



Market Research – Electric Vehicles, Ola Electric

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Industry Overview – Global & India

The global electric vehicle (EV) market is experiencing robust growth, with sales projected to reach approximately 17 million units in 2024, constituting over 20% of total vehicle sales worldwide(GlobalEVOutlook2024). Key drivers include competition among manufacturers, declining battery prices, and supportive government policies. The market share in major regions like China, Europe, and the United States is expected to continue rising, with China leading at an anticipated 45% market share in 2024(GlobalEVOutlook2024).In 2023, global EV sales reached nearly 14 million, marking an 18% share of all car sales, up from 14% in 2022(GlobalEVOutlook2024). China remains the dominant market, accounting for 60% of global EV sales, followed by Europe (25%) and the United States (10%)(GlobalEVOutlook2024). Emerging markets such as Vietnam and Thailand are also showing significant growth, indicating a broader global adoption trend(GlobalEVOutlook2024).

India Electric Vehicle Market

India's EV market, while currently holding a smaller share compared to global leaders, is rapidly growing. **Electric three-wheelers** are a significant segment, with India becoming the largest market in 2023, surpassing China with over 580,000 units sold(GlobalEVOutlook2024). Government initiatives like the Faster Adoption and Manufacturing of Electric Vehicles (FAME II) and Production Linked Incentives (PLI) Scheme are crucial in supporting this growth(GlobalEVOutlook2024). **Electric two-wheelers** also show promising growth, with around 1.3 million units sold in 2023(GlobalEVOutlook2024). The affordability of these vehicles, coupled with policy incentives, is driving their adoption. However, **electric cars** still account for a **modest 2%** of the market, indicating significant potential for growth with further policy support and infrastructure development(GlobalEVOutlook2024).

Industry Trends – Favorable?

- **Where is the Industry Heading?**
 - As of 2023, the investment potential in India's EV sector is estimated at around **USD 200 billion**, The CAGR for the Indian EV segment is impressive. The sales of electric 2-wheelers (2Ws) alone grew by **40%** in 2023 compared to 2022. However, electric cars still account for a **modest 2%** of the market
 - The **Technological advancements** include Solid-State Batteries supporting fast charging, Vehicle-to-Grid (V2G) Technology, Autonomous Driving, Battery Recycling, Lightweight Materials, Improved Electric Motors, Charging Infrastructure, Advanced Thermal Management Systems, etc. These advancements are driving the EV industry forward, making electric vehicles more practical, efficient, and appealing to a broader range of consumers
 - Market growth: Rapid expansion due to environmental regulations, technological advancements and strong policy support and incentives, such as the FAME II measure and the Electric Mobility Promotion Scheme (EMPS).

Need-Gap Analysis

Need-Gap Analysis

Need-gap analysis in the electric vehicle (EV) industry focuses on identifying the gaps between the current state of the market and the desired outcomes for EV adoption, infrastructure, and sustainability. This process helps stakeholders understand the challenges and opportunities for growth and innovation within the EV sector.

