FORD **SMART MOBILITY**
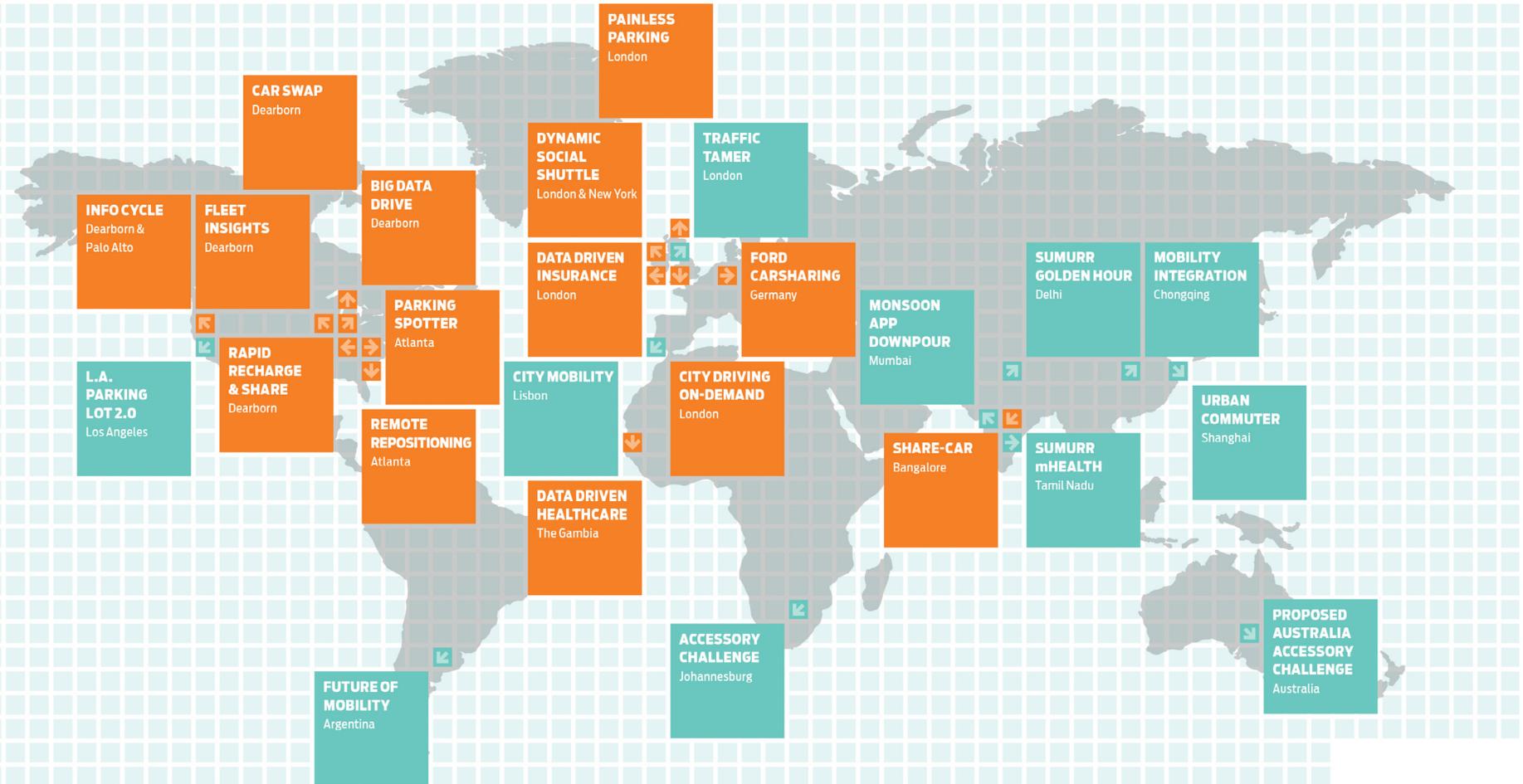
Ford Smart Mobility is a plan to use innovation to take Ford to the next level in connectivity, mobility and more. It begins with 25 mobility experiments and challenges across the globe to help change the way the world moves.

