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Open Flexible Systems Approach

May 2011

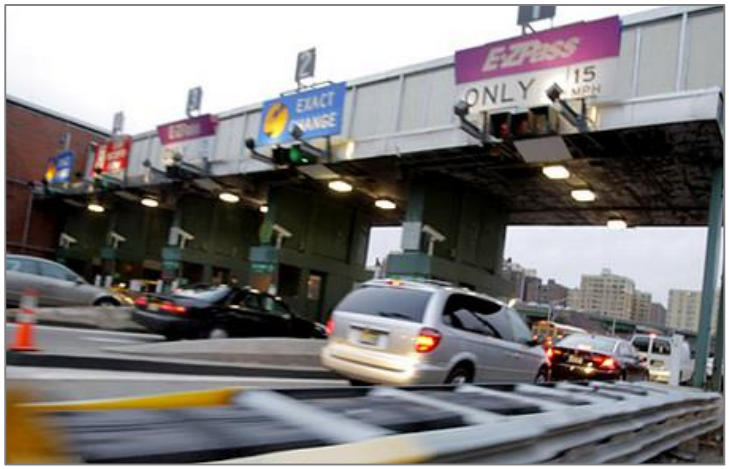
Interoperability is a principal issue facing transportation departments in North America

Accenture conducted in-depth research with 25 leaders in the U.S. Tolling & Turnpike industry between December 2010 and February 2011.

These executives identified areas where transportation departments are encountering growing pains with new technology and their changing role as road operators rather than road builders.

This includes:

- Conversion process to electronic tolling
- Next-generation tolling
- Interoperability
- Additional revenue-generating opportunities
- Cost reduction
- Public outreach
- Sustainability



True Customer Choice will put the customer's needs at the center of the preferred travel experience

- Choice of multi-modal transport: public or private sector




- Choice of multi-media payment and channels





- Choice to access information from multiple interfaces: Anytime; Anywhere; Anyplace


