

RE-IMAGINING RICKSHAWS: LESSONS FROM THE RICKSHAW RISING CHALLENGE

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INTRODUCTION

In 2014, EMBARQ India and Shell Foundation mentored three early-stage businesses to deliver large-scale improvements in the auto-rickshaw ecosystems of Pune, Bangalore, and Chennai. Chosen through a competitive process – the Rickshaw Rising Challenge – these businesses stood out for their enterprise-led solutions to improve service quality, driver income, and emissions of this iconic but unorganized mode of transport. Prior to the Rickshaw Rising Challenge, EMBARQ India had worked extensively to bring research, regulatory reform, and innovation to the sector. In 2010, we published Role of the Auto-Rickshaw in Sustainable Urban Transport which provided a comprehensive review of the sector and made reform recommendations to address service, economic, and environmental issues. In addition, city specific case studies for Mumbai, Rajkot, Surat, Pune, and Jaipur were published. In 2012, our work included supporting the Rajkot Municipal Corporation to launch a fleet auto-rickshaw service and the Tamil Nadu Government to regulate auto-rickshaw fares in Chennai in 2013. EMBARQ India also runs a leading dialogue platform about auto-rickshaws (and other mobility innovations) in India.

This report compiles the lessons learnt by the EMBARQ India team while mentoring the winners of the Rickshaw Rising Challenge. It also includes learnings from a mentoring engagement with three senior FedEx consultants. The objective of Reimagining Rickshaws is to provide insight to autorickshaw startups that are mushrooming across the country in smaller towns and cities. The report highlights the pilots run by our mentee companies, the successes and failures of these pilots, and the eventual strategies that emerged from this learning process. As such, the primary audience for this report is startup entrepreneurs; however, secondary stakeholders such as investors and regulators focused on new mobility solutions for Indian cities may find the lessons relevant.

BACKGROUND

Among the myriad of vehicles on Indian streets, the iconic auto-rickshaw stands out as a convenient and affordable mobility option for urban populations. Cheaper than taxis, the auto-rickshaw fulfills the need for last-mile connectivity to and from public transport. In areas with poor public transport, auto-rickshaws are often the only alternative for longer end-to-end trips. Their importance cannot be overstated, especially for middle-class and low-income populations. A report by EMBARQ India finds that auto-rickshaws can account for up to 20% of motorized trips and are a source of income for tens of thousands of drivers in large Indian cities. Despite their core role, the sector is notorious for poor customer service, poor environmental standards, and poor earnings for drivers (Mani, Pai and Aggarwal 2012).

Run primarily by renter-drivers¹, the auto-rickshaw sector is highly fragmented and faces three systemic issues. First, low visibility of demand and supply decreases the reliability of the system. Drivers are unsure of finding a steady stream of rides through the day and become wary of travelling to less popular areas. For customers, finding a rickshaw that will go to their intended destination becomes a matter of luck and negotiation.

Second, outdated fare structures and onerous license-permit systems have led to the creation of black markets. In many cities, auto-rickshaw drivers refuse to go by meter which angers millions that depend on this mode on a daily basis. Often auto-

¹ For example in Chennai, 71% of auto-rickshaws are driven by renter-drivers (Garg, et al. 2010) ² Based on conversations with the winners of the Rickshaw Rising Challenge

rickshaws are perceived as a "curse" (Khajane 2011) and a "nuisance" (Burke 2010) to be removed from the streets. On the flip side, auto-rickshaw drivers incur heavy costs to procure permits. In cities where the number of permits are capped, the cost of renting a permit for 5 – 10 years on the black market can be 500 to 600 times the legal fee (Shlaes and Mani 2013).

Third, there has been little financial and technological innovation in the auto-rickshaw ecosystem. The majority of drivers pay high monthly, weekly, and even daily rates to rent a vehicle² as they are unable to access formal loans to support the purchase of an auto-rickshaw. And while large cities have mandated the shift from 2-stroke to 4-stroke engines, from analog to digital meters, and from diesel to CNG engines, the burden to finance these upgrades often falls on drivers. These pressures further increase inefficiencies in the ecosystem.

In this context, there was an urgent need for enterprise-led solutions to leverage technology and other innovative systems and deliver targeted, vital improvements to the sector at scale.