PAINLESS PARKING
London

CAR SWAP
Dearborn

DYNAMIC SOCIAL SHUTTLE
London & New York

TRAFFIC TAMER
London

BIG DATA DRIVE
Dearborn

INFO CYCLE
Dearborn & Palo Alto

FLEET INSIGHTS
Dearborn

DATA DRIVEN INSURANCE
London

FORD CARSHARING
Germany

SUMURR GOLDEN HOUR
Delhi

MOBILITY INTEGRATION
Chongqing

PARKING SPOTTER
Atlanta

MONSOON APP DOWNPOUR
Mumbai

L.A. PARKING LOT 2.0
Los Angeles

RAPID RECHARGE & SHARE
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CITY MOBILITY
Lisbon

CITY DRIVING ON-DEMAND
London

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SHARE-CAR
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Tamil Nadu

DATA DRIVEN HEALTHCARE
The Gambia

PROPOSED AUSTRALIA ACCESSORY CHALLENGE
Australia

ACCESSORY CHALLENGE
Johannesburg

FUTURE OF MOBILITY
Argentina

■ Experiments
■ Innovate Mobility Challenge Series

Ford
Go Further

CITY DRIVING ON-DEMAND

While there are many car-sharing services based on the reservation model, the focus of this experiment is on-demand use. Researchers are exploring how to optimize the service, such as offering pay-by-minute and enabling one-way trips across the city. A fleet of Ford Focus Electric vehicles and Ford Fiestas with EcoBoost powertrains is located across London. Users can register, get directions to the nearest service location, reserve a vehicle and pay – all through a mobile app. The London service targets a better customer experience and improved operational efficiency compared to existing car-sharing models. Car-sharing through the use of zero and low-emissions vehicles can reduce congestion and pollution.

Cars located at hubs and on street for one-way or return trips.

Charged by the minute; congestion charge, fuel and insurance included.

HOTEL

▶ A network of Ford-owned electric and EcoBoost-powered vehicles positioned around London.

▶ Easier, quicker and more flexible than car club alternatives.

The Experiment
Ford car-sharing on-demand in London targets a better customer experience and improved operational efficiency compared to existing car-sharing models.

London

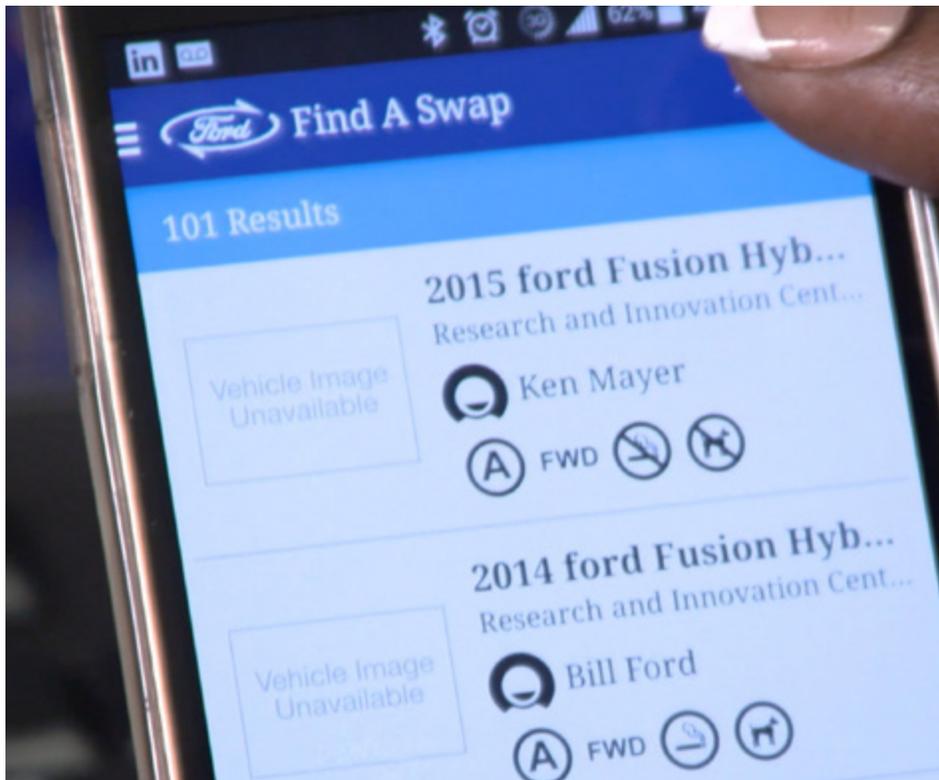## GOALS

Sustainability

New Revenue Streams

New Customers

Ford

FORD SMART MOBILITY

CAR SWAP

The car you own may not fit all of your needs all of the time, such as when you need to haul landscaping material or move a child to college. Car Swap is an experiment using Ford-owned fleet vehicles. Participating Ford employees use a mobile app that allows them to search for a vehicle that meets their needs, and negotiate terms of the swap. The experiment will provide an in-depth understanding of how Ford can help make car swapping easier.

The Experiment

Ford launched a vehicle exchange program for its managers who lease company vehicles to study the dynamics of car-sharing among a closed group.

