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COMPANY RESEARCH NOTE | DATE: 20 May, 2025

Osel Devices Ltd

NSE SME: OSELDEVICE

LED Display Systems / Hearing Aids / Electronics Manufacturing

CURRENT PRICE

₹ 271

NSE SME

MARKET CAP

₹ 437 Cr

Total market value

STOCK P/E

27.8x

TTM EPS basis

ROCE

54.2%

ROE

69.4%

DEBT/EQUITY

0.42x

EV / EBITDA

15.4x

SECTOR

Electronics | Med-Tech

MFG. BASE

Greater Noida

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About the Company

Greater Noida-based electronics manufacturer with two distinct product lines: LED display systems and hearing aids

Corporate history

The company was incorporated on 14 August 2006 as a private limited company under the name Innovative Infratech Solutions Private Limited. Later, to better reflect the company's core business and enhance branding, the Board passed a resolution on 13 November 2023, and shareholders approved it in the EGM on 15 December 2023. The name was changed to Osel Devices Private Limited, with a fresh certificate issued on 16 January 2024.

Osel is driven by a strong passion for innovation and a commitment to excellence. It is recognized as one of the leading providers of cutting-edge technology solutions. The company specializes in creating transformative products that empower individuals, businesses, and communities in a rapidly evolving digital environment.

Osel manufactures a comprehensive range of LED display systems and latest hearing aids, including all major components, at its state-of-the-art manufacturing plant located in Greater Noida, which was inaugurated by Ex-Union Minister Shri Pratap Sarangi.

Business architecture

The company is fully equipped with both software and hardware capabilities. Its LED display systems come with an integrated Content Management System (CMS), enabling connection to phones or computers for screen display. The display systems adhere to rigorous quality standards and are used across multiple commercial applications including:

- Advertising media
- Billboards
- Corporate meeting rooms
- Presentations and display promotions
- Command and control centres
- Front signboards

The vertical integration of production ensures consistent quality and excellence across all products.

Osel also manufactures advanced hearing aids, known as assisted healthcare devices, aimed at supporting individuals with disabilities, elderly people, and chronic patients with low hearing levels. The goal is to help these individuals carry out everyday activities more efficiently, thereby enhancing their quality of life. The major customer for Osel's

hearing aids is the Artificial Limbs Manufacturing Corporation of India (ALIMCO). The company offers both Digital Programmable and Non-Programmable Hearing Aids, and has a comprehensive manufacturing and assembling setup in Greater Noida that enables the end-to-end production of its product range.

Products & Their Usages — LED Display Systems

Four LED display variants tailored to different commercial environments

Indoor LED Display Solutions

Indoor LED display systems are designed to deliver vivid, high-resolution visuals for close-proximity viewing in controlled lighting environments. These systems are widely deployed across diverse applications such as retail showrooms, corporate boardrooms, airport lounges, conference halls, control rooms, education centres, and hospitality venues including pubs, clubs, and malls.

Attribute	Specification
Pixel Pitch Variants	Models range from P1 to P4 — pixel pitch defines optimal viewing distance (P1 for 1m, P2 for 2m). Lower pitch = sharper image at closer range; P1–P2 ideal for detailed presentations.
Brightness Levels	≥600 nits, optimized for ambient indoor lighting without causing glare or discomfort
Key Value Propositions	Seamless edge-to-edge display integration; modular panels for scalable installations; suitable for high-definition content in ambient environments

Outdoor LED Display Solutions

Outdoor LED display systems are engineered for robust performance in open-air environments, built with IP-rated weatherproof casings and high-brightness capabilities to maintain image clarity even under direct sunlight or rain. These systems are extensively used in outdoor advertising, DOOH (Digital Out-of-Home) media, stadiums, public transport terminals, highways, and large commercial facades.

