Mahindra REVA case study

Vodafone Global M2M
Making the connected car a reality

Vodafone
Power to you
Mahindra REVA makes the connected car a reality with M2M connectivity from Vodafone

Since its foundation in 1994, electric automotive specialist Mahindra REVA – a part of the $15.9 billion Mahindra Group based in India – has grown to become a world leading pioneer in electric vehicle technologies and manufacturing.

Recently the company was named by ‘Fast Company’ magazine as being in the Top 50 Most Innovative Companies in the world. Today the company licenses out its electric vehicle technologies, helps to develop zero-emissions mobility solutions and has a large deployed fleet of electric cars across 24 countries.
Enabling customer support for its electric vehicles spread over the world can be a costly and challenging task for a niche player in the automotive market. Telematics enabled remote diagnostics promises to reduce the cost of fault-diagnostics, improve vehicle uptime for customers and also enable customers to ‘stay connected’ with the car, and through that with the OEM brand. Mahindra REVA has been developing its telematics platform with a strategic focus to address these needs.

“Connected Cars’ are at the frontier of innovation in the car industry – they bring automotive, infotainment and communication technologies together to provide a great new experience for customers,” says Gopal, General Manager - Mobility Solutions and Business Development for Mahindra REVA.
This is the first and only project of its kind in India where a telecom service provider and an automotive manufacturer have joined hands to bring a major advance in technology to market.

Kartik Gopal, General Manager Mobility Solutions and Business Development, Mahindra REVA Electric Vehicles

The need

Having set out its strategy, there was still a lot of work for Mahindra REVA to do. Even in an era of ubiquitous communication, cars have so far remained relatively untouched by the rapid advancements in communication and information technologies. Delivering the data reliably, securely and with the desired performance over mobile networks under diverse conditions and also managing the connectivity of large numbers of vehicles as volumes grow required a partner with expertise in M2M communications.

“M2M is a really exciting area right now,” says Gopal. “It has the ability to transform cars into intelligent devices that exchange real-time information and open up a range of groundbreaking new services for customers – especially the ability to monitor and control the car functions remotely.”

So when Gopal and his team started their search for an M2M partner they had three main criteria. Firstly, they wanted to find a company that understood the strategy and vision for M2M and the possibilities that it can open up.

Secondly, they wanted to make sure that the partner could provide reliable connections across India. “There is little point introducing this kind of concept if it’s going to be let down by connectivity,” says Gopal.

Lastly, they also preferred a M2M partner with a global footprint to ease the launch of the car in other international markets.
The solution

After researching the market, Mahindra REVA quickly realised that Vodafone would be the perfect partner for its new venture. According to Gopal, it was an easy decision to make.

“Vodafone was the only network provider we spoke to that demonstrated that it had a long term vision and roadmap for M2M,” he confirms. “Vodafone has its own dedicated M2M service platform in India – something which is unique – and because Vodafone is such a strong global operator we could also see that we were going to get both the domestic and international network coverage that we wanted.”

After this selection process Vodafone advanced the project almost from its outset.

“We started working with Vodafone in 2011, two years before the official launch of the car,” Gopal explains. “Vodafone supplied us with the connections we needed for our tests, effectively linking the cars to a range of applications that we were in the process of developing.”

At this point, there was a big impetus to find out whether the service was going to be robust and reliable.

“We worked very closely with Vodafone throughout the development period, particularly when it came to testing the connectivity and the overall performance of the network,” says Gopal. “For example, we had some initial issues with connections in a factory in a remote area. Because Vodafone owns its own network, and has its own in-house team of M2M specialists, the problem was fixed straight away.

“Overall it was a great example of collaborative working between two companies with a similar vision of global innovation,” Gopal continues. “Indeed, this is the first and only project of its kind in India where a telecom service provider and an automotive manufacturer have joined hands to bring a major advance in technology to market.”
The impact

Mahindra REVA’s connected car – the Mahindra e2o – first launched in India in March 2013. There are already 350 e2o’s on the road, all connected to a range of applications and services via the Vodafone network. This means owners are able to access various features and functions of their vehicle remotely using a smartphone app or from a dedicated webpage. By doing so they can check the state of charge in the battery of their car, control its air-conditioning, lock or unlock doors, find the nearest charging station and more. The e2o also provides the owner with automatic SMS text alerts on a variety of safety and security checks, such as a door left unlocked, or a parking brake not applied.

In addition, Mahindra REVA’s service team is also using the remote connectivity to track potential maintenance issues in real time and proactively warn drivers when they may need to book in for repairs or a service.

According to Gopal, this is all part of a package that is really pleasing customers. “The reaction we’ve had from people that have bought or driven the vehicles so far has been very positive,” says Gopal. “Many of the features we have introduced are ‘firsts’ for the Indian market – such as the remote diagnostics and a charging station locator. They are proving to be a real hit with technology-savvy customers that want their car to fit with their connected and busy lifestyle.”

Looking to the future

Over the next few years Mahindra REVA forecasts that sales of the e2o will reach over 30,000. In fact it has built a new factory in Bangalore that’s capable of producing 30,000 of the cars a year.

This faith in the e2o’s future is partly because of the success of the initial launch in India, but also because the company sees great potential for expansion overseas.

“We’ve already had great success over the past decade, particularly in places like Europe where there is a very strong demand for solutions that address carbon emissions and the need for greener cities,” says Gopal. “With this product we now have the potential to penetrate even further, offering customers the zero-emission solutions they crave, but with a lot of added features that completely revolutionise the driver experience.”

According to Gopal, this plan for international expansion is just one more reason why Mahindra REVA’s partnership with Vodafone is proving to be such a continuing strategic success.

“We knew from the outset that this was going to be a global product, so we needed a global partner that would help us to get this right,” Gopal says. “With Vodafone we can roll out this service to other territories using one network, one management platform and one provider. It gives us every confidence for the future, and helps us to keep one step ahead of our competitors.”
Business need:
Bangalore-based Mahindra REVA is a pioneer of electric vehicle technologies and one of the most experienced electric vehicle manufacturers in the world. After coming up with the concept for a new breed of ‘connected’ car – enabling owners and service teams to remotely access various features and functions of their vehicle – it needed to find a reliable way to deliver data connectivity to vehicles across India and around the world.

Solution:
Vodafone has helped Mahindra REVA make its vision a reality – providing secure managed connectivity between the cars via its Machine-to-Machine network.

Business benefits:
- Reliable M2M connectivity enables drivers to access various features of their vehicle remotely using a smartphone app or a dedicated webpage
- Owners can check the state of charge in the battery of their car, control its air-conditioning, lock or unlock doors, find the nearest charging station and use many other innovative features
- Mahindra REVA’s connected car – the e2o – also automatically provides SMS alerts when a door is left unlocked, a parking brake is not applied or a charging point fault
- In addition Mahindra REVA service teams use the M2M platform to monitor a vehicle’s condition and proactively warn drivers when issues are likely to arise
- Overall the partnership has helped Mahindra REVA to move one step ahead of its competition, while Vodafone’s global footprint will provide support for international expansion plans

Executive summary
Overall it was a great example of collaborative working between two companies with a similar vision of global innovation.

Kartik Gopal, General Manager Mobility Solutions and Business Development, Mahindra REVA Electric Vehicles