



NCDOT Presentation | 11.22.2019

Rana Sen | Deloitte State/Local Transportation and US Smart City leader

Discussion items



**Changing
mobility
landscape**



**Guiding
principles**



Ecosystem



**Regulatory
approaches**

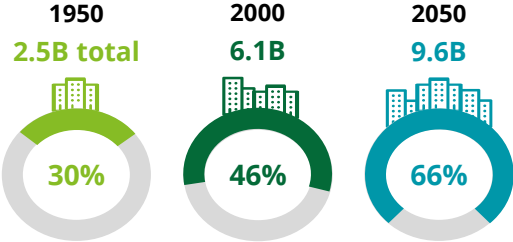


**Inclusion,
stakeholder
engagement,
and human-
centered
design**

The mobility landscape is evolving rapidly

PRESSURES

Global populations continue to increase dramatically, with relative urbanization (%) also rising



Existing infrastructure is increasingly strained

\$1.2T In GDP could be lost by 2025 due to infrastructure deficiencies

73% of the metropolitan workforce commute for 90 minutes or more

Policy shifts will increasingly impact mobility and transportation



UN Sustainability Development Goals defines poverty, inequality, climate, and environment as critical priorities



New regulatory guiding principles are being introduced to enable adaptive, outcome-based, and collaborative regulatory sandboxes

Source: "Smart City Challenge," U.S. Department of Transportation; 2015 Urban Mobility Report, Texas A&M Transportation Institute; "Smart Cities Readiness Guide," Smart Cities Council; TomTom Traffic Index; World Economic Forum, Strategic Infrastructure report; Deloitte Analysis

* Based on US data

EXISTING DISPARATE SOLUTIONS

As more digital mobility providers come online, it is challenging to influence these offerings towards equitable outcomes for citizens



