DART's MaaS Efforts

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DART let's go.

Agenda

- Define MaaS
- Trends & Industry Outlook
- DFW Region
- Questions to Consider
- MaaS Framework
- MaaS Development Cycle
- Short Term Initiatives


What is Mobility as a Service (MaaS)?

/’mahs/ - maas

MaaS

(1) Personalized journey planning and management; (2) Hassle-free digital payment and ticketing; (3) First/Last mile transportation combining public transit, on-demand and shared mobility services (4) Optimization of data exchange to expand services

RELATED WORDS

Journey planning; multimodal; autonomous vehicles; scooters; ride-sharing; choice; single payment; subscription services

Trends & Industry Outlook

Top Cultural Trends

- Consumer trends are impacting how DART engages with the community

Personalization and Individualization

Personalized Technology

iGoogle

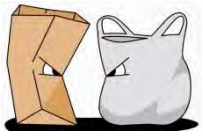
Social Networking Profiles

facebook LinkedIn YouTube

Personalized Products

Civic and Environmentally Friendly

Paper over Plastic



Carbon Footprint

Techno Savvy and Connected 24/7

Smart Phones

App Driven

Demanding and Impatient

Instant Text/Chat

Home Delivery

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Source: Frost & Sullivan Top 20 Global Mega Trends and Their Impact on Business, Cultures and Society

Global Payment Trends

World Population - 2019

7,699,900,870

World population has doubled (100% increase) in 40 years from 1959 (3 billion) to 1999 (6 billion). It is now estimated that it will take another nearly 40 years to increase by another 50% to become 9 billion by 2037. Worldometers

Mobile Payment Platform

PayPal 250M

Alipay 1B+

WeChatPay 1B+

Chinese competitors WeChatPay and Alipay state they have over 1 billion daily active users.

Merchant Savvy

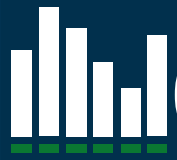
Contactless Payments

91%

Public Transit is reaping the benefits of contactless technology where 91% of all payments are contactless.

Merchant Machine

Number of Smartphones



66.7%

The number of smartphone users will continue to grow exponentially.

WorldoMeters U.N. data,.

Mobile Wallet Users

2.1B

Consumers worldwide will make payments or send money in 2019. 30% increase compared to 2017.

businesswire.com

Mobile Apps

31%

Mobile apps accounted for global digital commerce volumes in 2017.

GCI Analytics

Japanese Market

70%

Consumers still prefer to use cash, mainly due to security concerns with mobile payments.

McKinsey & Company.

GoPass App Stats

App Downloads

1.1M

# of downloads since Sept 2013. There are 528 average daily downloads (DART/Trinity Metro/ DCTA;2/28/19)

Device Usage

56%

Device usage by operating system has been consistent since the inception of the app

Loyalty Programs

1,014

Began Sep 2018, allows riders to earn up to a monthly pass during a calendar month period

Average Fare

2017	$5.81
2018	$5.84
2019 (6/28/19)	$5.63

Avg cost of tickets sold. Avgs. will fluctuate with fare changes

Tickets Sold

9.5M

Various types of tickets are sold through the app to include time specific and period passes

MaaS
Industry Outlook

1. Automated vehicle technology is gaining momentum with tech giants, auto manufacturers and ride-share platforms
2. 5G Internet connection provides more devices to be connected in faster, more reliable networks to include smart vehicles and smartphones
3. Scooters and the electric bike markets continue to grow exponentially
4. Greater focus on interoperability and big data
5. 2019 - the year of pilots in many regions
6. Smart cities delivering infrastructure which is more responsive and flexible for future needs

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Source: https://skedgo.com/5-maas-trends-to-look-out-for-in-2019/

DFW Region

GoPass Journey

2013

GoPass 1.0

- *Ticketing*
- *Trip planning*
- *Special events and offers*

2014

Sell of admission tickets

- *State Fair of Texas*
- *Zoo*
- *CFC*
- *NCAA*

2015

Deep Linking

- *Uber*
- *Lyft*
- *Zipcar*

2016

Introduced Corporate and University passes

2017

FTA Grant Recipient

2018

GoPass 2.0

- *Real time*
- *Cash to mobile*
- *Fare capping*
- *Apple Pay*
- *GoPass Wallet*

