 00, 2000-01, World Bank Report (nd), Rao (2006), NHAI (2011)]

Exhibit 3: Mode of delivery in NHDP GQ and NSEW projects

NHDP corridor	Mode of Delivery	Total No of Projects	Total Length of Projects (km)	Share in terms of No of projects (%)	Share in terms of length of roads (%)
GQ	IRC (Loan from ADB, JBIC, WB)	37	2006.80	28.91	34.31
	IRC (Funded by MoRTH and NHAI)	74	2902.21	57.81	49.62
	BOT (Toll)	6	373.40	4.69	6.38
	SPV	2	93.40	1.56	1.60
	MSRDC	2	90.00	1.56	1.54
	BOT (Annuity)	7	382.57	5.47	6.54
Total		128	5848.37	100.00	100.00
NSEW	IRC (Loan from ADB, WB)	45	2402.50	23.20	35.74
	IRC (Funded by MoRTH and NHAI)	113	2502.24	58.25	37.23
	BOT (Toll)	16	787.45	8.25	11.72
	SPV	0	0	0	0.00
	MSRDC	0	0	0	0.00
	BOT (Annuity)	20	1029.25	10.31	15.31
Total		194	6721.43	100.00	100.00

[Source: NHAI, 2011]

Exhibit 4: Year-wise Projects Awarded in PPP Mode: Number and Length

Year	BOT (Toll)		BOT (Annuity)		Total	
	Number	Length (km)	Number	Length (km)	Number	Length (km)
1997-98	1	1	0	0	1	1
1998-99	1	18	0	0	1	18
1999-00	0	0	0	0	0	0
2000-01	0	0	0	0	0	0
2001-02	3	279	0	0	3	279
2002-03	3	66	8	476	11	542
2003-04	1	90	0	0	1	90
2004-05	7	455	0	0	7	455
2005-06	25	1387	4	299	29	1686
2006-07	12	825	12	570	24	1395
2007-08	8	1109	2	101	10	1210
2008-09	8	643	0	0	8	643
2009-10	38	3451	3	177	41	3628
2010-11	25	2736	19	1512	44	4249
2011-12	46	6133	2	247	48	6380
Total	178	17194	50	3381	228	20576

[Source: Planning Commission, 2012]

