

The Slow Pace of Fast Change
The Future of Transportation



Designed for



Designed by
Garry Golden

Forward Elements Inc



#AskGolden @garrygolden

www.garrygolden.com/RECA2016

Start

End



Foresight 101



Drivers of Change



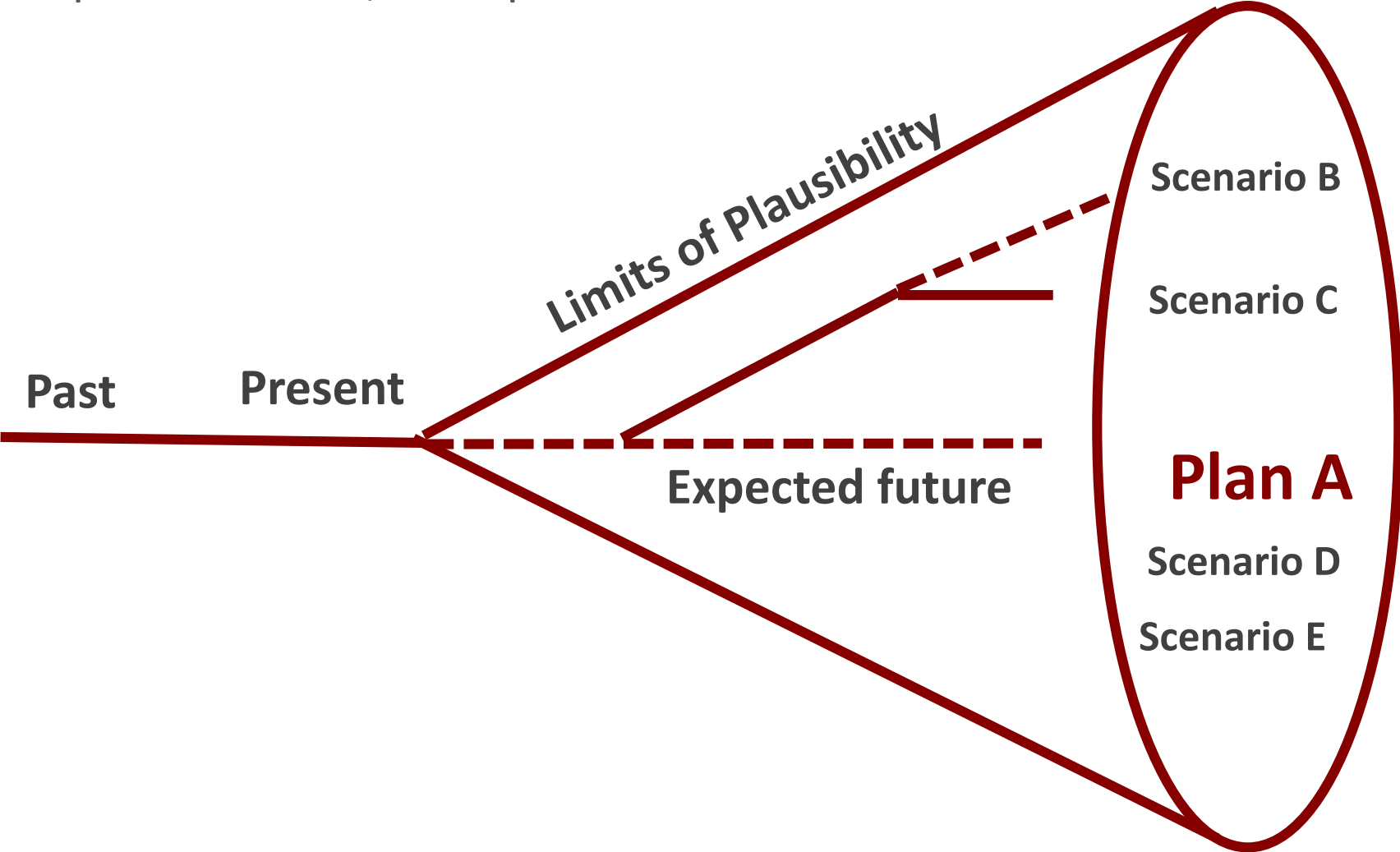
Q&A
Learning More


Tapping my Inner “Futurist”?



Foresight 101: Cone of Plausibility

Multiple Outcomes, Multiple Time Horizons



A close-up photograph of a person's hand holding a small, white, rectangular strip of paper. The paper is slightly curved and has the text "Austin traffic, not a problem..." printed on it in a black, sans-serif font. The background is a solid, dark color, likely black, which makes the white paper stand out. The lighting is soft, highlighting the texture of the paper and the skin of the hand.

Austin traffic, not a problem...

IF YOU HIT THIS SIGN
YOU WILL HIT THAT BRIDGE





WAIT FOR IT

.....Wait for it.....

**Every day I make an effort to move toward
what I do not understand.**

- Cellist, Yo-Yo Ma

Four Futures Thinking

?



**Continued
Growth**

**Disciplined
- Constrained**



Transformed

BlackBerry.



NOKIA

**Decline
- Collapse**

Four Futures Thinking: Austin Regional Transportation Experiences?

?

?

?

?