2019

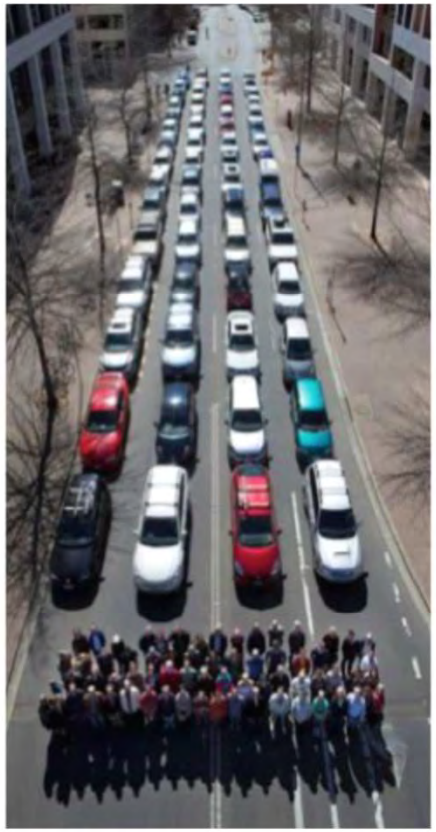
GoPass 3.0

- *Multimodal*
- *Microtransit*
- *UberPool*
- *Bird*
- *Rideshare choices*

Synopsis

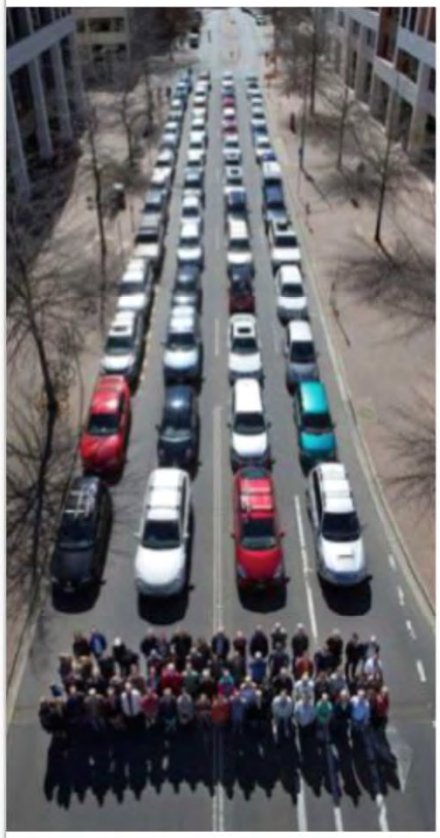
- Whether transporting people by car, TNC or automated vehicle, they still cannot move as many people as bus or rail
- It takes the same number of automated and Uber/Lyft/private vehicles to move the same number of people

