



# URBAN MOBILITY SOLUTIONS: AMIDST OF TECHNOLOGY SHIFTS & HOW FAIRLY RECIPROCATED BY OEMS OF ELECTRIC VEHICLES IN INDIA? : A STUDY

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## 1. Abstract

Ex-Researchers, based on a comprehensive study, would like to contemplate and assess the total course of the dispatch of an association called OLA-ELECTRICALS and its items, EV-Scooterette, because of the center chiefs of showcasing viz. Showcasing Marketing 4.0 (4) and Blue Ocean Strategies, (40) Green Marketing (41) and Green Production arrangements, (42) executed in all and its accomplishment as far as a beginning reaction, booking, and income collection. Researchers likewise are extremely excited about discovering how fire up can pool out the assets from the different quarters and development of a value of the brand in the beginning phases which will ultimately be changed over into Brand equity. Researchers could be able to figure out how promoters have addressed the immense innovation gap in technology and follow the severe natural standard and give and set to shape a total upset in the metropolitan portability arrangements which is in a state of harmony with worldwide requirements and address the 360\* purchaser direction. (3)(8)(11) The analysts explored the total promoting contributions of Ola-EV looks to enhance the talk on the execution of center showcasing blend with an extensive and definite survey of 36 articles, covering different papers, diaries from 2010 to 2020. (34) Through an assessment of hypotheses, settings, attributes, perceptions, and procedures like utilized in client need, showcasing gaps and tending to it through Blue Ocean and Green Production Technologies. This represents a complete and up-to-date outline of the exploration in this field of cutting-edge arrangements in metropolitan portability and sets a future examination plan to prod even more insightful research. (32)

Keywords: Electrical Vehicles, Urban Mobility Solutions, 360\* Block chains Resources usage, EV-Scooterette. De-carbonization. Biofuel.

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## 2. INTRODUCTION

The Current made to Junk Yard - Two-wheelers: A basic part of the economy, the Indian auto industry, which comprises around 2 to 3% of the public GDP, a prospering and especially in need industry, has been battling with many difficulties as of late. (4) While automakers have been somewhat direct in adjusting to the change the business since the rising fuel costs; appropriation and showroom costs, more item highlight interest, the severe standard for the outflow and nonstop thorough oligopoly red sea advertising, keeps on encountering consistently, changes in the worldwide and Indian innovative scene have incited the need to rapidly investigate the difficulties in the auto industry and conceptualize thoughts to determine something similar. (4)(5)

If we explicitly investigate the current situations the two where industry conceiving is extremely dubious, defying issues, for example, mileage, gas emanations, security, and moderateness of the vehicle. Furthermore, the cutthroat tensions on value, quality, execution, and manufacturability of the vehicles these days are more noteworthy than any time in recent memory. (8)

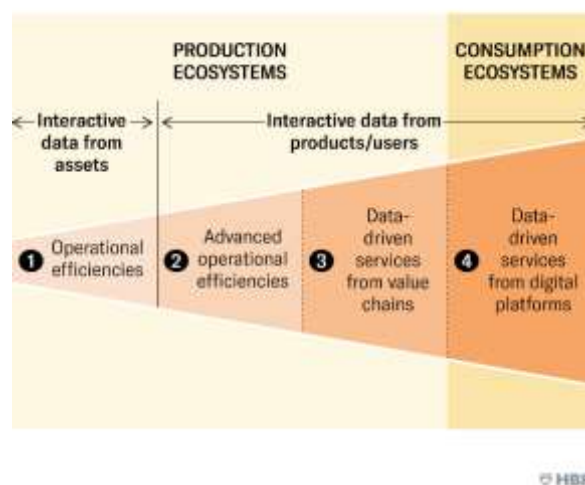
As the current metropolitan versatility arrangements are obsolete, baffling on the fuel costs, seriously dirtying and costs a bomb on the normal fix and upkeep, where the essential clients have spread around as youthful populace of understudies, the workplace goes, financial specialist, recorded deals individually, cutting edge laborers and so forth the essential bike market requests a bigger number of provisions than ruffle. (9)

In this way, there is a need for outright unrest which we are going through in Indian and Global Scenario beginning from very good quality extravagant cars, vehicles ' to more utilitarian, highlight pressed portability arrangements. (34) As an exploration subject the target under magnifying instrument is the difficulties confronted, openings existed and made up-gradation of its item includes through complete cutting-edge advances, utilizing

the arising and demonstrated innovations like AI and blockchain, making a total brand nature for post deals administrations and computerized online client experience and novel Amazonian market circulation of the vehicle conveyance framework. (5)(10)

