BY HAROLD W. WORRALL, PhD., P.E.

RADICAL CONVENIENCE

All electronic toll collection (AETC) is starting to become a reality. Several agencies have begun AETC operations and others are planning to do so. As this revolution in electronic toll collection occurs, agencies are discovering first hand who the customers in the cash lanes were. Given the choice between playing by the rules and breaking the rules, customers must decide whether to submit to the established process of establishing a transponder account or risk incurring a few violations. The key word is "few" since many of these customers use the toll road infrequently.

AGENCIES TEND TO THINK OF THEIR CUSTOMERS AS FREQUENT CUSTOMERS, BUT THE INFREQUENT CUSTOMER FAR OUTNUMBERS THE FREQUENT CUSTOMER.

The frequency of use uniquely distinguishes the customer base; and the toll agency approach to get customers to choose establish an account rather than violate requires a different philosophy of customer service, a radically different approach.

Agencies tend to think of their customers as frequent customers, but the infrequent customer far outnumbers the frequent customer. We have been so successful at reaching high revenue (electronic toll collection) ETC penetration rates that it is difficult to believe that our methods should change. In fact, it is difficult to believe that most of our customer base is not the frequent customer.

To attract the infrequent customer into some sort of prepayment method, we have to develop radically convenient processes. Simple sign up processes, temporary accounts requiring minimal data, and account maintenance procedures must be extremely available and convenient.

WE HAVE FEW PROGRAMS TAILORED TO THE LARGE NUMBER OF INFREQUENT CUSTOMERS.

Some agencies are beginning to turn to commercial and retail points of sale to permit customers to top off and maintain accounts. The alternative to this new philosophy of customer service is that infrequent customers will violate and the toll operator is left with the unpleasant and unpopular task of collecting revenues through cumbersome and costly billing processes or legal means. Though agency revenues may eventually be collected through penalties and fines, the funds are uncertain, received at a much later date, and the entire process fuels public animosity. Furthermore, it is difficult to justify the collection costs involved in pursing one violation for a customer.

A better way is to entice customers to establish an account up front before they become violators. The industry is quite good at doing this with ETC programs. We know how to do a marketing campaign, discount ETC transactions, and encourage ETC penetration with gate up operations that allow customers to travel through the lanes in free flow conditions. We are not very good, however, at encouraging the infrequent customer to become an established, preregistered account holder.

THE INFREQUENT CUSTOMER

Studies have repeatedly shown that a very small percentage of the customers of a toll road generate the majority of the revenue of a toll road. However, we have few programs tailored to the large number of infrequent customers.

Studies and surveys conducted in numerous states over long periods of time produced extraordinarily similar results: small numbers of customers generate large portions of the revenue and large numbers of customers generate small portions of the revenue. Generically we can think of this phenomenon as the 80–20 rule: 80 percent of the revenue is generated by 20 percent of the customers and 20 percent of the revenue comes from

80 percent of the customers. This relationship of frequency to revenue generation is also not linear. Some studies show that 2 percent of the customers generate 30 percent of the revenue and 58 percent of the customers generate 7 percent of the revenue. It should not be surprising that mature tolling operations typically get to 70–80 percent ETC penetration and have great difficulty getting above those rates. To go above these levels of penetration without significant changes in technology such as electronic vehicle registration (EVR), agencies must reorient their focus to the infrequent customer.

This is a different class of customer from what we are used to. Because they use the system very little — only a few times a year or month — they are not motivated by discounts, not interested in plans for expansion, and simply wish to get somewhere on the toll road in a reasonable and reliable time.

They are local retirees needing to use the system for medical appointments, family visits, shopping or other local activities. They are vacationers interested in paying the tolls efficiently while they are in the area; farmers bringing produce to the marketplace;
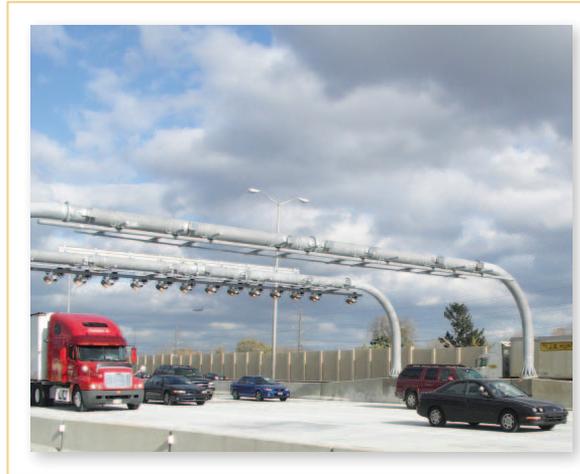
or business persons who may use the toll road intensely for a short period of time and then travel to another region. They simply wish to purchase a convenient and safe trip but wish to do so very conveniently. Convenience from the perspective of the toll agency is not synonymous with convenience from the perspective of the infrequent customer. Convenience for the infrequent customer must be radical.