Attribute	Specification
Pixel Pitch Range	Outdoor models generally start from P4 and extend to P10+ depending on viewing distance (10m to 100m+)
Brightness Levels	Typically exceeds ≥4,500 nits — ensures visibility in bright daylight conditions for public messaging and outdoor advertising impact
Key Features	Dust/water/UV-resistant enclosures; automatic brightness adjustment; high refresh rate for flicker-free video
Use Cases	Digital hoardings and billboards; government/public information systems; event displays and perimeter advertising

Transparent LED Display Solutions

Transparent LED displays represent next-generation display technology that combines the benefits of digital visual communication with see-through aesthetics. These displays are designed to retain transparency while projecting multimedia content, making them ideal for glass facades, showroom windows, atriums, and retail display walls where natural light and interior visibility must be preserved.

Attribute	Specification
Brightness Levels	1,000 to 5,000 nits — clear visibility across a range of lighting environments, including direct sunlight
Technical Attributes	High light transmittance (up to 70-80%); ultra-slim, lightweight modules; seamless integration onto glass surfaces
Applications	Flagship retail storefronts; automotive showrooms; luxury brand visual merchandising; high-end corporate lobbies and facades
Unique Benefits	Maintains architectural aesthetics; enables dual-purpose use of glass structures; energy-efficient with lower heat generation

Customized LED Display Solutions

Customized LED display solutions are developed based on specific project requirements, allowing clients to align the display's physical, technical, and aesthetic attributes with the intended environment and brand objectives. These solutions are designed for unique form factors, irregular surfaces, or multi-functional installations, offering extensive flexibility in shape, resolution, size, enclosure design, and control integration.

Aspect	Customization Options
Shape	Cylindrical, curved, concave, convex, or corner-wrapped displays
Size	Modular scalability to fit large or constrained areas
Enclosure	Design-focused casings to match interior/exterior themes
Control Features	Integration with Content Management Systems (CMS), IoT, and remote monitoring tools
Use Cases	Experience centres, corporate reception areas, live event backdrops, airport/railway info zones
Strategic Advantages	Immersive visual storytelling; differentiated branding; touch/gesture/sensor-based interactivity

Products & Their Usages — Hearing Aids

Behind-the-Ear (BTE) hearing aids across Digital Programmable and Non-Programmable categories

Behind-the-Ear (BTE) Hearing Aids — Product Overview

BTE hearing aids are among the most commonly used and versatile types of hearing aids, designed to rest comfortably behind the ear while transmitting sound into the ear canal via tubing or a receiver unit. They are suitable for individuals with mild to profound hearing loss, offering superior amplification, user comfort, and extended durability.

These devices are engineered for long-term use, with features that enhance usability in daily conditions — such as resistance to earwax, moisture, and skin irritation, which are common challenges in traditional hearing aids.

Variants of BTE Hearing Aids

Variant	Description
1. Standard BTE	Designed for moderate to severe or profound hearing loss; larger batteries for longer usage and more powerful amplification; suitable for elderly patients, pediatric cases, or individuals with progressive hearing conditions
2. Mini BTE	Smaller and more discreet version of the standard BTE; typically used with thin tubing and soft domes for better airflow and reduced occlusion effect; appeals to users looking for cosmetically appealing yet functional devices
3. Receiver-in-the-Ear (RITE) / Receiver-in-Canal (RIC)	Places the receiver inside the ear canal rather than behind the ear; delivers more natural sound experience; smaller behind-the-ear unit enhances comfort and discretion; flexible design ideal for mild to severe hearing loss

Product Categories

The company currently manufactures both Digital Programmable and Non-Programmable Hearing Aids, catering to a wide spectrum of user needs and price sensitivities.

Digital Programmable Hearing Aids

These are advanced hearing solutions that use digital signal processing (DSP) technology to provide a customized and precise hearing experience.