- 1. Market Demand vs. Supply:** *Current Trends:* EV sales are projected to reach 40% of light-duty vehicles (LDVs) by 2030 and 55% by 2035, according to various policy scenarios. Despite this growth, there is a significant gap between projected sales and the actual number of EVs required to meet net-zero emissions targets. *Gaps Identified:* There is a mismatch between the availability of EV models and the growing demand, particularly in certain regions. The need for more diverse models and price points is critical to attract a broader consumer base.
- 2. Infrastructure Development:** *Charging Infrastructure:* The existing charging infrastructure is inadequate to support the anticipated growth in EV adoption. A robust network of charging stations is essential to alleviate consumer concerns about range anxiety. *Investment Needs:* It is estimated that about USD 100 billion in capital expenditures is required to reach the necessary battery manufacturing capacity to support EV demand by 2030.
- 3. Battery Production and Recycling:** *Capacity and Resources:* The EV industry faces a critical gap in battery production capacity, which must be addressed to meet the increasing demand for electric vehicles. Additionally, there is a significant opportunity in the battery recycling sector, which is still in its infancy. Effective recycling strategies will be crucial for creating a circular supply chain. *Technology Development:* Innovations in battery technology and critical minerals extraction are essential to reduce dependency on imports and enhance local supply chains.
- 4. Policy and Regulation:** *Government Incentives:* Continued government support and incentives are needed to bridge the gap between EV production and consumer adoption. This includes regulations that encourage manufacturing and purchasing of EVs. *International Cooperation:* Global collaboration is vital for harmonizing standards and sharing best practices, particularly in regions lagging in EV adoption.
- 5. Consumer Awareness and Acceptance:** *Public Perception:* There is a need for increased consumer education about the benefits of EVs, including environmental impacts and cost savings over time. Addressing misconceptions and promoting positive narratives around EVs can help drive adoption.

Opportunities based on Need-Gap Analysis

- 1. Diversifying EV Models and Price Points:** Opportunity: Develop and market a wider range of EV models to cater to various consumer segments, including affordable options for budget-conscious buyers and high-end models for luxury segments. Action Plan: Invest in R&D to create diverse vehicle designs and functionalities that appeal to different demographics and preferences.
- 2. Expanding Charging Infrastructure:** Opportunity: Build a comprehensive network of fast-charging stations across urban and rural areas to reduce range anxiety and make EVs more convenient for everyday use. Action Plan: Collaborate with governments and private sectors to secure funding and locations for new charging stations. Implement smart grid technologies to optimize energy use.
- 3. Enhancing Battery Production and Recycling Opportunity:** Invest in local battery manufacturing facilities and develop efficient battery recycling processes to reduce reliance on imports and promote sustainability. Action Plan: Establish partnerships with technology firms and research institutions to advance battery technology and recycling methods. Seek government incentives for setting up battery production plants.
- 4. Leveraging Government Incentives and Policies:** Opportunity: Utilize existing government incentives and lobby for more favourable policies to support EV manufacturing and adoption. Action Plan: Engage with policymakers to shape supportive regulations. Promote awareness of available incentives among consumers to boost EV sales.
- 5. Promoting Consumer Awareness and Education:** Opportunity: Launch educational campaigns to inform the public about the benefits of EVs, addressing common misconceptions and highlighting long-term cost savings. Action Plan: Use multimedia channels to disseminate information. Partner with influencers and community leaders to amplify the message.
- 6. Fostering International Cooperation and Standards:** Opportunity: Participate in global initiatives to harmonize EV standards and share best practices, helping to streamline the industry and accelerate adoption worldwide. Action Plan: Join international EV organizations and contribute to standard-setting discussions. Collaborate with foreign companies to exchange technology and knowledge.
- 7. Developing Advanced Battery Technologies:** Opportunity: Invest in cutting-edge battery technologies such as solid-state batteries, which offer higher energy density, faster charging, and improved safety. Action Plan: Allocate resources to R&D projects focused on innovative battery solutions. Form strategic alliances with tech companies and academic institutions.
- 8. Building a Circular Supply Chain:** Opportunity: Create a circular supply chain by implementing effective battery recycling systems to recover valuable materials and reduce environmental impact. Action Plan: Develop recycling facilities and technologies. Educate consumers and businesses on the importance of recycling used batteries.
- 9. Targeting Emerging Markets:** Opportunity: Expand operations into emerging markets where EV adoption is still in its early stages but has high growth potential. Action Plan: Conduct market research to understand local needs and preferences. Develop tailored marketing strategies and affordable product lines for these regions.
- 10. Investing in Autonomous Driving Technology:** Opportunity: Integrate autonomous driving capabilities into EVs to enhance their appeal and functionality. Action Plan: Collaborate with AI and tech firms to develop autonomous driving systems. Ensure compliance with safety regulations and conduct thorough testing.

