

FASTAG: Prospects and Challenges

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Abstract: All highway toll plazas are manually operated, where an operator collects cash from the driver and provides a receipt. Since this procedure can be slow, we often encounter traffic jams at the toll plazas on busy highways leading to wastage of fuel and increased pollution. To overcome these issues the Indian National Highway Association (NHAI) then proposed to the Government a digital alternative to toll booth transactions in the form of RFID or FASTag module. This paper attempts to outline the various prospects and challenges offered by the new NETC system through FASTag rolled out by the NHAI to collect toll on vehicles at all the National Highway Toll Plazas.

Key Words: NHAI, NETC, TOLL PLAZA, FASTAG, DIGITAL PAYMENT.

1. INTRODUCTION:

Over the period of time India has been advancing technologically in every sphere and digital technology is one among them. There has been incredible advancement in the technology being adopted in the nation for advanced digital payment ecosystem in the toll and travel sector. Thus, when the Ministry of Road Transport and Highways (MoRTH) decided to embrace the cutting edge innovation in national highways for toll charge collection, the decision was considered worth plausible.

Tolling-related technologies have picked up impetus in the present scenario. This is for enabling the acceptance of digital payments instead of physical cash at toll plazas. With an emphasis on implementing an effective and efficient toll collection framework, electronic toll collection (ETC), with FASTag as its brand name, emerged to be a key solution to enable an efficient, fast and cashless payment option for collection of the toll charge. FASTag is a Radio Frequency Identification Technology (RFID) introduced by the Government of India in October 2017 by the Ministry of Road Transport and Highway.

India has 151,019 km (93,839 mi) of National Highways with more than 566 toll plazas as of March 2021 and daily average collection of toll has reached Rs. 100 Crores per day and the toll collection is expected to reach Rs. 1.34 trillion in the next five years. The National Highways Authority of India (NHAI) has made the use of FASTags mandatory from February 15, 2021 for all four-wheelers. Consequently more than 3 Crore FASTags are operational as on this date.

2. STATEMENT OF THE PROBLEM:

All highway toll plazas are manually operated, where an operator collects cash from the driver and provides a receipt. Since this procedure can be slow, we often encounter traffic jams at the toll plazas on busy highways leading to wastage of fuel and increased pollution..

Transport Corporation of India (TCI) and IIM Kolkata conducted a survey in 2013 says that Rs. 60,000 Crore or USD 9.2 billion was lost every year in the toll booth hold-ups. To overcome these issues the Indian National Highway Association (NHAI) then proposed to the Government a digital alternative to toll booth transactions. The alternate module is FASTag, which was eventually implemented to simplify and ensure hassle-free operations at the toll plaza. In view of this the present study is undertaken to know the problems and challenges of FASTag users.

3. METHODOLOGY: For the present study secondary data from different websites, magazines and reports published by various organizations are used.

4. OBJECTIVES:

- a. To understand the concept of the National Electronic Toll Collection.
- b. To understand FASTag Device and it's working.
- c. To study the prospects and challenges of FASTag.
- d. To make suitable suggestions to improve.

5. NATIONAL ELECTRONIC TOLL COLLECTION:

National Electronic Toll Collection is a program that uses a FASTag device that employs Radio Frequency Identification (RFID) technology, for making toll payments directly from the prepaid account linked to it.

This system is introduced by the Government of India under the National Highway Authority of India. This system is implemented at all the Highway Toll Plazas (566+ plazas) across India. National Payments Corporation of India(NPCI) has developed the National Electronic Toll Collection (NETC) program to meet the electronic tolling requirements of the Indian market.

It offers an interoperable nationwide toll payment solution, including clearinghouse services for settlement and dispute management. Interoperability, as it applies to National Electronic Toll Collection(NETC) system, encompasses a standard set of processes, business rules, and technical specifications that enable a customer to use their FASTag as a payment mode on any of the toll plazas irrespective of who has acquired the toll plaza.

The main objective of the NETC Program is to evolve the NETC ecosystem into a four-party scalable model (i.e. Issuer, Acquirer, NPCI and Toll Plaza Operator). It provides an opportunity to evolve a simple and robust framework that is secure, reliable and interoperable across the country.

To serve the sub-goal of Government of India;

- Electronification of retail payments
- Reduce air pollution by reducing the congestion around the toll plaza
- Reduce fuel consumption.

6. FASTAG: DEVICE AND WORKING SYSTEM:

FASTag is device that is based on Radio Frequency Identification Device (RFID) for making toll payments directly while the vehicle is mobile on highways. FASTag, is also known as RFID Tag, is affixed on the windscreen of the car or any other four-wheeler vehicle and enables a customer to make the toll payments directly from the account, which is linked to FASTag.

FASTag enables the customer to transact using a cashless payment method along with benefits like – saving on fuel and time as the customer does not have to stop at the toll plaza. Currently, the program is live on more than 566+ toll plazas across the country.

FASTag has many features to its credit. Some of them are:

- Emergency roadside assistance,
- Accidental Death Cover
- SMS and e-mail alert transactions
- 5 years validity.

How a FASTag works

Step 1: Whenever a vehicle will pass through the Electronic Toll Collection (ETC) lane of the Toll Plaza, the Toll Plaza system will capture the FASTag details like (Tag ID, Vehicle class, TID, etc.) and send it for processing to the acquiring bank.

Step 2: The acquiring bank will send a request to the National Electronic Toll Collection (NETC) Mapper to validate the tag details.

Step 3: Once the Tag ID will get validated, NETC Mapper will respond with details like Tag Status, Vehicle class, VRN etc. If the Tag ID is not present in NETC Mapper, it will respond as the Tag ID is not registered.