PROJECT DESCRIPTION

The Rickshaw Rising Challenge was launched by EMBARQ India with the support of Shell Foundation to support earlystage businesses with the potential to revolutionize the auto-rickshaw sector. The focus was on enterprise-led solutions to enable:

- 1. Passengers finding a ride easily that would go by meter
- 2. Drivers earning more and improving their lifestyle
- 3. Vehicles being used more efficiently to their full capacity

The Challenge offered businesses a chance to receive up to USD100,000 and mentoring support. We received 46 applications from 13 cities in India of which 8 companies were shortlisted to pitch.



The three winners of the Challenge were Autowale of Pune, AutoRaja from Chennai, and Three Wheels United (TWU) from Bangalore.

Autowale and AutoRaja operate book / hail autorickshaw services. They enable passengers to prebook rides or e-hail them in real-time. Passengers are assured rides by the meter and drivers experience a significant increase in earnings. TWU facilitates loans to auto-rickshaw drivers to help them own their vehicle. The company also enables book / hail

ride services to bring in additional revenue for drivers enabling them to pay off their loan faster.

To learn more about their scale up journeys, visit http://wricitieshub.org/videos/bringing-rickshawssmartphone-age.

The following sections review the lessons learnt about building a book / hail auto-rickshaw services business from our interactions with the winners of the Challenge.

CORE LESSONS

While each winner of the Rickshaw Rising Challenge had unique experiences and learnings corresponding to their city and business model, there were also common lessons learnt. The following sections summarize the lessons learnt in three key areas:

- 1. Driver-side lessons
- 2. Passenger-side lessons
- 3. Operational lessons

1. DRIVER-SIDE LESSONS

Auto-rickshaws are primarily run by renter-drivers who rent a vehicle on a monthly, weekly, even daily basis or by individual owner-operators. The vast majority of rides are hailed on the street. While average daily earnings differ across the country, drivers in large cities earn INR800-1500 a day of which they pay INR200-250 in daily rent for their vehicle¹. Poor earnings often result in drivers refusing rides for which they would have to bear the cost of dead-miles².

In addition, their families often lack documentation which hinders access to formalized financial services and government support programs. Few drivers have passed 8th and 9th standards of education and many are the sole earning members of large families. Book / hail auto-rickshaw businesses need to address these factors in their scale-up strategy.

¹ Based on conversations with Autowale, AutoRaja, and TWU. ² Dead-miles refers to the distance travelled by a vehicle without passengers



During our engagement with the Rickshaw Rising winners, three aspects of engaging with drivers were highlighted:

- 1. Approaching drivers
- 2. Engaging drivers
- 3. Retaining drivers

The following pages depict the range of strategies implemented by the Rickshaw Rising Challenge winners across these three areas in greater detail.

APPROACHING DRIVERS

Book and hail auto-rickshaw businesses need to have a large number of drivers on their platform in order to fulfill customer ride requests. However, auto-rickshaw drivers are a highly fragmented group. As such, it is challenging to approach drivers at scale in new markets. The winners of the Rickshaw Rising Challenge piloted a variety of strategies in Pune, Bangalore, and Chennai. A key take away included recognizing that autorickshaw drivers take pride in being entrepreneurs and may perceive offers as short-term gimmicks that are designed to extract money out of them.

Recruitment at gas stations, auto-stands, RTO office

- Success at gas stations, but have to convince all drivers present as they make decisions as a group
- Better success at recruiting drivers when auto stand "leader" is convinced
- Limited success at RTOs as drivers are stressed

Recruitment by third parties e.g. NGOs and transgendered groups

- Success with NGOs that work with driver families, but challenging to scale quickly given NGO model
- Transgendered groups generated large database, however most were unqualified, uninterested



drivers

- not successful
- Better success when follow up is done in person
- Challenging as not accepted by male drivers
- Repercussions for standing at predominantly male dominated stands includes threats, fights, and calling the police

Getting existing drivers to refer new

Recruiting at free health check-up camps

Successful as referred drivers are

• Challenging to scale unless incentive

drivers

more reliable

• Mixed success – drivers see such camps as a gimmick which will eventually get them to spend money



Recruiting women

Engaging the entire family to recruit drivers

- Brings drivers to the platform and builds loyalty if the platform is also supporting the family's education and health
- Challenging to scale this model

ENGAGING DRIVERS



Commission model

• For each ride given to the driver, the driver pays a commission e.g. 10% of the ride fare