Dearborn

GOALS

Sustainability

Shared Assets

New Customers
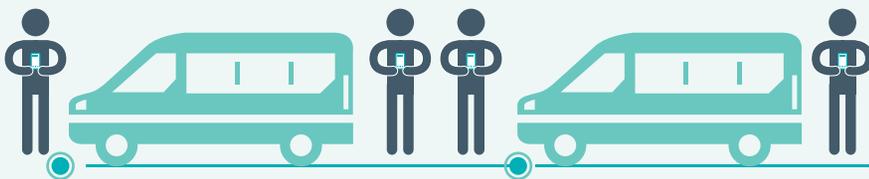
FORD **SMART MOBILITY**

DYNAMIC SOCIAL SHUTTLE

For city dwellers, Ford is investigating a shareable service of premium mini-buses offering point-to-point pick-up and drop-off on-demand. The goal is to better understand the social dynamics and routing requirements of shared transportation. Commuters enter a starting location and a destination into a smartphone app.
A shuttle that accommodates four to 10 passengers picks up and drops off commuters at convenient locations, taking the most suitable route for all passengers on board.

1 Registered travelers request point-to-point pick-up and drop-off on-demand via smart devices.

2 Premium mini-buses are dynamically routed to meet committed arrival times. Predictive demand and scheduling optimizes number of vehicles in circulation.

3 Service is optimized for speed of response and vehicle utilization as key drivers for customer satisfaction.

The Experiment
Ford researchers are testing a smartphone app that lets commuters order shuttle transportation for trips around town.

London

New York

GOALS

Sustainability

Vehicle Sales

Franchise Opportunities

FORD SMART MOBILITY

SHARE-CAR

In Bangalore, Ford is working with Zoomcar to test a sharing concept that would allow small groups, such as co-workers, apartment dwellers and families, to share a vehicle among multiple drivers. The approach helps consumers who can't afford a car but want the benefits of owning one. Researchers plan to develop a model for vehicle scheduling and managing ownership.

The Experiment
Create a model for easy vehicle sharing among small communities, such as office workers, apartment dwellers and families.

Bangalore
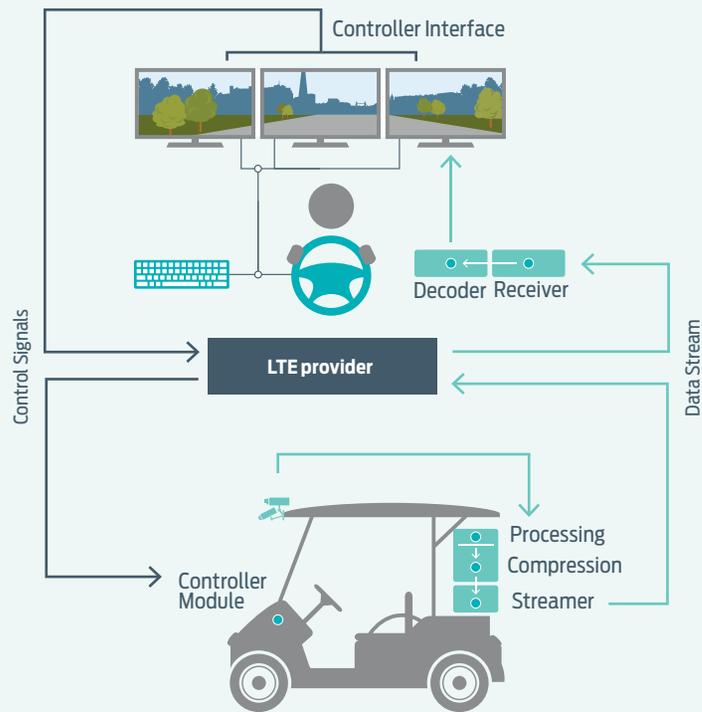
GOALS

Sustainability

New Revenue Streams

New Customers

FORD SMART MOBILITY

REMOTE REPOSITIONING

Using Georgia Tech-owned golf carts to prove out the technology, a person sitting in a remote location can access real-time video streamed over LTE to drive the carts. The outcome could be a more affordable and effective way to share or park vehicles using a remote "valet."

Controller Interface

Control Signals

Data Stream

Decoder Receiver

LTE provider

Processing
Compression
Streamer

Controller
Module

The Experiment
Ford is testing remote control repositioning technology using vehicle-mounted cameras and real-time streaming video.

Atlanta

GOALS

Sustainability

New Revenue Streams

New Customers

Ford

FORD SMART MOBILITY

FORD CARSHARING

Ford Carsharing is the first manufacturer-backed, nationwide car-sharing program incorporating dealerships. The collaboration recently expanded, and now has 39 participating dealers in 55 cities with more than 100 locations. Ford is working with Flinkster, a large car-sharing company with multiple partners. Ford Carsharing customers can use any Flinkster vehicle, and Flinkster's 270,000 customers can use the Ford fleet.

