



Keeping toll agencies ahead of the curve

Tools for making prudent decisions in the midst of a rapidly changing technology

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Toll agencies can better assess and respond to industry trends when they apply the right tools. This white paper presents a range of techniques – from strategic planning to success management workshops – that when implemented can help agencies address challenging questions, such as:

1. Are new technologies better for our customers and more efficient than how we currently collect tolls?
2. Should we be investing in these new technologies, and if so, when?
3. How much money should we invest now in our tolling infrastructure and systems when no one knows for certain the future of toll technology?

Predicting the future is challenging, but planning for it is crucial

There is no one-size-fits-all approach to tolling. Today's toll agency must possess an understanding of traditional tolling and infrastructure, as well as customer care, financial services *and cutting-edge technology*. It's a lot for a single agency to process and incorporate on its own.

As a result of the Moving Ahead for Progress in the 21 Century Act's mandate for nationwide interoperability, new products and business models promising lower costs and more efficient, effective results for electronic tolling are flooding the market. The advance of smartphone applications, GPS-based tolling products and the various paths to national interoperability are certainly developments of note – not to mention connected vehicle technology and the development of autonomous vehicles – but it is still early and uncertain how these technologies will influence the industry.

Within back-office operations, there are opportunities for advanced customer relationship management, next-generation image processing systems and system security enhancements. But these opportunities also present questions: *Should we be investing in these new technologies? If so, which ones and when? Should we change how we do business? If we don't, what are the consequences?*

There are no easy answers and the situation is complicated further by the divergence of roadway, back-office and customer service operations into separate industry segments that nonetheless still must be coordinated.

Do a quick reality check

Working with clients across the country, HNTB has developed toll strategies that address these issues. We can assure you of three things:

1. You are not alone in feeling pressured to read the industry's "crystal ball." Our experience is most agencies feel the same way.
2. When it comes to emerging technology, there is generally more planning required to mitigate risks related to future options than the effort of actual implementation, particularly with roadside technology, which is on the cusp of a number of developments. Agencies are

evaluating and considering the far-reaching impacts of current trends, such as all-electronic tolling, interoperability and changing technology. If any action is taken, it needs to be carefully planned and incrementally deployed where possible. Driven by local and regional needs, agencies are improving operations and collections by implementing customized, interim solutions.

On the back-office side, we are seeing new applications, technology and the use of specialized, third parties for services, such as image review, payment card industry compliance, payment processing and customer communications.

3. The toll industry is changing, but change does not happen overnight. Good planning will help you cost-effectively and logically incorporate new technology into your future toll systems.

Truth is, no one knows for certain the future of toll technology. **The key is not to predict change but to prepare for it.** That means getting maximum useful life out of your current systems and ensuring maximum flexibility when moving forward with any new investments. How? Avoid making decisions on a piecemeal basis and approach the problem strategically.

Proceed strategically

The question isn't which shiny, new toy you should buy, but are these new technologies better for meeting future needs than your current strategies? If so, in what combination and when? To help you answer those questions, we offer the following tools:

1. **Risk registers.** Some agencies will be comfortable with a certain level of risk, if the new technology provides other demonstrable, off-setting benefits. Others won't be willing or able to assume that risk.

Creating a risk assessment/risk register and knowing your agency's tolerance for those risks – especially the financial and technological ones – can go a long way in helping you make informed, prudent decisions regarding new technology or business practices.

2. **Strategic planning.** Taking a purposeful approach allows you to incorporate your business and risk models and realize the maximum useful life of your existing system. Strategic planning can help you identify your system goals, develop a concept for

the future and understand how and when to incorporate new technologies. It also will help you avoid reactive, costly responses to the use of new approaches and technologies, if you have considered them in your planning.

During the strategic planning process, consider what the next 10 years may bring. For example:

- What if, within 10 years, the worlds of toll technology, mobile technology, automobile technology and personal technology merge?
- What if, within 10 years, the industry is no longer using transponder-based tolling and smartphones become the key to interoperability?
- What will your customers look like in 10 years? How will the “smartphone generation” differ from the “interstate generation”? Will they be your customers – or will they be the customers of a third party you select? How might customer preferences change? How will privacy issues evolve in the face of worldwide changes beyond your agency’s control?