Specialist's point is to concentrate on the case, in which the beginning accomplishment of OLA ELECTRICALS, under the persistent authority of the CEO, is illustrated, who guarantees that they have followed the center chiefs of Marketing 4.0, Blue Ocean, Green Production, and Green Marketing of their two variations in EV. (39)

### The Four Tiers of Digital Transformation



**Diagram 1. The Four Tiers of Digital Transformation | Marketing 4.0 | HBR 22/09/21(39)**

## 3. ELECTRICAL VEHICLES (EV) INDUSTRIAL ANALYSIS: NEXT-GEN URBAN PORTABILITY SOLUTIONS.

As portrayed above, again to re-emphasis, the metropolitan versatility is a worry, there is a desperate need to shape portability to be more reasonable, more secure, and more agreeable. Portability is one of the essential vital instruments for your business and straightforwardly is identified with residents, providers, endurance, and improvement. Maybe, they ought to want to go through a brilliant auto-driving experience. Taking a gander at the pace of consumption of the petroleum derivative holds, the soaring rising expenses, and the measure of mischief caused to the climate because of their

utilization acquaints us with electric vehicles. (EVs). To acquire a more extended reception, EVs need to develop to spot issues like Fleet zap, low battery, deficient charging foundation, excessive cost, and filling environmentally friendly power-based charging matrices. They need to present a more square chain, EV brand explicit eco-climate which takes the client to multipurpose utility EV with low fuel utilization and low support costs. (5)

Head of EV The electric engine gets energy from a regulator, which controls the measure of force—given the driver's utilization of a gas pedal. The electric vehicle (otherwise called electric vehicle or EV) utilizes energy put away in its battery-powered batteries, which are re-energized by normal family power. (34)

Market size The Indian EV Market would be assessed at 50,0000 Crs. opportunity by 2025 while bike and three-wheelers would be the development drivers. Ascension in the working class pay and youthful populace will bring about solid development. In June 2021 itself, India previously arrived at the creation of bikes; three-wheelers and quadricycles are now reached 1693693.00 which is noteworthy. (34)

EV deals, barring E-carts, in India saw a development of 20% and arrived at 1.56 lakh units in FY20 driven by bikes. As indicated by NITI Aayog and Rocky Mountain Institute (RMI) India's EV finance industry is probably going to reach Rs. 3.7 lakh crore (US\$ 50 billion) in 2030. A report by India Energy Storage Alliance assessed that the EV market in India is probably going to increase at a CAGR of 36% until 2026. (14) What's more, the EV battery market is relied upon to develop at a CAGR of 30% during a comparable period. Premium motorbike bargains in India recorded a seven-cross-over ricochet in local arrangements, showing up at 13,982 units during April-September 2019. The excess vehicle market is depended upon to enroll arrangements of 28,000-33,000 units in 2021, up from 20,000-21,000 units sold in 2020. The segment of new creators and new dispatches is presumably going to push this market in 2021. (14)

## CLASSIFICATION OF THE EVs

Considering the power supplement and drive contraptions, EV could be gathered into three exceptional sorts: pure electrical vehicle (PEV), mutt electric vehicle (HEV), and energy part electric vehicle (FCEV) (Chan and Chau, 2001; Chau, 2010, 2014). (50) There is a brief request of different EVs. The PEV is basically dealt with by power from the power accumulating unit, while the driver of the PEV is solely given by an electric motor. The driving plan of HEV joins the electric motor and the engine, while the power sources incorporate both force and gas or diesel. FCEV is driven by an electric motor and could be directly or indirectly energized using hydrogen, methanol, ethanol, or gas. (50)

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## 5. METHODOLOGY:

The urban mobility solutions in India are represented by many existing brands like TVS and newcomers like Ola Electricals, however in any products marketing history especially in India, an EV-Scooterette sold in India and doing business worth 1,200 Crs is worth watching for and every newspaper and eyeball took the notice. Since their two variant S-1 and S-1, Pro-Trim has launched and contributed the above business, both the products are yet to be delivered, so the research methodology and study of marketing will

be limited to the secondary data only and available primary data based on the customer experiences at the level of product selection, model selection and making their purchase decisions through the descriptive advertisement only. It will also be very interesting to watch the complete digital marketing platforms like

**A. Primary Source:** Personal interviews of few customers who have booked the Scooterette, their experiences, expectation, product selection process, etc. Personal interviews also from the current petrol vehicle showroom owners, who will be not included as the distributor partners and their point of views of new market trends in business.