Aspect	Detail
Key Features	Multiple user programs/settings for different environments (quiet room, noisy street, conversation); feedback suppression, noise reduction, and directional microphones; compatible with telecoils, Bluetooth, or wireless accessories
Tuning	Can be tuned or adjusted via a computer or app by an audiologist, based on the patient's audiogram
End-User Benefits	Tailored sound amplification based on individual hearing profile; automatic adjustment to environmental noise; enhanced speech clarity and comfort
Ideal For	Users seeking modern, adaptable solutions that improve both functionality and lifestyle integration

Non-Programmable Hearing Aids

These are entry-level hearing aids with pre-set amplification levels, suitable for individuals with stable hearing loss patterns or for those seeking cost-effective solutions.

Aspect	Detail
Key Features	Analog or basic digital circuits with fixed gain settings; simple volume controls and on/off switches; easy to use with minimal need for calibration; reliable and robust for day-to-day use
End-User Benefits	Lower cost compared to programmable devices; quick deployment without need for professional fitting software; suitable for rural outreach programs, elderly populations, or mass-distribution campaigns
Ideal For	First-time users or those in need of affordable hearing support with essential functionalities

Intellectual Property Status

As of now, the company does not hold patents for any of its hearing aid products or designs. However, product development is based on proven engineering practices, industry-standard components, and ongoing refinement based on user feedback and market trends.

Customers, Manufacturing & Raw Materials

Marquee customer franchise and Greater Noida-based vertical integration

Customer Franchise

Rado, Adidas, ISKCON, NBCC, Nalco, BPCL, HPCL, IOCL, Lulu, PVR, among others.

Note: Customer list spans premium retail, religious institutions, public sector undertakings, infrastructure, oil & gas, retail malls and entertainment chains — indicating diversified end-market exposure across both LED display systems and hearing aids product lines.

Manufacturing Facility

The manufacturing facility in Greater Noida spans 15,000 square feet and has an annual production capacity of 15,000 square feet of LED display systems and 400,000 units of hearing aids. This vertical integration supports consistent quality, cost-efficient production, and end-to-end control of the production process.

LED Display System — Raw Material Procurement

S. No.	Component Name	Description / Use	Source of Procurement	Domestic Availability
1	LED Module	Core display component for forming visuals on screens	Imported from China	Not domestically manufactured
2	RGB SMD 3-in-1 LED	Surface-mounted LED for full-color display	Imported from China	Not domestically manufactured
3	Alloy Die Cast Cabinet	Outer enclosure housing for LED panels	Delhi NCR (Domestic) & China	Partially domestic
4	Switch Mode Power Supply	Regulated power supply for LED operation	Imported from China	Not domestically manufactured
5	Controller / Driver	Manages signal input and LED display output	Imported from China	Not domestically manufactured

Hearing Aids — Raw Material Procurement

S. No.	Component Name	Description / Use	Source of Procurement	Domestic Availability
1	Balanced Armature Receiver	Converts electrical signals into sound for earphones	Imported from China	Not domestically manufactured
2	MEMS Microphone	Captures sound input using MEMS technology	Imported from China	Not domestically manufactured
3	DSP Amplifier Assembly	Digital processing and amplification of audio signals	Imported from China	Not domestically manufactured
4	T-Coil	Enables telecoil function in hearing aids	Imported from China	Not domestically manufactured

5	Zinc Air Batteries	Power source for hearing aids	Imported from China	Not domestically manufactured
6	Housing Kit	External casing for hearing aid devices	Delhi NCR (Domestic) & China	Partially domestic