Space required to transport **48 people**



AUTOMATED VEHICLE

PRIVATE VEHICLE



Uber/LYFT

BUS

A GROWING AND DIVERSE REGION

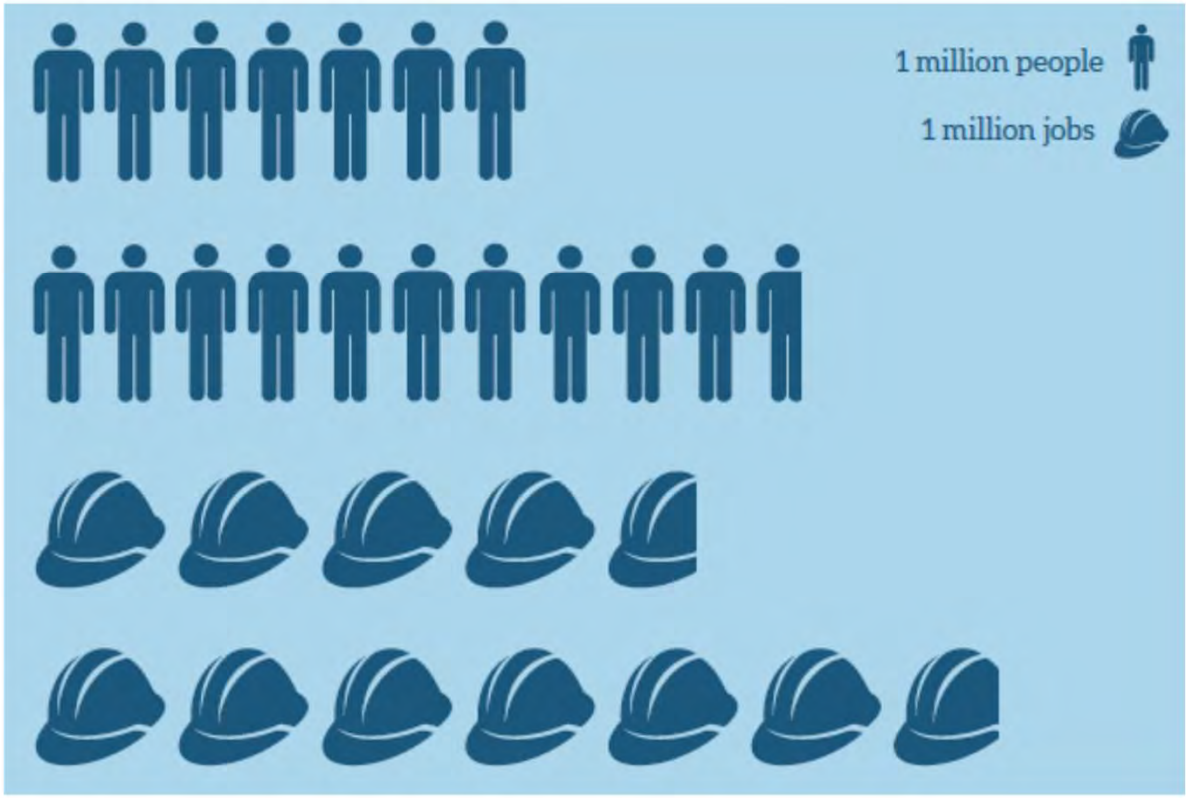
The Dallas-Fort Worth area is the fourth largest metropolitan region in the country in terms of population – and it is growing. With a current population of 7 million, the area adds approximately 1 million people every decade. By 2040, the region will be home to nearly 10.7 million people and will provide 6.7 million jobs.

CURRENT POPULATION:
7.0 MILLION

2040 POPULATION:
10.7 MILLION

CURRENT EMPLOYMENT:
4.6 MILLION

2040 EMPLOYMENT:
6.7 MILLION



The region's population and employment are expected to grow by 53 percent and 47 percent, respectively. This growth will increase demand on the region's already congested transportation system.

Source: The Metropolitan Transportation Plan For North Central Texas Executive Summary, NTCOG Staff,2017

Questions to Consider

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How can we leverage core competencies to differentiate or lead mobility as a service in the market place?

How can new transport modes complement and not cannibalize the existing offering?

How might we have to restructure to be successful in this venture?

What does success look like?

Who can be relevant partners for implementing and operating new modes of services?

How can we anticipate any competitive threats when planning?

What advantages does we have and how can we retain existing riders while attracting new customers?

