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Bolstering India's XR Startup and Innovation Ecosystem

A case study of the TN AVGC-XR Policy 2026



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Executive Summary

of the Policy Perspective



Experiential technologies hold revolutionary potential to transform India's workforce upskilling, healthcare delivery, and industrial productivity on an unprecedented scale. Extending well beyond AVGC (Animation, Visual Effects, Gaming, Comics), they unlock high-impact applications in healthcare, defense, manufacturing, heritage-tourism, and education. India's unique positioning to lead Global South XR innovation stems from its vast talent pool, frugal engineering expertise, and initiatives like IIT Madras's XTIC XR Corridor.

To establish India as a premier XR destination, this document evaluates central and state XR policies, offering recommendations to address critical gaps in hardware/R&D talent and funding constraints. Using Tamil Nadu's XR Policy 2026 as a case study, it provides actionable perspectives adaptable to other state and national frameworks.

While Tamil Nadu's AVGC-XR Policy 2026 offers distinct advantages over

The TN policy establishes a strategic framework positioning the state as a global services leader in AVGC-XR targeting \$1 trillion economy goals by 2030 through 20% national market share and 200,000 service jobs. Key measures include dedicated facilitation cells, specialized financial incentives, talent pipelines via college centers, startup ecosystems, anchor investments establishing Chennai as creative capital, plus infrastructure, IP development, and immersive tech integration across industries.

other states, close analysis reveals strategically vital areas either absent, mentioned peripherally, or deferred to future announcements. The policy predominantly emphasizes service-oriented digital work, reminiscent of 1990s IT strategies focused on back-end services rather than high-value creation. Though appropriate for India's context then, Tamil Nadu's current strengths demand bolder emphasis on climbing the AVGC-XR value chain.

This document urgently recommends policy revision prioritizing innovation, ensuring 50% workforce readiness for high-value-chain roles alongside systematic service-sector training. It strongly advocates academia's pivotal role, positioning IITs, Anna University, NITs, IIITs, state universities, and design schools as anchor institutions, not mere stakeholders or training vendors, for Tamil Nadu's AVGC-XR skilling ecosystem.

Case study of TN XR Policy

Tamil Nadu offers distinct advantages for hosting industries, particularly high-tech sectors like XR and manufacturing.

- Hosts over 38,000 factories, India's most industrialized state with clusters in automobiles, electronics, textiles, and renewables.
- Produces the highest number of engineering graduates annually, fueled by IIT Madras, Anna University, and NIT Trichy for skilled, R&D-ready workforce.
- Boasts the highest women workforce (41% of total women workforce in India) participation in factories across India, fostering inclusive growth and empowering women with diverse talent pools.
- Hosts India's highest number of operational SEZs (49+ as of 2025), driving exports and offering tax incentives.
- Four major ports (Chennai, Ennore, Tuticorin, Karaikal) and international airports ensure seamless global trade and logistics.
- Business-friendly policies like Tamil Nadu Industrial Policy 2024 provide incentives, SEZs and plug-and-play parks.
- Leads in renewable energy (wind / solar), ideal for sustainable green manufacturing and EV ecosystems.
- Strategic coastal location with industrial corridors linking to Bengaluru, supporting China+1 investments.
- Hosts the most data centers in India, including Equinix, Sify, and Colt hyperscale facilities with transpacific fiber and AI-ready high-speed computing infrastructure.
- Chennai hosts 5+ active cable landing stations (e.g., SEA-ME-WE 6/SMW6, MIST, IAX, BBG, i2i), with 3 more planned, connecting to Singapore, France, Malaysia, Thailand, Middle East, and Southeast Asia via transpacific routes-delivering >200 Tbps capacity and ultra-low latency. This enables seamless global data/cloud access, ideal for AI, XR rendering, and hyperscale computing, outperforming inland cities.

Highlights of the TN's AVGC Policy 2026



Vision and Mission

- Global AVGC-XR Powerhouse focussing on services
- USD 1 Trillion Economy Contribution by rendering services
- High-end Skilling and Job Creation towards services



Key Objectives

- 2 lakh New Service Jobs
- 200 AVGC-XR Service Startups
- 20% Indian Market Share of providing services
- IP Capital of India
- Business Starter Toolkit



Infrastructure

- Vijan CoE
- TIDEL NEO Parks Priority



Financial Incentives

- Startup and MSME Support
- Venture Funds
- Large and Mega Scale



Skill Development

- School Curriculum Integration
- Digital Arts Center
- Incentive Programs
- Naan Mudhalvan Scholarships



Regulatory Framework

- Labor Law Relaxation
- Self-Certificate Scheme
- Women in Night Shifts
- NIC Code Amendment Proposal



Implementation

- ELCOT Nodal Agency
- AVGC-XR Steering Committee
- Inter Departmental Committee

What the TN AVGC-XR Policy 2026 Has Missed or Not Mentioned

A careful reading of the policy reveals several strategically important themes that are either absent, mentioned only in passing, or left to future announcements. These gaps disproportionately affect XR startups, academia, computer infrastructure, and AI-asset pipelines, the areas that will determine the state's long-term competitive position.