- Daily earnings for auto-rickshaw drivers are poor, while operating costs are high. Earnings in large cities range from INR800-1500 a day of which drivers pay INR200-250 in daily rent for their vehicle. The Rickshaw Rising Challenge winners learnt that it was essential to prove the company's ability to deliver additional income. Trust and loyalty are established when rides are delivered consistently and with high-frequency.
- Drivers are unwilling to go out of their way and incur the cost of dead-miles in order to pick up a passenger
- Requires daily collection of the commission but the amounts can be too small to warrant the necessary logistics
- With auto-rickshaw drivers increasingly owning smartphones, there are attempts to move customers and drivers to use mobile wallets

Subscription model

- Platform offers drivers different packages where the driver pays an upfront subscription fee and receives guaranteed income from the platform through the month
- As drivers see a consistent increase in earnings, they become more willing to pay an upfront fee



Pay-for-miles model

- The platform pays the driver upfront for a certain number of kms; the driver commits to accepting rides from the platform till the paid for kms are over
- Expensive model with a high cash burn rate as some drivers take cash up front and then switch off their phones



• However, this model does allow the platform to accept ride bookings from a larger number of passengers which builds passenger confidence in the platform





Recurring booking service for regular

- Difficult to keep drivers and
- customers happy

rides

- Drivers are not reliable and do not always show up
- Customers book and pay the platform upfront
 - n thai
- Drivers resist as they do not receive cash in hand on a daily basis
- Customers make drivers wait and
- often change the route or request

Repayment for autorickshaw loans or smart phone loans

- Successful when micro-finance model followed
- Daily collection possible with a dedicated team or NGO partner
- Attempts to use mobile money to pay the commission are challenging as often drivers get *challaned* for parking their auto-rickshaw outside the mobile money point / store

RETAINING **DRIVERS**

Retaining drivers in the face of competition is a challenge. With offers of free smartphones from competitors, the risk of trying out multiple platforms is low for drivers. While it is essential to ensure a consistent and significant increase in income, the **Rickshaw Rising Challenge winners highlight the** importance of understanding the different segments of drivers: their needs, preferences, risk tolerance, and aspirations. Based on these profiles, platforms can design targeted programs to improve driver satisfaction.



Driver segmentation

• Marketing the platform to drivers needs to consider different driver target audiences¹



Converting new drivers

 Good results from offering trial periods during which drivers earn guaranteed income



.... • Using existing drivers to tell their story is a successful model of converting new drivers

• The "family man" minimizes

radius of

activity, expects

INR800 a day,

inclined to go

and is more

by meter



• Reducing dead miles by giving batched or return rides reduces cost and stress for drivers

Driver rewards program

Increased income and

improved lifestyle

Guarantees for consistent

income increase, beyond

current INR800-1500 per

day is critical

• Top drivers are rewarded with health insurance, teaching slots, recognition, or doing pilots of new tech



Training

- On-going training builds feeling of a common purpose
- Helping drivers procure and learn new technology is key



• The "hustler" maximizes his fare, expects INR1200 a day, but less inclined to go by meter



• Platforms that help with access to bank accounts, loans, discounts, insurance, government schemes build loyalty



• Interest in driving methods to increase fuel efficiency





2. PASSENGER-SIDE LESSONS

Auto-rickshaws are a life-line for millions of commuters in Indian cities. In Tier 1 cities such as Mumbai, over 1 million auto-rickshaw trips / day were made in 2005 (MMRDA 2008). In Tier 2 cities such as Pune, autorickshaws serve 5% of work trips, 17% of trips for education, and 23% of shopping, healthcare, and recreational trips (Mani, Pai and Aggarwal 2012). However, overcharging and refusal to ply to particular destinations is heavily prevalent. In Chennai, a study found that 95% of passengers had been overcharged (Garg, et al. 2010).

And while they are an iconic symbol of transport in India, commuters have developed an increasingly negative perception of auto-rickshaws. This has further deteriorated with the growth of organized, professional taxi services that use technology

to smoothen the process of hailing a ride. Even when passengers cannot afford to use such taxis, they expect a comparable level of service in autorickshaws. Book / hail auto-rickshaw businesses need to counter this negative mindset in their scale-up strategy.

During our engagement with the Rickshaw Rising winners, two aspects of engaging with passengers were highlighted:

- 1. Building the passenger base
- 2. Managing the customer experience

The following pages depict the range of strategies implemented by the Rickshaw Rising Challenge winners across these two areas in greater detail.



Book and hail auto-rickshaw businesses need a high number of ride requests from passengers in order to pass on to the drivers on their platform.