Strengths

Operational and competitive advantages that anchor the franchise

- One of the leading specialized manufacturers of LED display systems and hearing aids with along-standing market presence under the brand name 'OSEL'. The brand's reputation has helped build trust and goodwill among clients, positively influencing prospective customers' decisions.
- Over a decade of operational experience has positioned the company as a pioneering force intailor-made LED display systems and hearing aids, resulting in nationwide expansion and partnerships with system integrators and hearing aid manufacturers.
- Deep industry insight enables consistent delivery of specialized LED display solutions that meet stringent customer specifications. The dedicated quality control and assurance team plays a central role by conducting technical and manual tests to ensure compliance and defect-free products.
- Strong geographical presence supported by operations in both domestic and international markets. The company operates from a corporate office, manufacturing and assembling setup in Greater Noida, and a registered office in Delhi.
- The manufacturing facility benefits from the availability of abundant skilled, semi-skilled, and unskilled labour in India, leading to cost-efficient production while maintaining high product quality using domestic and imported raw materials.
- Robust quality assurance and control mechanisms are in place, with inspections conducted from raw materials to finished goods. An in-house lab with automatic/mechanical machines supports the quality process.
- Cost-effective production practices include efficient raw material sourcing, quality control, smooth labour relations, and an effective production system that ensures timely fulfilment of varied orders.
- The management team, led by Rajendra Ravi Shanker Mishra (Managing Director) and JyotsnaJawahar (Whole-time Director and CFO), possesses strong technical, operational, and business development experience. The leadership has helped the company expand across multiple sectors including Government, Broadcasting, Education, Hospitality, Banking, Healthcare, Retail, Entertainment, and Religious Institutions.
- A stable and experienced workforce with domain expertise supports continued growth and expansion into new markets. The technical team is well-qualified and

technologically equipped, contributing to operational excellence in the electronics industry.

Board of Directors

Founder-led management team with multi-decade operational expertise

Rajendra Ravi Shanker Mishra — Managing Director

Rajendra Ravi Shanker Mishra, aged 47 years, is one of the Promoters and serves as the Managing Director. He pursued a diploma course in Computer Science Engineering from B S F Institute of Technology. Associated with the company since its incorporation, he is responsible for overall supervision, risk assessment, and business development. He leads the LED Division and has played a pivotal role in expanding the product portfolio, client base, and market reach. With over 18 years of experience in manufacturing and development of LED screens and hearing aids, he brings extensive domain expertise.

Jyotsna Jawahar — Whole-time Director & Chief Financial Officer

Jyotsna Jawahar, aged 34 years, is one of the Promoters and holds the position of Whole-time Director and Chief Financial Officer. She holds a bachelor's degree in Business Management from Andhra University and a Post Graduate Diploma in Management (Marketing & Finance) from Balaji Institute of Management & Human Resource Development, Pune. She previously worked with ICICI Bank Limited as Manager-II and has over a decade of experience in accounts and finance management. Appointed as

Director on 10 May 2019, and as CFO with effect from 17 January 2024, she currently heads the Accounts and Finance division. During Fiscal Year 2024, her remuneration was ₹6.00 lakhs.

Mukesh Kumar Sinha — Whole-time Director

Mukesh Kumar Sinha, aged 55 years, is a Whole-time Director. He holds a bachelor's degree in Science from Ranchi University and a diploma in Industrial Relations & Personnel Management from Rajendra Prasad Institute of Communication & Management, Bombay. With a professional background in healthcare, med-tech, and electronics, he brings over 30 years of industry experience. His past associations include Dr. Reddy's Laboratories Limited, Allergan Indian Private Limited, and HOYA Medical India Private Limited, where he served as Director and Country Manager. Since 1 December 2023, he has been heading the Hearing-Aid Division, overseeing technology development, client engagement, and project execution.

Saurav Upadhyay — Independent Director

Saurav Upadhyay, aged 38 years, is an Independent Director. He holds a bachelor's degree in Commerce from V.B.S Purvanchal University, Jaunpur, and is an Associate Member of the Institute of Company Secretaries of India. He is a partner at Saurav Upadhyay & Associates and possesses 2 years of experience in secretarial work. He has been associated with the company since 16 January 2024.

Hitu Gambhir Mahajan — Independent Director

Hitu Gambhir Mahajan, aged 44 years, is an Independent Director. She earned a bachelor's degree in Science (Home Science) from the University of Delhi and a Post Graduate Diploma in Advertising and Marketing from the Institute for Media Studies and Information Technology. With over 16 years of experience in marketing, sales, branding, and advertising, her previous role includes serving as an Independent Director at Annapurna Swadisht Limited. Currently, she is the Vice President – Sales (North) at Ontrack System and Support Private Limited. Her association with the company began on 16 January 2024.

