# Digital Transportation Exchange (DTE)
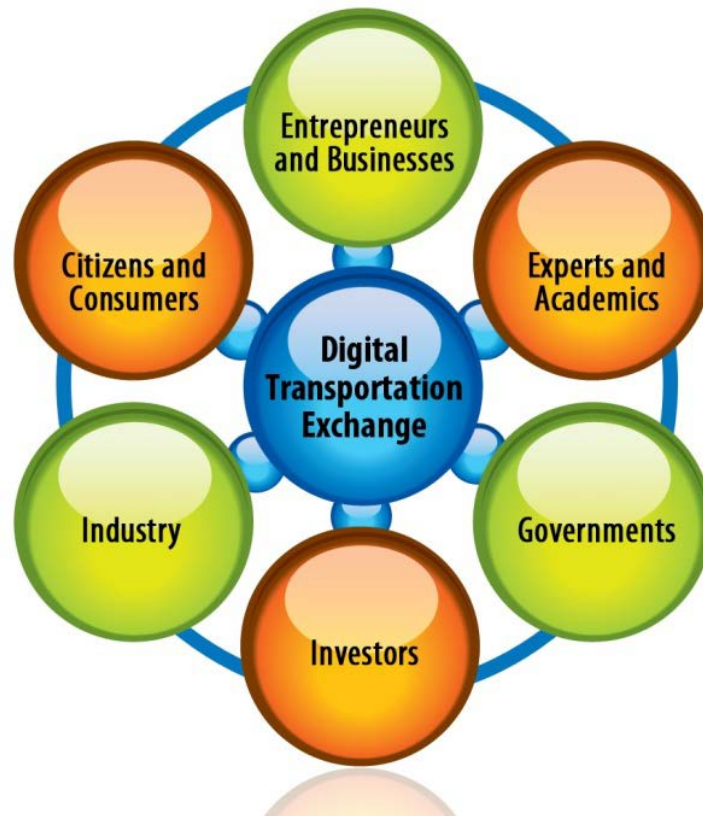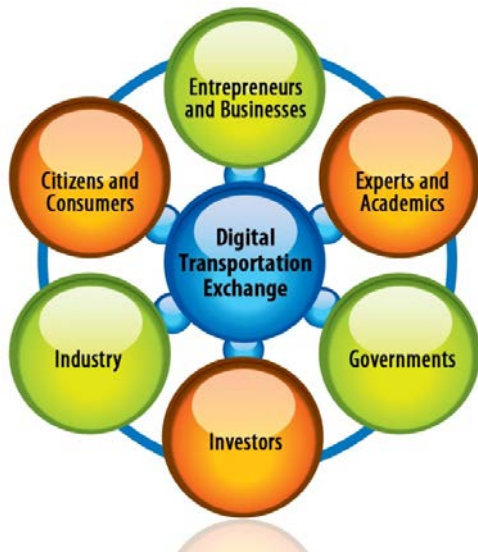


*Connecting People and Technology*
*for Transportation Innovation*

The **Digital Transportation Exchange (DTE)** will **connect** citizens and businesses, state and local governments, entrepreneurs, researchers, and investors **through a public-private partnership** like never before— creating a **thriving marketplace** for **multi-modal transportation solutions**.

The following use cases are hypothetical. These use cases are intended to illustrate the potential use and impact of the Digital Transportation Exchange, if launched and operational, to a wide variety of stakeholder communities. Potential uses are not limited to these use cases and the DOT does not endorse these ideas in particular. These examples are purely illustrative."

# The Problem…

## Citizens and consumers
*want efficient and effective transportation and are waiting for new technology integration in traditional transportation solutions…*



The Retiree
### Megan O'Hara
Age:        64
Resides:    Tucson
Job:        Retired

*"I can never figure out who to call to get a ride to the hospital for my appointments."*

The government offers older adults rides to places like hospitals, the grocery store and airports, but customers have to call a different agency depending on their destination. Information is scattered in many places and it's hard for people to find the ride they need.

Megan's son found a simple application through the DTE that aggregates all the ride information from multiple agencies and allows Megan to request a ride based on her zip code and destination. The app does the work for her, notifying the appropriate agency representative she needs a ride. The app has been so useful that Megan has told all of her friends about it.

# Federal, state and local governments *want to create quality transportation solutions while creating jobs in a tight economy…*



The Local Government Employee

## Mark Hill

Age:        40
Resides:    Tallahassee, Florida
Job:        Transportation Innovator

**"We had heard about some of the cool real-time traffic signaling work other towns have done and wanted to replicate it in our town, but I couldn't find the technology and expertise I needed to customize it."**

Mark is a local mobility innovator that thinks about how all modes of transportation get people where they need to go— whether by bus, car, rail or airplane. Congestion is a notorious problem in downtown Tallahassee and it's worsened by a lack of real time traffic signaling technology.

