

White Paper – Future-ready tolling Series

Hybrid Tolling in the USA

Compiled by: A-to-Be® | Mobility-Beyond
#touchless #tolling #atpm

Executive Summary

This short whitepaper is about the future of tolling and its connection with learning, adapting, and having choices while on the road. These times are demanding, mostly because of the complexity of the underlying systems – social, political, financial, environmental.

In this arena of often conflicting interests, technology has more than once proven to be the answer, which is also true in infrastructure management and operation. But let's take the All-Electronic Tolling ("AET") systems as an example, which are becoming the predominant tolling alternative. Despite its indisputable benefits in efficiency and convenience, **there is still a gap between attainable toll collection rates and business goals**, particularly when compared with traditional manual lanes.

How are toll operators to consider the options available today? **We explore the choices between All-Electronic and Self-Service tolling.** In the end, we allowed ourselves to draw conclusions, which are all about balance between options and convenience to users. And these come from the accumulated experience and the ability to combine and quickly adapt. And COVID-19 comes with many lessons – being capable of **adapting fast** –, such as by incorporating touchless operation modes in traditional tolling, while coexisting with open-road.

All-electronic tolling has **much to gain from having self-service touchless modes** alongside ATPMS, taking the most from **human-machine modern interaction behaviors**, using mobile apps, wireless communication, and creating seamless journeys.

US toll operators have much to gain with having a future-ready solution – to have choices., learning with the past, but acting today.

“ 5,000 miles rely on tolls to upgrade and fund new transportation infrastructure projects. ”

Introduction

With over 3,000 miles of tolled interstate (1) and 2,000 miles of tolled state roads across 35 states, over the last half-century, the United States has become **more dependent on tolling as a means of revenue**, used by states to upgrade existing infrastructure and fund new projects. However, the **coronavirus pandemic exposed just how outdated the original tolling systems are**, and how the lack of investment in more technologically advanced systems over the years has impacted states' abilities to collect tolls during the pandemic shutdown. Automatic Toll Payment Machines (ATPM), which serve as a complement to AET, allow for more reliable and efficient toll collection, especially in a post-COVID world.

“ All of this has been contributing to an annual average of toll operation losses of \$ 8 million due to leakage (3). ”

COVID-19 crippled cash collection at toll plazas as states were concerned about the spread of the virus. Regardless of the pandemic, 29% of Americans rarely carry cash (2), making it difficult for them to pay at cash-only toll collection booths with no card payment options. Cash collection continues to become a thing of the past, as recently many states, including Massachusetts and Maryland, have gone to All Electronic Tolling. All of this has been contributing to an annual average of toll operation losses of \$ 8 million due to leakage (3), **in extreme cases rising to \$30m in losses**. In some operations, a 10% leakage has been reported with only half of violators being prosecuted, and two-thirds of the operators not enforcing their authority to recover that revenue.

Three factors are likely to save the toll booth from an almost certain demise.

I The provision of a 'cash option' is mandated through **regulation** to improve access to **unbanked** citizens and to provide a level of **anonymity** for users.

II The **prevalence of trade unions** within the sector – almost one-third of tollways are unionized – , which often influences the ability of toll organizations to remove toll plazas entirely (3).

III In conventional stop'n'go lanes – such as the ATPM and manual modes – **toll collection rates achieved are higher**, with less revenue leakage, a strong enough reason to lead business decisions.

“ Almost 2/3 of tollway facilities offer a cash option, and half of these offer ATPM options. (6) ”

AET is the predominant style of tolling improving traffic flow and with other benefits, including pollution reduction. Take an AET lane, which flows at over five times the rate of a manual lane (4), this has led that early half of America's 342 tolled roads have only cashless tolling (5), being one-third of these managed lanes. On the other hand, in a survey conducted by KPMG , almost two-thirds of the inquired tollways operators declare offering a cash option – whether on or off the mainline or at walk-in centers – and more than one-third say they offer automatic toll payment machine (ATPM) options (6).

While AET has many benefits, these systems have been traditionally met with resistance, due to privacy concern issues, the inability to complete collections, and failure to finance public-private partnerships through AET. Additionally, the majority of AET systems have been manufactured – and managed by foreign entities – , even as states are looking for a way to incorporate more local jobs through production, management, and maintenance.

Self-servicing and the AET trend

An ATPM is a solution that can bridge the gap between the legacy (which use human operators or collect only cash and coins), and fully electronic AET systems. ATPMs deliver a contactless payment ability, while allowing the unbanked to participate in tolling and allowing individuals to travel without being tracked by AET systems, protecting individual privacy. Machines can be placed into existing toll booths, and it is not necessary to erect new ones. Moreover, the ATPM can be used to replace human operations – even if only partly – which puts toll operators at risk of catching or spreading COVID-19 or the next major virus. As society continues to transition to electronic transactions across multiple industries, **ATPM is the logical bridge between humans and machines as an intermediate technology.**

A-to-Be, a global tolling solutions provider – from roadside to backoffice, including also traffic management –, became the ATPM marketplace leader in the USA, using technology to perform self-service tolling, including touchless modes. Currently, A-to-Be is the only company to produce ATPMs in the United States, manufacturing over 150 machines in the last 5 years that are now installed and in use across the country.

Another benefit of A-to-Be's ATPMs is that it has – and continues to – **leverage the economy by creating US-based jobs**, through manufacturing, machine maintenances, and back-office operations, often aggregated with roadside and backoffice implementation and maintenance services. By producing in the USA, the price of ATPMs does not include overseas shipping and handling, keeping prices relatively stable, and allowing more investment in the technology and the actual machines. Lastly, A-to-Be's ATPMs support all payment methods including smartphones, smartwatches, cash, coins, bank cards, or even **digital wallets in conjunction with a mobile app**, creating a safe and touchless payment method, which is only becoming important and the preferred method of payment in the post-COVID economy.

“Jointly”, not “Instead”

As we continue down the road to full AET, ATPMs help create a more socially equitable situation for those who need to drive on toll roads, but don't have the credit cards or worry about their privacy. That is why the **AET system complemented with ATPM is the best solution** for your roadside as owner, as well as for the roadside as user.

U.S. manufactured ATPMs offer decision-makers a win-win scenario. The states that implement these systems as part of their AET will be able to **reduce 'leaking revenue'** while also **keeping or creating jobs and boosting the economy** within their states.

“ A-to-Be is the single company to produce ATPM in the U.S., manufacturing over 150 machines in the last 5 years, installed and in use across the country. ”

“ Touchless self-service, combined with open-road modes, are the most versatile tolling configuration in terms of business goals achieved.

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Conclusions

As the AET trend gains momentum, the **rates of toll collection have failed to keep up**, creating to highway operator companies an additional problem, adding to the social pressure of retaining jobs, and the political tension associated with promoting the US local industry. These last few months, societies and our everyday interaction models have been put to the test, challenging technology providers to rise to the occasion.

Touchless self-service tolling options, in conjunction with open road alternatives, create a toll plaza configuration that will continue to **guarantee social sustainability, increase toll collection rates**, and observe the **new user interaction rules** the society has adopted for the pandemic.

It comes naturally to encourage technology providers that invested in creating US local structures and job opportunities for specialized work, gathering from a vaster experience in the world of tolling – roadside and central systems.



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Works Cited

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