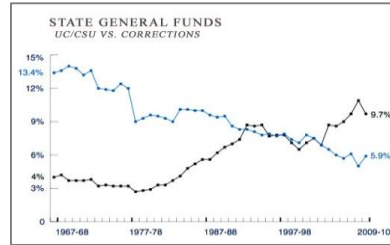
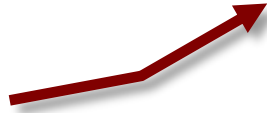
**Continued
Growth**

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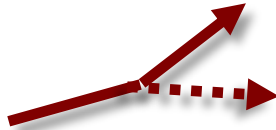
Trends
(Continuities)



Plausible
Future

Forecasts

Events
(Discontinuities)



Possible
Futures

Scenarios

Choices
(Discontinuities)



Preferred
Future

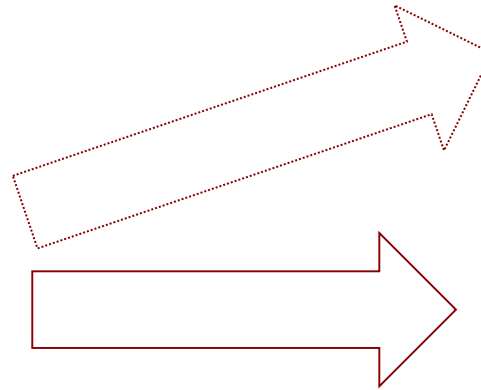
Visions



20th Century Transportation **Highway System**



Integrated Modes, Autonomous Fleets & Advanced User Culture



Maintenance, Preservation & Renewal



transportation.gov/smartcity

- Vision based on a Future shaped by:
- Empowered Metro Regions
 - 'Accelerating' Emergence of Electric, On-demand Fleets
 - Access/Equity = Economic Issue
 - Incremental + Disruptive Thinking

Drivers of Change: 2016 - 2030



Data + Behavior Change
Mobility Innovations



Autonomous Fleets
Captain Culture + On Demand

Hype vs Hope: Data is the New Oil... the New Soil

waze CONNECTED
CITIZENS

TRAFFIC VIEW

HELP CENTER

Login

Exchange data with Waze to:

Know what's happening on your roads

Partners receive real-time incident information faster than other reporting methods

Increase the efficiency of incident response

Waze accurately pinpoints and verifies where incidents occur, creating faster response and clearing times

Reduce traffic congestion in your area

Reroute Waze users around road closures and incidents in real time

Make data-driven infrastructure decisions

Gain insights into locations with frequent congestion or hazards to drive smarter urban planning



Learning from Aggregate Global Mobility Data



A COMMUNITY-EDITED DATA SERVICE    

AGGREGATING    TRANSIT NETWORKS

ACROSS METROPOLITAN    AND RURAL

AREAS AROUND THE WORLD.       

Flow



Hype vs Hope:

Turning Data into Insights, Actions + Outcomes

Design for Behavior Change

Why Software is Eating the World...

THE WALL STREET JOURNAL.

By MARC ANDREESSEN

August 20, 2011

Social Norms for the Anonymous-Access Web

1993




“On the Internet, nobody knows you’re a dog.”