On the DTE he was able to find some systems used for real time traffic signaling, open source code, points of contact in other towns, ratings from operators about how the program could be improved, and a list of vendors. He decided he'd sponsor a challenge for a complete customized solution for his town. Within 60 days, Mark had a very polished solution that was above and beyond what he expected.

**Industry** *manages and operates transportation services and systems every day but is not often exposed to the most innovative new tools and technologies to help them do their job…*

The Shipper

**Jean Jacobs**

Age:      45
Resides: Michigan
Job:       Scheduler at a freight
             shipping operator

**"We have a lot of empty cargo space in our weekly shipments and know there are local businesses that could use it, but we're having a hard time finding them."**

Jean's company tried traditional advertising channels but just wasn't finding local business to fill their empty cargo shipments. On the DTE, Jean found a tool that inventories shippers and businesses, creating a new way for shippers to find potential clients and businesses to find the best shippers to meet their needs. Through this tool Jean connected with Bob, the owner of a local yogurt producer, whose inventory had been spoiling in transit. After meeting, Bob switched to Jean's company for shipping. His yogurt is no longer spoiling in transit as it's leaving earlier on Jean's former empty cargo slots.

# Entrepreneurs, businesses and startups

*want to create quality technology solutions to major problems and create large profitable companies but have historically had a limited focus on transportation…*

The Entrepreneur

## James Hawkins

Age: 28
Resides: Baltimore
Job: IT Specialist

**"I created a tool that will help people make better decisions about where to buy homes, considering the noise created by airplane flight paths, but I'm getting no traffic online."**

Using FAA and private sector data sources, James created a tool that puts flight paths and noise contours of aircraft on a map, helping home buyers and real estate agents identify which neighborhoods are quiet and which have air traffic flying over their heads. While it received some initial buzz in the area, people quickly forgot about it.

James put his tool on the DTE and an investor quickly bought the code. The solution is now being licensed for use by nearly 15 real estate companies, 4 city websites and an app version has been downloaded 10,000 times. James is now working on his next project.

# Experts and academics

*understand the complex problems and potential solutions in transportation but often lack access to the resources that can create solutions...*

The Professor
## Todd VanFleet

| | |
|---|---|
| Age: | 47 |
| Resides: | Boston |
| Job: | Assistant Professor |

**"For the past two years, my research lab has been working on algorithms to provide alternative routing using traffic management, arterial and historical data to Personal Traveler Devices. We have a lot of great work but need help getting that work to market."**

Todd assigned two of his best students to create algorithms for alternative traffic management that could be leveraged by a variety of mobile devices and GPS units. They had a great solution and were looking to start up a Boston firm to sell their solution to car and mobile device manufacturers. However, these markets were totally unfamiliar to them and they didn't know how to get started.

On the DTE they were able to find a venture capitalist that would provide industry expertise and seed capital to get their business off the ground. They successfully took their research to deployment in 8 months thanks to their investor.

# Venture capitalists and strategic investors *are keen on funding digital technology transportation solutions but see limited entrepreneurial interests and business plans…*
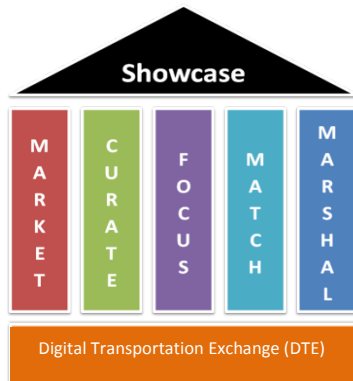
The Investor

## Oliver Blanchard

Age:          52
Resides:      New York
Job:          Venture Capitalist

**"I hear buzz around an emerging market for transportation solutions, but where do I find projects I might be interested in funding?"**

Oliver's firm has invested in some of the most promising social startups of the last decade—and they are looking to invest in other locally driven solutions that could scale their other investments.  He went to DTE and was able to immediately see business plans, identify high potential locally driven solutions, and connect directly with developers. Within a few months, he purchased rights to two transportation solutions.

# The Vision…

**Showcase**

MARKET | CURATE | FOCUS | MATCH | MARSHAL

Digital Transportation Exchange (DTE)

To connect citizens and businesses, state and local governments, entrepreneurs, researchers, and investors like never before—creating a thriving marketplace for transportation solutions**.**

**Focusing and Curating** – Imagine what would happen if non-traditional technology entrepreneurs, startups, venture capitalists and the private industry were focused on creating quality digital, multi-modal transportation solutions together! By connecting these communities, problems and solutions could be identified and discussed in one place— and teams with the right expertise could form around them.

**Marshalling** – Imagine what innovative solutions could be created in congestion management, multimedia, 911, traffic signal system controls, freight management, and connected vehicle systems by encouraging and leveraging private sector investment and expertise…

**Matching and Marketing** – Imagine an online showcase gallery that allows local transportation providers and consumers to search, locate, understand, learn, collaborate, use, improve and reuse solutions efficiently and effectively…

# The Solution…

The Digitial Transportatation Exchange—managed through a public-private partnership with the U.S. Department of Transportation!