The Experiment
Ford and its dealers in Germany are offering car-sharing to more than 1,100 dealer customers.

Germany
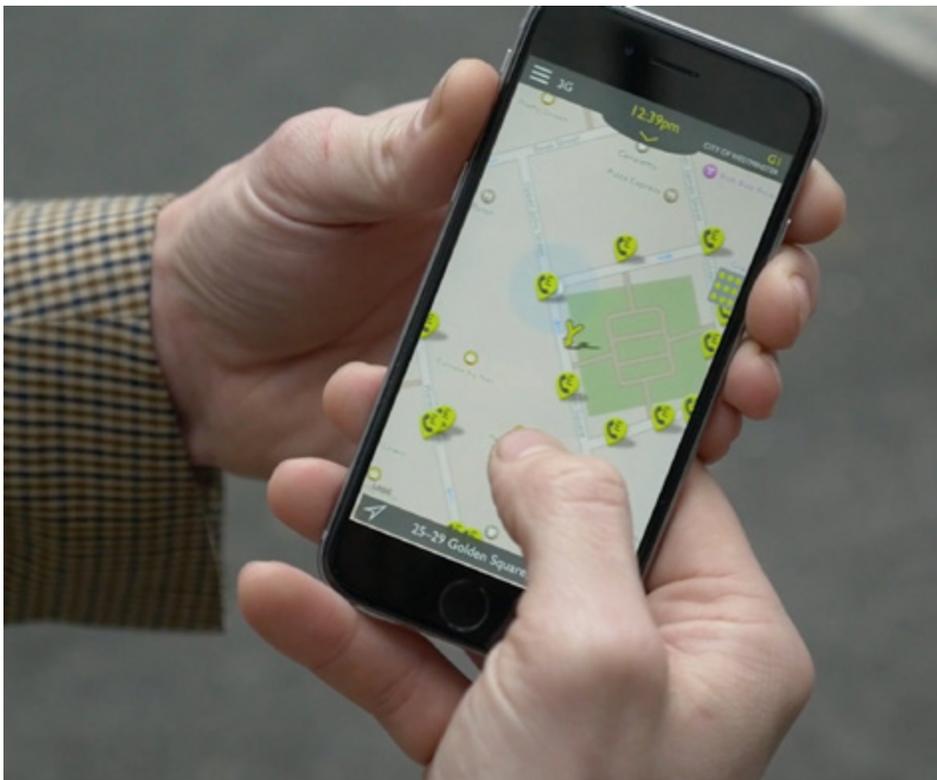
GOALS

Sustainability

New Revenue Streams

New Customers

FORD SMART MOBILITY

PAINLESS PARKING

In London, Ford is working to make parking easier for drivers and the city. Drivers voluntarily use plug-in devices that create live data on traffic and parking. The City Dash app tells users whether they are legally parked. If not, the app recommends the nearest open spot. It allows drivers to pay for parking meters by mobile phone, and identifies the closest available parking spots to the driver's final destination.

The Experiment

Participants will exchange parking permits for a plug-in device that generates parking and traffic data.
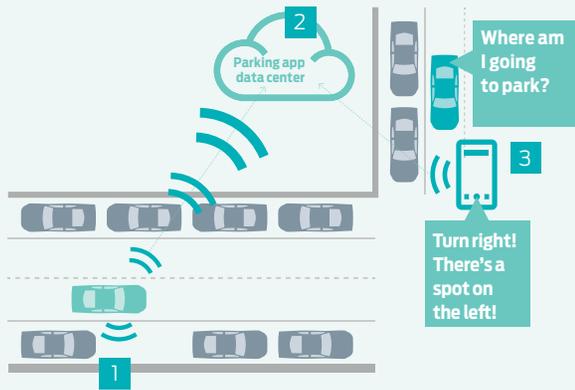
London

GOALS

Big Data

New Customers

New Revenue Opportunities

FORD SMART MOBILITY

PARKING SPOTTER

This experiment, conducted with Georgia Tech, leverages driver-assist sensors that most Ford vehicles already have, including sonar and radar, by putting them to work for everybody. The sensors search for open parking spaces while the driver looks for spots around the city, and share the information with a cloud database other drivers can access. The system makes it easier for a driver to locate an open spot, reserve it and navigate to the space. It also reduces fuel consumption and carbon dioxide emissions.

2 Parking app data center

Where am I going to park?

3

Turn right! There's a spot on the left!

1

1 Ford vehicles equipped with sensing technologies like radar, sonar and cameras can be employed to detect open spaces as drivers look for parking spots.

2 The open parking space information, along with GPS coordinates, is sent to a cloud data center to be shared with other drivers who are looking for available parking.

3 Other drivers will be alerted to available parking in the area of their request.

The Experiment
Existing vehicle sensors detect open parking spaces to help create a data source for parking-assist apps.