**“On Facebook, 273 people know I’m a dog.
The rest can only see my limited profile.”**

Social Norms & the Social Web

2008





Everyone knows I'm working on some personal growth issues

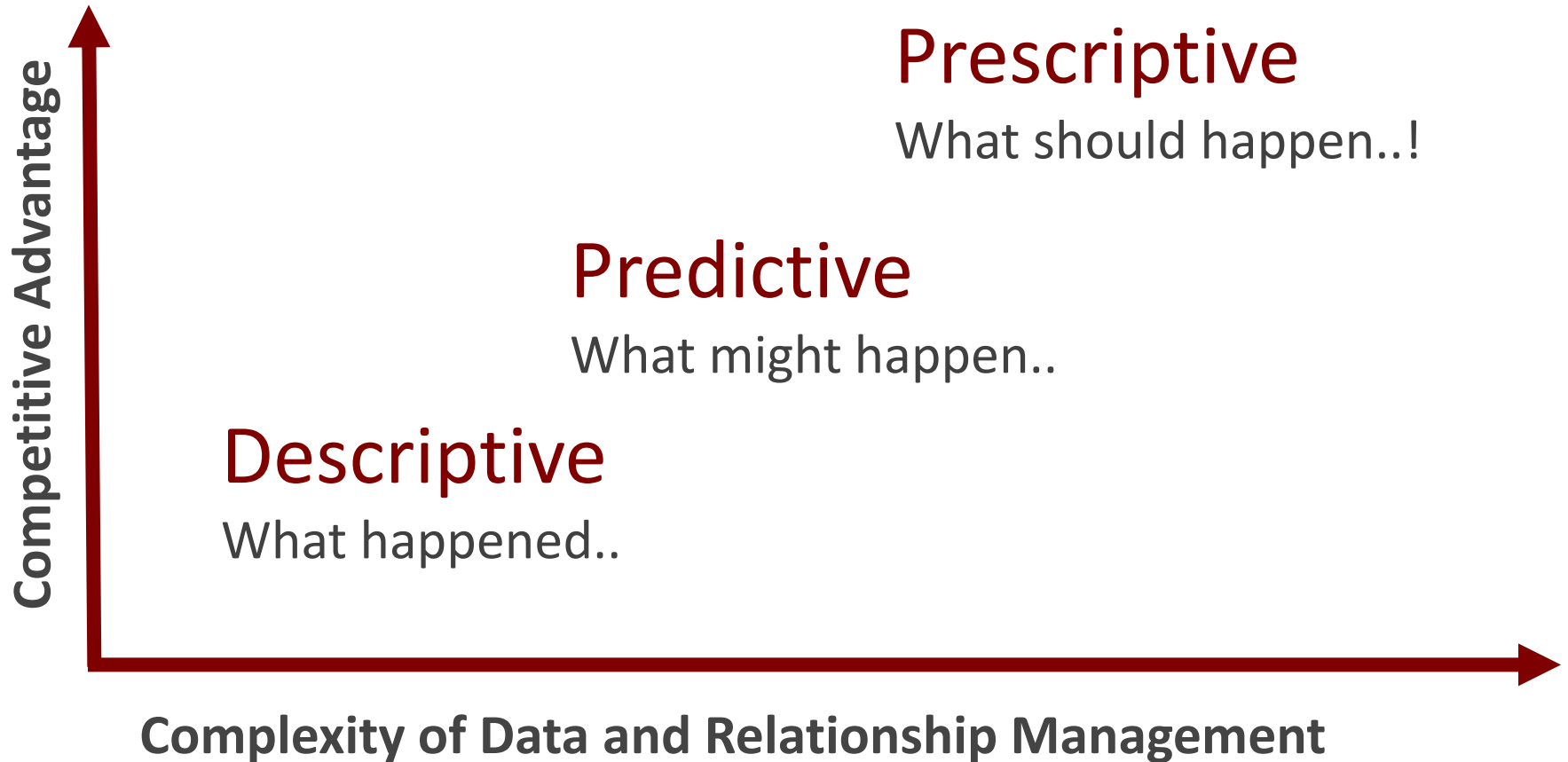
Assumption:
The web is becoming a platform for managing outcomes & personal behavior change.

Andrea Arden
• *Workshopping*—including state-of-the-art and creating an effective workshop
• *Facilitation*—leading groups, one-on-one, and more
• *Dog Training 101*—inspiring to help you train the right way and more
• *Behavioral Psychology*—including personal learning, assessment, planning, and more

BARRON'S

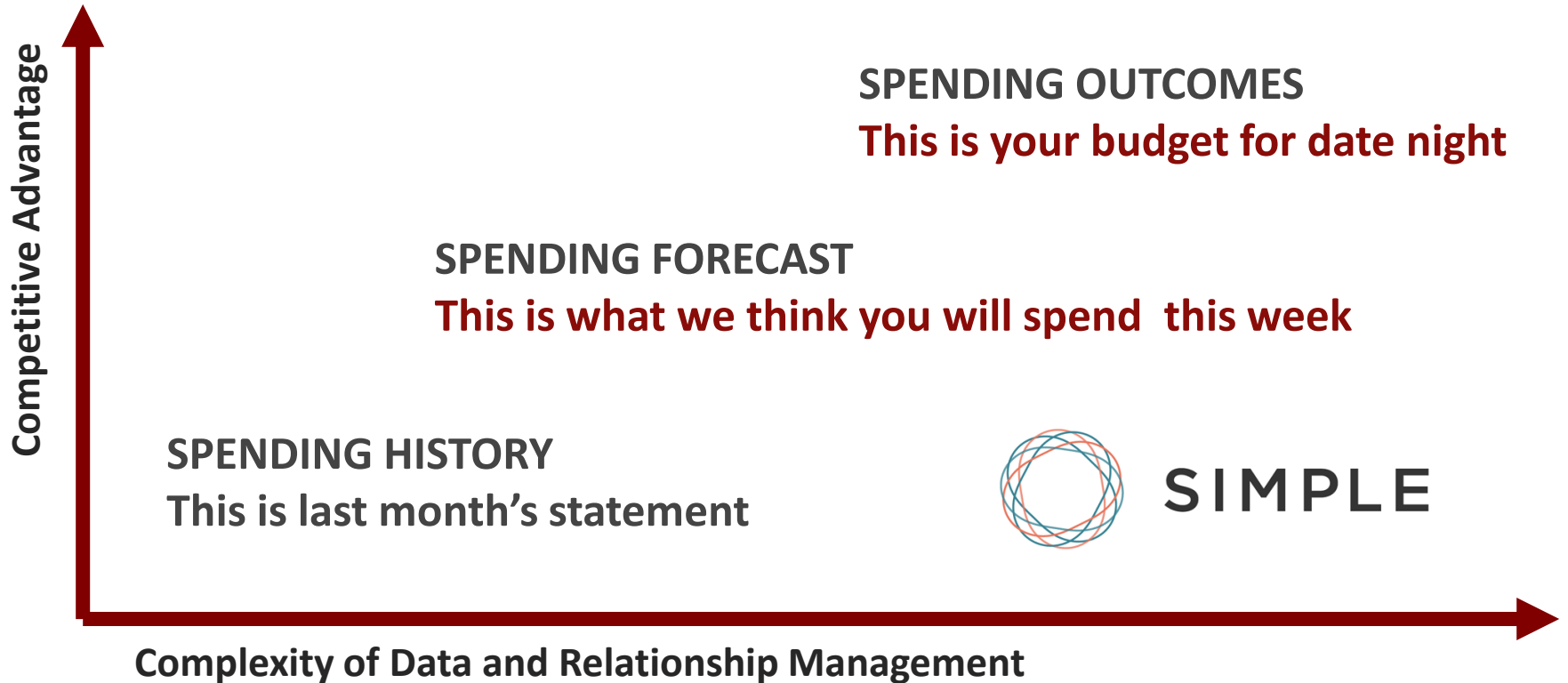
Web Applications May Alter Mobility Experiences

