



Proven Transportation Leadership: A Backwards Look

By Jack Finn, P.E.

“A leader,” says former U.S. First Lady Rosalynn Carter, “takes people where they want to go. A great leader takes people where they don’t necessarily want to go, but ought to be.”

Could Charon, then, be thought of as a leader? The mythological Greek god and ferryman of Hades took the newly dead from one side of the river Styx to the other—only if they had a silver coin to pay for the ride. Those who could not pay had to wander the banks of the river Styx for one hundred years.

In Greek mythology, there were several sections of Hades, including the Elysian Fields (comparable to Heaven), and Tartarus (comparable to Hell). Charon started the dead on their journey through Hades. He took them where they wanted to go.

Charon—and so many to follow in the tolling industry—saw a need and filled it. He provided a transportation solution, albeit a macabre one. Was Charon an entrepreneur? Yes. A leader? Perhaps, in the literal sense that he led people across the river. Was he a great leader? No.



Great leaders in the tolling industry are made of tougher stuff than Charon. They face complex challenges and provide transportation solutions to communities around the world. The tolling industry has offered great leadership to the transportation industry overall, bringing mobility, technology and financing to where it “ought to be.”



Pioneers in U.S. Tolling

Tolling as a means to provide transportation is not a new concept. Neither is the underlying driver: humans’ insatiable need to travel. By the seventeenth century, a number of turnpikes had been built in England. Early settlers to the U.S. brought the concept with them.

Early toll road construction in the U.S. peaked in the mid-19th century. By the turn of the twentieth century most toll roads were taken over by state highway departments. It took the forward-looking vision of several influential men in Pennsylvania to modernize the concept of tolling.

In 1936, Victor Lecoq of the State Planning Board, William Sutherland of the Pennsylvania Motor Truck Association and state

Representative Cliff Patterson commissioned a study to investigate the feasibility of a superhighway through the Allegheny Mountains of Pennsylvania to link Harrisburg and Pittsburgh. The following year, the Pennsylvania Turnpike Commission was established with Walter A. Jones the first commission chairman.

Defying the Odds

Walter Jones and the other turnpike commissioners believed that revenue-based bonds could finance toll roads. Others were skeptical. The U.S. Bureau of Roads (now, the Federal Highway Administration) was not only anti-toll highway at the time but also against intercity limited-access highways, either toll or non-toll.

Bankers were also skeptical of supporting the unproven concept of a toll superhighway, especially in 1937 when the U.S. was still recovering from the depression. Nobody had ever built a toll highway of this length, cost, and scale before, and it was not clear that the road could pay for itself.

Not to be dissuaded, Jones and his staff, with the support of then-president Franklin Roosevelt who thought construction of the turnpike would lower unemployment, procured a loan from the New Deal’s Reconstruction Finance Corporation for almost \$41 million at 3.75 percent interest. The Work Projects Administration (WPA) would also provide another \$29 million in grants.

The turnpike commission projected upwards of 3,000 vehicles per day would use the new superhighway when it opened, compared to the Bureau of Roads’ projection of 715 vehicles per day. The Bureau of Roads simply could not imagine that enough of the traveling public would pay a toll to drive on the turnpike.

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Toll Road Viability

They were proven wrong. In the first four days of operation, the Pennsylvania Turnpike carried 24,000 vehicles or about 6,000 a day. Planners predicted that 1.3 million vehicles would use the turnpike each year, but early actual usage was 2.4 million vehicles.

The phenomenal revenue from turnpike tolls allowed construction bonds to be retired early and reissued for capital improvements to the road. Jones and the Pennsylvania Turnpike Commission proved to the world that tolled highways were a viable means to provide mobility.

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They also demonstrated one of the fundamentals of leadership: that leaders rise to the challenges placed before them using desire and willpower to advance the conviction that their ideas have merit. They are able to communicate their vision and motivate others to help implement it.

The success achieved on the Pennsylvania Turnpike paved the way for other states' plans to build their own toll roads after World War II. Today there are toll facilities—including bridges, tunnels, highways, and ferries—in 35 states across the U.S.

Tools of the Trade

A great leader brings to bear the best resources and tools available to develop solutions to pressing issues. By the mid-1980s, there were amazing new technological tools available to toll agencies and the Texas Turnpike Authority (TTA, now the North Texas Tollway Authority), under the leadership of executive director Robert G. Neely, seized upon the opportunity to upgrade its toolbox by implementing electronic toll collection (ETC).

At the time, several other toll agencies were testing prototype systems that used either radio frequency or optical technology to automatically identify and classify vehicles and offer a cashless transaction. Amtech, led by David Cook, had developed a radio frequency based tolling tag.

In 1989, TTA completed deployment of ETC on the Dallas North Tollway. Although the use of transponders for ETC was not especially quick to catch on with the traveling public, TTA saw a dramatic improvement in the flow of traffic through its toll plazas. This was enough proof to spark the ETC revolution throughout the tolling industry.