**B. Secondary Sources:** global Sources like newspaper articles, companies' websites, the advertising channels broadcasted on digital marketing and online booking platforms. The Government policies on electrification of the vehicle. Previous dissertations on the topic

## 6. DATA ANALYSIS: A. Observations and Findings

Through the various inputs given on the website of the company the promoters are engaged with the following core marketing of the products, which are again next-gen, and they are flaunting the more proven marketing jargon like MARKETING 4.0 directly to the less aware public domain(43)

**C. Product Marketing Strategies:** Promoting 4.0 is an advertising approach that consolidates on the web and disconnected connection among organizations and clients. In the computerized economy, advanced collaboration alone isn't adequate. Promoting 4.0 likewise mixes presentation with significance. (43) While brands should be more adaptable and versatile because of fast innovative patterns, their real characters are a higher priority than any time in recent memory. In an undeniably straightforward world, legitimacy is the best resource.

(1) This is a radical shift from moving from traditional marketing to the digital platform with a more humanized approach. (35) **C. Brand Positioning:** Though the various inputs like recorded videos from the CEO, it was suggested that although the core cost situating ought to be the offer to the client which is a more saleable point or utilitarian point, anyway CEO decides to open his location by featuring the regular assets and magnificence of it, besides repeating the obligation to save it (34) (35) ( more interesting to twenty to thirty year old ), then, at that point, gradually developing the recent technologies.

**D. Market Segmentation:** clear recommending the blue sea methodologies where the item has been attempting to make the disturbances and attempting to satisfy each need of the metropolitan bike portability. (35) Chief never trouble to current market division however centered around the whole EV market and attempt to address the extreme shift from Petrol to EVs. They are more focused on eliminating petroleum-driven vehicles straightforwardly. Item Prices and Pricing Strategies: Like the way that development will reliably be costlier is commensurate to more prepared advancement, Ola Electric continues to underline that its electric bicycles have been assessed strongly and that blessings at state levels will push the expenses down altogether further. (43)(35)

**E. EVS, Formula Electric** has assessed the S1 electric bicycle at ₹1 lakh while the S1 Pro is



**Diagram 2. Ownership Study on costs saving for the 5 years duration (34):**

lakh. Items Features: Seamless home charging: A convenient charger of 5 AMP stopped can progress nicely. (35) Charge in a hurry: building the world's most hyper charging network across 400 urban areas, 100k+ charging focuses, fast charging of 18 minutes to accomplish for 75 KMs. 3 S: Sales, Services, Spares on the web-based stage like web application, including home-based administrations and prescient AI-based support alarms, as clarified by the outline clarified in QR-Code High on elements and High on Savings (35): The Ola S1 is costing almost 43% lesser as the proprietorship cost when contrasted with old and garbage petroleum bike, as the prescient investigation chart addresses something very similar. In INR the saving proposed to be 87415.00 as a normal client in the city of Delhi. (35) Creation Capacity Generally, in the commercial displaying rarely discover the notices of the creation limit, anyway, the administration set up more accentuation on the show to the clients to impact him on the bigger picture which again put the mental benefits that an enormous number of clients will book and client might feel the FOMO ( Fear of passing up a great opportunity from the pattern ). A lot of accentuation has been put on the guiding principle of natural safeguarding, lesser carbon negative as far as possible and machines and results and energy would be sustainable. Progressed AI works consistently across all phases of assembling to improve activities. (35)

**F. More than 3000 AI-driven robots** assist with guaranteeing everything is worked with careful accuracy. Significant creation plant develops in

500 Acres with something like 2 Acres of backwoods inside, with auto paint shops, 100% in house creation leads to 25000 EV-of Ola's, assessed to be 10 million in a year. (35) Workforce 10,000 just lady's representative will be working in the introduced including authentic and white collars. This is very recognizable and will prompt more gender orientation driven association soon after one of the clinical universities claimed by Symbiosis gathering of organizations in the Pune region. This will be pursued by numerous directions from the male-female representative proportion to 16:1 in India by 2019. (18) Administration behind the total story Ola Electric Mobility was set up in 2017 as an entirely possessed auxiliary of Ola Cabs' parent ANI Technologies(35)