- Choice of products and services focused on meeting customer needs

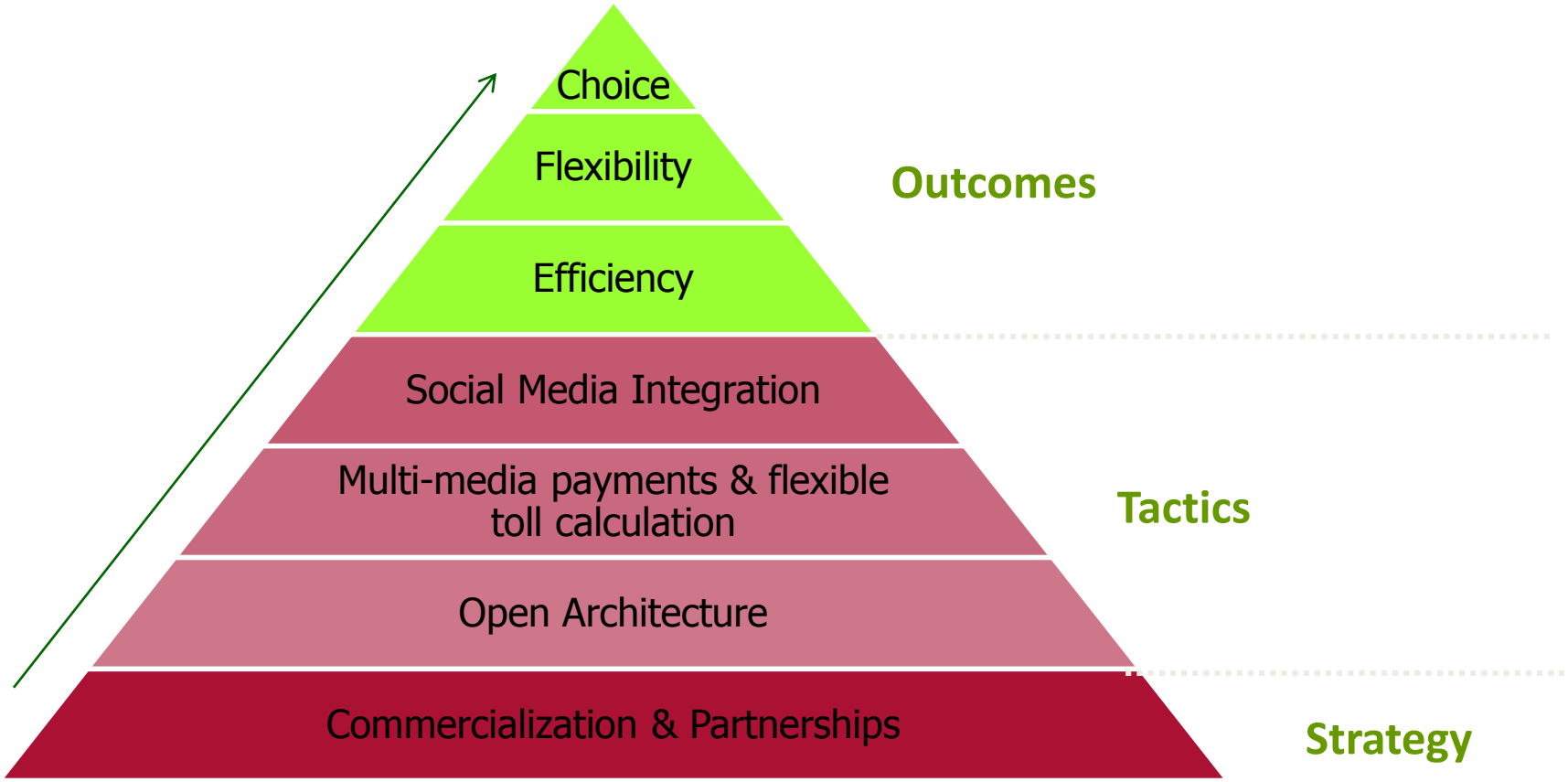
Flat Fee or by Distance

Time of Day or Demand Based

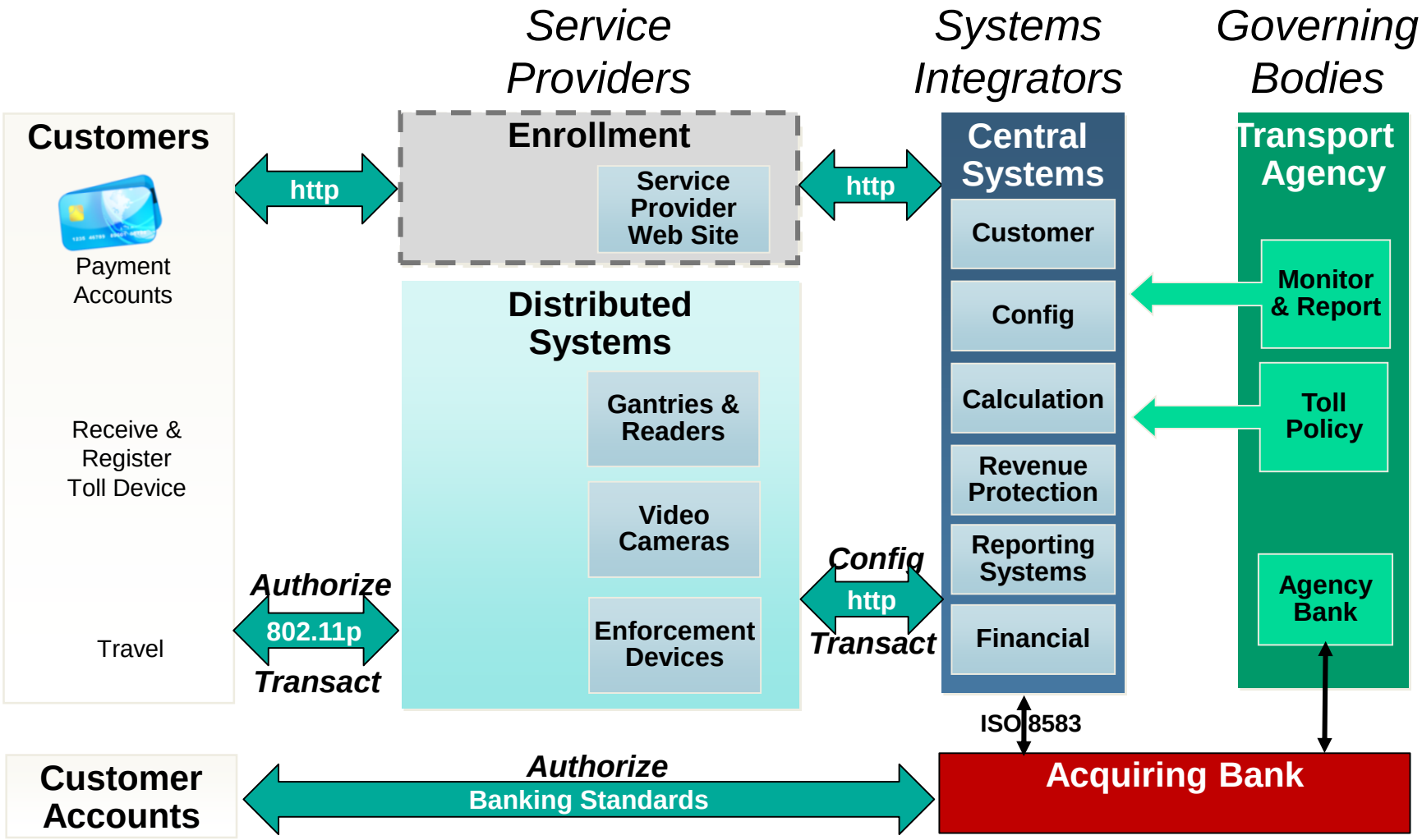
Commercialization Opportunities will drive economic growth and productivity beyond traditional toll revenue

- **Customers**: Increased convenience & new retail options
- **Providers**: Positive revenue supports expansion, job creation & improved services
- **Retailers**: Increased brand awareness and sales
- **Government**: Decreased subsidies to public transport

Open and Flexible Systems will be needed to enable the strategic outcomes of Transport Agencies



In Order to Seamlessly Integrate a Variety of Key Road User Charging Participants