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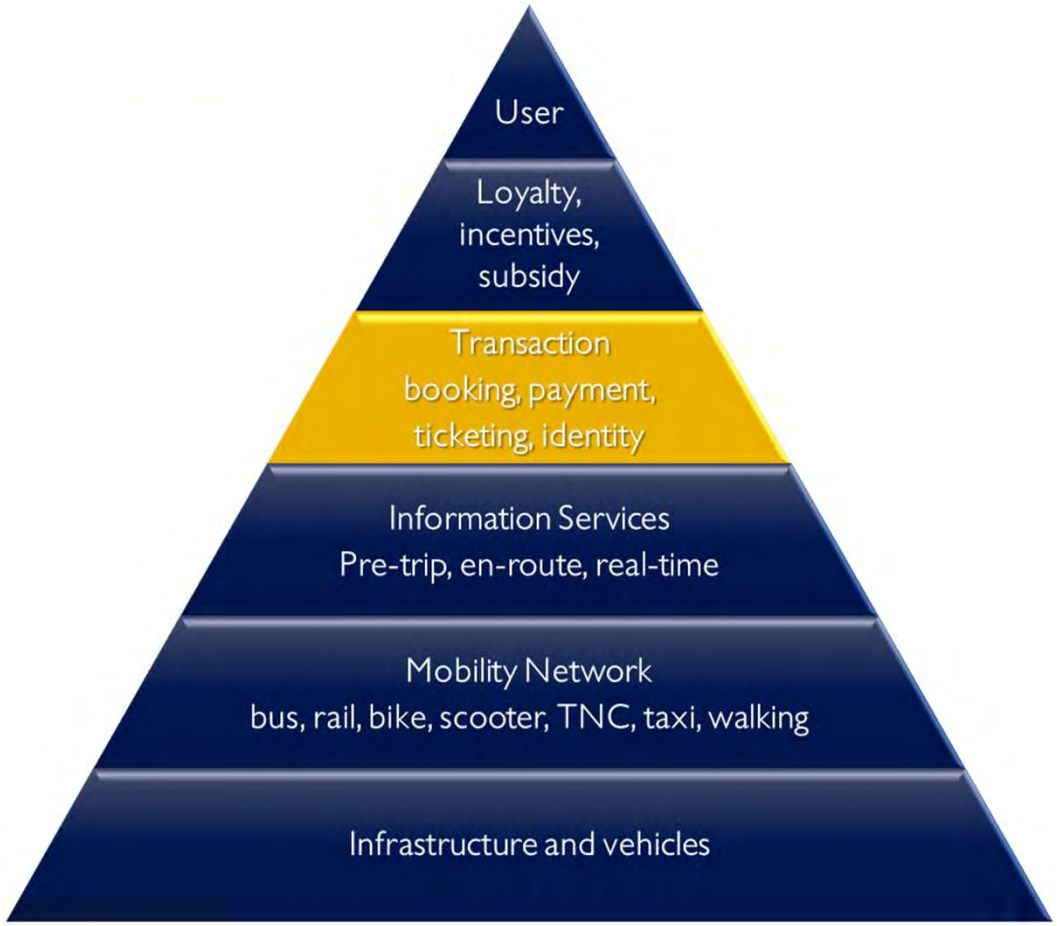

Mobility Network

JOURNEY TO MOBILITY AS A SERVICE

While technology will connect vehicles, infrastructure and various modes of service, single payment transactions and identity are the nexus for any digital transformation of transportation. Payments must be routed to all participating parties to cover the cost of the service while providing a frictionless experience for the end user.

