Making Cities and Regions Smart

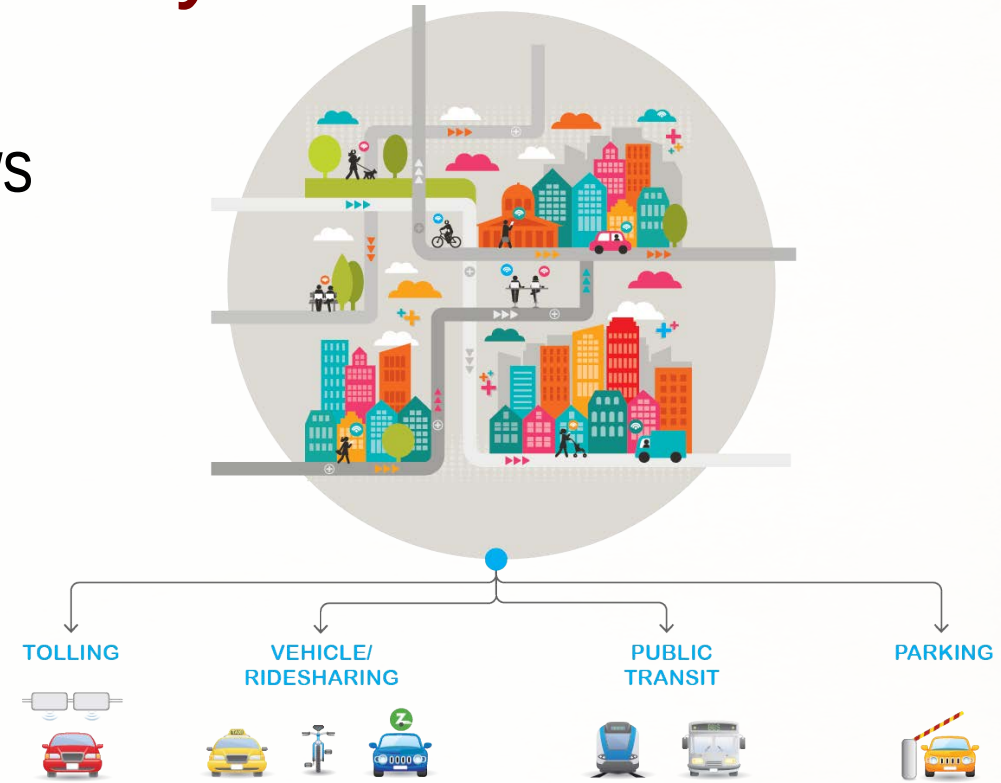
Phil Silver

Director, Business Development

Urban Insights Associates

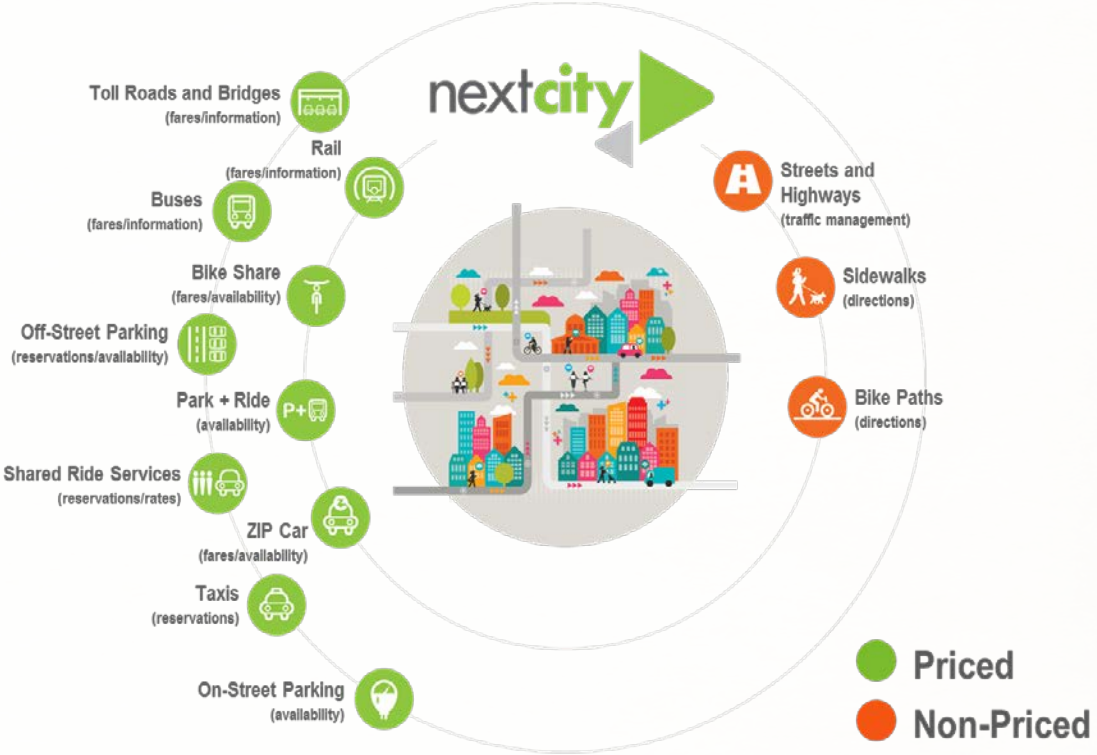
Today

- Each mode in the transportation world views the traveler as “their” Customer.
- Every travel decision is made in a silo.
- Does not lend itself to being “smart”