Atlanta

GOALS

Big Data

New Revenue Opportunities

Ford

FORD SMART MOBILITY

DATA DRIVEN INSURANCE

This experiment studies a driver's behavior over time in order to build a more personalized mobility profile. The goal is to create a driving behavior passport that can be used to calculate more exact insurance rates and allow drivers to take the information with them, from car to car or from insurance carrier to insurance carrier. Vehicle data might enable lower insurance rates for good drivers.

The Experiment
Ford will collect and analyze vehicle performance data to determine how it might enable lower insurance rates for good drivers.

London

GOALS

Big Data

New Customers

New Revenue Opportunities

Ford

FORD **SMART MOBILITY**

BIG DATA DRIVE

More than 200 Ford employees have volunteered to allow the company to collect driving data from in-vehicle sensors. By applying big data analytics, researchers can learn more about how people move and see patterns that can help them derive mobility solutions and improve products based on how drivers actually use their vehicles.

The Experiment

Ford is studying the driving habits of more than 200 employee volunteers, using data collected by in-vehicle sensors to determine ways to optimize vehicle performance.

Dearborn

GOALS

Big Data

Analytics Expertise

Data Monetization

FORD SMART MOBILITY

INFO CYCLE

Engineers are working to develop sensor kits based on Ford OpenXC that gather information from bicycles and other common forms of transportation in urban areas. The devices gather data such as wheel speed, acceleration and altitude, among other information. The data could provide insight into how alternate modes of transportation might be best positioned to serve future urban mobility needs.

OpenXC sensor box (frame-mounted)

Sensor magnet for pedal speed (pedal-mounted)

Magnetically operated switch wired to sensor box (frame-mounted)

Sensor magnet for pedal speed (wheel-mounted)

Magnetically operated switch wired to sensor box (frame-mounted)

Bluetooth

First, the electronic sensor box gathers sensor data, then the accompanying software libraries and application programming interface provide a way for developers to create custom applications and sensors.

The Experiment
Develop sensor kits for bicycles to gather information about how bikes are used today to meet existing urban transportation needs.

Palo Alto   Dearborn

GOALS

Big Data

FORD **SMART MOBILITY**

FLEET
INSIGHTS

Ford engineers are working with HP, one of the world's largest technology companies, to track the driving habits of 100 vehicles used nationwide by HP employees for work and personal commuting. The project will shed light on the purpose behind the trips, how drivers interact with external factors such as weather and traffic, and how to further personalize time behind the wheel. The data is gathered by devices plugged into the HP fleet vehicles and could lead to better products and services.

The Experiment
Collecting data about how drivers use their vehicles could lead to better products and services.

Dearborn

GOALS

Big Data

Customer Insights

Value-Add Services

FORD SMART MOBILITY

RAPID RECHARGE & SHARE

Electric vehicles would be beneficial as urban shared vehicles because they have lower operating costs and can be "refueled" in their parking space. But if a shared car is consistently being driven, it needs time to charge. Ford is investigating a partnership with a retail or fast-food business to develop a fast-charging infrastructure, making electric vehicles practical choices for car-sharing. The goal is to make electric vehicles easier to use, because when more people choose to drive one, everyone benefits from lower carbon emissions.

The Experiment

Develop a charging station that can quickly recharge electric vehicles, making them a practical choice for car-sharing.

Dearborn

GOALS

Sustainability

Customer Insights

FORD **SMART MOBILITY**

DATA DRIVEN HEALTHCARE

In West Africa, unpaved roads and a lack of reliable transportation prevent people from accessing healthcare. Ford is working with Riders for Health, an organization that manages and maintains fleets that deliver healthcare workers to patients who need help. Equipping Ford pickup trucks and SUVs with OpenXC technology will help better maintain the vehicles, as well as allow for vehicle data to be collected that could improve productivity. Ford is also using data collected to create maps of the region, where most mapping companies do not go.

The Experiment
Researchers will capture and analyze data from Ford vehicles carrying healthcare workers to remote areas of West Africa.

The Gambia

GOALS

Big Data

Sustainability

Health

Customer Insights

L.A. PARKING LOT 2.0

The Challenge

Downtown Los Angeles has more parking spaces per acre than any other city, and the number has grown by about 1,000 every year for more than a century, Los Angeles Magazine reported in 2011. Yet finding a place to park isn't getting any easier — especially during peak traffic times.

At the same time, the city has a big surplus of open parking spaces during off-hours, evenings, weekends and holidays.

The challenge was to develop an app that would enable parking in Los Angeles, and help the city repurpose outdoor surface parking lots for a greater variety of uses during off-peak times, or to enhance the aesthetic value of the lots.

