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Qatar's autonomous mobility bet

From pilots to everyday rides

Fully autonomous vehicles (FAVs) have been in the works for decades, but they are now on the cusp of widespread adoption, thanks to technological advancements and successful pilots in cities around the world.

The vision of FAVs delivering passengers, safely and affordably, to locations around cities has stirred not just imaginations but also investment: the market for FAVs is projected to reach $18.5 billion by 2035 in the GCC alone.

The next decade will see a full-on sprint among countries seeking to capture their share. In this race, Qatar is uniquely positioned to excel. It has an enviable combination of ambition, capital, and an enabling environment that could place the country in the lead of FAV mobility's next adoption curve. If successful, Qatar could secure up to $1 billion in autonomous mobility value by 2035.

Qatar's primarily urban population and investment capacity—it has the highest GDP per capita in the region—make it an ideal test bed. As important, the Qatari Ministry of Transport recently published a detailed plan for a well-coordinated autonomous mobility ecosystem. This strategy encompasses "the development, testing, licensing, procurement, operation, reporting, and regulation of autonomous vehicles for use in public transportation."

These elements have the potential to turn early wins in smart, electrified, and automated transport into a globally visible, people-first autonomous mobility system that serves as an example to other aspiring countries.

This outcome depends on Qatar's skill at guiding technologies from initial pilots to commercial operations to FAV mobility at scale. A robust foundation—from driverless metro operations and an electrified bus backbone to national 5G coverage—could accelerate these efforts.

Qatar also has existing corridors that could provide a ready-made setting for FAV pilots: dense, mixed-use areas favored by tourists for robo-taxis, large campuses and hospitals for robo-shuttles, and high-capacity transport feeder routes for robo-buses. Meanwhile, passenger drones could serve airport and water-adjacent routes.

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Despite Qatar's impressive advantages, its leadership in autonomous mobility is by no means a foregone conclusion. Progress will require stakeholders to methodically execute a series of steps.

1 First, the government should establish an overarching FAV program office to coordinate agencies, operators, and tech partners over the next decade. This office could also direct funding to move quickly from promising pilots to commercial scale.

2 To be successful, pilots will need to demonstrate their effectiveness at addressing the real-world needs of the mobility system. Key performance indicators such as overall safety, wait times, utilization, and cost per trip can reinforce the value of FAVs. Communicating these initial results to the public and offering introductory pricing can help to build trust and volume among riders.

To give FAV operators the needed clarity and assurance, Qatar should launch a national regulatory sandbox and detailed framework for liability and insurance to decrease the risk of commercial operations. Stakeholders will also need to proactively define the target operating model—licensing fleets versus procuring vehicles with public funds—and empower the FAV program office to orchestrate the ecosystem.

3 Last, establishing local operations will require Qatar to build a robo-mobility services hub, which would accommodate 24/7 command centers, maintenance, the ongoing calibration of advanced driver assistance systems (ADAS), and data and AI services. Qatar could also expand on the existing free zones to attract the presence and investments of additional top foreign companies, especially tech players and FAV suppliers.

Together, these components could provide the requisite direction, guardrails, and support to launch and sustain a successful robo-mobility effort.

So how to begin? The Qatari government's leadership and engagement will be crucial to propel the program forward.

A detailed "From Pilot to Product" road map could anchor actions in the Qatar National Vision 2030 themes of accessibility, sustainability, and innovation. It could also guide the buildout of critical enabling elements, such as corridors equipped with V2X technologies (which allow vehicles to communicate with one another), control centers with teleoperations to allow for human intervention, and FAV hubs for charging, cleaning, and calibration. Defining common technology standards will facilitate collaboration among participating companies.

Designating dedicated lanes, with priority access for FAVs, could promote reliability and volume. Likewise, selecting leading technology and service providers as partners will jump-start progress.

The necessary focus on technology and machines can be aligned to a clear overarching goal of giving the population at large access to affordable mobility options. Prioritizing tangible benefits for citizens and visitors—for example, a new FAV shuttle link to a metro mobility node and discounted AV rides during peak tourism months—can ensure gains remain aligned with key national milestones.

The next several years will bring exciting breakthroughs in the implementation of FAVs. Qatar has taken steps to lay the groundwork for a comprehensive robo-mobility ecosystem. It now can ramp-up its efforts toward the end goal.

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