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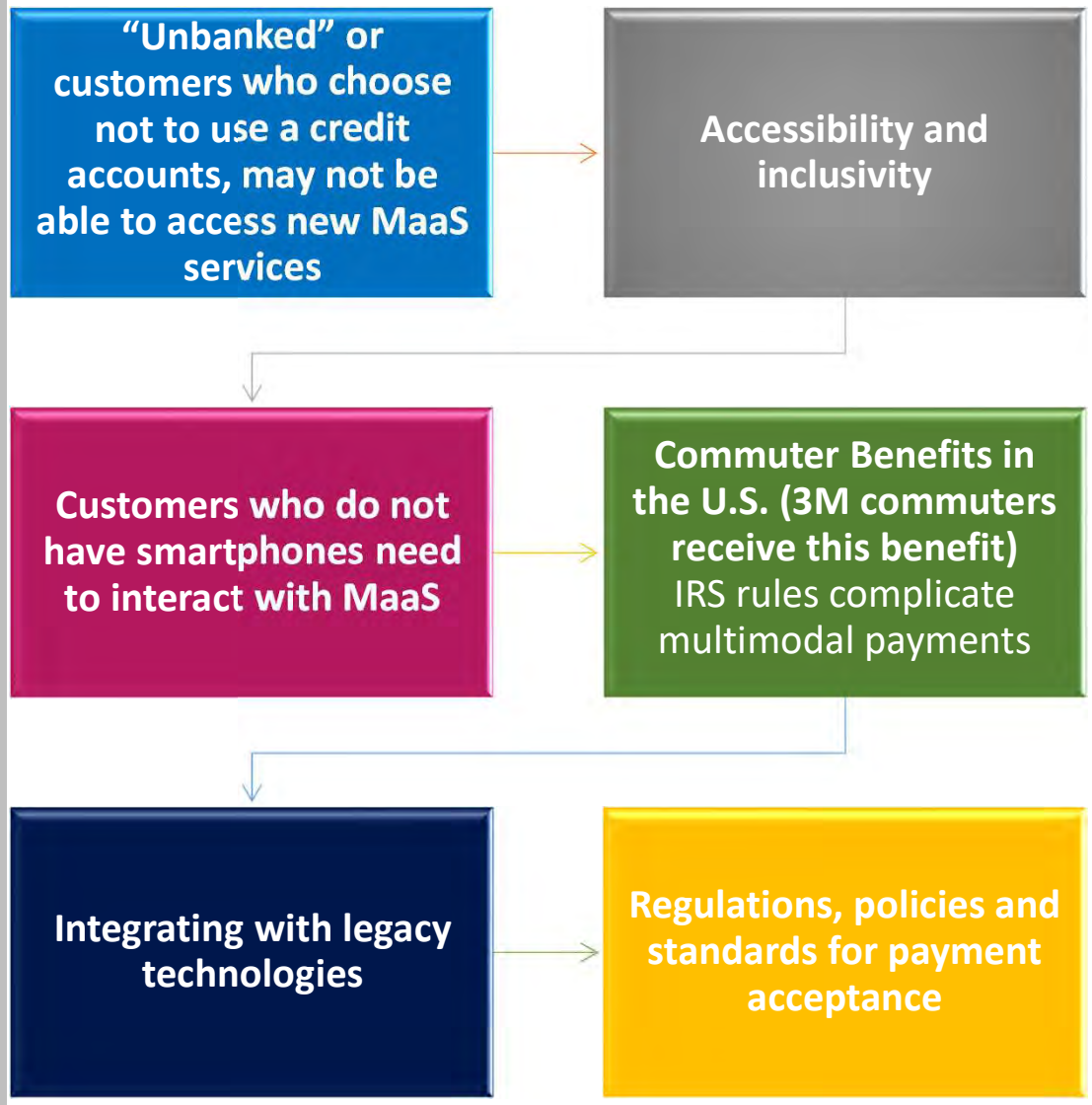