Shareholding Pattern & Financial Highlights

Promoter-led ownership and multi-year financial trajectory

Shareholding Pattern

Category	Sep 2024	Mar 2025
Promoters	71.53%	71.53%
FIIIs	4.13%	1.83%
DIIIs	5.88%	5.38%
Public	18.46%	21.26%
No. of Shareholders	1,525	1,897

Promoter holding is stable at 71.53%. FII share has compressed from 4.13% to 1.83% over two quarters — typical post-listing churn. DIIIs held broadly steady (5.88% to 5.38%). Public participation has expanded from 18.46% to 21.26%, indicating broadening retail interest, alongside a meaningful rise in shareholder count from 1,525 to 1,897.

Profit & Loss (Figures in ₹ Crores)

Metric	Mar 2021	Mar 2022	Mar 2023	Mar 2024	TTM
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Sales	57	65	82	132	169
Expenses	55	61	73	110	142
Operating Profit	3	4	9	22	27
OPM %	5%	7%	11%	17%	16%
Other Income	0	0	0	0	0
Interest	0	1	1	3	4
Depreciation	1	1	1	1	1
Profit Before Tax	2	3	7	19	23
Tax %	33%	29%	33%	30%	—
Net Profit	1	2	5	13	16
EPS (₹)	9.99	11.39	25.04	11.31	11.67

Sales have compounded sharply from ₹57 Cr (FY21) to ₹169 Cr (TTM) — a 3-year CAGR of approximately 32%. Net profit scaled from ₹1 Cr to ₹16 Cr over the same period. OPM expanded from 5% (FY21) to 17% (FY24), reflecting operating leverage and product mix improvement, before stabilising at 16% on a TTM basis.

Balance Sheet & Cash Flows

Capital structure evolution and cash conversion profile

Balance Sheet (Figures in ₹ Crores)

Metric	Mar 2021	Mar 2022	Mar 2023	Mar 2024	Sep 2024
Equity Capital	1	2	2	12	16
Reserves	4	6	10	14	90
Borrowings	10	9	18	25	44
Other Liabilities	8	17	19	48	90
Total Liabilities	23	33	49	99	240
Fixed Assets	6	5	7	18	18
CWIP	0	0	0	0	0
Investments	0	0	0	0	0
Other Assets	17	28	42	80	222
Total Assets	23	33	49	99	240

The balance sheet has expanded sharply from ₹23 Cr (Mar-21) to ₹240 Cr (Sep-24) — reflecting both organic growth and capital raised during/after listing. Reserves jumped

from ₹14 Cr (Mar-24) to ₹90 Cr (Sep-24), indicating a meaningful post-listing capital infusion. Borrowings stand at ₹44 Cr; with D/E at 0.42x, leverage remains modest.

Cash Flows (Figures in ₹ Crores)

Metric	Mar 2021	Mar 2022	Mar 2023	Mar 2024
Cash from Operating Activity	-3	3	-11	12
Cash from Investing Activity	0	0	-2	-13
Cash from Financing Activity	5	-2	8	4
Net Cash Flow	2	1	-4	4

Operating cash flow has been uneven historically (negative in FY21 and FY23) but turned firmly positive in FY24 at ₹12 Cr. Investing activity intensified in FY24 (-₹13 Cr) as the company added fixed assets and built capability. The broader read is that the company is now generating operating cash supportive of growth.

Industry Overview — LED Display Systems

Market size, growth trends, segments and technological advancements

Market Size and Growth Trends

LED display systems — electronic screens using light-emitting diodes — are widely used for digital signage, advertising billboards, sports scoreboards, retail and public information displays. The global market is already in the multi-billion-dollar range. For example, Grand View Research estimates the LED digital signage market at about US\$10.7 billion in 2024, growing ~8.4% CAGR through 2030.