Turning Data into Behavior Change + Desired Outcomes



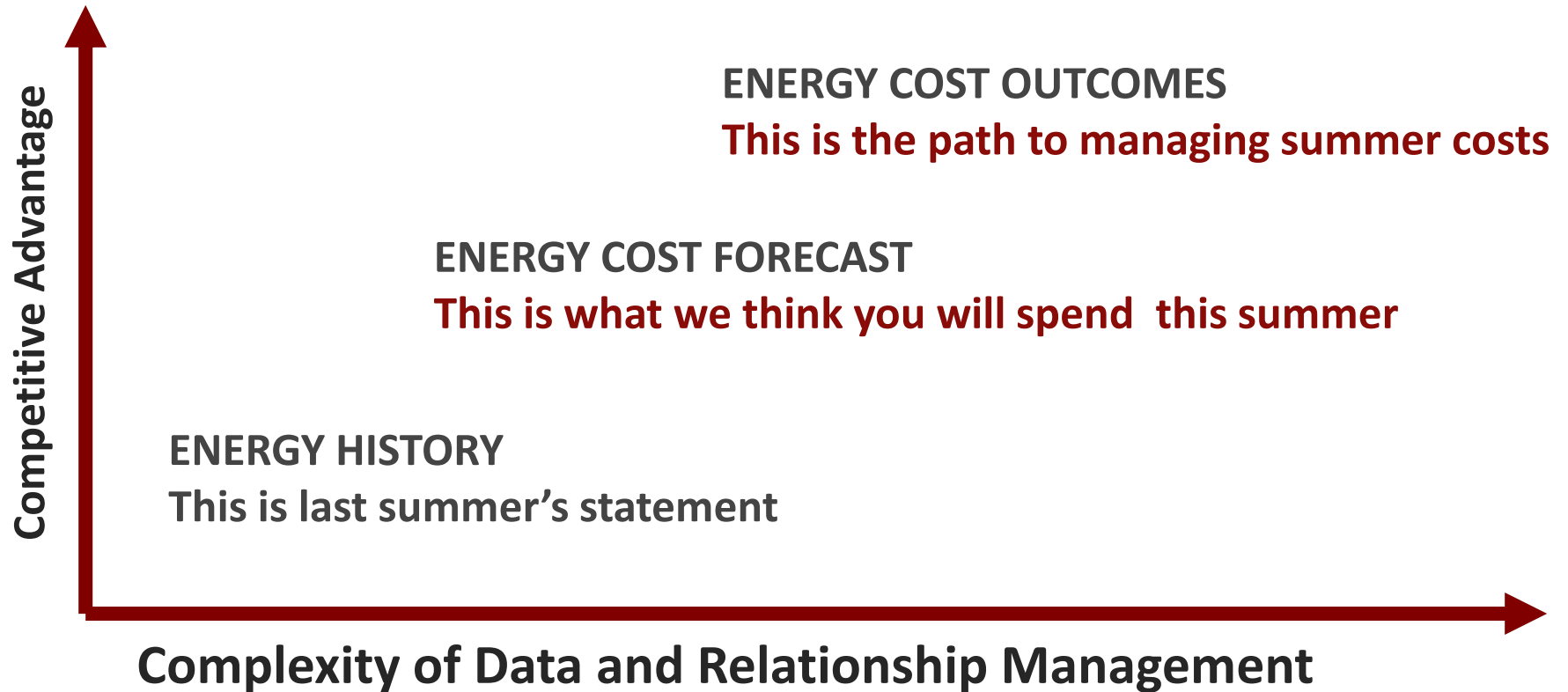
Social Norms + Slow Embrace of Prescriptive Analytics