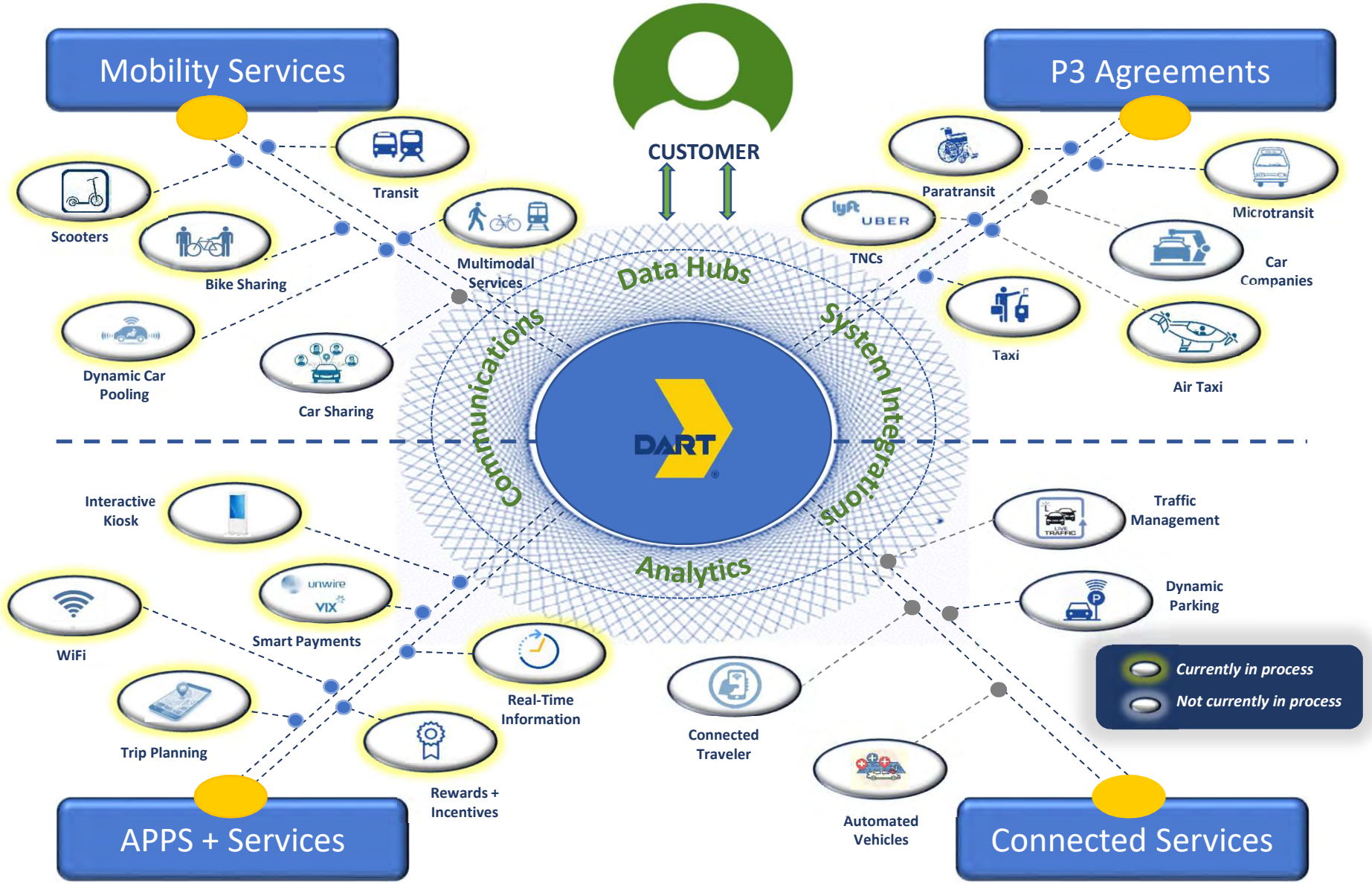
Challenges Not Yet Addressed