A Number of Principles are Required to Make a Solution truly Open and Flexible

Enable a pervasiveness of tolling and refresh infrastructure

- Limited budget
- Forward looking and future proof solutions

Vendor Agnostic

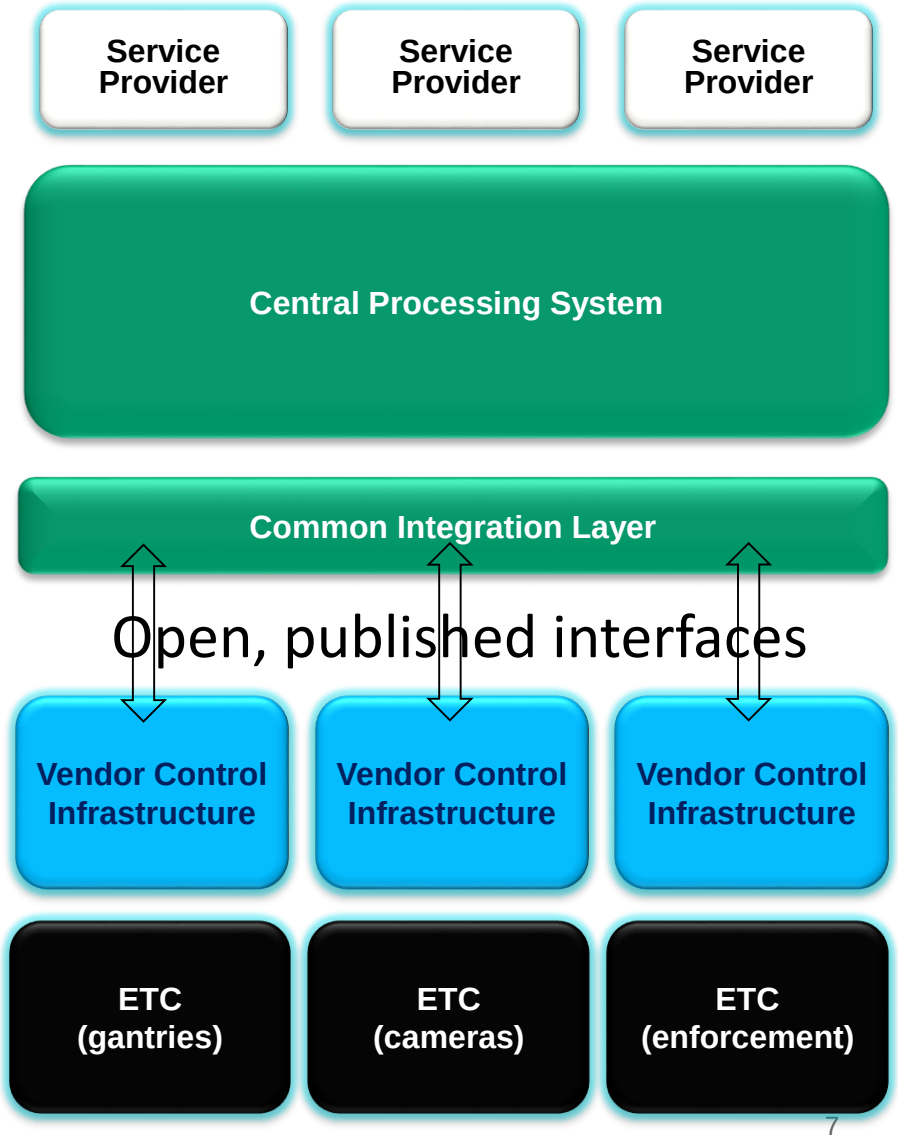
- Makes use of existing investment
- Leverages technology already in the field
- Any supplier can be integrated through common, standardized interfaces

Multi-tenant

- Supports multiple tolling authorities/service providers
- Allows for interoperability across tolling providers

Open Architecture

- Published interfaces (IEEE, CEN, ISO)
- Pushing the industry to standardization
- Industry standard security mechanisms (PKI, tokenization, etc.)



Via Verde – A Case Study

Car Parking
Via Verde clients can pay parking electronically

Gas Stations
Filling gas in gas stations is also convenient when using the Via Verde service