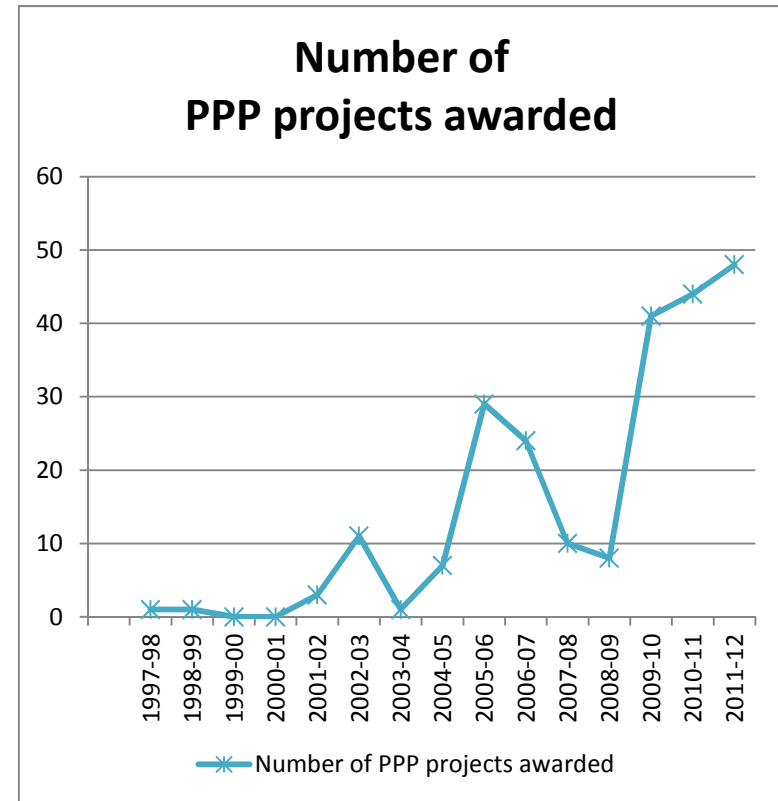


Exhibit 5: An overview of National Highway Development Project

Phase	Approved on	Length(km)	Project details
Phase I	Dec 2000	7,498	Four/ six/eight laning of NH mainly on the Golden Quadrilateral
Phase II	Dec 2003	6,644	NH of the North South Corridor and East West Corridor to be widened to four/six lane facility
Phase III	A	4,035	Upgradation of existing NH to two lane with paved shoulders/ four /six lane having high traffic density, connecting important tourist locations, economically important areas , State capitals etc
	B	8074	
Phase IV	Oct 2006	20,000	Widening of existing single /intermediate /two lane highways to two lane with paved shoulders
Phase V	Mar 2005	6,500	Six laning of NH which includes 5,700 km of GQ and other stretches
Phase VI	Nov 2006	1,000	Expressways
Phase VII	Dec 2007	700	Construction of standalone ring roads /bypasses as well as grade separators, flyovers, elevated road, tunnels road over bridge, under passes, etc.

[Source: MoRTH (nd) and NHAI (nd)]

Exhibit 6: Essential features of Durg Bypass, Jaipur Kishangarh and Nagpur Kondhali BOT (Toll) Projects

Characteristics / Feature	Durg Bypass	Jaipur Kishangarh	Nagpur Kondhali
Nature of work	Construction of 18 km bypass road (two lane)	Construction of six laning (from two lane)	Construction of four laning (from two lane)
Physical location	Km 308.6 to km 323.6 of NH 6 in Madhya Pradesh	Km NH 8 in Rajasthan	Km 9.20 to Km 50.00 of NH 6 in Maharastra
BOT operator	Shaktikumar M Sancheti Limited, Nagpur (SMS Infrastructure Limited)	GVK Jaipur Kishangarh Expressway Private Limited	M/S Balaji Tollways Limited
Date of agreement	05.11.1997	08.05.2002	09.12.2005
Cost of the project	Rs 106 cr	Rs 644 cr	Rs 168 cr

[Source: CAs of Durg bypass (1997), Jaipur Kishangarh (2002) and Nagpur Kondhali (2005)]

Exhibit 7: Time overrun for projects awarded under various modes of delivery**Status as on 31th October 2011.**

	Completed projects			Projects under implementation			Total		
	No of projects awarded	Total time overrun (months)	Average time overrun (months)	No of projects awarded	Estimated total time overrun (months)	Anticipated average time overrun (months)	No of projects awarded	Total time overrun (months)	Average time overrun (months)
All projects	263	4143	15.75	152	3237	21.30	415 ^a	7380	17.78
<u>Item Rate Contracts</u>	202	3757	18.60	76	2649	34.86	278 ^b	6406	23.04
Awarded upto Dec 2005	178	3327	18.69	35	1650	47.14	213	4977	23.37
Awarded from Jan 2006 to Oct 2011	24	430	17.92	41	999	24.37	65	1429	21.98
<u>BOT (Toll) Projects</u>	44	301	6.84	58	360	6.21	102 ^c	661	6.48
Awarded upto Dec 2005	11	67	6.09	0	0	0.00	11	67	6.09
Awarded from Jan 2006 to Oct 2011	33	234	7.09	58	360	6.21	91	594	6.53
Awarded from Jan 2009 to Oct 2011	0	0	0.00	44	48	1.09	44	48	1.09
<u>BOT (Annuity) Projects</u>	17	85	5.00	18	228	12.67	35 ^d	313	8.94

a - This does not include 90 projects out of which 26 are completed and 64 are under implementation as data on time overrun for these projects is not available.

b - This does not include 28 projects out of which 26 are completed and 2 are under implementation as data on time overrun for these projects is not available.

c - This does not include 48 BOT projects that are under implementation as data on time overrun for these projects is not available.