Industry Structure – Fragmented or Segmented?

Overall, the Indian EV market exhibits both fragmentation, due to the numerous players and product variety, and segmentation, based on different vehicle categories and targeted consumer demographics.

Fragmented

- **Variety of Players:** The Indian EV market consists of numerous players, including established automakers like Tata Motors and Mahindra, new entrants, startups, and international brands such as BYD. This variety indicates a fragmented market structure where no single entity holds a dominant market share.
- **Diverse Product Offerings:** The market includes a wide range of products from two-wheelers and three-wheelers to electric cars and buses. This diversity shows fragmentation in terms of product categories and customer segments.

Segmented

- **Different Vehicle Categories:** The Indian EV market is segmented by different types of vehicles such as two-wheelers, three-wheelers, passenger cars, and commercial vehicles. For instance, a significant portion of venture capital investments has been directed towards startups developing electric two- and three-wheelers.
- **Targeted Consumer Segments:** Within these vehicle categories, there are further segmentations based on pricing, usage (personal vs. commercial), and urban vs. rural markets. For example, Tata's Tiago/Tigor models are targeted at budget-conscious consumers, whereas BYD's models cater to the higher-end market.



Hypothesis

1. Should Ola Electric enter 4-Wheeler market and make a dent? (H1: if not, what are we missing?)
2. Should Ola Electric enter Charging infrastructure market to enhance existing 2-Wheeler market presence? (H1: if not, what are we missing?)
3. Null – where should we deploy the existing cash reserves for growth?

1. Competitor Benchmarking – 4-Wheeler

1. Tata Motors: Known for models like the Nexon EV and Tigor EV.
2. BYD (Build Your Dreams): A Chinese manufacturer with plans to capture a significant market share.
3. MG Motor India: Offers the ZS EV and plans to expand its electric portfolio.
4. Hyundai: With models like the Kona Electric.
5. Mahindra Electric: Part of the Mahindra Group, offering electric SUVs and commercial vehicles.

These companies are key players due to their early market entry, diverse product offerings, and strategic plans to expand their electric vehicle lineups in India

2. Competitor Benchmarking – Charging Infrastructure

Key competitors in the Indian EV infrastructure sector include companies focusing on charging solutions, battery swapping technologies, and related services. Some of the notable competitors are:

1. Tata Power - A major player in the EV charging infrastructure with a significant number of charging stations across India.
2. Fortum India - Provides EV charging solutions and has established a network of charging stations.
3. Charge Zone - An Indian start-up that raised nearly USD 55 million to develop around 300 charging stations.
4. Exicom - Specializes in EV charging infrastructure and battery management solutions.
5. Sun Mobility - Focuses on battery swapping technology and has raised USD 50 million for expansion.
6. Battery Smart - Another key player in the battery swapping segment, having raised USD 33 million for its growth.
7. Gogoro - Partnered with the Indian state of Maharashtra to deploy smart battery infrastructure, investing more than USD 1.5 billion.
8. BluSmart - While primarily a ride-hailing service, it also contributes to the EV infrastructure by ensuring its fleet is charged and raised significant funds for its operations.

These companies are contributing to the development and expansion of India's EV infrastructure, which is crucial for supporting the growing number of electric vehicles on the road.

Porter's 5 Forces

The Indian EV segment is characterized by intense competition, high buyer power, and moderate to high supplier power. The threat of new entrants is moderated by high entry barriers and strong brand loyalty among established players. Substitutes, primarily in the form of ICE vehicles and public transportation, pose a moderate threat. Strategic focus on localizing supply chains, continuous innovation, and enhancing charging infrastructure will be crucial for companies to navigate these competitive forces and achieve sustainable growth in the Indian EV market.