However, if passengers find that most of their ride requests go unfulfilled, they are unlikely to return to the booking platform.



passengers on such platforms • Women feel safer in slower moving, open vehicles



- value in having an auto wait for them while they complete multiple of errands
- BILL
- Important to build reputation of safe, verified drivers

On-ground marketing to apartment guards, hotels, hostels, clinics, fairs etc.



Marketing on digital channels

• Leads to an increase in ride requests, but most passengers want a pick up within 10 – 15 minutes

- Giving security guards and auto drivers business cards to distribute to customers is effective
- Effective when tailored to passenger e.g. SMS reminding you to book return auto after being dropped off at the mall
- Tie ups with online bus aggregators have proved successful, especially with out-of-town travelers





The winners of the Rickshaw Rising Challenge piloted a variety of strategies in Pune, Bangalore, and Chennai. A key take away from their experience was that while the market is gravitating towards instant fulfillment of rides, populations such as non-office

women at home and the elderly

callers for off-peak hours

• However, callers demand immediate pick-up and discounts even during peak hours





PASSENGER **EXPERIENCE**

Overcharging, refusing to fulfill a ride, and perceived unprofessional driver behavior has created a negative image of auto-rickshaws in the minds of urban Indian commuters. Changing people's attitudes towards auto-rickshaws is a challenge that book/hail auto-rickshaw businesses have to address. A key take away by the winners of the Rickshaw Rising Challenge includes the influence that the formalized hail taxi segment has on passenger experience expectations

TAXI

Guarantee rides by meter and verified drivers

- Tapping into passenger segment that cannot afford taxis
- Assuring that drivers go by meter means setting up a checking process with each ride initially
- Complaint number or "rate-your-ride" service necessary to weed out bad drivers



- Customers are most comfortable having a number they can call should they need to
- However, there is clear shift to using apps to book

Rewarding passenger loyalty

- Response to customers is tailored to the number of rides they have taken previously on the platform • High frequency customers are
- offered special deals



Complaint system

- Essential to track rides initially to ensure compliance with meter, arrival on time, and driver behavior
- Gaining the customer's trust that complaints will be taken seriously is important e.g. responding to complaints with a phone call to apologize
- It helps to retain upset customers by offering a free ride
- Set up system to train or weed out bad drivers



Offer a variety of packages to suit different audiences

• Audience includes Indian and non-Indian tourists, office goers, non-working women, senior citizens, differently abled, students, and businesses with delivery needs





3. OPERATIONAL LESSONS

Running a book / hail auto-rickshaw business is a high-volume, low-margin business. With the growth of real-time hail services in the taxi industry, the winners of the Rickshaw Rising Challenge were faced with the choice of whether to operate a pre-book or real-time model. This decision had significant implications on the businesses' processes, technology, and cost structure.

During our engagement with the Rickshaw Rising winners, the following aspects of operations were highlighted:

- 1. Booking and dispatch operations
- 2. Tracking driver availability and operations
- 3. Costs and additional revenue streams

The following pages depict the range of strategies implemented by the Rickshaw Rising Challenge winners across these three areas in greater detail.

BOOKING AND DISPATCH OPERATIONS

The market for taxi services has moved from a book-dispatch model to an on-demand model. The success of on-demand is shifting customer and driver expectations of auto-rickshaws too. Customers expect low waiting times and the ability to track their ride. Drivers expect low dead miles and an increased number of rides a day. There is also growing comfort with making and receiving payments electronically. As their models evolved, the winners of the Rickshaw Rising Challenge worked to re-configure their booking and dispatch processes. The need to transition from more manual to automated processes was clear.





Build versus buy

- Choice between in-house or licensed software to manage calls, order entry, fleet tracking, and dispatch
- Capacity to re-design or build add ons critical as business model changes or grows
- Check compatibility with tracking APIs and other interfaces
- Third-party software is expensive, but deals may be struck with companies trying to enter the Indian market

- **Batching and analytics**
- Core to reducing dead-miles, increasing driver efficiency
- Companies like FedEx use software like Cheetah







Managing the drivercustomer interaction

- Tendency to over-manage to attempt to control quality can result in high telecom costs and redundant processes
- Better to invest in training drivers on how to use the system and streamline processes

- Bulk of customers are not willing to wait for more than 10-15 minutes for a ride
- In order to reduce processing time, automation is a must



TRACKING DRIVER AVAILABILITY AND LOCATION

Knowing when a driver is available and tracking the auto-rickshaw's location has been a challenge. Until recently, most drivers have not been able to afford smartphones. In the absence, the winners of the Rickshaw Rising Challenge used a variety of manual to semi-automated processes to track availability and location. However, as their businesses grew, using automated solutions became imperative.