Guided Financial Experiences

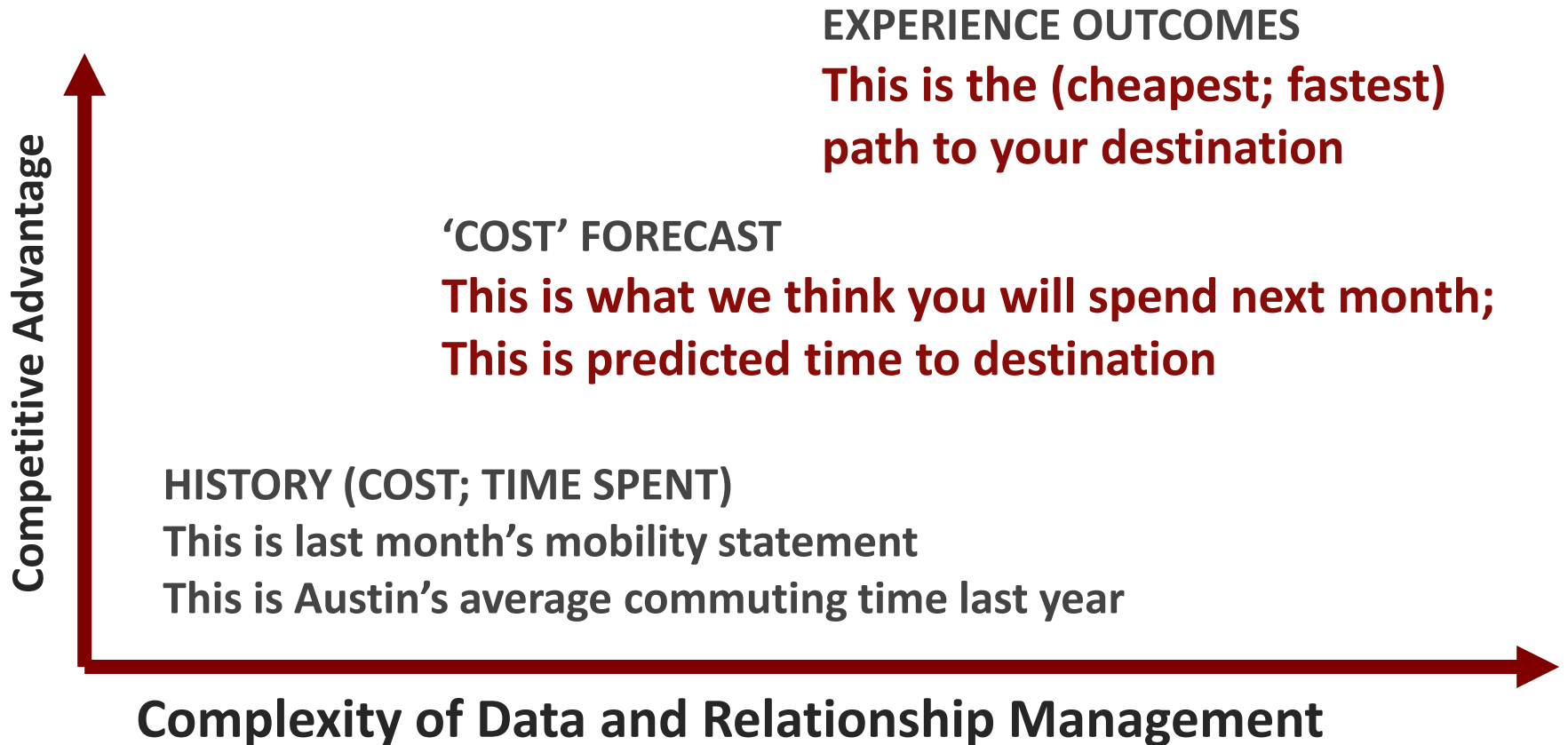


Social Norms + Slow Embrace of Prescriptive Analytics

Guided Utilities Experiences



Guided Transportation Experiences

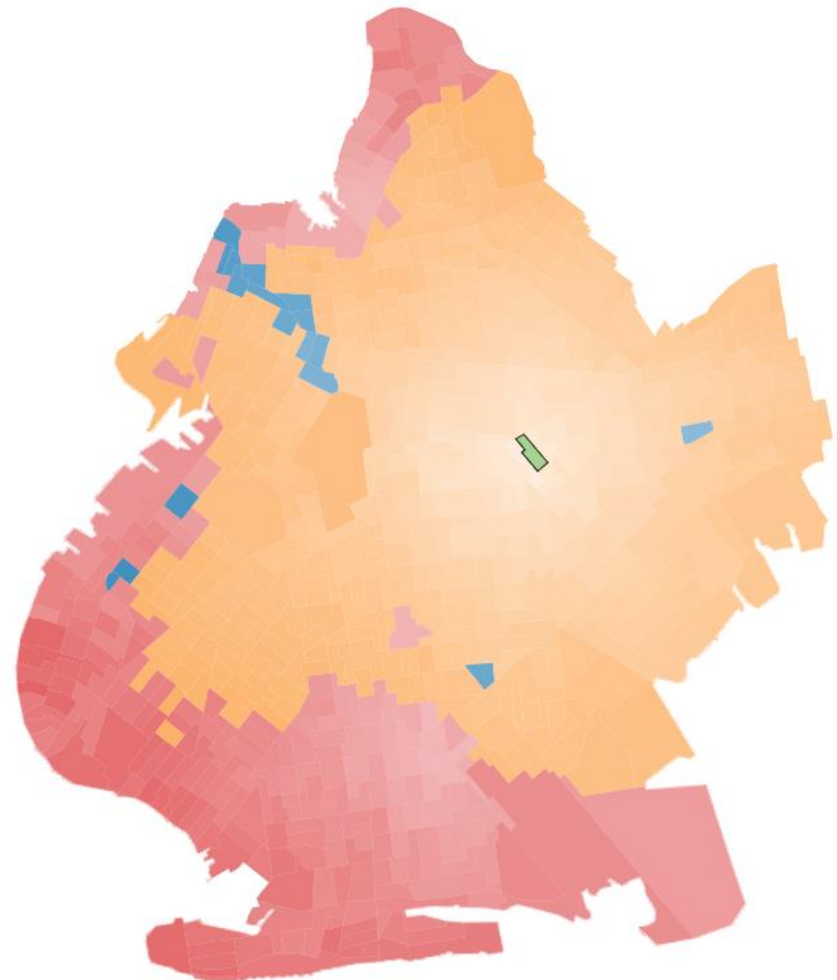




Brooklyn

What is the fastest mode of transport: [walking](#), [bicycling](#), [transit](#) or [driving](#)? [Click on the map to explore ... more](#)

Our Mobility Data Challenge: Moving from novel websites to real-world platforms for change?