G. In March 2019, Ola Electric was slowed down as a substitute substance, with facilitator Bhavish Aggarwal purchasing out the parent affiliation's stake in Ola Electric. (20)(21) Ola Electric raised \$250 million from SoftBank during Series B round financing in July 2019, getting a valuation of more than \$1 billion. (22)Ola Electric obtained Amsterdam-set up EV startup Emergo concerning 27 May 2020 to dispatch an own line of electric bikes in 2020. (23)In December 2020, the affiliation uncovered its strategy to set up its get-together plant in Tamil Nadu to a disadvantage of ₹2,400 crores (US\$340 million) in the wake of meaning an update with the Government of Tamil Nadu. (23) It gained a 500-part of land in Pochampalli in January 2021; the headway work for the collecting plant started in late February. (23)

## 7. INFORMATION ANALYSIS: RECOMMENDATION & CHALLENGES:

Researchers might want to give the idea dependent on the auxiliary information like news stories in rumored proof-based news

reports, incorporating the meetings directed with not many genuine purchasers and the circulation channel proprietor.

A. **The conveyance accomplices** might confront the precision of the conveyance since still transportation frameworks in India are under advancements, aside from the above mentioned, India will require the extremely talented labor force including the forefront laborers, an appropriate preparation should be planned. The enormous interest might require different investigations in the conveyance frameworks and square chain orientations. (24) (27)

B. **Suppliers Capabilities:** There are many aspects of the capability of the suppliers both in terms of deliverables and on-demand maintenance of the vehicles that will be tested by consumers. Shockingly, the main component of the vehicle the fuels cells we are talking about do not have major production within India and we need to be depending on up for overseas manufacturers,(45)Some of the manufacturers has come out with the in-house production of the batteries since their vehicle will the triode technology that is 3 batteries which are removable and can be refitted back once charged fully. An inward burning motor typically contains more than 2,000 moving parts. An electric engine locally available as an EV then again contains around 20 moving parts. The main significant parts of an EV are the battery and the electric engine. This makes the EVs a lot simpler for upkeep, decreasing the expense of possession essentially. (45)

C. **.Others OEM's opinion:** As per the meetings directed with a couple of proprietors like Honda-Activa and Royal Enfield Bullet, they are of the firm assessments of the individual selling and notoriety in the vehicular market, often, but client firm on the web-based decisions, a seal's individual can have the option to

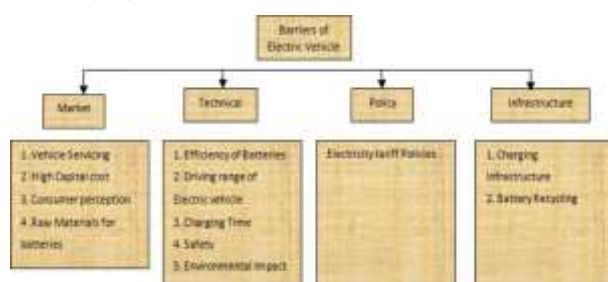
distinguish the total need and can recommend the items. Starting level, it might look great and helpful anyway as when rivalry builds, they need to have the display area, salespersons, selling, and care staff might be at focal cove yet need not be denied. India is a customary market and clients are brand steadfast and faithful to administrations rendered by the wholesaler channels. The insight read by the merchant is the chiefs in decisions, which can't be undermined. (27)

- D. .One of the vendors has proposed** that if OEMs don't choose them, they will not be collaborating for the old vehicle repurchase frameworks which is a colossal optional market section and driven by the sellers' organization.
- E. .Since the Scooterette industry** is inclined to more mileage and prompt fixes, which can be called emergency treatment, minor mishaps, battery association, spillage, electrical parts like bulb, broken glasses, and so forth will require the handy solution from the neighborhood mechanics shop and accordingly will represent a test to broadly guarantee 360\* AI put together with help responsibilities concerning the underlying levels. (13)
- F. .Charging focuses** are not accessible in every one of the significant social orders for every one of the level proprietors in the level frameworks say 25 pads to 100 pads and this will require one more armada of specialists and auxiliary. (19)
- G. .Power cut:** non-industrial nations face intense deficiencies of force disappointment and force cuts, and this might represent the issue in class A, B, and C towns (28)(29)
- H. .Challenges in Insurance Policy and Stakeholders:** Many of the protection players let it be worldwide or having tie-ups with enormous corporate houses denying the protection for EVs consequently idea to Ola-EV to come out even protection strategies to keep away from the issues further. (33)
- I. .Threat from Other Technology:** The market intelligence sources suggests that urban mobility solutions requirements may be given rise to other alternate fossil fuel options like instead of EV's there are going to use the CNG technology while keeping the same robustness of the vehicle and distribution channel and this seems to be a more viable option rather going to see the catapult of complete technology and changing the whole market scenario, support systems for some experimental disruptive technology for which the Indian customers may not be ready. (36)
- J. .Lovato-Honda Handshake:** As of now, you do get a Lovato kit for the Honda Activa. This costs Rs.15,000 and according to the seller, the price you pay for this kit can be recovered within a year. This is only for BS4 models. Honda-Activa CNG can run on both petrol as well as CNG, so it leaves you with the choice to use the fuel that is available close to you. The CNG kit is fitted below the seat with the cylinders at the front and there is a switch that allows you to change from petrol to CNG. You need to keep some amount of petrol in the fuel tank which will be required for the scooter to start before switching to CNG.(36)
- K. Opinion on the Honda-CNG:** Having a CNG kit on a scooter is a good idea if you want to reduce just the fuel cost. The problem arises with the range which is not a big deal when it comes to scooters. (36) The Honda-ACTIVA CNG could have been a success if the company would have given factory fitted CNG kits that could accommodate smaller petrol tanks and make more space for a bigger CNG tank(36)
- L. Biofuel Technologies:** Biofuel and renewables are keystone energies for meeting the mobility demands of the