3. **Success management workshops.** As part of your planning process, define what success looks like to your agency and the requirements necessary to achieve that vision. Engage key agency stakeholders and obtain input and buy-in early in the planning and development process.
4. **System assessments.** Understand your current system’s gaps and its ability for growth. Conduct an assessment of your future requirements and then look at the gaps in your system. Where does it fall short of your goals? Be sure to include your back-office, operations and roadway systems. Think about necessary information technology infrastructure, regional growth and required legislation.

There may not be a one-size-fits-all solution, but your solution should incorporate all of your systems as part of a modular but coordinated approach. This exercise will help you make informed decisions about transition planning, procurements and/or upgrades needed to meet your goals.

5. **Customer outreach.** Know your customers. Consider how your plans and decisions will affect your customers and other key stakeholders. The

implementation of AET and new customer service functionality has been an eye-opener to the importance of properly understanding and managing customers while assuring revenue collection. Incorporating these lessons learned along with new technologies and approaches is one of the keys to future success.

6. **Outsourcing.** Outsourcing some services may help extend the useful life of your back-office system. During the planning process, weigh the benefits of specialization and the potential lower costs of outsourcing. The tradeoff will be additional project management versus potentially less control.
7. **Industry associations.** Take an active role in the International Bridge, Tunnel and Turnpike Association, the American Association of State Highway and Transportation Officials, ITS America, the American Association of Motor Vehicle Administrators and other groups who share common goals for promoting sustainable roads and sustainable financing.
8. **Testing.** Seek opportunities to participate in federal programs designed to test new technologies, such as the U.S. Department of Transportation’s Request for Information as part of its Connected Vehicle Pilot Deployment Program. Ask vendors to provide new products and seek the help of your toll adviser to conduct demonstrations or testing that will minimally impact current operations and revenue collection.
 - Inviting a group of vendors to demonstrate their technologies on your facility can be a smart, low-cost way for your agency to learn what technology is available, see it in action and make comparisons. For example, some industry vendors have been seeking agencies to test products, such as vehicle occupancy detection or multiprotocol readers.
 - The Washington State Department of Transportation completed a prototype test of smartphone technology equipped with radio-frequency identification technology, which turns a cellphone into a transponder. The technology successfully recorded 98.9 percent of all attempted readings.
 - The Tampa Hillsborough Expressway Authority recently became an automated vehicle test bed, joining a small affiliation of other test bed locations nationwide. THEA will provide

the capability for researchers to test semi-autonomous and autonomous vehicles with the latest technology standards and architecture consistent with the U.S. DOT's connected vehicle research program.

Some agencies do not have the luxury of waiting for technology as their systems have reached their maximum useful lives. In any case, work with an expert to ensure you are incorporating maximum flexibility into any new system acquisition or procurement.

Consider transitioning. Can you incorporate short- to midterm "bridge" solutions – or a gradual transition to new technology and approaches, depending on current system life cycles, funding, agency resources and overall risk aversion? For example, some toll agencies are incrementally improving current operations by installing multiprotocol readers, which require switching out equipment but don't require significant change to infrastructure.

One final thought: If you should choose a new technology or approach, it is important to properly allocate risks and responsibilities and include performance standards in contractual agreements. The consequences of nonperformance also must be clearly spelled out. Using a well-thought-out, properly planned approach, your toll agency can retain the right amount of control over revenue assurance and customer service.

9. **Networking with other agencies.** Use your contacts in the industry and learn from other agencies' experiences. But remember, every situation is unique. One agency may be highly successful at video billing largely because it is a commuter facility with a low level of commercial traffic while another facility may have significant out-of-state traffic.

10. **Qualified toll adviser.** A knowledgeable adviser will be involved in all aspects of the toll industry. The right independent consultant can bring together the necessary unbiased knowledge and tools to ensure both short- and long-term results are achieved. Further, qualified advisers will have vetted many of the solutions on the market and can offer a cadre of best practices based on previous implementations.

Toll agencies can't predict the future, but they can prepare for it. Using these techniques, agencies can follow a logical approach to addressing today's critical questions and arrive at prudent answers that will help ensure the success of that toll system and agency.

Resources

For additional information and resources, please contact one of HNTB's tolling experts.

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