From this location, [0.1%](#) of the city can be reached
fastest by [walking](#), [48.1%](#) by [bicycling](#), [1.1%](#)
by [taking public transit](#), and [50.7%](#) by [driving](#).

This work is part of the You Are Here project + The Social Computing Group + MIT Media Lab

Growth through Behavior Change Mobility Solutions



Prepare for Next Wave of Data

How do we incentivize sharing beyond visible traffic flow data?

Spectrum of Outcomes for Austin

(e.g. Cleaner air; Logistics; BRT ridership; Equity; Retail)

Exploring Uncertainties

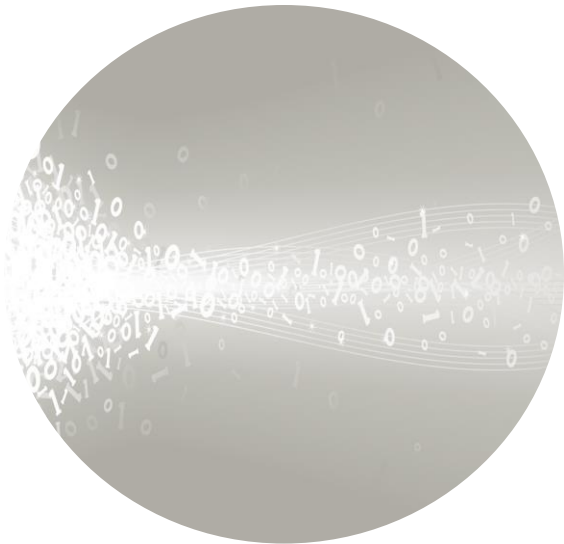
How do we address privacy concerns and build trust for private and public sector prescriptive mobility services?

Who leads these 'guided' era solutions?

GM? Google? TxDOT? City of Austin? CapMetro? Uber?

Local businesses?

Drivers of Change: 2016 - 2026



Data + Behavior Change
Mobility Innovations



Autonomous Fleets
Captain Culture + On Demand

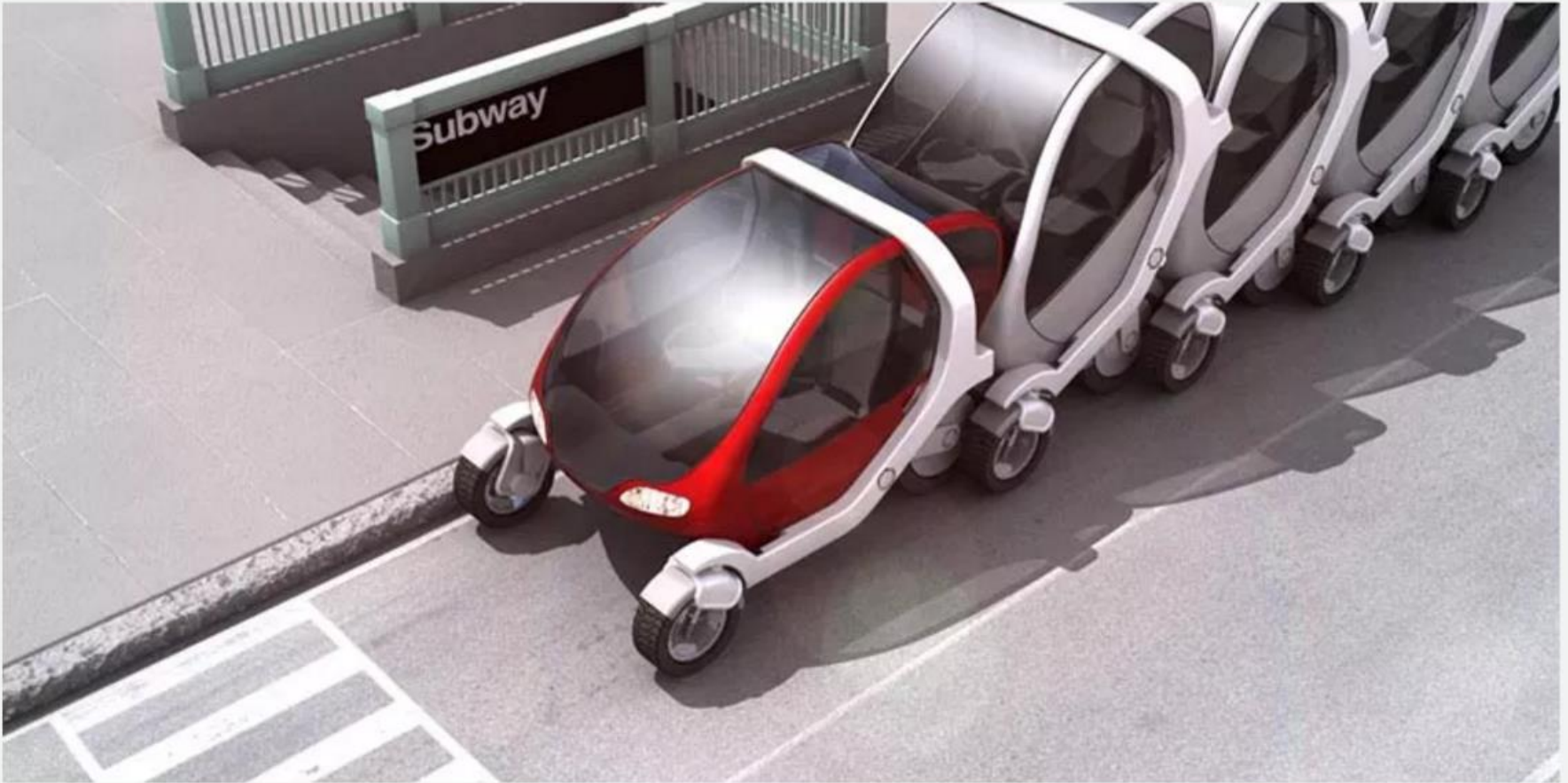
Self-driving Olli shuttle with IBM Watson debuts in Washington area