Five guiding principles



Opportunity



Inclusivity



Sustainability

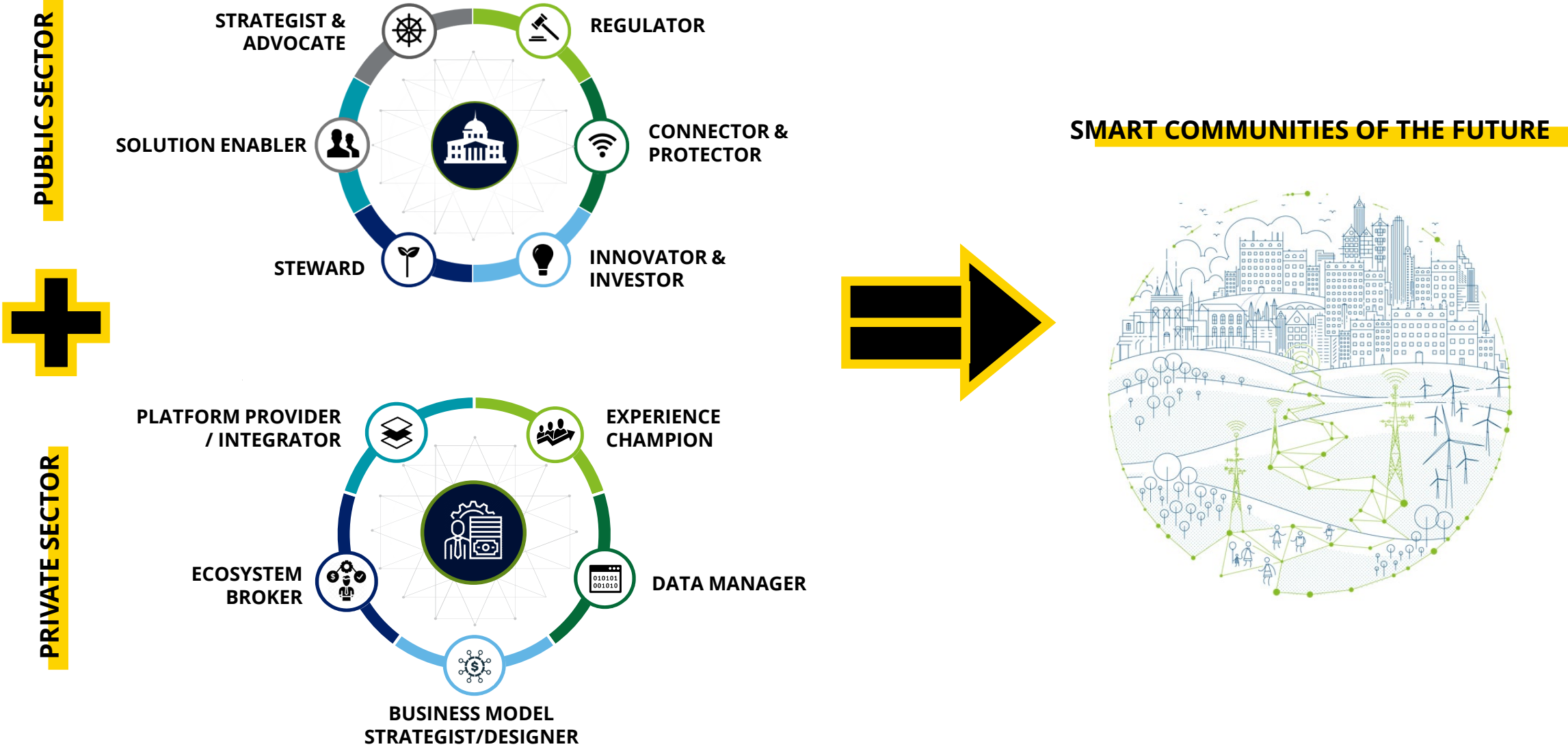


Experience



Safety

The new mobility future requires deliberate collaboration between public and private sectors



Policy frameworks and approaches should be nimble and responsive

Adaptive Regulation

Regulation that can be quickly updated as the market evolves (e.g., trial periods)

Regulatory Sandboxes

Areas where the effects of new solutions / approaches can be tested (e.g., adjusting fees and incentive structures, varying parking rules)

Outcome-based Regulation

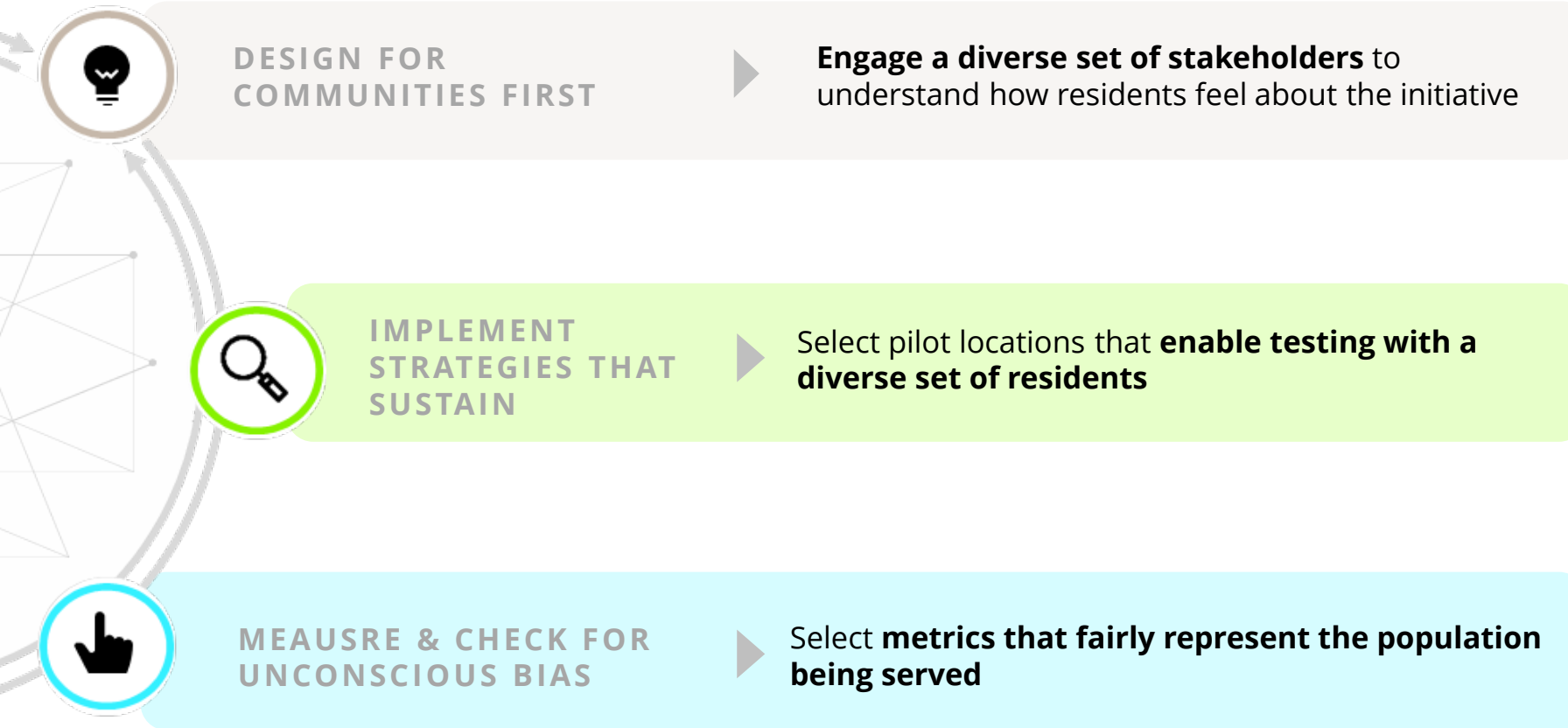
Performance-based criteria driven by a government's transportation goals and corresponding metrics (e.g., addressing congestion, first-mile/last-mile challenges, and access to underserved communities)