The DTE will be a public-facing, private, online exchange where entrepreneurs, experts, developers, investors, partners and citizens converge to find the best way to plan, develop, fund and market the best digital products and services for the transportation industry– from very simple to very complex. This online Digital Transportation Exchange could catalyze:

**Prioritizing Problems:** Help identify and prioritize major transportation problems by size and intensity through ideation and crowd sourcing from citizens, industry, labor/unions, businesses, experts and academics.

**Solutions Teaming:** Encourage teaming of entrepreneurs, industry, developers, experts and government entities to create innovative digital transportation strategies and plans for funding.

**Funding and Financing:** Attract attention of the investment community including angels, venture capitalists and strategic investors to digital transportation business plans for funding. Stimulate solution development through innovative funding mechanisms like prizes and competitions.

**Market Development:** Create a transportation-focused service provider exchange consisting of legal, marketing, communications, accounting and other expertise. Increase the supply of solutions by involving non-traditional actors as well as the demand by drawing the attention of users and investors.

# Digital Transportation Exchange (DTE)

**What:** The DTE is a catalyst for collaboration and innovation across the public, private and non-profit sectors to develop and share solutions for the biggest problems facing transportation's digital infrastructure.

**How:** Through a public-private partnership, DOT will leverage private sector resources and catalyze this innovative exchange at a low-cost to the Government.

**Who:** The DOT Office of the Chief Information Officer, in partnership other DOT offices and Operating Administrations, and strategic external partners, will work with external private and nonprofit institutions to stand-up and support DTE. Entrepreneurs, experts, investors, partners and citizens will bring the exchange to life and sustain the platform.

**When:** The partnership will launch in Fall 2011 with a prototype deployed months after the external private or nonprofit institution has been identified as the managing partner.

**Where:** The exchange will reside online with occasional physical events (i.e. mashathons) to highlight excellence and stimulate interactions and products across the nation as required.

# The Participants...

The DTE will be launched and operated through a public-private partnership. A solicitation for managing partners will be released in Fall 2011 after a stakeholder meeting and online dialogue to discuss this concept.  Although the DOT will act as a partner throughout launch and operations, DTE will utilize a public-private partnership to provide an externally-hosted solution. Partners would be expected to stand-up and sustain a business model over time, understanding that DOT may not have funding to contribute. The identified partners will be required to clearly present a model that will enable growth and ongoing collaboration through the online space.  The public-private partnership will consist of two main groups:

**Non-Governmental Managing Partners**: Other members of the public-private partnership managing the DTE will be interested in creating a space where varying stakeholders can combine resources and collaborate to identify issues, match solutions, and create an implementation team. Managing partners will act as custodial agents for the community and develop a business model to sustain that activity over time. The identified partners will be required to clearly present a model that will enable growth and ongoing collaboration through the online space.

**U.S. Department of Transportation**: The ongoing role for DOT will be as a champion for the DTE—raising awareness of digital transportation issues, encouraging engagement in transportation innovation, stimulating investment in the transportation sector, and inspiring new companies, products and services to be created. In that capacity, DOT will organize the initial discussions with stakeholders about the concept and work with the selected partners to finalize a governance structure and process for the DTE.  Additionally, DOT will work with DTE partners to provide an in-person forum for developers, giving them the opportunity to brainstorm and code mashups and build applications with local systems and Web services relating to the transportation industry.   Furthermore, it is expected that DOT will issue external challenges for transportation-related products and services.

## Several stakeholder groups are important to the DTE. Primary stakeholders for this project include:

**Citizens and Consumers**

- Contribute problem identification, voting, purchasing and feedback to the ecosystem.
- Looking for transportation apps and solutions to identified issues from trusted sources.
- Concerned with usability and an intuitive presentation so solutions are easily found and implemented.

**Federal, State and Local Governments**

- Interested in identifying innovative methods to encourage market growth and pursue partnerships to contribute to all federal, international, and state DOT missions at lower cost.
- Interested in the possibility to procure solutions more quickly through prizes and competitions.
- Understand the demands of their local community and hope to reuse proven solutions and harmonize standards nationally.
- Transportation Industry
- Contribute to problem identification as the managers and operators of transportation services and systems everyday.
- Interested in finding new solutions to help them do their jobs better.

**Entrepreneurs, Businesses, and Startups**

- Contribute skills to the ecosystem and may have identified solutions for issues .
- Looking for an ecosystem to build advanced transportation solutions and companies.
- Looking for successful solutions that can be leveraged or they can alter to meet their needs.

**Experts and Academics**

- Provide knowledge and expertise about transportation problems and solutions.
- Develop out of the box ideas and solutions that need to be operationalized and marketed.

**Venture Capitalists and Strategic Partners**

- Contribute funding and other resources to the ecosystem.
- Interested in finding and reviewing transportation-related projects for funding.