Olli, a self-driving shuttle for up to 12 passengers that integrates cognitive computing from IBM Watson, was unveiled this week in National Harbor, a private shopping and dining area in Oxon Hill, Md. Credit: Local Motors

Hype vs Hope of On-Demand Fleets

Powerful Ingredient for Techno-Utopian Visions



(MIT)
Stacked citycars.

We will be scared of autonomous vehicles, until we aren't



Christopher Mims Retweeted



Thor T. Mathison @Thormathison · 1h

Future-

"Wait, people used to control the car?"

"Yup"

"Wasn't that dangerous?"

"Oh, yeah, people died all the time."

Christopher Mims @mims

Drowsy Driving Kills 6,400 Americans Annually
[scientificamerican.com/podcast/episod...](https://www.scientificamerican.com/podcast/episod...)



9



8



'Captains' for Freight + Logistics (Short Haul vs Long Haul)

Self-driving start-up Otto to test with truckers by year's end

 **REUTERS** By Alexandria Sage August 4, 2016



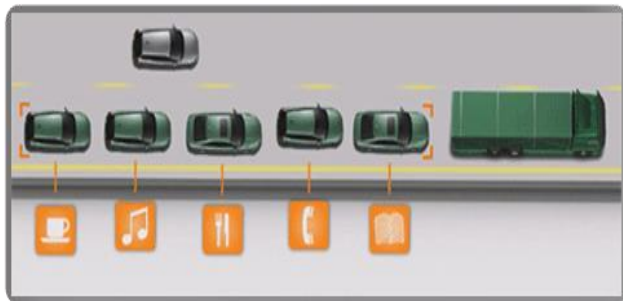
An Autonomous trucking start-up Otto vehicle is shown during an announcing event in Concord, California, U.S. on August 4, 2016. REUTERS/Alexandria Sage

2018 – 2030 Top Down Focus on Commercial Sector

Phase One - OEM Focus on Road Platoons for Safety & Flow



Safe Road Trains for the Environment



COMPANION

cooperative
mobility solution for
supervised platooning

2020 – 2030 Bottom up Urban Marketplace

Phase Two – City Focus on Vision of On-Demand Fleets (Act II)

Beyond 2020 Radical Rethinking

- ❑ 'Last Mile' Transit Connections
- ❑ Fleet Brands Associated with Retail Hubs + Developments



Growth through Captain Culture + Autonomous Solutions

❑ Regulatory Frameworks

How do we engage local, state and federal regulatory community?

❑ Transit-first Approach to Autonomous Fleets

How might we fund pilot 'last mile' connections – and low ridership routes based on autonomous or 'captained' fleets?

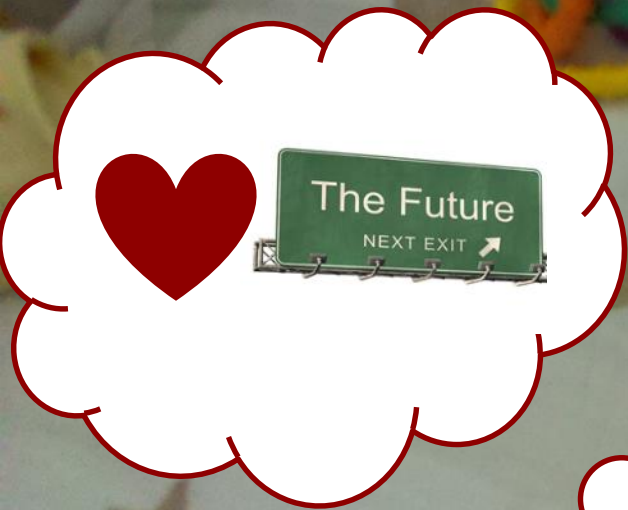
❑ Role of Real Estate and Developer Community

How might we look at on-demand fleets as more valuable assets than today's parking lot model?