1. **Threat of New Entrants:** Moderate Barriers to Entry: High initial capital investment for manufacturing and R&D. Government incentives can lower these barriers somewhat, but technical expertise and economies of scale are significant hurdles. Brand Loyalty: Established players like Tata Motors, Mahindra Electric, and Ather Energy have strong brand recognition, which can deter new entrants.
2. **Regulatory Environment:** Favourable government policies support new entrants, but compliance with safety and emission standards can be challenging. **2. Bargaining Power of Suppliers:** Moderate to High Battery Suppliers: A limited number of suppliers for advanced batteries, such as lithium-ion, increases supplier power. Dependence on imports for raw materials like lithium, cobalt, and nickel further strengthens supplier power. Technology Providers: Companies supplying critical components like electric drivetrains and control systems hold significant bargaining power. Localization Efforts: Increasing efforts to localize production and develop indigenous supply chains can mitigate some supplier power.
3. **Bargaining Power of Buyers:** High Price Sensitivity: Indian consumers are highly price-sensitive, particularly in the two-wheeler and entry-level four-wheeler segments. Alternative Options: Availability of conventional ICE vehicles and a growing number of EV models increases buyer power. Information Availability: Buyers have access to ample information on EV performance, price, and maintenance costs, allowing them to make informed decisions.
4. **Threat of Substitutes:** Moderate Conventional Vehicles: Internal combustion engine (ICE) vehicles remain a significant substitute, especially in regions with limited charging infrastructure. Public Transportation: Improved public transportation systems and shared mobility solutions (e.g., ride-hailing services) can serve as substitutes for private EV ownership. Technological Advances: Future advancements in alternative fuels (e.g., hydrogen fuel cells) could pose a threat to the EV segment.
5. **Industry Rivalry:** High Number of Competitors: The market is crowded with numerous domestic and international players across different vehicle segments (two-wheelers, four-wheelers, commercial vehicles). Market Growth: Rapid growth in the EV market intensifies competition as companies vie for market share. Product Differentiation: Intense rivalry to differentiate products through innovation, performance, range, and connectivity features. Promotional Activities: Aggressive marketing and promotional strategies to attract customers and increase brand loyalty.

PESTEL Analysis for Ola Electric

Political

- Government Policies: Supportive policies and subsidies for electric vehicles (EVs) in India.
- Regulations: Stricter emission regulations favouring EV adoption.

Economic

- Economic Growth: Rising disposable incomes and economic growth in India.
- Cost of Raw Materials: Fluctuations in the cost of raw materials, particularly for batteries.

Social

- Environmental Awareness: Increasing consumer awareness about environmental issues and sustainability.
- Urbanization: Growing urban population with a demand for modern transportation solutions.

Technological

- Advancements in EV Technology: Continuous improvements in battery technology and vehicle performance.
- Charging Infrastructure: Development of public and private charging infrastructure.

Environmental

- Climate Change: Growing emphasis on reducing carbon footprints and combating climate change.
- Resource Management: Focus on sustainable resource management and recycling of batteries.

Legal

- Compliance Requirements: Need to comply with local and international EV standards and regulations.
- Intellectual Property: Protecting technological innovations and intellectual property.

SWOT Analysis for Ola Electric

Strengths:

- **Brand Recognition:** Ola is a well-known and trusted brand in India.
- **Technology and Innovation:** Strong focus on technological advancements and innovative electric vehicle (EV) designs.
- **Existing Customer Base:** Large customer base from the ride-sharing business.
- **Environmental Benefits:** Strong alignment with the growing trend of environmental consciousness and sustainability.
- **Government Support:** Potential to benefit from government subsidies and incentives for EVs.

Opportunities:

- **Growing Market:** Increasing demand for electric vehicles in India.
- **Government Initiatives:** Supportive government policies and subsidies for EVs.
- **Partnerships:** Opportunities to collaborate with technology and infrastructure companies.
- **Environmental Trends:** Rising consumer preference for eco-friendly products.
- **Technological Advancements:** Advancements in battery technology and renewable energy integration.

