Acacus Case Study

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Technology becomes powerful when it creates value for organizations and individuals—today we are seeing the promise of intelligent cloud and intelligent edge becoming real with innovative solutions that provide valuable impact. Microsoft partners like Acacus Technologies are leading the way. Acacus is redefining future mobility technology by integrating IoT, machine learning, and cognitive services to drive value for its customers.

Acacus’ solutions specialize in mobility, beginning with fleet management technologies like location tracking, fleet optimization, vehicle diagnostics, and autonomous vehicles. Since launching in 2013, Acacus’ technology for the logistics and transportation space has already implemented by leading customers like Etihad Airways, Dubai Roads and Transport Authority (RTA), and major delivery providers. Acacus expanded its solutions by developing cutting edge driver and passenger safety solutions. Its machine-learning-based driver behavior and driver distraction monitoring technologies have enabled Dubai Taxi to install in-vehicle driver cameras and sensory devices to capture eye movement, head tilt, and driving behavior in real time. And Acacus hasn’t stopped there. Today Acacus is working with city governments and Dubai Police to bring autonomous vehicle technology to Dubai roads by 2020, including driverless police patrol vehicles.

Acacus innovates with cutting edge technologies while focusing on providing real outcomes for its customers by creating business efficiency, optimizing resources, and reducing costs. Multinational companies, governments, and global airlines are using Acacus solutions to drive their operational performance and business growth.

Fleet optimization and management provides major cost savings

For a major delivery provider in the United Arab Emirates, the costs associated with managing a large fleet of vehicles were inhibiting its ability to compete against other fleets seeking to win market share. The struggle was a matter of logistical efficiency; fleet planning was based on historical trends and slow to respond to fluctuating demand—in large part because the delivery provider lacked the ability to adequately gauge real-time vehicle utilization. The delivery provider partnered with Acacus to implement a clever solution with two key components. First, a research-based optimization engine uses mathematical combinatorics to monitor fleet data and allocate vehicles more efficiently. This tool factors in traffic, vehicle types, cargo volume, pickup locations, and fuel range to predict how many vehicles are required to account for demand fluctuations. Second, a disruption engine determines if a fleet vehicle will be critically late for a scheduled trip and allocates alternative vehicles as required, helping eliminate costly service disruptions. By eliminating inefficiencies in route-planning and cutting down on service disruptions, the delivery provider saw an ability to reduce the required number of vehicles in its operational fleet, resulting in significant monthly savings.

Acacus goes beyond vehicle management by also offering crew management technologies. For example, by using Acacus’ crew management system, Etihad Airways was able to optimize crew check-in and briefing.
processes for busy pilots and cabin crew, allowing crews to arrive at the airport much later while saving the airline costs.

Harnessing the power of AI and intelligent edge to improve driver and passenger safety

Pursuing greater efficiency for its own fleet, Dubai Taxi Corporation set out to improve driver and passenger safety and gain greater insight into fleet management. Acacus embarked on a proof of concept with Dubai Taxi Corporation that sought to reduce accidents caused by driver fatigue, ensure all trips are authorized, and standardize driving practices across a fleet of drivers from varying driving backgrounds. The bespoke solution leverages Acacus’ Lynx Vision technology, with a focus on complex event alerting, remote data management, and video analytics and recording. The proof of concept involved outfitting trial vehicles with numerous HD-quality cameras that store data locally and upload to an Azure-hosted cloud repository as cars are being washed to ensure operational costs are minimized. This camera technology dynamically detects driver distraction, vehicle proximity, numbers of passengers, and lane departure. The Lynx Vision technology then leverages real-time camera analytics in addition to location, trip metrics, driver revenue targets, and more to power an advanced configurable engine for event alerts.

All this precision safety and logistical data gives Dubai Taxi the capacity to change how taxi fleets are managed in Dubai. And this proof of concept has even broader implications going forward – enhancements to in-vehicle safety and deep learning analytics are the first steps toward the next generation of driverless public transportation for city residents.

“Our work with Dubai Taxi showcases our ability to provide innovative solutions that focus on the exact needs of an industry while transforming the way that they do business using machine learning and AI.”

– Talal Ben Halim, Managing Director, Acacus

Bringing autonomous mobility to Dubai roads by 2020

Acacus is now launching the next stage of its transportation offering, a driverless delivery solution which is planned to be on roads in Dubai by 2020. The platform for the driverless vehicles will be developed by Acacus and designed to operate on the roads of Dubai. The vehicles will be low cost and targeted towards logistics and delivery service providers that require efficient operations at a low operational cost.

Dubai has set ambitious goals with a strong autonomous mobility strategy that expected to generate AED22 billion per year, reduce mobility spending by 44 percent, and curb demand for parking by 50 percent. Acacus is playing an important role in Dubai’s work to realize this goal, including providing guidance to Dubai’s Roads and Transport Authority and Dubai Taxi Corporation on driverless vehicle
regulations. The first driverless vehicle parking trial of the platform was completed in October 2017.

“At Acacus we are proud to contribute in making Dubai the global hub of AI and machine learning to the transportation space and be instrumental in driving operational efficiency, optimizing resources, and reducing costs for our clients.”
— Rashid Ahmed Bin Rasheed, Chairman, Acacus

Talal Ben Halim, managing director and partner of the company, explains, “Microsoft supports Acacus as a global technology innovator, and empowers us to implement new ideas faster.”

“Our partnership with Microsoft is crucial to our success as a growing company. Microsoft supports our innovation with expertise from its engineering and commercial teams while bringing us the best technical excellence with leading AI and cloud products.”
— Talal Ben Halim, Managing Director, Acacus

The reality of autonomous mobility was enticing to Dubai Police General Command, who recently struck an agreement with Acacus to add driverless capabilities to its fleet of patrol vehicles by 2020. The first phase of the program will see the patrol vehicles outfitted with cameras and video analytics, with advanced driverless technology and object detection and tracking coming online in subsequent phases.

Deep partnership with Microsoft

Acatus’ excellence has been quickly recognized in the tech world. It was ranked among the Top 100 Start-Ups by Forbes Middle East in 2017 and won the grand prize in the ‘Best Global Startup’ competition among 500+ companies at GITEX 2016. Microsoft recognizes this excellent as well and has invested in its partnership with Acacus.