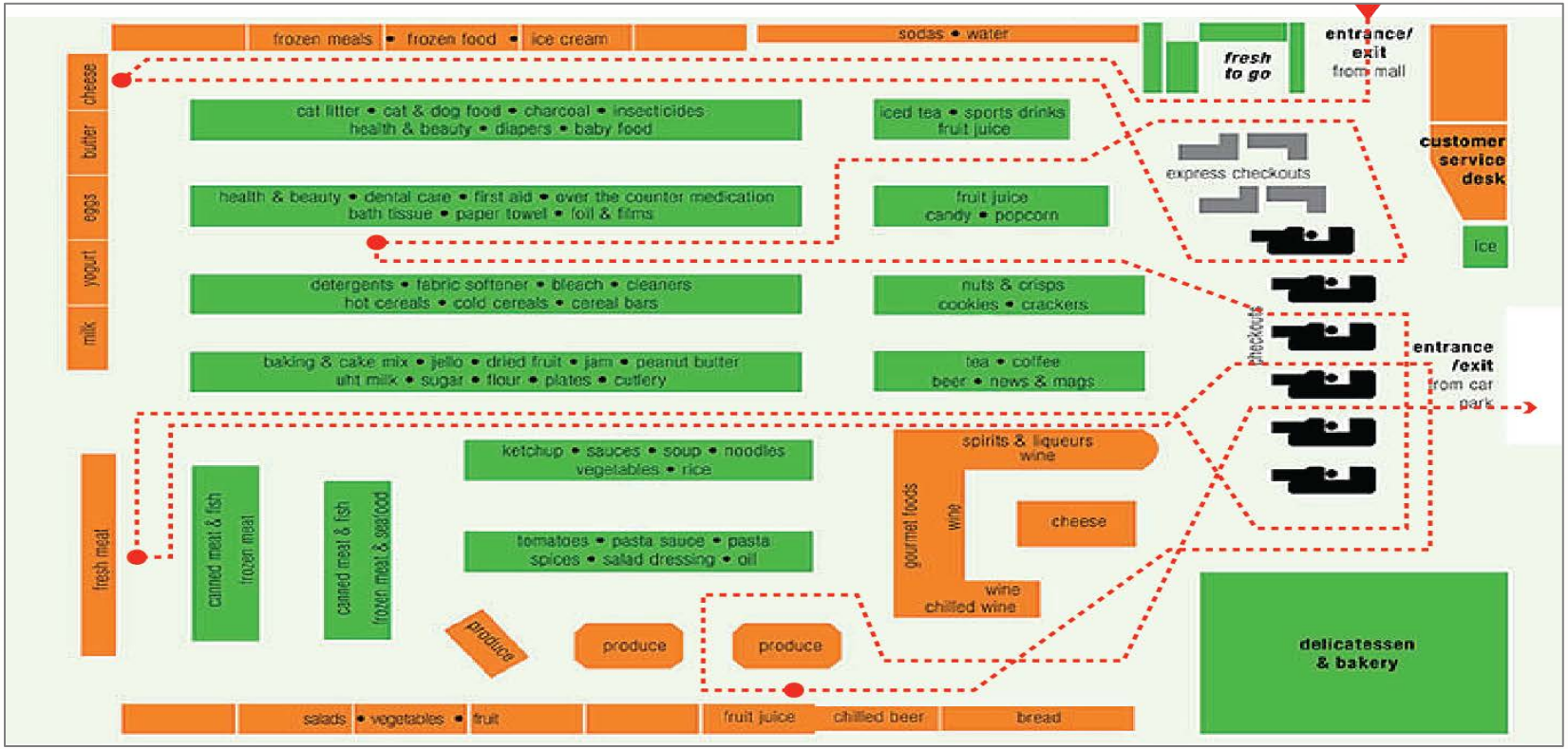


Urban Center Dynamics

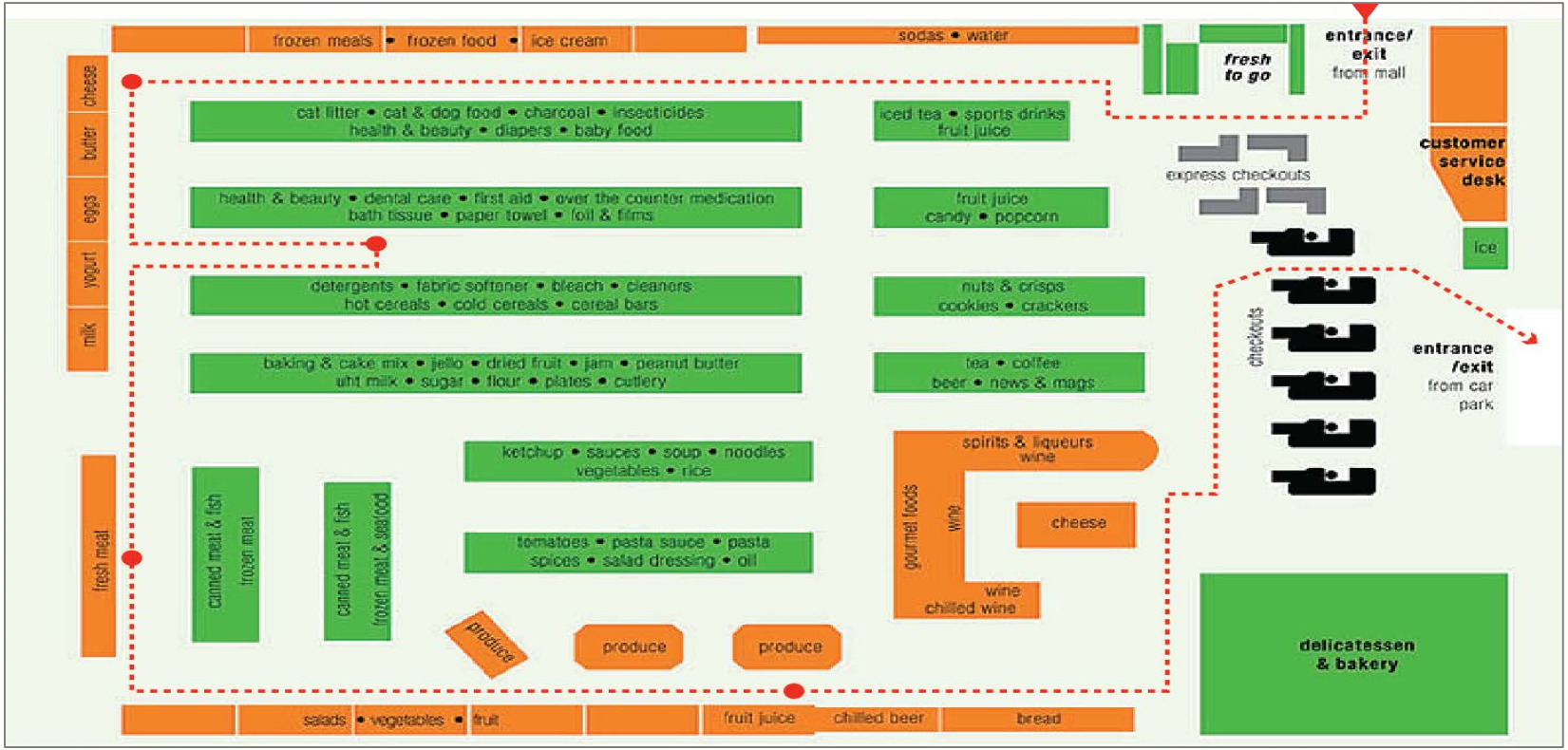
- The proliferation of all kinds of paid transport services – *whether public, private or upstart* – just complicates the problem.