Step 4: The acquirer host will calculate the appropriate toll fare and initiate a debit request to NETC system after successful validation of Tag ID from NETC Mapper.

Step 5: NETC System will switch the debit request to the respective issuer bank for debiting the account of the customer.

Step 6: Now, Issuer host will debit the linked tag holder account and send an SMS alert to the tag holder. The Issuer host will also send the response message to the NETC system. If the response is not sent within the defined TAT, the transaction will be considered as Deemed Accepted.

Step 7: NETC system will notify the response to the acquirer host.

Step 8: Lastly, acquirer host will notify to respective toll plaza system.

7. PROSPECTS OF FASTAG:

a. Convenience to Drivers / Consumers: You need not have to wait for too long in queue while driving. Time is saved at both ends. Customers will feel comfortable and will be able to manage through the highway without any delay or overhead. This system will also reduce traffic entangles and slowdowns that are the primary cause of disturbance for everyone.

b. Taming Corruption: This system will tame the corrupt employees and companies who misuse the toll plaza and tamper with toll booth system, there will be no cash at hand, and all the money paid through an electronic system will be properly accounted for to the Government authority or the organization in charge of that Toll Plaza. Therefore, there will be no interference by malicious people, and all the possibility of fraud will be vanished.

c. Safer and More Secured Payment System: This system is safer for both the payer and payee organization. People will have to pay the exact amount and not more than what is payable at the plaza. The system is layered with a secure billing process during which the payer will receive updates on his registered cell phone and a linked bank account.

d. Protection Against Crime and Mishaps: In case of a crime or a mishap, a vehicle can be traced easily, and further information can be gathered faster. All vehicle details will be saved at the server with the help of the ETC (Electronic Toll Collection) system once a customer crosses a toll plaza on the highway,. A vehicle can be traced easily in the event of crime of mishap and further information can be pulled faster.

e. All-round Savings: Saving your own money and resources is saving for the nation too. Without long queues, there will be the least fuel consumption. Customers will be able to save more of their fuel and can get higher mileage. Less fuel consumption will also save the nation's resources. For every transaction through FASTag, a customer will get cash back in the form of discount up to 2.5 percent.

f. Saves Manpower Cost: Since everything will be automated, the organization will be able to save enough money by cutting the cost of manpower employed at different lanes of the plaza. The authority will not be dealing with cash handling and management, which is expected to bring down the number of human errors and work overhead. This technology will create a simple but robust framework.

8. CHALLENGES OF FASTAG:

a. System or Network Failure: Since all the system will be operated through an automated network, more of the process and the FASTag technology will depend on the network. It becomes significant to keep the network servers up, the failure which might cause a ruckus and difficulty in the smooth workflow. This, in turn may also affect the customers and result in a massive loss to the government in terms of money.

b. Technical Glitches: Due to technical error the scanning machines may not be able to read FASTag. In this situation, someone has to be technically sound to troubleshoot such issues. In the rare of the rarest cases, the FASTag might become unreadable after few transactions. The Government or issuer has to have an alternative plan to reissue the same to the customer. There may be times when the toll charge may be deducted twice from the accounts of the customer, in the wake of the technical error.

c. Card Safety: FASTag is a simple sticker that is placed inside the windscreen. Under any circumstances, FASTag may get tampered or damaged, it would result into another trouble to the customer. It may become unusable, which means and one has to purchase another FASTag. Though money is refundable, one has to go through the registration process again.

d. Ownership Issue: With the vehicle owner's registration details encrypted in the FASTag, it is unclear whether somebody else can drive the vehicle or not? Given that the owner's registration and bank details will be linked to the FASTag, it is still not clear whether other people are eligible to drive your car. Let's say you are out of town or are unable to take your vehicle for some reason, what happens in the case when your family member or friend takes your car.

e. Loss of Card: Since FASTag comes in a tag form, it can be stolen easily or lost. In such a situation, one should never forget to request the agency to block the FASTag account instantly and process re-issuance.

f. FASTag Can be Wrongly Charged: Due to technical flaws, at times a FASTag user may be wrongly charged. And the user is only left with the option to report the matter as soon as he/she comes to know about it and asking for reimbursement.

g. Blacklisted FASTag: This issue is a fairly common prevalence for FASTag users. A FASTag gets blacklisted in the event the user fails to maintain minimum balance in their FASTag wallet. Thus if the user tries to pass through the toll gates with an insufficient balance in their FASTag account, they would not be able to avail the National Electronic Toll Collection (NETC) services, forcing them to pay via cash.

9. SUGGESTIONS:

1. In case of loss of fast tag, one can immediately notify the issuing agency or bank about the theft/loss. They can then process blocking the account and can help you with obtaining another.
2. In case the toll amount is deducted twice, by going on your FASTag customer portal, one can register a claim regarding a double deduction of toll amount and can put in a request for compensation.
3. There need to be stringent measures to ensure that the entry way into the designated FASTag lanes also has a scanner. This scanner will be the means to detect the card securely attached on the windscreen of vehicles. This will ensure that entry is allowed only to automobiles that have FASTag. And when these measures are in place, the user satisfaction and time saving opportunities will grow manifold.
4. For FASTag problems of this nature, the solution is absolutely simple. As a user of FASTag, one must be aware of the current balance in their account, such that they do not end up facing this challenge. Regular top-ups of the wallet is a must to ensure seamless passage through toll plazas.

10. CONCLUSION: The intent of NHAI to introduce FASTag to collect toll electronically at all toll plazas is a right step towards the elimination of various issues such as long waiting in toll plazas, reduction in the fuel consumption, pollution control etc. But at the same time it is the responsibility of NHAI and NETC to address various issues to make the journey more comfortable and user friendly.

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