Los Angeles

Grand Prize Winner
CROWD PARK

Crowd Park, a crowd-sourced parking app, offers drivers mobile payments and real-time alerts when the time on their spot is almost expired. Drivers can buy more time right from their phone, and are rewarded for finding cars with expired or unpaid parking. The app lets lot owners and cities rely on the power of crowds to enforce parking rules, rather than traditional, and costly, parking meters or meter maids.

LEARN ABOUT THE WINNER ▶ http://youtu.be/ymws1ewlLOM

MORE INFORMATION ▶ http://parking.challengepost.com/

Ford

FORD SMART MOBILITY

TRAFFIC TAMER

The Challenge

London's busy streets and limited parking space mean drivers have a hard time getting from place to place, and an even harder time finding somewhere to park when they arrive.

Ford asked developers to consider how technology could make it easier and more convenient for drivers in London to get where they need to go and find a place to park their car when they do arrive.

London

Grand Prize Winner
APPYPARKING

The AppyParking smartphone application makes finding a parking space anywhere in London easier so drivers can spend less time searching or idling in traffic. The app consolidates parking areas, restrictions and rules into one map. With a few taps of their finger, drivers can see where meters and lots are located, when parking is restricted, and, in some areas, even find available parking spaces. Users can also prepay for parking with the app.

LEARN ABOUT THE WINNER ▶ http://youtu.be/LUEBzanHK2E

MORE INFORMATION ▶ http://traffic.challengepost.com/

FORD **SMART MOBILITY**

CITY MOBILITY

The Challenge
On the narrow streets of Lisbon, congestion has worsened with population growth due to the mountains and hills surrounding the city — making the task of moving goods and services around even more difficult.

Ford asked developers to reimagine urban mobility by looking at how technology and data — big data, real-time data, data integrated into systems — could streamline the process of getting people and goods around efficiently, reducing congestion and saving time and money.

Lisbon

Grand Prize Winner
SMARTAXI
Smartaxi is a smartphone app that helps taxi drivers respond to demand for cars quickly and efficiently. The app crowd-sources location data from taxi drivers to produce heat maps showing where cabs are needed and where passengers are headed — saving taxi drivers wasted time and fuel looking for fares. By using predictive analysis, Smartaxi can also help direct taxi drivers to locations in the city where demand is likely to increase over the next 24 hours — ensuring drivers have more fares and customers can find a car when they need one.

LEARN ABOUT THE WINNER ▶ http://youtu.be/gQwQuOE8oFg

MORE INFORMATION ▶ http://city.challengepost.com/

FORD **SMART MOBILITY**

FUTURE OF MOBILITY

The Challenge
As traffic density increases in large cities, it becomes more difficult for people to get around efficiently. Challenge participants were asked to submit an innovative idea to reduce traffic jams that is also environmentally and economically sustainable.

Argentina

Grand Prize Winner
URBAN SHUTTLE
Urban Shuttle is a mass-transit vehicle that allows drivers of two-seat electric shuttle cars to commute into the city together on a bus-shaped car carrier — combining the efficiency of public transportation with the freedom of movement of a private car. By transporting cars into the city center as a group, traffic is reduced, and commuters still have the freedom to move about the city as necessary. Both the bus and cars are electrically powered, reducing emissions.

LEARN ABOUT THE WINNER ▶ http://youtu.be/YirMyH_357k

MORE INFORMATION ▶ http://www.futurodelamovilidad.com/futurodelamovilidad/

FORD **SMART MOBILITY**

ACCESSORY CHALLENGE

The Challenge

Commercial vehicles transport people, animals and goods wherever they are needed, but the vehicles' usefulness does not have to end when they're parked. Equipped with the right technology and accessories, commercial vehicles could be used as a base to bring critical services to people who have little or no access in urban and rural areas.

Ford challenged app developers to create accessories for Ford commercial vehicles and light-duty trucks that improve the delivery of needed services. The geographic focus of the challenge was in and around Johannesburg, South Africa. Ultimately, Ford is looking for solutions that could be applied in any urban area throughout Africa.

Johannesburg

Grand Prize Winner
SECONDARY POWER MANAGEMENT SYSTEM

Secondary Power Management System is an electrical system that would be constructed to be independent of a vehicle's primary electrical system. It would operate on its own battery and be charged separately from the primary electrical system, allowing the vehicle to remain in operation regardless of the power draw on the secondary system. The design would allow for providing power to many devices, such as lights, communications equipment, refrigeration units and computers.