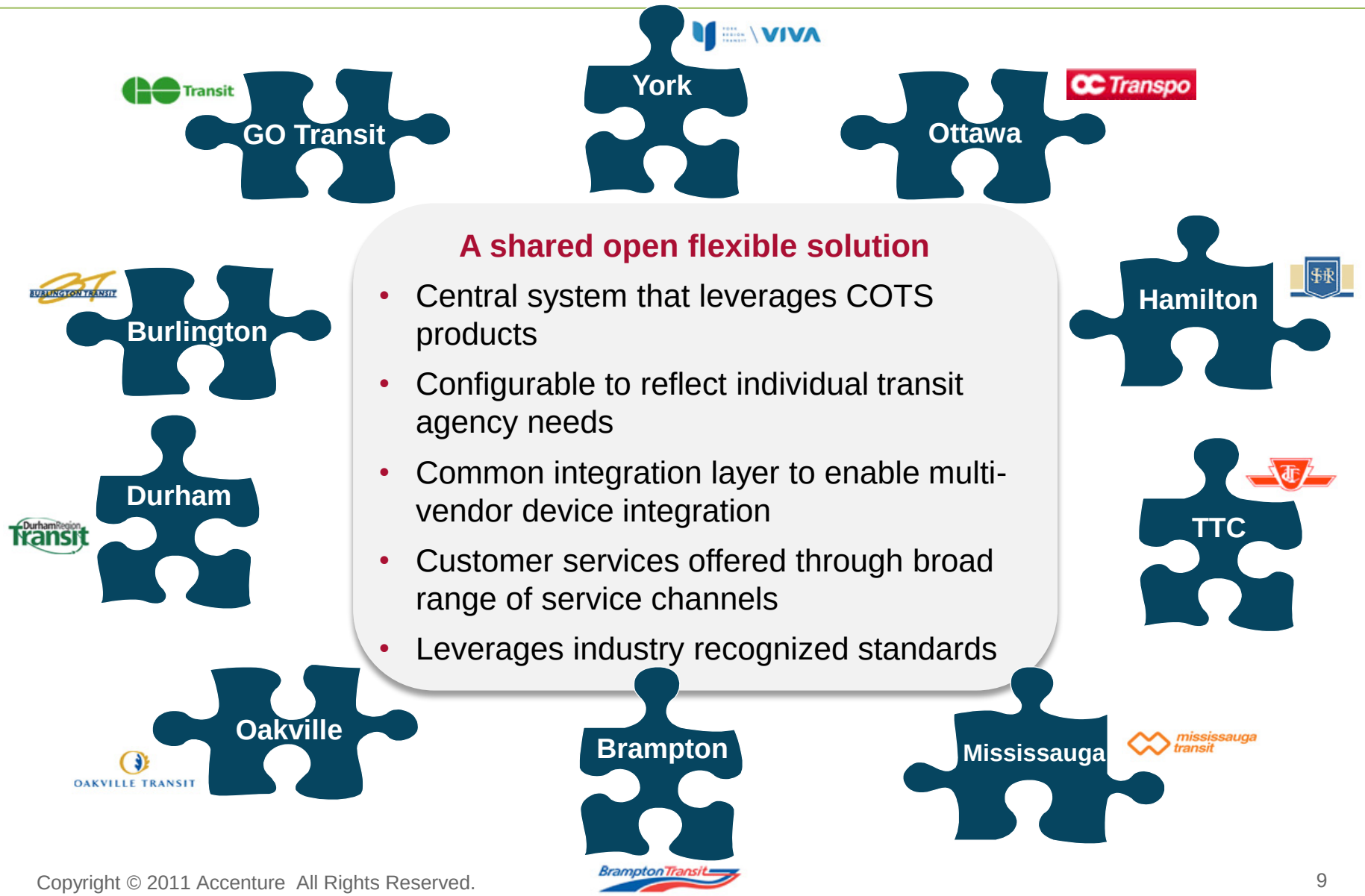
Access Control
Several Portuguese historical areas control vehicle access with the help of Via Verde

Street Parking
The Via Verde service will allow for the payment of street parking as well

McDrive
The Via can be used in portuguese McDrives

- 1997: Via Verde readers installed at all toll plazas (90,000 clients)
- 2001: Via Verde expanded into gas stations (1.25 million clients)
- 2002: Via Verde can be used at car parks (1.36 million clients)
- 2003: Access control to park in restricted areas using Via Verde (1.58 million clients)
- 2009: Expansion into McDonald's Drive Thru (1.9 million clients)
- 2010: Expansion to MLFF model (2.3 million clients)

PRESTO – A Case Study



A shared open flexible solution

- Central system that leverages COTS products
- Configurable to reflect individual transit agency needs
- Common integration layer to enable multi-vendor device integration
- Customer services offered through broad range of service channels
- Leverages industry recognized standards

Wrap Up

- Interoperability is a principle concern for transport agencies
- Customer choice and Commercialization opportunities are putting pressure on underlying technologies
- Open and flexible solution are needed to enable strategic outcomes
- They must respond to interoperability amongst numerous solution participants
- The potential exists today for open and flexible solutions