Other analyses suggest similar or stronger growth: Persistence projects direct-view LED displays reaching \$56 billion by 2033 (from \$13 billion in 2023, ~15.8% CAGR), and outdoor LED displays alone were approximately \$9.35 billion in 2024 (forecast ~9.8% CAGR to 2033). Overall, forecasts imply mid-high single-digit to low-double-digit CAGRs, with Future source projecting total LED display revenue over \$20 billion by 2028. Markets are strongest in Asia-Pacific (often >50% share) but growth is picking up globally as emerging regions (Latin America, Africa, Middle East) invest in digital signage.

Key Segments

The LED display market is segmented by application and form factor. Major categories include Indoor LED, Outdoor LED, Transparent LED, and Customized LED Solutions.

Segment	Description / Trends
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Indoor LED	Displays for indoor venues (malls, offices, corporate events). Typically fine-pitch (dense pixels) for close viewing. Indoor modular screens have historically dominated (approx 59% share of global modular display revenue in 2023) due to mall and enterprise demand. Bluetooth connectivity and ease of control make them attractive for retail, education and presentation.
Outdoor LED	Ruggedized, high-brightness screens for outdoors (billboards, stadiums, traffic screens, digital billboards). Outdoor LED volumes are large and growing (~9.8% CAGR to 2033). Must withstand weather and are extremely bright. They drive much of the market's value.
Transparent LED	See-through LED panels (often integrated into glass facades or windows) that display images while allowing light to pass. Relatively small base (hundreds of millions USD today) but high-growth. One report values all transparent displays at \$2.42 billion in 2023 with ~42% CAGR. Applications include retail storefronts, AR/VR showroom windows, and automotive HUDs.
Customized LED	Tailor-made configurations (curved, flexible, or uniquely shaped LED video walls for stage events, art installations, architecture). Not commodity products; vary widely. Niche but growing market segment. Examples: cylindrical LED billboards, 3D stage backdrops.

LED Display — Technology & Competition

Technological frontiers and global competitive landscape

Technological Advancements

Ultra-Fine Pixel Pitch & MicroLED

Shrinking Pixel Pitches: Pixel pitches are now below 1 mm, enabling ultra-high-resolution displays suitable for cinema-quality large screens. **Market Growth:** Per Future source, ultra-narrow-pitch (UNPP) LEDs saw over 30% growth in 2023 and are projected to surpass \$1 billion by 2025. **Emerging MicroLEDs:** Tiny LEDs embedded on silicon substrates offer thinner, brighter panels without backlights — seen as the future of premium large-format displays. **8K and Large-Area Displays:** High-resolution panels (up to 8K) and larger display formats are becoming more commercially viable.

Smart and Connected Displays

Integration of IoT & AI: Modern LED displays feature intelligent systems that automatically adjust brightness and content based on environmental conditions. **Remote Management:** Displays can be monitored and updated in real-time via 5G wireless connectivity. **Adaptive and Interactive Features:** Some screens can interact with users and adjust in response to sensors detecting temperature, light, or user presence.

Flexible, Transparent & Energy-Efficient

Flexible Displays: Rollable and bendable LED panels support creative installations (curved walls, wraparound columns). **Transparent LED Screens:** Acoustically-transparent panels are emerging — in 2024, China introduced the world's first acoustically-transparent LED cinema screen. **Energy Efficiency:** MicroLED and OLED

technologies reduce power usage; adaptive brightness dynamically adjusts to ambient lighting; sustainable materials reduce e-waste.

Immersive Applications & System Integration

Virtual Production Studios: LED walls are replacing green screens in film/video production, creating dynamic, real-time virtual environments. **AR/VR Integration:** Used in VR/AR mixed-reality experiences and immersive rooms. **Event Broadcasting:** Large-scale events (e.g., Olympics) use LED virtual displays for enhanced venue experience and advanced broadcasting backdrops.