21st-century without creating rampant CO<sub>2</sub> emissions. By 2050, three-quarters of humanity will live in a city. This places even more importance on decarbonizing the transportation sector. (37) Adjusting the energy mix will be crucial to living sustainably, protecting the environment, and supporting the aims of the Paris Agreement. Shell Catalysts & Technologies are claiming that they are committed to supporting its partners through the energy transition and offer various biofuels technologies in that vein. These solutions are from the Shell Renewable Refining Process to Shell Fiber Conversion Technology, Shell Catalysts & Technologies' team of experts can help you build an informed decarbonization roadmap given your unique constraints that capitalizes on these renowned solutions. (37)

#### M. Barriers in the EV Market in India. (38)



**Diagram 3. Flow Chart explaining the various challenges on the table (38)**

Barriers for EVs in the Indian market can be addressed from various perspectives such as technical barriers, policy barriers, and lack of infrastructure. (3)

**O. Raw materials for batteries:** The raw materials for EV batteries include lithium, nickel, phosphate and manganese, graphite, and cobalt, which are rare earth materials. For an internal combustion engine, aluminum copper, and steel are required. (38)(34) The catalyzes for combustion automobiles need platinum, rhodium, and palladium to filter the toxic gases. These all are scarce materials, and the availability

of this material may not be available enough for battery production. The lithium-ion batteries alone consume 5million tons/yr. of nickel, which could lead to 10–20 times more consumption of lithium and cobalt in the future. (3)

**P. Battery Longevity:** Electric cars are usually created by using electric motors, batteries, chargers, and controllers by replacing the fuel tank and gasoline engine of a conventional vehicle. As the EVs batteries are designed for long life, it wears out in due course of time. Currently, most manufacturers are offering eight years/100,000-mile warranty for their batteries.(38)

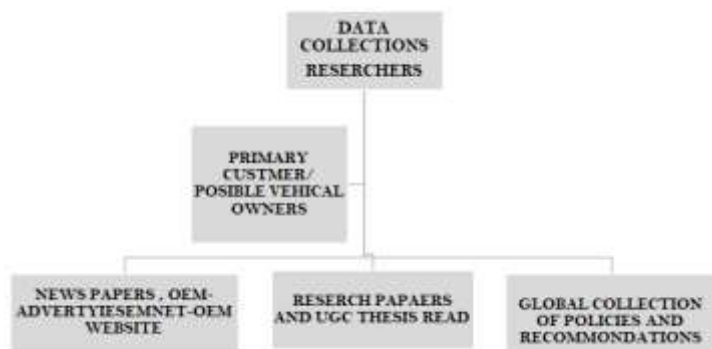
**Q. Road Safety:** In India, six bike riders pass on consistently in street mishaps. Helpless streets, flawed protective caps, and remiss permit rules consolidate to make the country perilous for motorcyclists. On the off chance that Ola-EVs make a plan with Bluetooth which either helps the rider to remember non-wearing of the protective cap or will limit the beginning of the actual vehicle will be truly best and suggested by the guardians and govt bodies. (44)

**R. Service Station Aspects for EV's:** This is one of the major parameters would be for any automakers anywhere in the world the services post-sales since as per the good manufacturer aspects is concern one manufacture of the serviceable product must be keeping the spare parts at least for 7 years and this was made mandatory by many governments. This goes along with the due repair, maintenance, and replacements services proactively provided by the EV's. Since per se the EV's are modeled in such a way that they should be lightweight, and this will give rise to many issues since the conditions of the road are in very poor states and post-monsoon many roads are available in patches only.