Weaknesses:

- **High Initial Costs:** Higher upfront costs compared to conventional vehicles.
- **Charging Infrastructure:** Limited charging infrastructure in India.
- **Consumer Awareness:** Limited consumer knowledge and misconceptions about EVs.
- **Range Anxiety:** Concerns about the range of electric vehicles.
- **Service Network:** Need for a robust service and maintenance network.

Threats:

- **Competition:** Increasing competition from both domestic and international EV manufacturers.
- **Economic Factors:** Economic instability and fluctuations in raw material prices.
- **Regulatory Changes:** Potential changes in government policies and regulations.
- **Supply Chain Disruptions:** Risks of disruptions in the supply chain for essential components.
- **Consumer Acceptance:** Slow adoption rate and resistance to change from conventional vehicles.

Parameter that Influence decision making – Customer side

1. Range Anxiety:

- Consumer Need: Consumers require EVs with sufficient range to cover daily commutes and longer trips without frequent recharging.
- Market Gap: Current EV models often have limited range, which deters potential buyers concerned about running out of battery mid-journey.

2. Charging Infrastructure:

- Consumer Need: Easy access to fast and reliable charging stations is essential for widespread EV adoption.
- Market Gap: The existing charging network is inadequate, with limited fast-charging options and uneven distribution across regions, leading to convenience and accessibility issues.

3. Cost of Ownership:

- Consumer Need: Affordable initial purchase prices and low operating costs are key factors for consumers considering EVs.
- Market Gap: High upfront costs and perceived long-term expenses, including battery replacements, deter budget-conscious buyers despite lower running costs.

4. Vehicle Variety:

- Consumer Need: A diverse range of EV models catering to different consumer preferences and lifestyles is necessary.
- Market Gap: Limited variety in the market, especially in terms of family-friendly and compact city cars, restricts consumer choices.

Parameter that Influence decision making – Company side

Market Potential

- Theme: Growing Environmental Awareness: Quote: "I am considering an EV for my next car because it's better for the environment and helps reduce pollution."
- Theme: Government Incentives: Quote: "The subsidies and tax benefits make EVs a much more attractive option financially."

Consumer Preferences

- Theme: Battery Life and Range: Quote: "I need a car that can go at least 300 km on a single charge for it to be practical for my daily commute."
- Theme: Charging Infrastructure: Quote: "The availability of fast chargers in my area is a big concern. It needs to be as convenient as refuelling a petrol car."
- Theme: Cost-Effectiveness: Quote: "While the upfront cost is higher, I am looking at the long-term savings on fuel and maintenance."

Competitive Landscape

- Theme: Established Brands: Example: Tata Nexon EV and Mahindra eVerito are popular choices among early adopters.
- Theme: New Entrants: Example: Startups like Ather Energy are making waves with their affordable and efficient EV options.

Technological Advancements

- Theme: Battery Technology: Quote: "Solid-state batteries could be a game-changer, offering better performance and safety."
- Theme: Autonomous Features: Quote: "Advanced driver-assistance systems and autonomous driving capabilities are features I look forward to in my next car."

Research Methodology

Qualitative Analysis

- Trend Analysis
- Focus Groups
- Content Analysis

Quantitative Analysis

- Surveys and Questionnaires
- Sales Data Analysis
- A/B Testing

Mixed Methodology

- Conjoint Analysis
- Market Basket Analysis

How would we do it?

Distributing surveys and questionnaires to a broad audience.
Analyzing sales data and perform A/B testing on marketing materials.