Competitive Landscape — Global LED Display Market

The LED display industry is highly competitive, featuring a mix of diversified global electronics giants and specialized OEM manufacturers offering solutions across outdoor billboards, ultra-fine-pitch indoor panels, and transparent displays.

Region	Key Players & Strengths
South Korea	Samsung Electronics — LED Signage (IF Series), QLED-based displays; high-end indoor/outdoor LED. LG Electronics — MAGNIT video walls, Transparent OLED; innovation in transparent and fine-pitch displays.
Japan	Sony — Crystal LED (CLED) modular displays; premium, high-resolution microLED for broadcast studios and luxury installations. NEC/Sharp — Professional-grade LED signage; integrated AV solutions.
Europe	Barco (Belgium) — UniSee platform, fine-pitch LED video walls; corporate and control room solutions with strong color uniformity.
North America	Christie (Canada) — MicroTiles LED series; pioneer in modular, fine-pitch displays. Daktronics (USA) — Large-scale outdoor displays, stadium scoreboards; market leader in sports and outdoor signage. Nanolumens (USA) — Custom indoor LED displays, creative form-factors.
China & Hybrids	Leyard/Planar — TVH series, CarbonLight; high-end indoor LED video walls. Unilumin — Large-format LED, rental/fixed; global footprint. Absen — Rental LED panels, fixed installations. AOTO — High-precision LED for commercial and command centres.

Market Share Concentration & Outlook

The global LED display market is moderately consolidated. Per a 2020 analysis, the top 8 global LED display manufacturers captured approximately 58% of total market revenue, with Leyard and Unilumin ranked #1 and #2, followed by Daktronics, Hikvision, Samsung, Absen and others. Samsung and LG are pushing microLED signage advancements; Leyard continues expanding via the Planar acquisition; Sony focuses on premium cinema-grade installations.

Industry Overview — Hearing Aids

Global market scale, growth drivers, segments and technology frontier

Market Size & Growth Trends

The global hearing aids market was valued at US\$8.48 billion in 2024, and is projected to reach approximately US\$12.6 billion by 2030, reflecting a CAGR of ~6.8% (2024-2030). Other estimates suggest similar growth trajectories, with the market at US\$7.96 billion in 2023.

Key Growth Drivers

- **Aging Population:** Primary driver, as hearing loss incidence increases with age. The population aged 65+ is expected to more than double by 2040.
- **Rising Awareness & Public Health Initiatives:** Increased education and screening programs improving early diagnosis and adoption.
- **Technological Advancements:** AI-powered sound processing; Bluetooth and wireless integration; rechargeable longer-lasting batteries; smartphone compatibility and app-based control; smaller discreet near-invisible designs.

Key Segments by Form Factor

Type	Characteristics / Trends
BTE (Standard)	Larger behind-the-ear units with tubing; high amplification and long battery life; supports Bluetooth and remote control; preferred for ease of use. Growth supported by miniaturization (Mini-BTE models offering similar performance in smaller sizes).
Mini BTE (BTElite)	Smaller and lighter variant of BTE; delivers BTE-level power in more discreet form; increasingly popular with active users; segment growth driven by comfort advantages.
RITE (Receiver-In-Ear)	Receiver (speaker) positioned inside the ear canal; nearly invisible design preferred for cosmetic reasons; canal/RIC devices cancel external noise effectively.
Canal / ITE / ITC / CIC	Custom-molded to fit inside the ear canal; fastest-growing category due to compact size and aesthetic appeal; popular among users seeking comfort and daily usability.

Technological Advancements

Advanced Signal Processing & AI: Modern hearing aids use sophisticated digital signal processors combined with neural-network algorithms. Devices like Starkey's latest hearing aids incorporate dedicated neural processing units for speech recognition and noise reduction directly on-device. Adaptive features include feedback cancellation, automatic scene detection, and real-time environment classification.

Wireless Connectivity: Bluetooth (especially Bluetooth LE Audio with Auracast broadcast) is now standard, improving range and audio quality. Hearing aids can stream from smartphones, TVs, and other Bluetooth devices, with companion app control.

