

# IBTTA Technology Summit

## Session Descriptions for the Call for Presentations

---

### GENERAL SESSIONS

There will be three General Sessions during this Summit, but none will be accepting presentation submissions. The sessions will cover:

- Session 1: California – We’re Living the Dream! (Presented by members of CTC)
- Session 2: Tolling’s Role in the Broader Vision of Transportation and Mobility
- Session 3: Perspectives from Technology Experts from Outside the Industry

### SPECIAL TOPICS TRACK

#### 1. *The Potential Convergence of Road User Charging and Tolling*

Road User Charging (RUC and aka Vehicle Miles Traveled fees, Mileage Based User Fees) all have one fundamental goal -- to ensure that there is a steady flow of funding to build, operate, and maintain the nation’s roadways. As fuel economy improves and more electric vehicles are on the road, the purchase of gasoline is no longer a good proxy for how much a vehicle uses the road. And over time, as gas tax receipts flatten and decline, relying on those revenues will put the health of the road systems at risk. While tolling collections are typically used to pay off a specific facility, RUC will be a replacement to replenish the general transportation fund. Tolling and RUC have somewhat different purposes, but they share many common aspects including technologies, account management, commercial back offices and the need to gain public acceptance. This session is looking for experts from both the public and private sectors to explore and review the various areas of potential convergence between road usage charging and tolling.

#### 2. *The Impact of MaaS on the Tolling Industry*

Mobility as a Service (MaaS) continues to change the transportation industry by integrating multiple transportation services into a single mobility service, accessible on demand. It represents a shift from independent infrastructure owners and service providers to a coordinated approach that can be used to improve the customer experience and achieve local and regional mobility goals. Successful MaaS systems seamlessly integrate services and fees to make it easier for travel without being limited to a specific provider. This concept also creates the potential for significant shifts in mode shares of people and goods out of single-user vehicles and into transit, micro- and shared-mobility. This session is seeking presentations that will discuss what roles the tolling industry could play (or are already playing) in MaaS systems and how MaaS could impact the technology, services, and facilities used by tolling agencies.

**3. *CASE Vehicles: Impacts on the Tolling Industry***

Disruptive technologies and new business models are affecting the way we live, work and travel. Connected, Automated, Shared and Electric (CASE) vehicles are being touted in their ability to provide new opportunities to engage customers, improve throughput, and make roadways safer. But how and when will that be realized? Toll road operators, states, cities, and municipalities wrestle with the impacts of the technologies on infrastructure planning, financial implications, and future readiness. New developments continue to arise in the use of CASE vehicles for interstate travel and last-mile options to usher in an era of demand-responsive transit, deployment of information technology systems, and new operation technology models. US DOT has deployed Connected Vehicle Pilots and recently announced winners for the Automated Driving Systems Demonstration Grant with applications covering numerous intersecting CASE vehicle technologies and topics. Further development in the space is seen across the world in both test and operational environments. This session is looking for presentations on current deployments, policy alternatives, revenue approaches, operating models, and technologies that will impact the future of tolling.

**4. *Congestion Pricing: More Livable Cities Through Funding and Technology***

Congestion pricing is emerging as a key tool for government officials to manage their cities. New York has announced their plans to implement a system by early 2021 and several other cities including Boston, Chicago, Seattle, Vancouver and Los Angeles are now considering Congestion Pricing as an approach to managing congestion and raising revenue for transportation projects. This session will consider the challenges, strategies, and approaches that can be employed for Congestion Pricing. Among the areas to consider are topics such as determining what the appropriate policy approach is; garnering political support for the approach; generating public acceptance; determining and managing the technological approach; implementing what is essentially a toll system in an urban environment; integrating Congestion Pricing with local tolling approaches; and maintaining and operating the Congestion Pricing system over the long term. This session will include a robust discussion on these topics, and we seek presenters who can provide their expertise and knowledge.

**5. *Organizational Strategy and Innovation for the Future of Transportation***

We are living in the Technological Revolution (or, the “Fourth Industrial Revolution”) in which disruptive technologies and trends such as the Internet of Things (IoT), robotics, virtual reality (VR) and artificial intelligence (AI) will change the way we live and work. Innovation is driving change in the mobility landscape and tolling organizations are responding by stepping up their innovation profile with deep and broad changes in their organizational culture, trailblazing pilots of emerging technologies, and considering new business and service delivery models. This session will focus on strategies and practices that toll organizations can adopt to stay current with the rapidly changing transportation landscape and position themselves for the future. This session is interested in presentations about what you and/or other organizations, public and private, have done to meet the challenges of tomorrow.