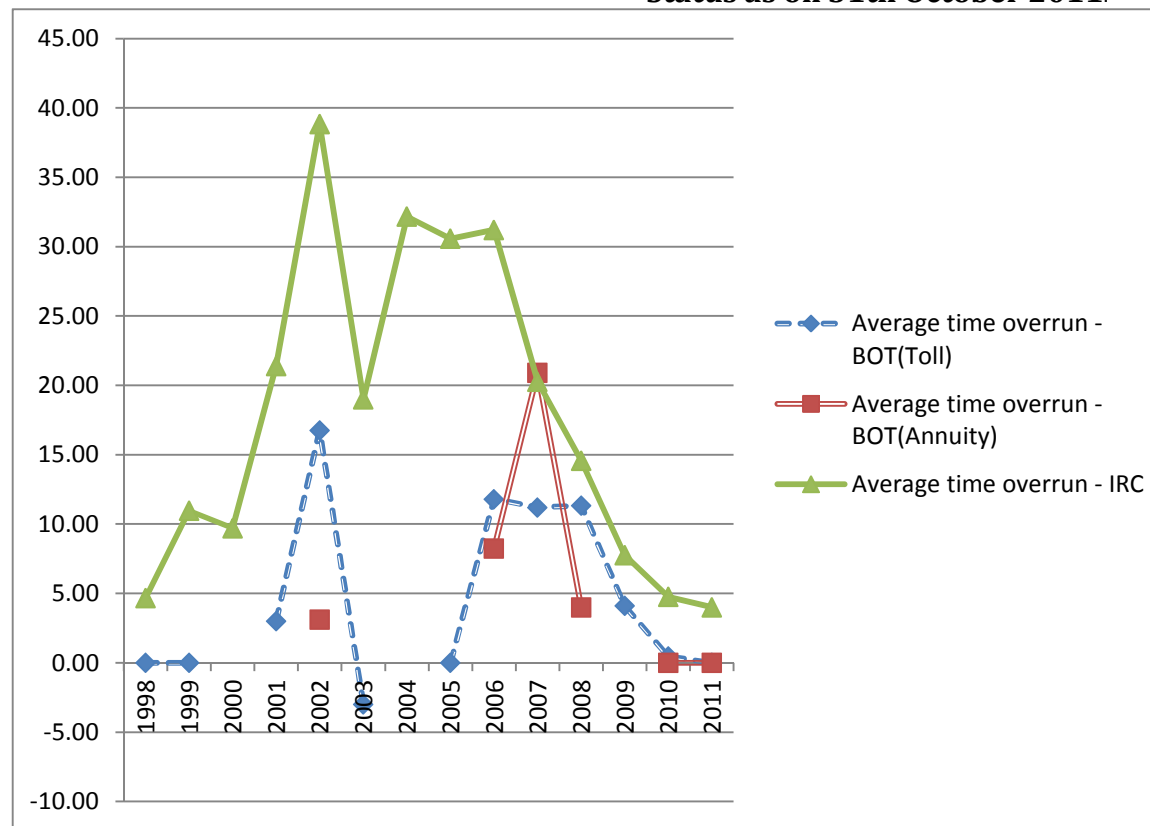
d - This does not include 14 Annuity projects that are under implementation as data on time overrun for these projects is not available.

[Source: NHAI]

Exhibit 8: Time overrun/anticipated time overrun for projects awarded from 1998 to 2011

Status as on 31th October 2011.

Year of start	Average time overrun of BOT (Toll) projects (months)	Average time overrun of BOT (Annuity) projects (months)	Average time overrun of IRC projects (months)
1998	0.00	***	4.67
1999	0.00	***	10.96
2000	***	***	9.71
2001	3.00	***	21.40
2002	16.75	3.13	38.85
2003	-3.00	***	19.00
2004	***	***	32.17
2005	0.00	***	30.58
2006	11.80	8.25	31.21
2007	11.20	20.92	20.27
2008	11.33	4.00	14.57
2009	4.11	***	7.75
2010	0.46	0.00	4.75
2011	0.00	0.00	4.00
Grand Total	6.48	8.94	23.04



*** - No project was awarded during that year. The discontinuities in the chart are due to this.

[Source: NHAI]

Exhibit 9: Cost overrun along with time overrun for the completed projects of IRC mode of delivery from 1996 to 2009**Status as on 31st October 2011**

Year of start	No of projects	Contracted amount (Rs cr)	Cumulative Expenditure (Rs cr)	Cost overrun over contracted amount (%)	Cumulative time overrun (months)	Average time overrun (months)
1996	1	58.70	80.87	37.77	0	0
1997	1	275.00	347.19	26.25	0	0
1998	3	140.86	222.35	57.85	14	4.67
1999	26	1544.07	2153.85	39.49	285	10.96
2000	17	2052.57	2895.58	41.07	165	9.71
2001	66	9681.86	11973.41	23.67	1339	20.29
2002	11	2788.88	3618.62	29.75	340	30.91
2003	3	312.47	483.41	54.71	57	19.00
2004	5	1422.07	1854.72	30.42	139	27.80
2005	45	10473.08	13715.27	30.96	988	21.96
2006	12	2065.06	2977.18	44.17	250	20.83
2007	8	1399.08	1658.68	18.56	143	17.88
2008	2	319.99	395.07	23.46	24	12.00
2009	2	84.33	158.96	88.50	13	6.50
Total	228	32618.01	42535.16	30.40	3757	16.48