LEARN ABOUT THE WINNER ▶ http://youtu.be/I6djOnGDE3M

MORE INFORMATION ▶ http://www.innocentive.com/ar/challenge/9933612
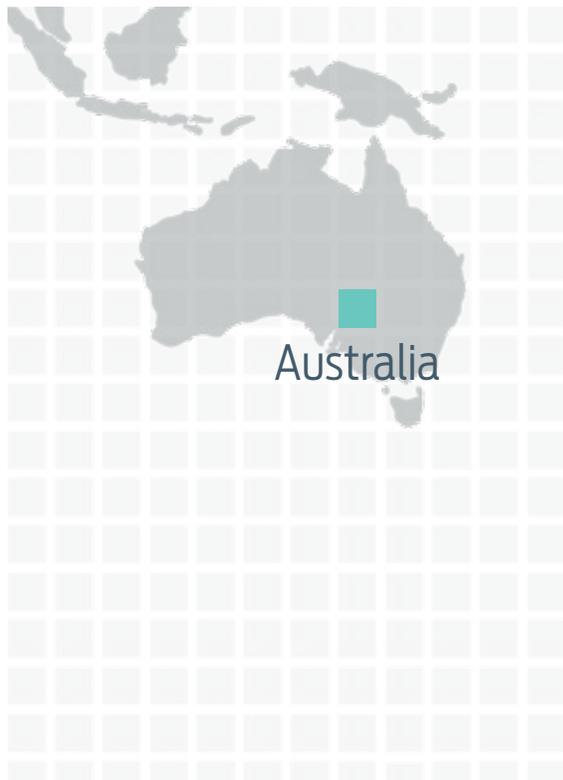
FORD **SMART MOBILITY**

PROPOSED AUSTRALIA ACCESSORY CHALLENGE

The Challenge

Ford Motor Company is defining a challenge in Australia, the country with the third-lowest population density in the world.

Drivers traveling in remote areas over rugged terrain must be prepared for emergency situations and conditions. Having limited access to help and resources is one of the challenges they face during their journey. A long drive in a desolate location may also lead to driver distraction and inattention.

Ford is asking innovators to invent a novel accessory or app that increases driver awareness in remote regions or over rugged terrain. The main goal is to enhance driver self-sufficiency in difficult situations, like electrical failure, hazardous weather and dangerous road conditions.

Australia

WINNER TO BE ANNOUNCED EARLY 2015.

Details to come.

FORD **SMART MOBILITY**

MONSOON APP DOWNPOUR

The Challenge

Mumbai is known for its monsoon rains in the middle of summer. The heavy rains last up to four months, and result in flooded roads and railways that create long delays for the 12 million residents of the area. People simply can't get around to do what they need to do.

Mumbai

Grand Prize Winner
MUMBAI MONSOON HELPER

The Mumbai Monsoon Helper app allows users to plan routes around the most water-soaked areas by providing current weather details, forecasts and maps. The information is gathered through crowd-sourcing. Planned enhancements for the app include navigation around flooded areas by prioritizing recently reported floods and areas of receding water. While the app can't stop the rain, it can help people deal with it.

LEARN ABOUT THE WINNER ▶ http://youtu.be/cgyu8yhfvgE

MORE INFORMATION ▶ http://monsoon.challengepost.com/

FORD **SMART MOBILITY**

SUMURR GOLDEN HOUR

The Challenge

Trauma patients have a better chance of survival if they receive care within 60 minutes of being injured – known as the Golden Hour.

Ford challenged developers to help improve outcomes for trauma victims of road accidents in Delhi, India – where nearly 30 percent of crashes were fatal in 2011. Ford wanted to help reduce the time it takes for victims to get to treatment or a trauma center, and to get more information about a victim's treatment needs to emergency officials within the Golden Hour.

The challenge is part of a Ford initiative – Sustainable Urban Mobility with Uncompromised Rural Reach, or SUMURR – that focuses on helping communities in developing nations.

Delhi

Grand Prize Winner
FLARE

Flare is designed to establish a volunteer community to help others in need, while authorities oversee operations. The app allows users to report an accident, or learn of one near them so they can volunteer to help. Users can easily post a photo, show their location on a map and send a message to report what happened, or view other reports to see if they can help.

LEARN ABOUT THE WINNER ▶ http://youtu.be/vQTm7zx4SUg

MORE INFORMATION ▶ http://goldenhour.challengepost.com/

Ford

FORD **SMART MOBILITY**
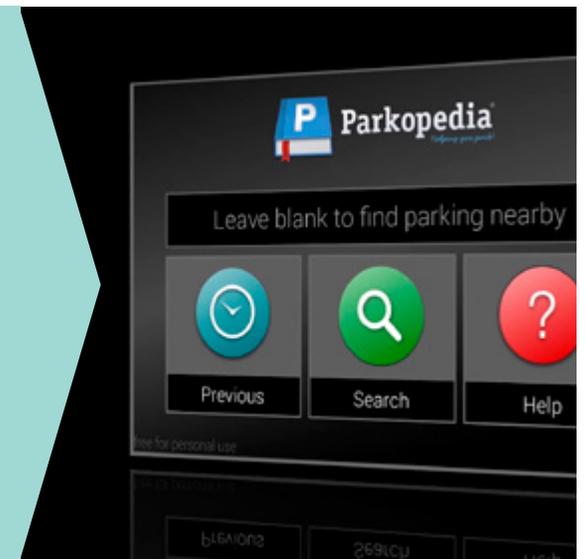
URBAN COMMUTER

The Challenge

Ford asked developers to create software that would improve quality of life for urban and long-range commuters in congested cities such as Shanghai. Finding reasonably priced parking near favorite destinations, for example, has become more difficult as downtown areas grow.