Some customers have multiple vehicles that are on the toll road very infrequently, such as recreational vehicles hauling trailers or boats. But that same customer may be a frequent customer using another vehicle. The tools should fit the frequency of use. Perhaps back office accounting systems should allow for various types of accounts within the master account.

We should not assume that radio frequency identification (RFID) transponders will be sufficient to get higher levels of prepayment just because using them in the past has allowed the industry to attain 80 percent ETC penetration. Even if an agency were successful in getting customers to accept transponders as the *only* means of toll payment, there would be many more accounts and many more transponders in the hands of individuals who should not have one on a permanent basis. If the usage rate is once per month, the cost of the transponder is spread across too few transactions to recover the capital cost; and if we simply pass that cost on to the customer, they may not purchase one.

THE ALTERNATIVE

Agencies that have converted to AETC have quickly realized that it is less expensive to sign up infrequent customers through very simple means requiring very little data than it is to chase the revenue through the violations process. Toll agencies now offer grace periods to give customers every opportunity to pay the toll voluntarily; and gradually the philosophy of permanent transponder accounts using traditional means is changing.

An approach that has been used to some extent is the license plate account. Rather than using RFID to identify the customer and the payment source, the license plate image is taken and converted to digital form where it can be compared to accounts with the license plate as the key. They must, however, be radically simple to establish; they must require only the most essential data, such as license plate number and payment method. The process must be extraordinarily accessible.

Some have suggested using cell phones to take an image of the license plate, then sending it by text message or email with a payment method to establish accounts. Some have considered drive up pre-registration where an account is established by swiping a payment card while the license plate image is being taken. Such processes require no "mother's maiden name", "driver's license number" or even the customer's name. The essential elements are a method of payment and a means of identifying the vehicle, either a license plate or a transponder. Most importantly, every account that is established means fewer potential violations that must be tracked through a mail-intensive process

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and court system, all of which deteriorates the goodwill of the agency with the populace.

Some toll operators have begun to make the maintenance of a toll account more convenient as well. By offering various methods of payment through large numbers of retail outlets or offering credit card processes linked to existing accounts, toll operators have reduced costs by reducing the client's need to interface directly with the agency. These payment methods support the use of credit cards, bank cards, and even cash.

A significant issue for many customers is the lack of a bank account. It has been estimated that Miami Dade County has 600,000 persons who do not have a bank account or are "unbankable." This does not necessarily mean that customers do not have sufficient assets to establish a bank account. They may

simply prefer to manage their finances with cash. Cash accounts also provide a certain level of anonymity. Regardless, these customers need a convenient means to establish and maintain a toll account. Some toll operators are contracting with the private sector to issue bank cards that can also be used for personal purchases. These cards serve as electronic purses that can be topped off at many retail outlets and can be used to establish ETC or license plate accounts.

Not using these kinds of tools will result in a large number of violations produced by an array of infrequent users each of whom has a small number of violations; a poor economical strategy that is difficult to defend. One toll agency that converted to AETC experienced nearly 400,000 single vehicle violations in the first six months of AETC operations. Prosecuting large numbers of citizens for small numbers

of violations is difficult to sustain over a long period. The assumption that large fees and penalties are a reasonable deterrent and can be passed on to the customer reduces the likelihood that the community will support the agency in the future.

Even if the number of violations per customer is higher, the conversion of images to digital letters and numbers requires varying levels of manual review because the agency must be careful not to send a violation notice to the wrong customer. When the 80 percent of customers who were previously happy paying cash in the manual lanes become potential violations, the number of images increases by a factor of three to five times the previous levels. This creates a flood of images that must be processed, some of them manually. This can result in large back office costs.

Even more radical proposals have been proposed to establish infrequent user accounts in the lane where cash transactions are still offered. This method would use cash payment lanes to establish license plate accounts. On first encountering a toll facility, vacationers and local residents would go to the cash lane and receive a pamphlet or simple postcard instructions on how to establish an account that would allow them to pass through the lanes as if they were ETC customers. At the next plaza they would once more enter the cash lane, but this time they would hand the attendant a payment card and request that an account be established. The attendant would push a button on the patron toll display that indicates the customer wishes to establish an account. The license plate image and optical character recognition (OCR) conversion would appear on the screen monitor for approval. The payment card would be swiped and the account would be established allowing the customer to travel through ORT and other high speed lanes without a transponder. This process may have promise even for those who have converted to AETC if some of the cash lanes are still available. Perhaps this should be an interim step in the conversion to AETC to get the ETC penetration rate to a high enough level.