Identifying driver availability

- When drivers pay for the call to register their availability, they are committed to taking the ride
- Instead of manually taking driver availability, an IVR or app can be used which streamlines time and cost
- 20% drivers have smartphones and can use apps
- Driver training to use IVR and apps is necessary

Manual location tracking by calling the driver

- Manual tracking is expensive, laborious, and increases the time taken to respond to callers
- Dropped calls and mistakes increase with manual tracking as number of calls increase
- Batching rides and smart routing is challenging

Tracking driver SIM cards via triangulation

- Basic mobile phone can be tracked by telecom cos
- The larger the fleet, the cheaper the cost per SIM
- Charge ranges from INR200-300 per SIM per month
- 5 minute lag on SIM card location

Tracking via a vehicle tracking unit

- Expensive option as each tracking unit costs INR5000 for device and INR1000 for charger
- Low durability and poor reception when enclosed
- Drivers were unwilling to pay for this device



Compatibility of tracking API with booking and dispatch technology

- Telecom and GPS location players provide location of SIM card on their own API interface
- Compatibility with internal call management, order entry, and dispatch technology will need to be assessed





COSTS AND ADDITIONAL REVENUE STREAMS

Transitioning from small-scale to city-wide operations necessitates investment in a robust platform capable of handling the complexity of locating, matching, and optimizing rides. However, investing in automated technology may not be financially viable in the early stages of a company's growth. For example, the Rickshaw Rising Challenge winners initially found value in expanding their call center, however, as their businesses grew, the additional cost of hiring one more call operator became unviable and it became necessary to automate more processes.



Reducing telecom costs

- Telecom costs are very significant in this business
- Where possible, using land-lines is significantly cheaper even though getting a mobile connection is easier and faster
- Getting customers to book a ride and training drivers to accept rides via automated technology is critical as the business scales



Boosting revenue

- Advertising on rickshaws has been challenging given regulatory structure and encounters with police
- Bringing credible advertisers is difficult unless there is a substantial fleet available



Reducing manpower costs

- Automation is necessary to keep call center costs down
- In order to receive payments from drivers, technologies like mobile money are being piloted but are facing challenges due to driver's difficulty in loading money on to their accounts

SUMMARY

As the pressures on urban living increase, so will the demand for seamless, efficient, safe, and affordable transport options. Auto-rickshaws offer Indian cities a lowcost, flexible, and fit-for-purpose solution to the need for last-mile connectivity.

The sector faces issues stemming from its history of highly fragmented operations. Many auto-rickshaw drivers live in poverty and are slower to be included in the digital and financial inclusion revolution. Public perception of autorickshaws as an outdated vehicle offering poor customer service must also be addressed.

The opportunity for enterprise-led models and technology to bring efficiency to the sector at scale is significant. However, it is important to recognize the unique challenges of the ecosystem and recognize the following factors:

Lesson 1 Drivers as entrepreneurs

Auto-rickshaw drivers value their autonomy. They take pride in their ability to assess which timings, streets, and destinations will offer the greatest profit. Drivers want to be able to set their own schedule. Book / hail services should consider designing their engagement in a way that gives drivers a choice.

Lesson 2 Consistent and frequent ride delivery

Auto-rickshaw drivers resist having to travel more than 10 minutes to pick up a passenger, and are reluctant to fulfill rides to remote destinations. To address these concerns, book / hail services must deliver rides consistently and with high frequency in order to instill confidence in their driver base.

Lesson 3 Drivers as diverse target audiences

Auto-rickshaw drivers have different risk profiles which impacts how they make decisions. As with any other target audience, one model may not fit all. When scaling the number of drivers on a platform, it is critical to consider a range of on-boarding strategies and engagement models to cater to this diversity.

Lesson 4 High passenger expectations

With the growing number of transport businesses, passengers have an increasing number of choices and are quick to move to a cheaper, faster, more convenient service. In addition, the rapidly decreasing cost of technology in the hands of passengers via smartphones is transforming expectations from how to hail and pay for a ride, to service levels, and the ability to rate the service.

Lesson 5 Automation as a short and long term strategy

Bringing in technology to replace more manual processes can improve the margins of a business significantly. However, technology is expensive – whether it is bought or built – and the level of automation must be appropriate for the stage and scale of the business.

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