I don't
like the
future...

 #Never_Garry_the_Futurist





Every day I make an effort to go toward
what I don't understand.
Yo-Yo Ma



Foresight 101



Drivers of Change



Q&A
Learning More

End



Finding Austin's Health Sense of Urgency to *Think Differently*

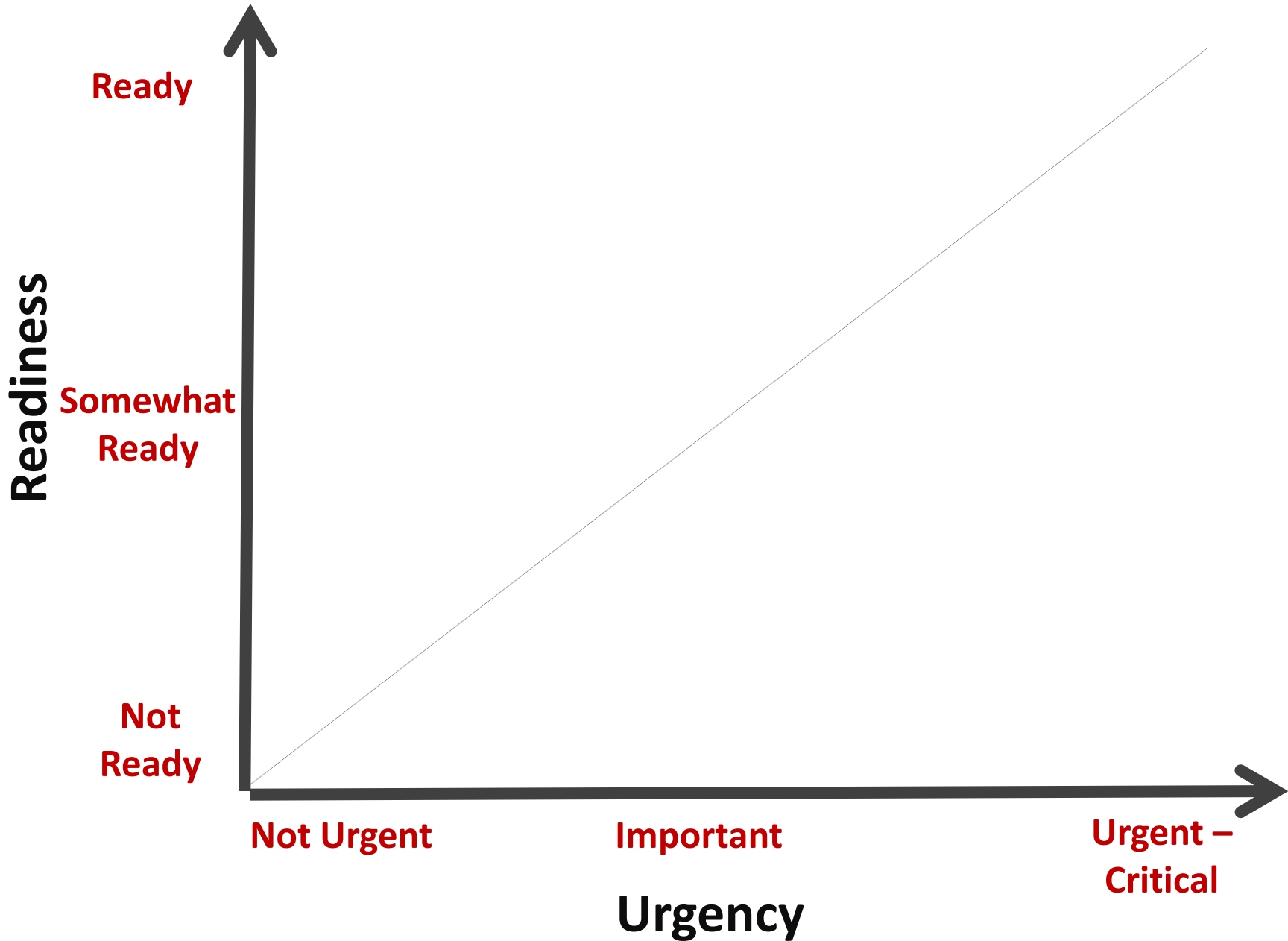
On the Plateau *'Managing the Decline'*

- Incumbent mindset
- Incremental Improvement
- Fear, Uncertainty,
Doubt & Denial

Walking up Hill *Enabling New Era*

- Entrepreneurial mindset
- *Prototyping*
Transformative Change
- *Failing Forward*

Survey Regional Leadership on Emerging Trends



Elevate Austin's Thought Leadership

Engage community leaders in socializing 'big ideas' on the horizon of transportation sector:

- ❑ Focus on Transition to Autonomous Age
- ❑ Highlight Future Demographic Challenges (e.g. Aging in Place)
- ❑ Engage Local Business Leaders in Challenges associated with Regulatory Issues and Business Models
- ❑ Prepare for EV Vehicles (Battery + Fuel cells)
- ❑ Get ahead of Privacy Concerns
[Explore Blockchain Solutions (L'zooz + Arcade City)]
- ❑ Invest now in Transportation Equity Issues

Questions?



#AskGolden @garrygolden

www.garrygolden.com/RECA2016

