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NIBAV LIFTS

Home Mobility Through Vacuum Elevator Innovation

Abstract

The rapid evolution of urban lifestyles, increasing construction of multi-story residences and changing demographic patterns have created growing demand for safe, convenient and accessible mobility solutions within homes. Yet for decades, the residential elevator market remained largely confined to luxury housing segments because of high costs, extensive civil modifications and complex installation requirements. Nibav Lifts addressed this challenge by introducing vacuum-powered home elevators that redefined the economics and accessibility of residential mobility. Founded in Chennai in 2019, the company pioneered a new category in India's home mobility sector by offering self-supporting elevators that require no pit, machine room, support walls or major structural alterations. Through indigenous innovation, advanced engineering, customer-centric design and global expansion, Nibav transformed elevators from aspirational luxury products into practical lifestyle and accessibility solutions.

Introduction Mobility within homes is increasingly important in modern living. Rising life expectancy, changing family structures and growing awareness about inclusive living have created demand for solutions that enable comfortable movement across multiple levels of residential buildings. The challenge is particularly significant for senior citizens, people with disabilities and families planning long-term independent living. Conventional elevator systems, however, have historically been designed for commercial buildings and large infrastructure projects rather than residential settings.

Traditional elevator technologies involve significant civil construction, including deep pits, machine rooms, structural shafts and supporting walls. These requirements increase installation costs, extend project timelines and often make retrofitting completed homes impossible. As a result, home elevators

remained inaccessible to many homeowners despite the growing need.

Nibav Lifts recognised this gap and created an entirely new category within the residential mobility market. Rather than incrementally improving conventional elevator systems, the company reimaged the technology itself. Leveraging vacuum-based engineering principles, Nibav developed air-driven elevators that operate without cables, chains, hydraulic systems or extensive structural support.

Established in November 2019, the company introduced a product that combined functionality, aesthetics, safety and ease of installation. Its elevators can be installed in existing homes with minimal disruption, providing premium mobility experiences. This innovation resonated strongly with customers seeking future-ready homes and enhanced accessibility.

The Problem Statement

The first challenge was infrastructure dependency. Traditional elevators require pits, machine rooms, shafts, support beams and substantial structural modifications. For homeowners seeking to install elevators in existing residences, these requirements often made projects technically difficult and economically unviable. Installation frequently involved extensive renovation work, increasing costs and disruption.

The second challenge concerns affordability and market accessibility. Because of construction requirements and complex engineering systems, residential elevators were viewed largely as luxury products reserved for high-end properties. This perception restricted market expansion.

A third challenge was demographic. India's aging population is increasing steadily and many families are choosing to age in place rather than relocate. Senior citizens often experience mobility

limitations that make navigating stairs difficult or unsafe. Similarly, differently-abled individuals face barriers in accessing multiple floors within residential settings. Yet available solutions remained limited, expensive or impractical.

Maintenance represented another important concern. Conventional elevators rely on mechanical systems that include cables, pulleys, hydraulic components and motors, which require periodic servicing. Homeowners often perceived elevators as maintenance-intensive assets that would create long-term operational dependencies and costs.

It was felt that the problem was not simply technological but conceptual. The market needed a completely new approach—one that would eliminate structural barriers, simplify installation, reduce maintenance, enhance safety and make home mobility accessible to a much wider population.

Strategic Vision

Nibav's strategic vision was to democratise home mobility by transforming elevators from niche luxury products into accessible and practical lifestyle solutions. The company sought to create a new category of residential elevators that combined safety, simplicity, sustainability, aesthetics and affordability while eliminating the infrastructure challenges associated with conventional lift technologies.

The vision extended beyond product development. Nibav aimed to position India as a global centre for advanced home elevator manufacturing and innovation. Through indigenous

engineering, international quality standards and customer-centric design, the company sought to build a globally competitive brand capable of serving residential markets across continents.

At its core, the vision focused on enhancing quality of life. By enabling independent mobility for senior citizens, differently-abled individuals and families living in multi-story homes, Nibav sought to make accessibility an integral part of modern residential design. The long-term ambition is to become the world's largest home elevator company and establish a billion-dollar enterprise rooted in innovation, sustainability and trust.

Solutions Stack

Nibav's success has been driven by a comprehensive innovation ecosystem that combines product engineering, manufacturing excellence, customer engagement and global expansion.

The foundation of the solution lies in the company's vacuum elevator technology. Unlike conventional elevators that rely on cables, chains, hydraulic systems or heavy mechanical assemblies, Nibav elevators operate using controlled air-pressure differentials. This technology enables smooth vertical movement while reducing mechanical complexity and maintenance requirements.