We end up “shopping” for travel like this…



Instead of being “smart” like this…



It's time for a new urban model that …

- Utilizes predictive analytics to create the most effective and useful transportation demand management tool ever by enabling operators and authorities to manage regional and urban transportation assets and services *centrally, dynamically, and in real-time*
- Is built on existing public infrastructure and services
- Blends the entire transportation pricing model, resulting in *a reduction in cost* for the traveler who uses the network more efficiently

It needs to be technology-driven

- Integration of payment and information systems
- Dynamic multi-modal response to real-time situations – including pre-planned scenarios
- Smarter journey planning
- Integrated and dynamic fares, tolls, fees
- Enhanced operational and planning information
- Better informed passengers and customer experience
- Reduced operational costs
- Integrated incident and crisis management

Delivering insights to shape the future

- Anticipate traveler responses to transportation network conditions by predicting the impact on journeys
- Identify stress points in transportation networks and propose remedies
- Improve journey planning tools and accuracy
- Support frictionless travel across multiple modes of transportation
- Facilitate the restructuring of transportation networks to achieve strategic and operational efficiencies

Cubic calls this nextcity

CUBIC™
Intelligent travel made real™

The challenge

- Today's urban transportation networks generate terabytes of operational data and information from enterprise sources in addition to a vast number of sensors
- Organizations responsible for managing these networks are often restrained by jurisdictional issues and severely challenged to expose hidden insights using today's standard reporting tools and methods
- Cubic's NextCity vision incorporates business insight discovery through predictive analytics that transportation planners need to comprehend what needs to be to advance service quality and optimize urban transportation networks

An analogy from private industry

- In 2001 UPS used predictive analytics to shave a massive 30 million miles of its drivers' routes, and 30,000 metric tons of carbon dioxide emissions, improved safety and efficiency, reduced accidents, fuel consumption and wasted time.

Source: Big Data: A Revolution That Will Transform How We Live, Work, and Think, V. Mayer-Schönberger and Kenneth Cukier, 2013

- How does this parallel what cities and regions need to do to be smart?

What can toll authorities do?

- Apply predictive analytics techniques and models to problems that improve agency operations AND support Smart City initiatives.
- Utilize data science techniques to:
  - Detect patterns that can only be inferred from integrating disparate data sources
  - Simulate outcomes and test against historical results
  - Uncover operational improvement opportunities
- Some examples include:
  - Modeling and predicting HOV lane volume
  - Predicting revenue and detecting/reducing patron, collector and backoffice fraud
  - Understanding customer behavior and preferences
  - Incorporating toll input into massive regional analytic models

What are we doing to make cities smart?

From design, supply, installation, maintenance and operations of revenue management systems, to managing traffic networks, to AVL and real-time passenger information (for more than 120 agencies), Cubic is helping it's customers apply predictive analytics to gain insight from terabytes of data they produce to solve the challenges of 21st century urban mobility.

Check out our videos for more …

NextCity – Intelligent Travel Made Real™

https://www.youtube.com/user/CubicTS/videos

Urban Insights - data-informed insights to shape the future of urban transportation

https://www.youtube.com/channel/UC1xFLlxUxQCwswXH1k4x_tw/videos