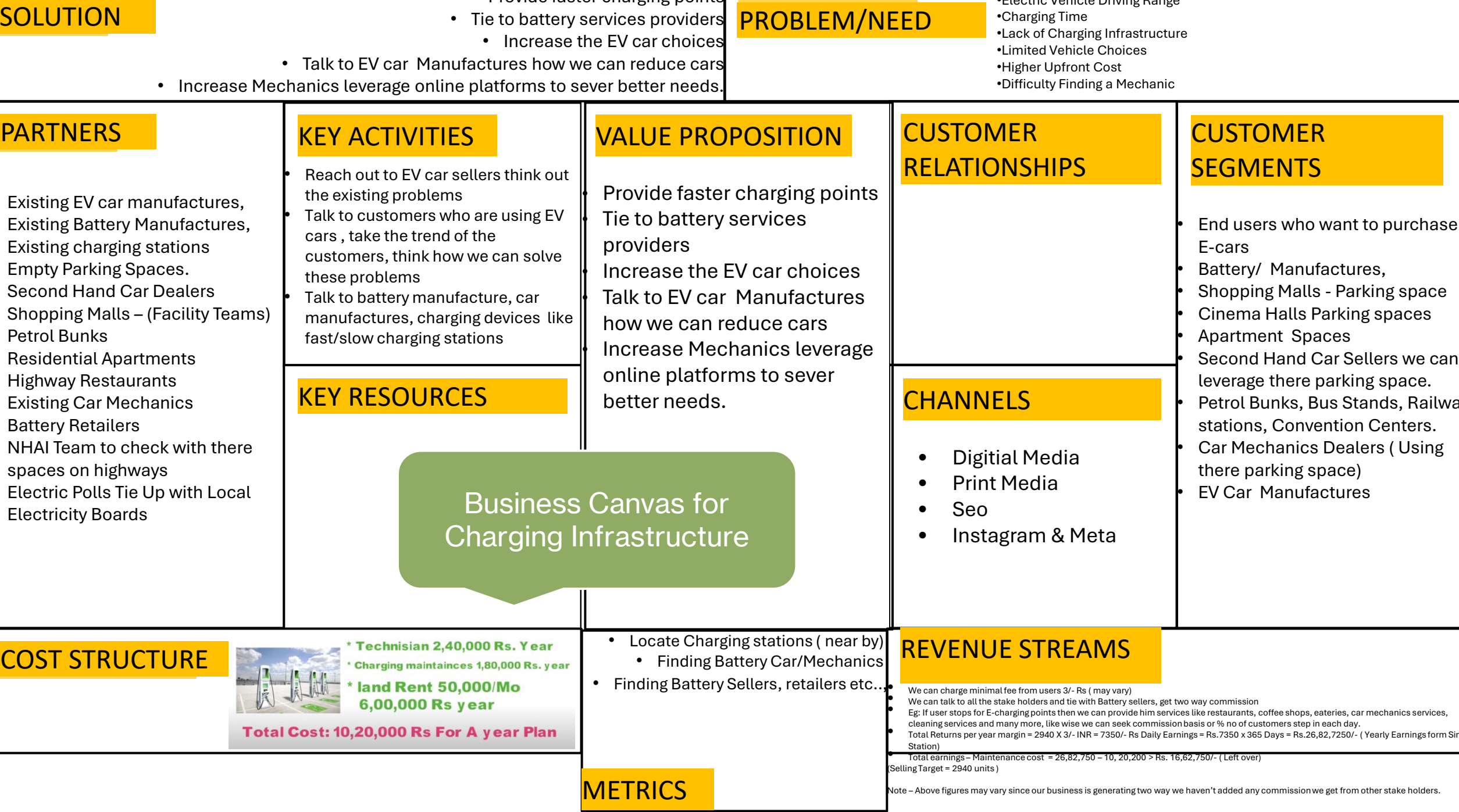
Using conjoint analysis and market basket analysis to understand preferences.
Analyzing survey and sales data to identify trends and patterns.



Conducting focus groups and pilot launches to validate findings.
Using visual simulations to gather additional feedback.



Synthesizing all data and insights to decide about GO-TO or NO-GO-TO.
Developing a marketing strategy to introduce the new Line of Business.



Source and Thank you

- <https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/why-the-automotive-future-is-electric#/>
- <https://www.iea.org/reports/global-ev-outlook-2024/trends-in-the-electric-vehicle-industry>

