

Mobility-as-a-Service: Seamless Travel





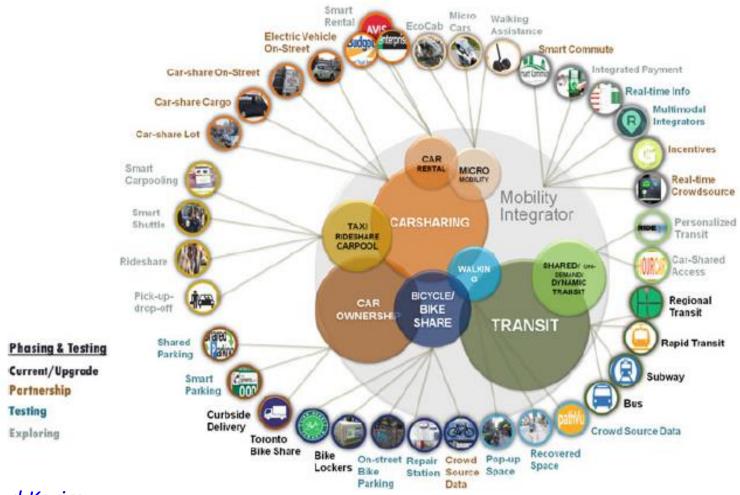
XaaS - Beyond the App

- Reframe role from transportation agency to mobility service provider
- View MaaS not just as an app, but travelers' experience by context
- What are other US cities doing? Tompkins County
- Take a harder look at "seamless" not just digital but also physical seamless travel
- Adopt an opportunistic view of MaaS for First/Last Mile(s) passengers



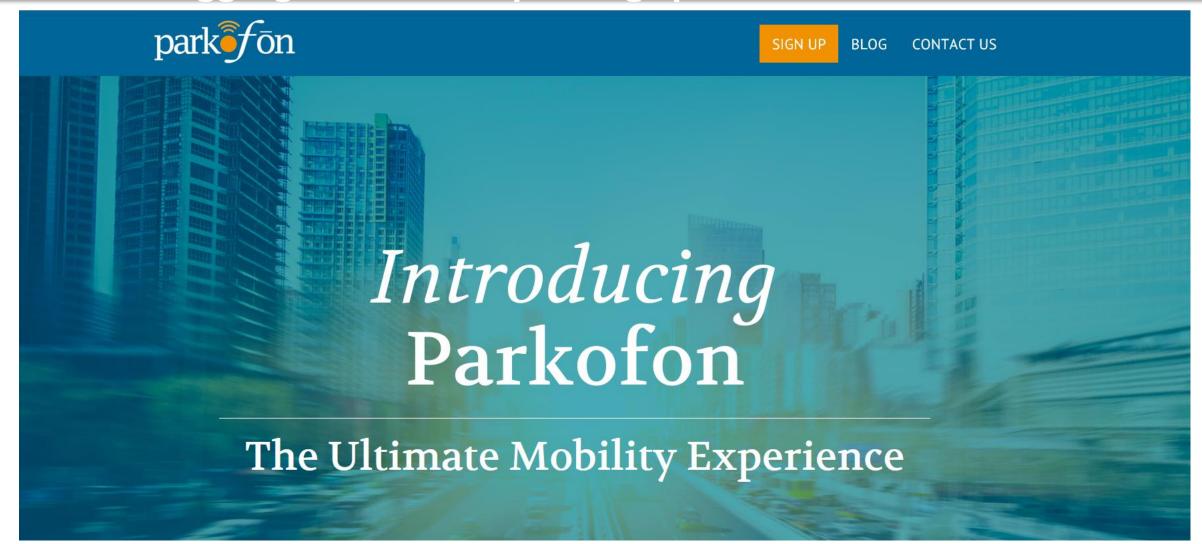


Explosion in Modes – and Variations of ModesIncrease options & coverage, but complicates integration





Parking as a Service Aggregation of ALL parking spaces





Mobility as a Service Digital Transportation Demand Management





Mobility as a Service Different Packages for Different Places

Elements

Bikeshare **E-Bikeshare Scootershare** Carshare **Moped share Car Rental** Rideshare Ridehail **Paratransit** Bus **Intercity Bus Shuttles** Rail (Ferries)

Urban

Value Proposition

Reduced need for car ownership
Reduced need for private car use
Lower congestion
Reduced emissions
Easy tripchaining
Easy access to back-up plans
Easy & transparent payments
Facilitates incentives
Student travel

\$\$

Pay per use

Monthly packages

Customized monthly packages

Employer-provided subsidies

Ancillary services



Mobility as a Service Different Packages for Different Places

Elements

Bikeshare **E-bikeshare** (Scootershare) Carshare **Moped share Car Rental** Rideshare Ridehail **Paratransit** Bus **Shuttles/Vanpools Commuter Rail** (Ferries) **Parking**