## FIELD SYSTEMS/LANE SYSTEMS TRACK

### 1. ***New Developments in AET Conversions***

Over the past decade, agencies have been converting traditional toll facilities and programs to All Electronic Tolling (AET) with great success. Each transition has its own nuances and challenges. However, the achievements outweigh those challenges with respect to infrastructure modifications, scheduling restrictions, budgeting and procurement, engineering inputs, business rule adaptations, public outreach, stakeholder buy in, tolling schema changes, to name just a few. This session is looking for presentations that will focus on the successes of these programs and the decisions during the development and deployment that lead to the positive results.

### 2. ***Managed Lanes are WAY More Than HOT***

Increasing congestion and lack of funding are challenges that Priced Managed Lanes have the potential to address, just not enough in the traditional way. Managing all lanes, connecting networks, serving as test beds for CV/AV while reducing the physical collection and enforcement footprint are opportunities that require smart risk taking in maturing technologies that could be ready for the next generation of projects. This session is looking for presentations that reflect how agencies can harness the potential of private sector innovation to accelerate technology implementation.

### 3. ***Life Beyond RFID Tolling***

Our industry is changing rapidly, and emerging technology has the potential to reduce the footprint of in lane infrastructure, enhance our data gathering ability and provide payment efficiencies. Cellular systems, geo fencing, image-based systems, smart cities, and V2I may all have a role to play in our next generation payment systems. Presentations should discuss what you are doing now to prepare for life beyond RFID including pilots, demonstrations, and preparations to help agencies move to the next generation of tolling.

### 4. ***Drones and Other Crazy New Stuff***

Toll facility operators are continuously challenged with new technologies and tools which promise great value for our industry: reduced costs, increased safety, increased capacity, etc. Some of those technologies include Use of Drones, Big Data Analytics, Blockchain, Artificial Intelligence, Automation and Digitalization. This session is looking for pioneers who have already implemented some of this “crazy new stuff”. Which promises were fulfilled? What pitfalls should be avoided? Which technologies are recommended for the short / mid / long-term? How can they be integrated into existing business processes? How can we convince and train employees? Share your learnings and recommendations when it comes to new technologies for the tolling industry. Presentations from around the world are highly encouraged!

## BACK OFFICE TRACK

### 1. ***Lessons Learned: Back Office Systems Procurement & Implementation***

Procurement departments everywhere face a common challenge. How can you increase transparency, control and compliance, while delivering measurable business benefits for your organization? The pace of change in Information Technology systems is fast and is not abating. In the past, the waterfall approach to software development may have worked but today's IT organization must utilize agile development methodologies and consider the impact of change on the Operational Technology systems. The back office must deliver many things: reduce revenue leakage, prevent cyber breaches, ensure interoperability, provide agency management with the data needed to run the business, and provide road users a seamless, no-pain experience. This session will focus on how an agency can determine the best approach to deliver a back office that achieves the goals of the agency. The session will draw upon lessons learned from recent procurements and discuss establishing the right framework for the system, creating a procurement approach that is agile, comprehensive, and compliant, identifying the provider best positioned to deliver the BOS for today and for the future, ensuring that the back office procurement considers the introduction of new tolling sensors and approaches, and that system can be implemented and managed in controlled, measured approach. This session is interested in presentations about lessons learned and best practices for procuring a next generation back office.

### 2. ***Designing and Building A Customer-Centric Back Office System***

In the modern world, toll road users are savvy technology consumers. Many/most of them carry the latest iPhone, shop on Amazon, and manage their finances directly from their phone. Today's toll agency needs to catch up to this is cultural shift--from being driven by operational needs to becoming more focused on the needs of the customer. This is how technology firms succeed and the toll industry must adapt in order to stay on par with customer expectations. Toll agencies are looking at private companies such as Amazon and Zappos, to help make this culture change and alter the ways in which the back office operates and interacts with their customers. The shift is toward creating a customer centric contact center, which drives the customer toward automated systems such as user-friendly websites, interactive voice recognition (IVR) phone systems and online payment apps. These systems need to be integrated into the back-office database system in order to appear seamless to the customer as they manage their accounts or pay their toll. But the key is to start the design with the customer in mind. Send your presentations discussing lessons learned, best practices, and future plans for customer-centric back office systems.