Risk-weighted Regulation

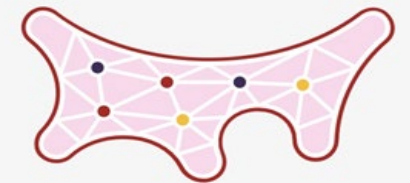
Regulation that acknowledges the realities of today's infrastructure and user needs (e.g., differentiated policies depending on current infrastructure conditions)

Inclusion and stakeholder engagement should be at the forefront of innovation

KEY COMPONENTS TO FOSTERING INCLUSION



INCLUSION IN PRACTICE



Beta Bl•cks

Boston Beta Blocks

Formed by the Mayor's Office as a citizen engagement process to engage underserved communities in testing and exploring new technologies, issues, and policies

Regulatory

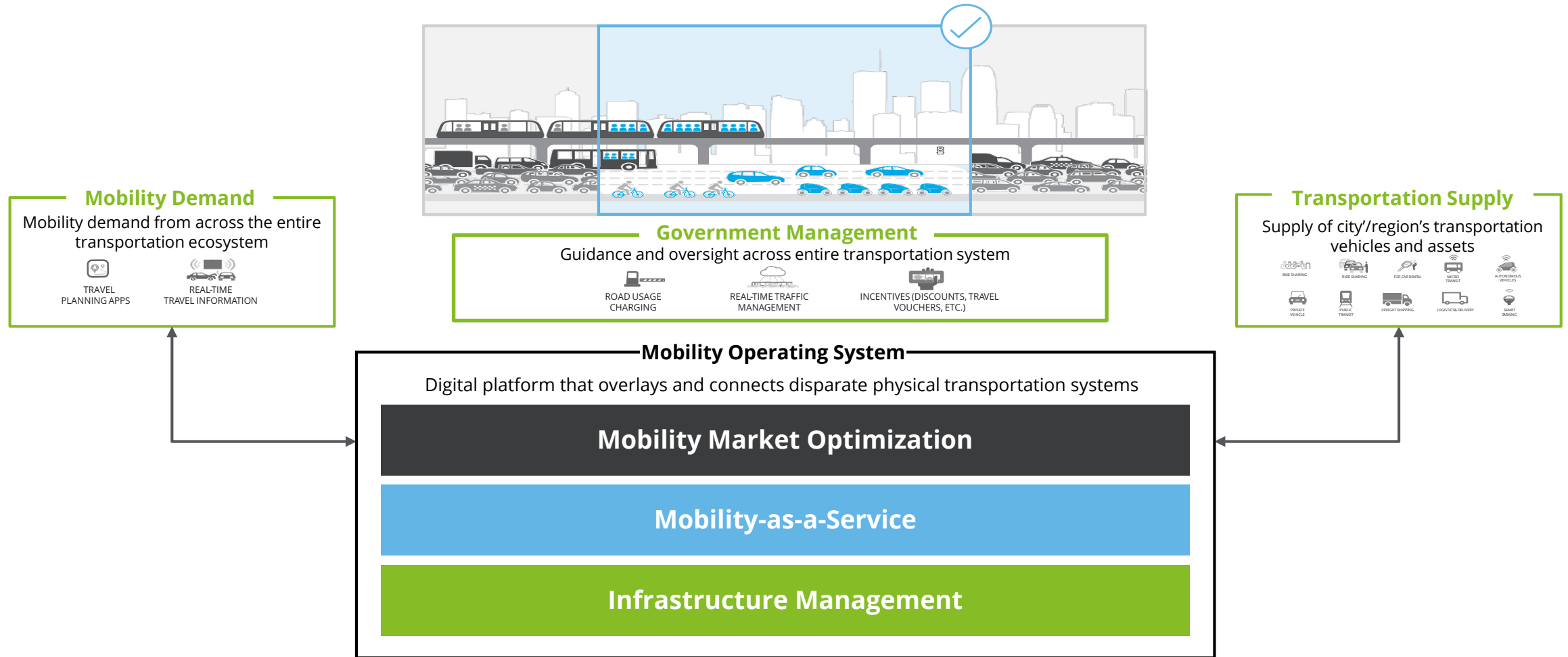


Please do not distribute without prior approval

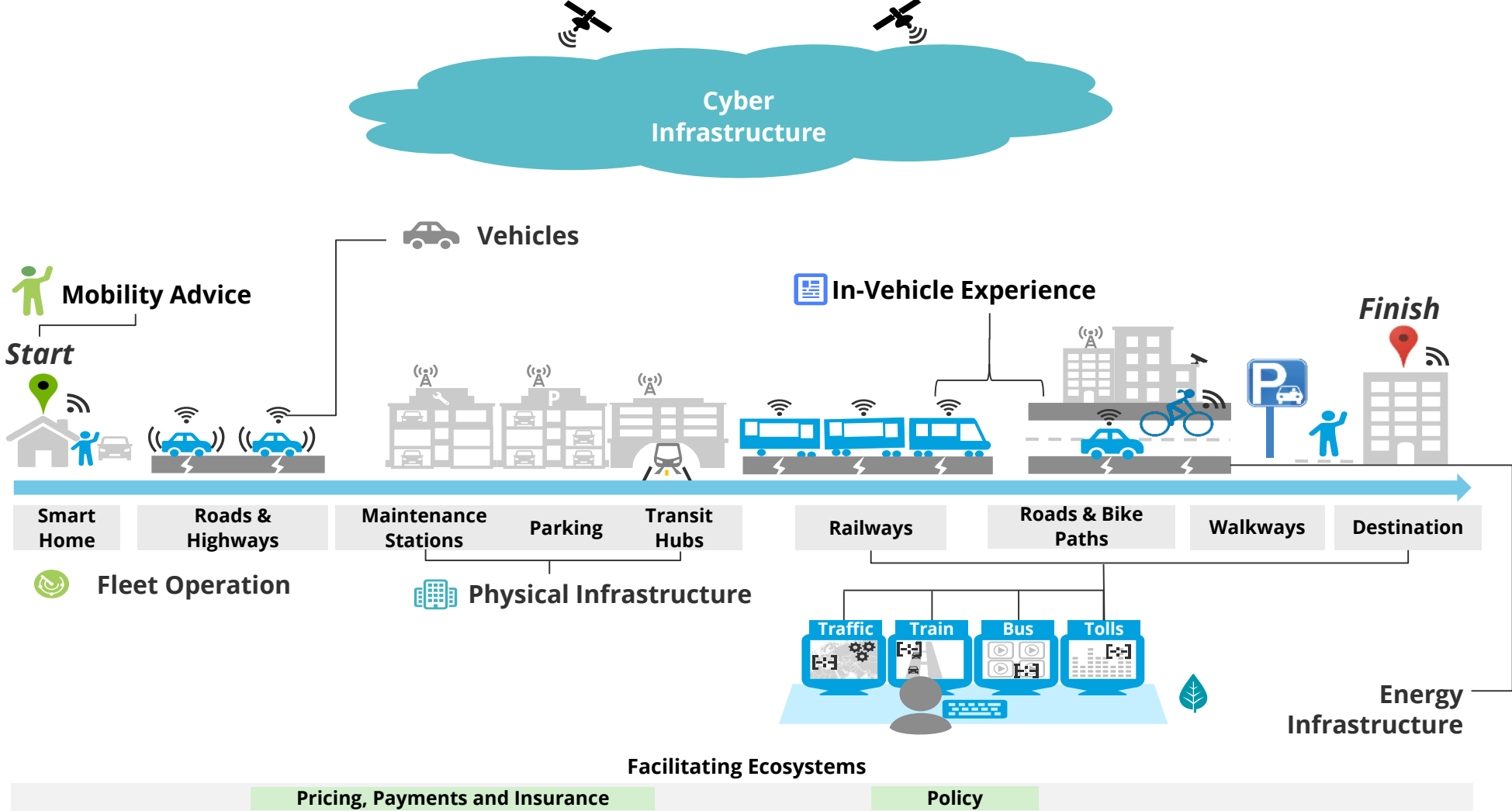
Human-centered approach



Mobility operating system needed that can connect users, transit providers, & infrastructure



The mobility ecosystem of the future will require new and different capabilities



Source: <http://dupress.deloitte.com/dup-us-en/focus/future-of-mobility/roadmap-for-future-of-urban-mobility.html>



Official Professional Services Sponsor

Professional Services means audit, tax, consulting, and advisory.

About Deloitte

As used in this document, "Deloitte" means Deloitte Consulting LLP, a subsidiary of Deloitte LLP. Please see www.deloitte.com/us/about for a detailed description of the legal structure of Deloitte USA LLP, Deloitte LLP and their respective subsidiaries. Certain services may not be available to attest clients under the rules and regulations of public accounting. This publication contains general information only and Deloitte is not, by means of this publication, rendering accounting, business, financial, investment, legal, tax, or other professional advice or services. This publication is not a substitute for such professional advice or services, nor should it be used as a basis for any decision or action that may affect your business. Before making any decision or taking any action that may affect your business, you should consult a qualified professional advisor. Deloitte shall not be responsible for any loss sustained by any person who relies on this publication.