Tolls

Suburban

Value Proposition

Reduced need for private car use **Increased use of suburban transit Lower congestion Avoid tolls Greater service for seniors/students Enhance value of suburban developments Consolidate shuttles** More productive commutes **Reduced emissions** Easy access to back-up plans **Easy & transparent payments Facilitates incentives** Student travel

\$\$

Pay per use

Monthly packages

Customized monthly packages

Employer-provided subsidies

Ancillary services



Mobility as a Service Different Packages for Different Places

Elements

E-bikeshare Carshare **Car Rental** Rideshare Ridehail/Taxi **Paratransit** Bus **Intercity Bus Drones (Delivery) Shuttles/Vanpools Commuter Rail Parking** Tolls

Rural

Value Proposition

Reduced need for car
Reduced need for private car use
Increased use of suburban transit

Lower social service costs

Avoid tolls

Serve emerging employment (logistics)

More productive commutes

Reduced emissions

Easy tripchaining

Easy access to back-up plans

Easy & transparent payments

Facilitates incentives

Student travel

\$\$

Pay per use

Monthly packages

Customized monthly packages

Employer-provided subsidies

Social services

Deliveries



Mobility as Service Small Operator as MaaS Coordinator

TABLE A. EXAMPLE OF FAMILY OF SERVICES	UNIT COST	UNIT
Annual Public Transit Adult Pass	\$450	Annual
Annual Public Transit Youth Pass	\$110	Annual
Car-share Frequent User Hours	\$8	Hour
Car-share "Just in Case" Hours	\$11	Hour
Car Rental voucher	\$50	Day
Taxi voucher	\$8	Trip in City
Bicycle Maintenance	\$50	Voucher
Hybrid Electric Bike Purchase	\$1,500	HE Bike
Bike Purchase	\$500	Bike
Bike-share (Rental)	\$.50 - 1.00	Ride
Rideshare Driver - Miles	(\$0.50)	Mile (Credit)
Rideshare Rider - Miles	\$0.15	Mile
Paratransit (Seniors, People with	\$3	Trip
disabilities and ADA-eligible trips)		
Vanpool membership	\$125	Month
Guaranteed Ride	\$30	Annual

Tompkins County New York Mobility as a Service pilot

Program:

 Modes & Transportation Policies

White Paper



Mobility as Service Plan components depends on user needs

TABLE (.CITY HOUSEHOLD) IOBILITY BUDGET, 1 CAR, 2 ADULTS 1 YOUTH, WALKSCORE = 96

Mobility Calculator	Annual		Household
Family of Services	Qty	Unit Cost	Cost
Annual Adult Bus Pass	1	\$450	\$450
Annual Youth Bus Pass	1	\$110	\$110
Car-share Frequent	112	\$8	\$900
User Plan: Hours			
Taxi voucher	24	\$8	\$192
Bicycle Maintenance voucher	2	\$50	\$100
Guaranteed Ride/Rideshare Fee	1	\$30	\$30
Member Support			\$178
Annual Total			\$1,960
Monthly Payment			\$163

TABLE C RURAL HOUSEHOLD HOBILITY BUDGET, 1 CAR, 2 ADULTS, 1 INFANT, WALKSCORE = 0

Mobility Calculator	Annual		Household
Family of Services	Qty	Unit Cost	Cost
Carshare "Just in Case" Hours	44	\$11.00	\$480
Rideshare Driver – miles credit	800	\$(0.50)	\$(400)
Vanpool Months	12	\$125	\$1,500
Vanpool User Subsidy	12	\$(50)	\$(600)
Guaranteed Ride	1	\$30	\$30
Member Support			\$146
Annual Total			\$1,636
Monthly Payment			\$136



Suburban Mobility Hubs for First/Last Mile(s)

Maximize choice, Link subdivisions & office parks, Reduce highway congestion

Wi-Fi

Bike parking & repair station

E-Bike share

Autonomous shuttle facilities

Co-located pick up/drop off points for ridehail & transit

Delivery lockers

Gyms, showers, & Day care

Car Share & car rental spaces



Preferred Parking for carpool & guaranteed ride home

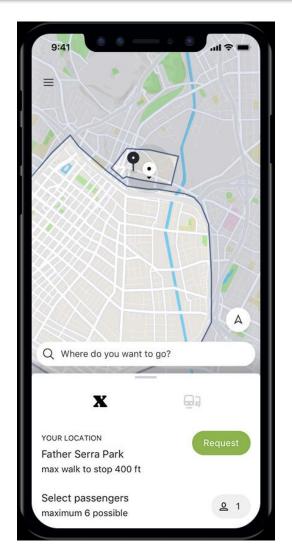
Information & payment kiosks

Charging for NEVs, e-bikes, mopeds and cars

Image: Columbus OH



MaaS and the Future of Payments Managing interlinked, dynamic pricing



Dynamic Tolling

VMT pricing

Dynamic Parking

Dynamic Congestion Charges



Let's Keep in Touch!

We welcome follow up to begin future mobility today

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