[Source: NHAI]

Exhibit 10: Litigation before Arbitration Tribunal and Courts for completed projects**Status as on 31th October 2011**

	Before Arbitration Tribunal					Before Court			
	Total No of projects	No of projects	Share of Projects (%)	Amount pending (Rs cr)	Average amount pending (Rs cr)	No of projects	Share of Projects (%)	Amount pending (Rs cr)	Average amount pending (Rs cr)
Completed projects	289	92	31.83	5216.44	18.05	52	17.99	637.48	2.21
<u>Item Rate Contracts</u>	228 ^a	85	37.28	4839.54	21.23	51	22.37	632.83	2.78
Awarded upto Dec 2005	178	75	42.13	4143.88	23.28	47	26.40	585.3	3.29
Awarded from Jan 2006 to Oct 2011	24	10	41.67	695.66	28.99	4	16.67	47.53	1.98
<u>BOT (Toll) Projects</u>	44	2	4.55	84.44	1.92	0	0	0	0
Awarded upto Dec 2005	11	1	9.09	1.40	0.13	0	0	0	0
Awarded from Jan 2006 to Oct 2011	33	1	3.03	83.04	2.52	0	0	0	0
<u>BOT (Annuity) Projects</u>	17	5	29.41	292.46	17.20	1	5.88	4.65	0.27

a - Includes 26 projects for which year of award has not been specified

Exhibit 11: Summary of litigation before Arbitration Tribunal and Courts for projects under implementation**Status as on 31th October 2011**

	Total no of projects	Before Arbitration Tribunal				Before Court			
		No of project s	Share of Projects (%)	Amount pending (Rs cr)	Average amount pending (Rs cr)	No of projects	Share of Projects (%)	Amount pending (Rs cr)	Average amount pending (Rs cr)
Projects Under Implementation	219	19	8.68	4087.41	18.66	10	4.57	91.96	0.42
<u>Item Rate Contracts</u>	81 ^a	19	23.46	4087.41	50.46	9	11.11	88.51	1.09
Awarded upto Dec 2005	35	7	20.00	209.89	6.00	2	5.71	27.10	0.77
Awarded from Jan 2006 to Oct 2011	41	10	24.39	3808.06	92.88	6	14.63	59.02	1.44
Terminated contracts	3	2	66.67	69.46	23.15	1	33.33	2.39	0.80
<u>BOT (Toll) Projects</u>	106 ^b	0	0	0	0	0	0	0	0
Awarded from Jan 2006 to Oct 2011	58	0	0	0	0	0	0	0	0
Awarded from Jan 2009 to Oct 2011	44	0	0	0	0	0	0	0	0
<u>BOT (Annuity) Projects</u>	32	0	0	0	0	1	3.13	3.45	0.11

a - Includes 2 projects for which year of award has not been specified

b - Includes 48 projects for which year of award has not been specified

Exhibit 12: Response of private players at RFQ and RFP stages**Status as on 31th October 2011**

	At RFQ stage				At RFP stage			
	Projects considered	Total No of Applications	Shortlisted bidders	Average No of bidders shortlisted	Projects considered	Bidders who purchased RFP	No of Bids received	Average No of bids received
<u>Item Rate Contracts</u>	9	491	288	32.00	12	152	100	8.33
Awarded upto Dec 2005	9	491	288	32.00	9	126	80	8.89
Awarded from Jan 2006 to Oct 2011		Data Not Available			3	26	20	6.67
<u>BOT (Toll) Projects</u>	19	322	292	15.37	19	138	85	4.47
Awarded upto Dec 2005		Data Not Available				Data Not Available		
Awarded from Jan 2006 to Oct 2011	19	322	292	15.37	19	138	85	4.47
<u>BOT (Annuity) Projects</u>	12	270	238	19.83	9	105	92	10.22

Note: Out of 415 projects that were awarded till October 2011, details on RFQ and RFP of only 40 projects were given by NHAI.