One of the most significant innovations is the self-supporting structure. Nibav elevators require no pit, machine room, support wall or major structural modification. This dramatically simplifies installation and enables elevators to be incorporated into existing homes without extensive reconstruction. What previously required months of planning and construction can now be completed within days.

The company has continuously invested in product innovation. Successive generations of elevators have introduced improvements in aesthetics, safety, energy efficiency and user experience. The latest Series V platform incorporates artificial intelligence capabilities, Alexa integration, smart controls and enhanced customisation features that align with evolving smart-home ecosystems.

Safety has remained central to product design. Nibav elevators incorporate advanced braking systems, emergency descent mechanisms, automatic rescue functionality, continuous pressure monitoring, auxiliary power backup, GSM connectivity and multiple redundant safety protocols. These features ensure dependable operation while enhancing user confidence.

The company has also adopted a sustainability-oriented engineering philosophy. Vacuum elevators consume energy primarily during ascent, while descent

is assisted by gravity and controlled air pressure. The absence of oils, hydraulic fluids and heavy mechanical systems reduces environmental impact while improving operational efficiency.

Manufacturing excellence represents another critical pillar of the solution stack. Nibav operates five manufacturing facilities in Chennai with a production capacity exceeding 1,000 units per month. Approximately 70 percent of inputs are sourced domestically, supporting the Make in India initiative while maintaining global quality standards through carefully selected international components.

Customer engagement has been equally important. Through a network of more than 55 experience centres, the company allows prospective buyers to interact directly with products before purchase. This experiential model helps educate consumers, builds trust and accelerates adoption.

The company's global expansion strategy has further strengthened its position. Operations now extend across more than 15 countries, demonstrating the scalability and international competitiveness of its technology platform. International certifications, including CE, ASME, TÜV NORD, ISO and EN 81 compliance, have enabled entry into global markets while reinforcing quality and safety credentials.

Outcomes

By introducing vacuum-powered home elevators, the company transformed consumer perceptions and expanded the addressable market beyond traditional luxury segments. Residential elevators increasingly came to be viewed as practical investments in accessibility, convenience and future readiness.

Business performance reflects this transformation. Since its establishment in 2019, the company has installed more than 10,000 elevators worldwide, operates in over 15 countries, manages a network of more than 55 experience centers, employs over 1,500 professionals and generates annual revenues exceeding ₹400 crore.

Global expansion has further strengthened the organisation's position. Operations across more than 15 countries have established Nibav as one of the few Indian mobility technology brands with significant international presence. This

expansion has diversified revenue streams, strengthened brand recognition and validated the universal relevance of its innovation.

Employment generation has been substantial. The organisation currently employs over 1,500 professionals across manufacturing, engineering, sales, logistics, customer service and international operations. Indirect employment opportunities have also been created throughout supplier networks, installation ecosystems and service infrastructure.

Perhaps the most meaningful impact has been social. Thousands of senior citizens and individuals with disabilities have gained greater independence and mobility in their homes. By eliminating structural barriers and simplifying installation, Nibav has made accessibility solutions available to a much broader population than was previously possible.

Highlights

- Nibav Lifts pioneered India's home mobility sector with vacuum-powered residential elevators that require no pit, machine room, support walls or major structural modifications, making home elevators accessible beyond luxury housing.
- Founded in 2019, the company redefined residential mobility through air-driven vacuum technology, eliminating cables, hydraulic systems and complex infrastructure while simplifying installation and maintenance.
- This solution addresses the growing needs of senior citizens, differently-abled individuals, and multi-story homeowners, enabling safer and more independent living.
- Nibav's latest elevator platforms integrate AI capabilities, Alexa connectivity, smart controls, advanced safety systems, emergency rescue features and energy-efficient design.
- The company operates five manufacturing facilities in Chennai with a production capacity exceeding 1,000 units per month, supporting the Make in India initiative.
- Since its inception, Nibav has installed 10,000+ elevators, expanded into 15+ countries, established 55+ experience centers, employed 1,500+ professionals and generated annual revenue of ₹400+ crore.

Conclusion Nibav Lifts represents one of the compelling examples of category creation and innovation-led growth in contemporary Indian manufacturing. By reimagining home mobility through vacuum-powered elevator technology, the company addressed longstanding barriers related to accessibility, affordability, installation complexity and maintenance. In doing so, it transformed residential elevators from niche luxury products into practical lifestyle solutions that enhance quality of life.

From its inception in 2019, Nibav has evolved into India's largest home elevator company with more than 10,000 installations, operations across 15 countries, five manufacturing facilities, over 55 experience centres, a workforce exceeding 1,500 employees and annual revenues surpassing ₹500 crore. These achievements reflect not only commercial success but also the creation of a globally competitive Indian technology brand.



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