NITI Aayog has given their strong research-based recommendation which the EV industry is supposed to follow the same. (46). For the Proactive maintenance, 3-S aspects i.e., Sales, Services, and Spares, the EV OEMs are gearing up and some of the OEMs are coming up with the following solutions.

**OLA EVS:** Ola is building 'another versatility environment' with the customer at its center, said CEO Bhavish Aggarwal in a blog entry on Thursday. The three mainstays of this biological system are new portability administrations, new energy vehicles, and new auto retail. This will be brought to individuals through Ola-planned electric vehicles (EVs) altered for different shared versatility needs. (47)**TVS EVS:** is profoundly settled in the startup environment with a major spotlight on telemetries and availability stages. These regions have deliberately added to the organization's center business up until this point, and they will improve the EV purchasing experience. The organization has taken in the 'craft of being spry, which will be basic later on associated and computerized world, he said.(48)**Bajaj:** First to come out by Bajaj Auto which they very traditionally wanted to market by creating the showroom facility for the digital viewer, who do not wish to go physically. (49)

## 8. DATA ANALYSIS: Collection: Primary & Secondary Analysis



**DIAGRAM 4. : DATA COLLECTION METHODOLOGY**



**DIAGRAM 5. : DATA ANALYSIS FLOW CHART**

Dig 4. &5. : These diagrams are the graphical representation of data collection and research done and the methods of data analysis, researchers find appropriate to describe. (17) (35)

## 9. CONCLUSION

Through this study, the researcher has found that the new generation of marketers and OEM manufacturers are smart enough to pool out the resources available based on their credentials, a bit past performance as uphill now delivers the good booking revenues also that is 1.2 Million booking done in the first 2 days of product launch through adopting the core principles of marketing like Marketing 4.0, using the feature-packed production with ultra-utilitarian approach, and good practices of green marketing and green production. OLA-EVS Scoring high on the following aspects of marketing, production, and good employment practices.

**A. Technology Shift Challenges:** to shift from fossil fuel to a more sustainable and economical option an Ola-EV met while making the complete revamp in vehicular product engineering from basic requirements to contingencies while putting up 3 different batteries for poser reserves. (1)(3)(5). The change in the technology has been accepted very well and came of total quality products while using the latest technology available. (14)

**B. Customer-Centric, much Utilitarian Product:** a convenient, feature-packed product runs on long-term economical ownership costs, without compromising on the

performance criterion like speed, convenience, and utilities. (21)(22)(17)

### C. Identification & Creating the Hybrid Market Segment for Product:

through the core marketing concepts like Marketing 4.0, Blue Ocean marketing strategies, greenhouse Marketing, and Greenhouse productions facilities, etc. have put Ola-EV at the forefront of an astonishing marketing success wherein the revenue generation was more than 1120 Cars in first two days of the flash booking. The first initials much thought after the objective has been met. (32)(1)(2)(24)

**D. Real-Time CSR:** Company ought to give 100% employment to women and try to fill the gap in employed male & female ratio in India which is 16:1 (30). This is recognizing the social responsibility of an organization to bring the change factors. (31) There would be more performance-linked incentives to be shared and will encourage the employee to look beyond his routine and met more than the goal of the organization.

**E. Start-Up Torch Bearer:** By raising the 250 million USD and thus becoming the coveted Unicorn club of the market value of 1 billion USD club which was very well utilized in erecting state of the production capacity and feature-packed vehicle giving complete urban mobility solutions. (9)

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## 11. APPENDIX

- [http://iced.cag.gov.in/?page\\_id=256](http://iced.cag.gov.in/?page_id=256)
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## 12. ANNEXURE

- a. <https://www.olaelectrical.com>

## 13. QUESTIONNAIRE

- a. Availability of charging points at home, up market, down-market, and in hinterlands.
- b. Awareness about carbon footprints/ pollutions
- c. Awareness about the company and branding.
- d. Current Insurance Policies of Eves, challenges, etc.
- e. Customer's decision-making tools, features, and comparison
- f. Features required in a vehicle.
- g. Fuel prices hike and their impact on home expenses.
- h. The absence of a dealer's network and its effect on long-term commerce.
- i. Users – the experience of the apps, interface, decision-making tools, etc.
- j. Virtual experience of booking experience without physical attributes.