Shanghai

Grand Prize Winner
PARKOPEDIA

Parkopedia developed an online service that shows users available parking based on their current location or destination, as well as current pricing. Users can see the address and pictures of garages and lots in a preferred area. They can post reviews of the location and comment on access to public transportation, local sights, nighttime lighting, the safety of the area and more.

P Parkopedia

Leave blank to find parking nearby

Previous   Search   Help

LEARN ABOUT THE WINNER ▶ http://youtu.be/nttDcR7FCsE

MORE INFORMATION ▶ http://commuter.challengepost.com/

Ford

FORD **SMART MOBILITY**

MOBILITY INTEGRATION

The Challenge
Chongqing, China, is challenged by drastic geographical changes and extreme congestion, requiring multiple modes of transportation that struggle to move people into, out of and through the city quickly and efficiently.
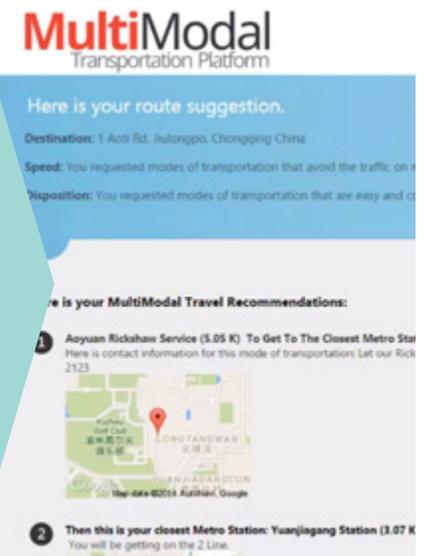
Ford asked app developers to come up with a way to make commuting easier by connecting multiple transportation options on a single trip.

Chongqing

Grand Prize Winner
MULTIMODAL TRANSPORTATION PLATFORM
MultiModal Transportation Platform is an app that combines city-based mass-transit options, including buses and trains, with localized transportation, including bicycle rentals and rickshaws, to get people where they want to go while saving fuel and reducing congestion. The app finds high-traffic areas and alternative routes; nearby transportation options with maps; and provides contact information for services, pricing, line changes for buses, subways, railways and more.

MultiModal Transportation Platform

Here is your route suggestion.

Destination: 1 Aoti Rd, Jiulongpo, Chongqing China

Speed: You requested modes of transportation that avoid the traffic on

Disposition: You requested modes of transportation that are easy and c

Here is your MultiModal Travel Recommendations:

1. Aoyuan Rickshaw Service (5.05 K) To Get To The Closest Metro Sta
Here is contact information for this mode of transportation: Let our Rick
2123

2. Then this is your closest Metro Station: Yuanjiagang Station (3.07 K
You will be getting on the 2 Line.

MORE INFORMATION ▶ http://mobilityintegration.challengepost.com/

FORD **SMART MOBILITY**

SUMURR
mHEALTH

The Challenge

In many parts of the world, there is a divide in the availability of healthcare between where people live — cities and rural areas. In India, for example, 72 percent of the population lives in rural areas, yet 75 percent of healthcare services are in urban centers.

The SUMURR mHealth Challenge called on app developers to find a way to help those living in rural Tamil Nadu receive much-needed healthcare, taking advantage of mobile technology and improved vehicle access in rural areas.

SUMURR, for Sustainable Urban Mobility with Uncompromised Rural Reach, is a Ford framework for addressing critical social needs in developing countries.

Tamil Nadu

Grand Prize Winner
SIMPRINTS SOLUTIONS FOR COMMUNITY HEALTH WORKERS

In Tamil Nadu, many births are never recorded and many people do not have official forms of identification. Healthcare relies heavily on community health workers making home visits. SimPrints Solutions developed software that allows these health workers to use a pocket-sized fingerprint scanner to instantly identify a patient and link to his or her health records.

LEARN ABOUT THE WINNER ▶ http://youtu.be/rOse3SuE6q4

MORE INFORMATION ▶ http://mhealth.challengepost.com/

FORD **SMART MOBILITY**