Health Monitoring & Sensors: 3D motion sensors track activity and provide fall detection alerts; fitness/health tracking features include step counting and balance assessment.

Battery & Form Factor: Rechargeable lithium-ion batteries offer multi-day usage; micro-molding and 3D printing enable CIC, IIC and eyeglass-integrated designs.

Teleaudiology: Audiologists can remotely fit and tune hearing aids via cloud platforms; AI-driven customization expedites fitting; FDA-approved OTC hearing aids broaden accessibility.

Challenges & Opportunities

Challenges: Only about 10% of U.S. adults who need hearing aids actually use them. High device costs and limited insurance coverage (Medicare excludes standard hearing aids) create financial barriers. Social stigma and adjustment difficulties further constrain adoption. Lengthy FDA approval processes slow innovation, though OTC pathways are easing restrictions. Pricing pressure from low-cost OTC audio devices and personal sound amplifiers impacts traditional manufacturers.

Opportunities: Growing addressable market driven by aging population and rising awareness. Increased early screening by governments and health organisations supports timely intervention. Rapid AI-driven noise filtering and adaptive sound make hearing aids more appealing. Telehealth and direct-to-consumer models reduce access barriers. Asia and Latin America remain under-served, representing significant growth potential. OTC hearing aid pathways foster easier access and greater consumer choice.

Strategic Roadmap

Management's six-pillar plan to compound revenue and brand equity

1. Market Penetration and Geographic Expansion

- Engaged in designing, manufacturing, assembling, and providing post-sale services of LED display systems and hearing aids for domestic and international markets.
- Focus on strengthening presence in existing geographies by building deeper relationships with current channel partners.
- Aiming to expand sub-geographically within India and explore untapped markets and product segments to mitigate risk and widen growth opportunities.
- Targeting high-demand international regions, especially metropolitan areas in the Middle East and North America for LED display systems.
- Hearing aids currently sold in B2B format via government tenders and white-label manufacturing.
- Entry into B2C retail segment planned through audiologist clinics across India.

2. Embracing New Technologies for Product Diversification & Innovation

- Committed to remaining a technology-driven manufacturer by leveraging the latest innovations to expand the product portfolio.
- Development of customized LED display variants suited for different industries is underway.
- Integration of features such as interactive screens, eco-friendly materials, and energy-efficient components in LED systems.
- Hearing aids under development include In-the-Ear (ITE), Completely-in-the-Canal (CIC), Invisible-in-the-Canal (IIC), Receiver-in-Canal (RIC), and In-the-Canal (ITC).

3. Focus on Quality Control

- Quality control process begins with supplier selection and component inspection.
- Sample testing conducted to verify electrical characteristics of components.
- Each module is tested for electrical functionality, followed by comprehensive testing of the finished product.
- Emphasis placed on high product quality to ensure reliability, performance, and customer satisfaction.

4. Marketing Strategy

- Business operations enhanced by expanding customer base through marketing efforts.
- In-depth understanding of customer preferences and behavior enables strong customer loyalty.
- Continuous improvement of product-mix to meet evolving customer expectations.
- Marketing and sales team comprises 12 professionals, with plans to induct industry experts for further expansion.
- Product usage by reputed clients enhances brand visibility and nationwide inquiries.
- Experience from domestic operations used to align with global trends and boost readiness for international markets.

5. Client Relationship Management

- Strong client base built through reliable service and repeat business.
- Focus on maintaining long-term relationships with existing clients to drive sustainable growth.
- Strong client network leveraged to secure new business and strengthen market position.

6. Operational Efficiency and Cost Optimization

- Emphasis on reducing costs while enhancing operational efficiency.
- Adoption of effective supervision and strategic planning to minimize costs.
- Implementation of skill upgradation, process modernization, and optimized service activities.
- Ongoing evaluation of procurement policies and service processes to identify and eliminate bottlenecks.
- Resources allocated optimally to maximize output and minimize wastage.

Disclosures

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