### 3. ***Technologies for Next Generation Back Office Systems***

Tolling CTOs are constantly bombarded with new ideas and new technologies which will make their operations more efficient and make the CTOs life easier. There are several technologies which are being considered as we develop the next generation back office. These include Cloud Computing and Storage, Block Chain, Tokenization, use of Artificial Intelligence and Machine Learning, and ChatBOTS. Furthermore, conventional approaches to Customer Relationship Management, Interactive Voice Response system are giving way to next generation solution. A CTO is responsible for ensuring that he has the best value system for today's world while being ready to manage the customer from 2030. This session will explore how to leverage this next generation suite of tools---what makes sense and what doesn't in terms of improving time to market, creating best value for the user and the agency, ensuring interoperability with other

agencies, and preparing the system for tomorrow. This session is interested in presentations that dive into the policy and operational impacts of these future technologies in our back-office systems.

**4. *Cybersecurity in Back Office Systems***

Among the issues that are consistently rated as the top issues of concern to CIOs and CTOs is the challenge of cybersecurity. Cities such as Atlanta and Baltimore have experienced ransomware attacks, disrupting business and potentially exposing them to untold losses. The challenge is whether to pay the ransomware or to invest in an approach to cybersecurity that thwarts such attacks. Toll agencies have valuable information including Payment Card Information and Personally Identifiable Information, including credit card and name/address stored in the back office system making their tolling back office an attractive target. This session will explore the typical attacks that agencies are vulnerable to, what measures can be taken to prevent an attack, how attacks can be mitigated once they are underway, and how to ensure recovery while minimizing damage. Damage takes many forms---not only to the IT and Back Office Systems but to the reputation of the agency which can easily be damaged. This session seeks experts in cybersecurity who can discuss threats, how to mitigate them, and how to manage/prevent them in the future.

## INNOVATION “TECH” TALKS

The San Diego Technology Summit will be the 5<sup>th</sup> year of IBTTA’s “Tech” Talks. Attendees rave about this format and feedback from previous presenters is that it’s fun, different and a great way of presenting a topic and honing your story-telling skills. If you’re interested in presenting your ideas in this unique format, send us your “pitch” in a short video! No need for anything fancy – nothing produced or scripted – just create a one-minute video with your iPhone describing your Tech Talk story and upload it using the instructions on the submission form. Some high-level guidance (AND ENCOURAGEMENT) for you to consider while thinking of a topic is shared below.

### **Scenario 1. Connected Mobility: Harnessing Technology to Make Lives Better**

The world is awash in technologies and solutions that aim at trying to fix transportation. Too often, we lose the human side of the equation---how will this help the people who need to move, to travel, to commute. Help Wanted: humans who can tell *stories* about how transportation technology will make lives better---how can technology make our travels safer and how can technology improve our quality of life. How will it improve roadways, sidewalks, city streets? If you have a story to tell and feel confident that you can stand in front of an audience of humans, and relate your experience with just your mind, your voice, your story, we want you! We are seeking individuals who can tell their story in a way that humans understand---and we mean real humans, not technophiles who speak about Orthogonal Frequency Division Multiplexing (OFDM) or Block chain algorithms-----tell us your story. Andy Warhol said we all will have fifteen minutes of fame---this is your shot; enjoy your fifteen minutes of fame. Just you, a microphone, a few slides, your mind, your voice, your story.

### **Scenario 2. Transportation Technology Management: Humans, Policies and Organizations**

Have you found yourself at a technology conference, but you are not a techie and don’t want to discuss the benefits of cloud storage versus data centers? You want to make certain people understand the other side of transportation: humans, policies, and organizations. Tell us your story. Make your story relatable for other humans so that your voice can be heard. Think there are policy approaches that can better serve the public---tell us your story. Are there organizational approaches that are better than others---tell us your story. Maybe, you want to focus on leadership, and leadership can be the key to success---tell us your story. Maybe market and demographic trends are what your story is based on---tell us that story.

**Bottom Line: Anything is on the table---this is your shot. Just you, a dimly lit room set “in the round”, a microphone, a few slides, your mind, your voice, your story.**