RADICAL CONVENIENCE

The frequent customer has been accommodated by most agencies with mature ETC operations. The majority of the daily and weekly customers now have transponders and accounts to pay tolls as they occur. It is not the frequent

customer, however, that is the most likely to violate. If frequent customers violated it would be a regular occurrence and there would be sufficient violations to justify court proceedings to recover the lost revenue. Infrequent customers create a different condition and are less likely to be pursued.

To accommodate the infrequent customer and to reduce the number of violations and images that must be processed, large numbers of accounts must be established that have few data collection requirements and require little effort on the part of the toll agency to maintain. The onus is on the customer to maintain the account in good standing. Many accounts will be temporary in nature, such as those for the vacationer or business traveler. When the account is no longer valid, however, the infrequent traveler must be provided an extremely convenient method to reestablish the account.

Attracting the infrequent customer to an electronic payment process where they can used unmanned toll lanes using ETC results in more revenue collected up front, less violation processing, and lower operating costs.

Radical and divergent philosophies of operation will be required. Rather than focusing on recovering revenue losses through large penalties and fees, outsourcing violations to the private sector, and penalizing anyone who uses the toll road without a transponder, toll agencies must provide other types of toll accounts that more closely align with the needs of the infrequent customer. Agencies must provide simple and fast methods of establishing accounts, some of which will be temporary in nature.

The toll industry must "radicalize" its thinking to free itself from its nearly twenty-year history of providing excellent ETC services to the non-cash customer, the frequent customer. The toll industry still needs to provide a solution to the largest constituency. Successful programs will focus on the infrequent customers who previously have been in the cash lanes.

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RADICAL CONVENIENCE DOWN UNDER
BY PATRICK D. JONES

I first visited Australia in March 2002 with the IBTTA Executive Committee. Until then, I had not seen or experienced all electronic open road tolling. Ken Daley, who was then the general manager of Transurban's Melbourne City-Link, challenged us to think about tolling in a radical way. Radical in the sense of getting back to basics, the very fundamentals of the business we're in.

Over the course of our Melbourne visit, Ken repeatedly emphasized that while the technology is great, the most important thing to focus on is how you interact with the customer. Unless you focus first on the customer experience and how you intend to interact with the customer, then everything else is nonsense. He stressed that moving from a barrier system of tolling to a barrier free system requires more than incremental changes. It requires a complete rethinking of your relationship with the customer. Once you identify what the customer's needs are and how you're going to satisfy them, only then can you design the technology and systems to support that vision most effectively. If you focus on the technology first and not the customers, it won't work; at least, it won't work as well as it should.

In January 2009, Ken Daley shared his toll operations experience with the 25 members of the second class of IBTTA's Leadership Academy Executive Development Program. He challenged the students to embrace the notion that customer service is the key differentiator between a toll agency and any other organization that manages a road, bridge, or tunnel.

In describing all electronic toll collection (AETC), Ken noted that exceptions come from technology, operators, and errors from the customer. "Our problem is the customer is always right. That's the issue I'm trying to highlight. Whose problem is it when the transponder dies? The customer or the operator? Today, it's the problem of both the customer and the operator; tomorrow, it will be the operator's problem alone."

Ken hammered home his message about the importance of customers. "You have to know how you're going to interface with your customers. We define that before we talk to the technology people. The business planning process and the functional specifications of Melbourne do not fit in with Sydney or Virginia. You have to start out with the needs of the customer and those needs feed into your business requirements."

Before leaving the students, Ken challenged them to think about another issue: sustainability. He noted that the United States used to have one of the best highway safety records in the world; now the U.S. falls behind many other developed countries. The issue, he says, is sustainability. It's the sleeping giant of transportation. He defined sustainability as a set of objectives that go well beyond the impacts of a transportation facility on the natural environment. Sustainability is also about how we behave as corporate citizens, how we treat our staff, and how we measure our performance against key metrics such as the delivery of essential services and our relationships with the community and the marketplace. Ken suggested that our industry's response to the question of sustainability could be as big a differentiator as customer service is today. "If you don't have a total systems approach to sustainability," he said, "then it will always be just an add-on, something that you're going to do later.

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