

ENGINEERING INTELLIGENT HUMAN-CENTRIC AV ECOSYSTEMS FOR THE FUTURE WORKPLACE

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*India's professional audiovisual industry is undergoing a transformative change as groundbreaking technologies including Artificial Intelligence (AI), cloud infrastructure, IoT integration, and immersive experiences converge to create intelligent, connected workplaces. In this exclusive feature, **Sachin Hallikeri**, CTO, Online Instruments (India) Limited, examines the technological forces reshaping the pro AV landscape. The industry leader explores how AI-powered platforms, IoT-driven smart spaces, AVoIP architecture, and immersive technologies are creating seamless, human-centric environments that define the future of intelligent workplaces.*

The Audiovisual (AV) industry is undergoing its most significant transformation since the introduction of digital conferencing. Organisations across the globe are moving beyond traditional meeting rooms to intelligent, AI-powered collaborative environments that seamlessly connect people, spaces, and data. Modern enterprises no longer view AV as a support function; it has become a strategic business enabler that enhances productivity, user experience, and operational efficiency.

One of the most impactful trends is the adoption of **AI-enabled collaboration platforms**. Features such as automatic camera framing, speaker tracking, voice isolation, real-time transcription, multilingual translation, and meeting summarisation have revolutionised hybrid work. These innovations ensure every participant enjoys an inclusive and immersive experience, regardless of their location.

Another major advancement is the rise of **IoT-driven smart meeting spaces**. Sensors now monitor room occupancy, air quality, lighting, and equipment health, enabling organisations to optimise energy consumption while ensuring meeting spaces are al-

ways ready for use. Predictive maintenance powered by cloud analytics minimises downtime and significantly reduces operational costs.

Cloud-managed AV ecosystems are rapidly replacing traditional on-premises infrastructure. Centralised monitoring, remote troubleshooting, automated firmware updates, and device analytics allow IT teams to manage thousands of AV endpoints across multiple locations from a single dashboard. This shift has dramatically improved scalability, security, and lifecycle management.

The emergence of **AV over IP (AVoIP)** has further transformed enterprise deployments. By leveraging standard network infrastructure, organisations can distribute ultra-high-definition video and low-latency audio across campuses without the limitations of conventional matrix switching systems. This architecture offers unmatched flexibility while reducing installation complexity and future expansion costs.

Artificial Intelligence is also reshaping **Digital Signage**. AI-powered content management systems now deliver personalised and context-aware information based on audience demographics, time of day, occupancy, or business requirements. Combined with interactive touch displays and immersive visualisation technologies,



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digital engagement has become significantly more dynamic and meaningful.

Forward-thinking organisations are also embracing **Extended Reality (XR)**, **Augmented Reality (AR)**, and **Digital Twins** for training, simulation, design collaboration, and executive decision-making. These technologies create highly interactive environments that improve learning outcomes, accelerate innovation, and reduce project risks.

Looking ahead, the convergence of **AI**, **Cloud Computing**, **IoT**, **AVoIP**, and **immersive technologies** will define the next generation of intelligent workplaces. The focus is no longer on deploying sophisticated hardware but on creating frictionless, intuitive experiences that empower users while simplifying technology management.

As technology leaders, our responsibility is not merely to implement AV solutions but to engineer connected ecosystems that are secure, scalable, sustainable, and human-centric. The future of AV lies in delivering seamless digital experiences where technology becomes virtually invisible, allowing collaboration and innovation to take centre stage.