Today, virtually every new tollway incorporates ETC, and many existing toll facilities already have it. Toll agencies around the world are reaping the benefits of ETC: significant declines in the operating costs of toll facilities, reduced congestion at tollbooths, less vehicle emissions for better air quality, and lower vehicle operating costs.

Spin-Off Applications

If the benefits of ETC to customers and toll operators alike were not proof enough that the leaders of TTA were visionary in their application of technology to their operations, consider the spin-off applications that have resulted.

The Dallas North Tollway was the first real demonstration of electronic interaction between roadside and vehicle. Eyes were opened throughout the transportation industry to the possibilities of communicating with vehicles.

Other industry leaders began to envision “smart cards” that could be used to pay for tolls, parking fees, transit fares, and entrance fees



at multiple venues. Toll tags were used in New York and New Jersey to monitor traffic flow and measure average speeds on roadways and eventually communicate with the vehicle about best alternative routes if traffic was congested.

Some of these ideas have been fully implemented; others are still on the drawing board. Nonetheless, in deploying ETC for the first time, the leaders at TTA brought the transportation industry to a new level of customer service and operability.

High-Speed Express

When ETC was first deployed, vehicles lined up at the toll plazas with everyone else to pay their tolls. The primary difference is that

the drivers didn't have to roll down their window or fumble for change. They just drove right through.

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ORT is a revenue collection system that eliminates the need for toll plazas altogether. Instead, motorists use a vehicle transponder or other electronic means to pay the toll without having to stop or slow down.

Leaders at the Oklahoma Turnpike Authority and the Georgia State Road & Tollway Authority (GSRTA) changed that. They were the first to install express electronic toll collection systems in the United States. "Express lanes" enable vehicles with ETC transponders to travel through the tollbooth at highway speeds.

The never-ending quest for improved customer service was the motivation for Oklahoma and Georgia to build express toll lanes. In fact, excellence in customer service has been the hallmark

of the tolling industry and is what sets tolling apart from other public transportation providers.

Leaders in a customer service industry have to be self-confident, independent, flexible, creative, knowledgeable, versatile and diligent to create a successful business. The GSRTA, for example, was

in the process of directing the planning and design of the Georgia 400 Extension, a brand new toll road with a single toll plaza, when ETC was successfully demonstrated on the Dallas North Tollway. Just as commissioners of the Pennsylvania Turnpike had done 50 years before, the GSRTA looked toward the future and took a calculated risk. Although ETC was proven viable in Texas, no one was sure that the technology would catch on in Georgia. Because it was a new toll facility, there was no proven market for ETC.

Nonetheless, half of the toll plaza was dedicated to express lanes. The Georgia 400 now handles 120,000 vehicles per day with about 35 percent of all vehicles using a Cruise Card to pay their toll. SRTA estimates that a Cruise Card can save approximately five minutes each trip for the average commuter.

Great leaders build on the success of those who have come before them. Open road tolling (ORT) is the next frontier for ETC. ORT is a revenue collection system that eliminates the need for toll plazas altogether. Instead, motorists use a vehicle transponder or other electronic means to pay the toll without having to stop or slow down. Currently, ORT is used in Europe, Australia and Canada and most recently introduced to the United States in Houston Texas. Other states, such as Florida and Illinois, are seriously considering this option.

HOT Lanes: Hot!

Entrepreneurial leadership within the toll industry took another giant step forward when the California Department of Transportation (Caltrans) partnered with the California Private Transportation Company (CPTC), a private consortium of highway builders, financiers, and toll operators. Together, Caltrans and CPTC built State Route 91, a four-lane plus two high occupancy toll (HOT) lane, 10-mile toll road built in the median of California's Riverside Freeway.

The fundamental belief behind SR 91 is that travelers deserve a choice in transportation. If traffic is backed up on the Riverside Freeway, single-occupant travelers have a choice of paying a toll to travel in the less-congested high-occupancy vehicle (HOV) lanes. Thus the HOV lanes become “HOT” (high occupancy toll) lanes.

HOT lanes are a way for urban areas to get more use of existing highways and reduce congestion on “free” roads without raising taxes to build new roads. SR 91 boasts a series of firsts. It is the world's first fully automated toll facility and the first application of value (congestion) pricing in America.

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The concept of HOT lanes has rocked the transportation industry. Despite some initial resistance (for example, predicting that only the wealthy could afford to travel in HOT lanes), there has been huge acceptance and use of the SR 91 HOT lanes by the traveling public. Other toll agencies are now lining up to install their own HOT lanes.

Transportation Leadership

Our Greek mythological character Charon was depicted as a cranky, gnarled old man stooped over a ferry pole. Sometimes he’s a winged demon with a double hammer. He is always seen hooded and often wearing a black cloak.



Is this the image of today’s toll industry? Hardly not. The tolling industry could better be depicted as knights in shining armor, leading the transportation industry in customer service, technology application and innovation.

It will be up to the present and future leaders in the tolling industry to continue to make great strides—to bring the transportation industry where it “ought to be” and to show the traveling public that toll facilities will get them “where they want to go.”

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