MaaS Framework

DART's Mobility as a Service Framework



MaaS - ROADMAP OBJECTIVES

FY 2019

Integrations

Functional needs: On-demand for persons with disabilities, single payment acceptance, continued multi-modal integrations, add other agencies, safety/security integration

- Uber full integration
- "See Something" integration
- Google Pay
- Real-time trip planning improvements
- Governance structure

FY 2020

Technology Improvements

Functional needs: Trip planning enhancements, traffic management, solutions for non-smartphone users, continued third-party integrations, automated vehicle planning

- Paratransit on-demand
- Tap & App integration New trip planner
- Robust Analytic Tool
- 511/DFW integration
- Micromobility full integrations
- Additional Integrations
  - Taxi Subsidy
  - Microtransit
- AV & Mobility hub planning

FY 2021

Machine Learning

Functional needs: Automated vehicles design/pilot, blockchain, air travel, mobility studies, interoperability with other agencies' platforms

- 5G technology
- Blockchain
- Real-Time Payments
- Interoperability with other agencies' platforms
- AV business modeling
- Mobility behavior study
- Mobility hub design & build infrastructure

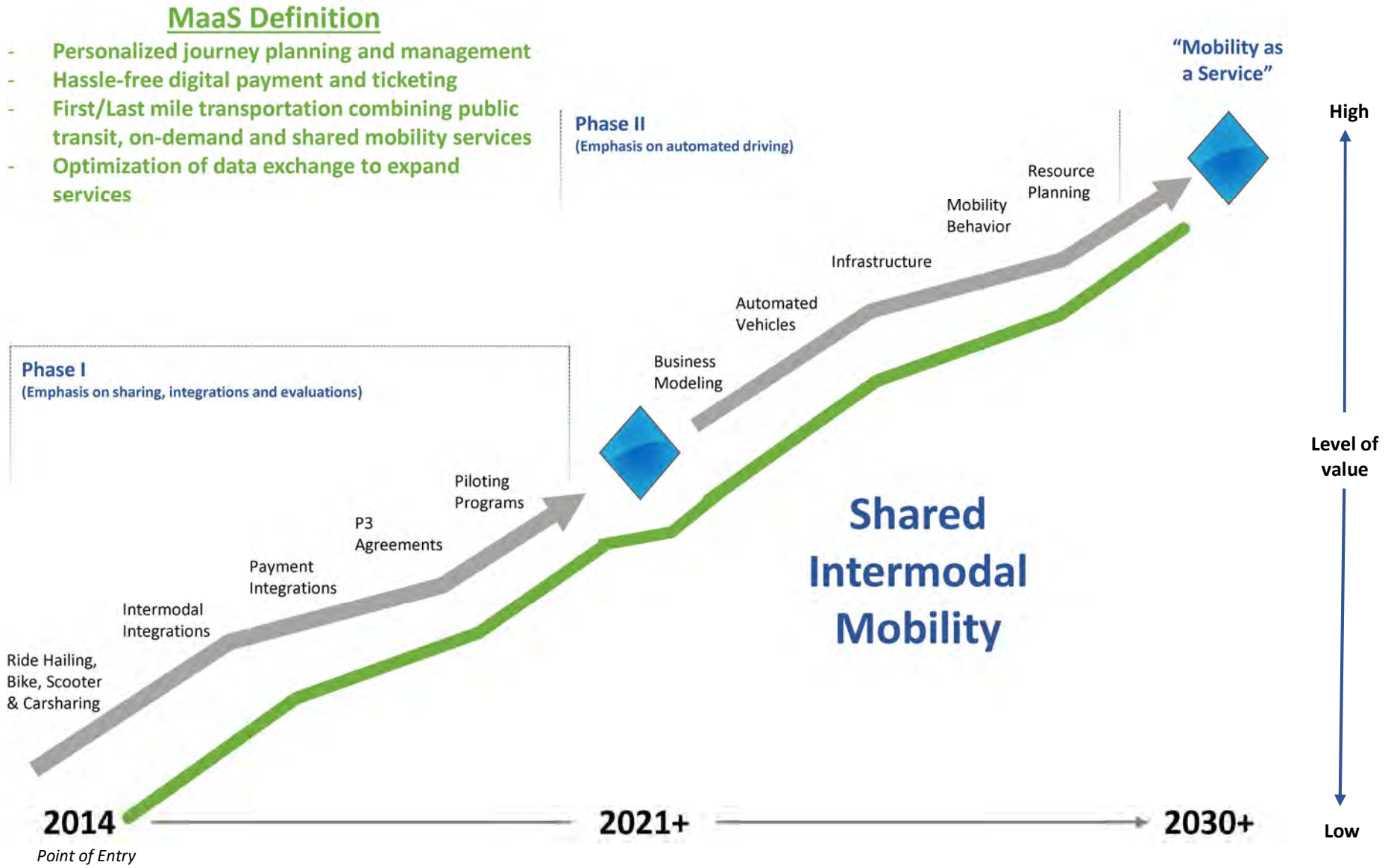
FY 2022

Process Redesign

Functional needs: Infrastructure to support automated vehicles & air taxi changes, resource planning and contractual considerations

- Infrastructure changes platform/transit facilities
- Operator/admin personnel planning (AV)
- Contract considerations

DART's Mobility as a Service Development Cycle



Source: Roland Berger – Global Strategy Consulting Firm

Short Term Initiatives

- Integrating a range of services
- Identifying new mobility opportunities
- Assessing pilot programs to determine viability in the DART platform of services
- Aligning with cities to adopt mobility as a service framework
- Improving current and exploring new technologies to enhance the rider experience

Questions