BAIN & COMPANY

BrAINWARS 2025
CASE PROBLEM

Case Context

Nexus motors has been a dominant force in the automotive industry in the US, and has built its reputation on reliable, fuel-efficient vehicles. Founded in the 1960s, it has thrived for decades, especially in the last 10 years, where it has strengthened its hold globally, in geographies such as Middle-east. However, the rise of electric vehicles (EVs) and an increasing consumer preference for sustainability, the automotive landscape has been shifting dramatically. Catering to the growing market, they recently launched their new model – 'Voltaris Z', a smart mobility solution, particularly built for South Asian countries, and comes with features such as solar assisted charging, high ground clearance (180mm – 200mm), and water-resistant battery casing. They foresee market potential in India and plan to set up a manufacturing facility there.

After market research, they have finalized top three locations for the production facility – Pune, Chennai and Gurugram. Basis their forecast for the next five years, they plan to start production in January 2027, with a total of 50,000 cars for sale. This number is expected to rise, with the average per year production between 2027 and 2036 being 75,000 cars per year.

Additionally, they also have strategic plans to acquire AutoAI, an automotive startup based out of India, which has had market presence for the last 5 years, and commands ~5% market share in the passenger car market. The synergies from the acquisition will help them leverage the existing supply chain of AutoAI, providing them with quick access to suppliers, and capitalize on procurement efficiencies and cost advantages.

Nexus motors is venturing into a new geography, and they have onboarded Bain to assist them in planning the production facility and are looking to get answers on below key questions:

1. Detailed analysis on COGS and any associated overhead expenses for the 3 shortlisted locations in 2027
2. Evaluate ideal location for setting up the production facility, which maximizes cost efficiency (please include all costs – fixed, variable, inventory carrying)
3. Potential procurement synergies and discounts post acquiring AutoAI

Data and Insights

- The direct material cost in Tamil Nadu is expected to be INR 420K/ car for the year 2027 while the labor cost is INR 15K/ car. Following a comprehensive analysis of the candidate locations, forecasts for cycle inventory turnover and inventory holding costs were developed to estimate inventory carrying costs. It is established that client will maintain a 10-day safety stock to mitigate the risk of lost sales due to unforeseen demand fluctuations, irrespective of the selected location

- The Gurugram plant is forecasted to replenish its inventory every 5 days with holding cost of 10%. Maharashtra has recently undergone some local labor regulations and hence the labor cost is INR 216K for a dozen cars manufactured. Chennai plant is expected to incur INR 50B to set up the plant, 25% more than that in Gurugram; the new plants in both locations are expected to have a capacity to produce 10K cars in a month. A study conducted in the month of September revealed that the inventory turnover for Pune plant is expected to be thrice a month with carrying cost of 15%

- HR & Admin costs in Chennai are INR180K per car, 20% higher than Pune which itself is ¼ more than the costs in Gurugram. The costs of raw material per car in Gurugram is INR 50K more than Chennai while the logistics expense is same for both regions i.e. INR 130K per car. Factory labor in Haryana is cheaper by INR 6K per car when compared to Pune while the direct material cost in Pune is 430K/ car and expected CAPEX same as Chennai plant while the monthly production capacity is 10% lower than the Gurugram plant; CAPEX needs to be straight line depreciated in 10 years for all locations

- The inventory turnover in Chennai plant is expected to be twice in 15 days. The S&M expense would be INR 50K/ car every year irrespective of the location in India and the supply chain expense in Pune would be INR 110K/ car. Chennai's expected inventory holding cost would be 3 percentage points lower than that of Pune

  Additionally, following are the discounts we are expecting to receive across major cost heads, post the acquisition of AutoAI

Cost Head	Discounts	AutoAI's current procurement spend
Raw Material	If spend > 25B Rupees, then 10% discount on overall	7,500,000,000
Factory Labor	If spend > 1B Rupees, then 5% discount on overall	500,000,000
Logistics	if spend < 5B Rupees, then no discount, if between 5-8B then 8% discount on total, if > 8B then 10% discount on total	3,000,000,000