- No explicit AI-Asset / Generative-XR track. The policy mentions AI as a future sunrise technology but does not define AI-asset pipelines (text-to-3D, neural rendering, Gaussian splats, neural avatars, procedural worlds) as a formal XR sub-class with dedicated incentives.
- No dedicated GPU / CPU compute infrastructure. There is no mention of a state-operated XR-AI compute cloud, GPU credit programme, or subsidised per-hour access for startups and academic users, a foundational gap for any deep-tech XREcosystem.
- No quantified workforce composition target. The policy sets a two-lakh jobs goal but does not specify how many will be in high-value-chain roles (product, tools, engine, R&D) versus service roles, risking a re-run of the 1990s services-led trajectory.
- No XR Corridor / XR Superhighway architecture. The national XR Corridor framework (XR Innovation Centres, Skill Centres, Experience Spaces, Manufacturing Centres, Education Centres) is not explicitly adopted or mapped into the state hub-and-spoke model.
- No XR hardware manufacturing chapter. HMDs, haptic interfaces, trackers, depth cameras, and specialised sensors are not treated as strategic manufacturing sub-sectors, despite Tamil Nadu's strong electronics base



(Sriperumbudur, Hosur, Coimbatore).

- No PLI/ duty-free import linkage for XR hardware. The policy does not leverage the central PLI, EMC, or customs-duty concessions to attract XR hardware anchors into the state.
- No pre-announced, rule-based incentive table for Large / Mega units. Incentives are left case-to-case, creating unpredictability for investors, unlike the UK/Canada transparent 25-40% rebate tables.
- Credit-guarantee schemes for XR startup lending are not spelt out. While IP-collateralisation is mentioned (and deferred), there is no interim bank-lending risk-cover mechanism.
- No matching-fund (co-investment) mechanism with VCs. The venture-

fund mention is generic; there is no formal 1:2 or 1:1 state-VC co-investment scheme with a public rulebook.

- R&D tax credit / weighted deduction is not claimed. There is no explicit request to the Centre for a 150% weighted R&D deduction for XR, haptics, and AI-asset R&D.
- Capital Gains Tax exemption / roll-over for XR investors is not proposed. A significant angel / VC incentive is missing.
- Fast-track IP processing window is missing. While the policy rebates IP-filing costs, it does not commit to a six-month patent / design / trademark processing window in partnership with CGPDTM.
- Metaverse governance and child-safety guidelines are not articulated. Privacy, content moderation, age-appropriate use, biometric / gaze-data protection, and accessibility rules for XR deployments are absent.
- Alignment with MIPS (Metaverse India Policy and Standards) and open-source interoperability is not operationalised. The policy references innovation but not the standards layer that makes content and platforms portable.
- No Indic AI-foundation-model initiative. The policy does not fund training of India-specific models for Indic characters, architectures, costumes, and languages, the moat for long-term IP.

- Faculty-startup equity protection is not mentioned. Professors cannot formally hold equity in XR startups emerging from their labs without procedural friction, a recognised barrier to academic spin-outs.
- No dedicated XR Fellowship / research stipend programme. The Naan Mudhalvan scholarships cover skilling, but there is no MS / PhD-level research fellowship for high-end XR talent.
- Regional edge-compute pods for Tier-2 cities are not planned. Coimbatore, Madurai, Tiruchirappalli, Salem, and Tirunelveli are named as spokes but lack dedicated GPU / XR compute infrastructure.
- The first Customer / government-as-buyer mechanism is not defined. No fast-track GeM window for state departments (health, tourism, police training, skill development, education) to procure from TN-based XR startups.
- Women-in-XR, rural XR, and regional-language content programmes are not detailed. Diversity and inclusion goals for the XR workforce and content corpus are not quantified.
- Sustainability and carbon intensity of compute are not addressed. Green-compute SLAs, renewable-linked data centres, and carbon disclosures for XR production are missing.
- Online money gaming exclusion ignores cross-sectoral innovation spillovers. The policy foregoes the high-concurrency, low-latency, fraud-detection innovations that often emerge in that sub-sector.
- No structured academic block-grant for anchor institutions. IITs, NITs, IIITs, Anna University, and IICT are referenced but not given sustained, formula-based annual funding for XR research.
- Visiting international faculty budgets is not quantified. International exchanges are mentioned but without a clear budget line or a target number of visiting chairs.



Skills Gap in India and Tamil Nadu

India's AVGC-XR sector faces a significant skills gap, with current workforce shortages hindering growth despite high demand for specialized talent. The Whitepaper on XR in India released by XTIC IIT Madras shows the skills-gap for XR in India.

Current Workforce Stats

The sector currently employs about 2.6 lakh people directly, with projections needing 20-23 lakh more jobs by 2030-2032 to sustain expansion. A mismatch exists between job seekers' skills and employer needs, even amid general unemployment, requiring better tech-art blends like XR development and haptics.

India currently accounts for less than 1% of the global AVGC market, despite projections that it could reach 3-5% with the right interventions. Much of the work is in outsourced services for global studios, so value capture through Indian-owned IP, platforms, and XR products remains limited.

Key Challenges

- Lack of strong academic support offering foundations in AVGC-XR. What is being taught in academia is on how to use existing tools, not on how to create a new tool for AVGC-XR.
- Lack of industry-aligned training in roles like animators, XR designers, and AI-integrated creators.
- Data shortages on employment and education ecosystems complicate policy-making.
- Regional disparities, with Tier-2/3 cities lagging in infrastructure.

Central Government Initiatives

Although Union Budget 2026 allocates ₹250 crore for AVGC talent development, including 15,500 creator labs in schools/colleges and skills integration from secondary education, targeting 2 million professionals by 2030, focussing on innovations and foundations, particularly curriculum is missing. Efforts like IIT Madras' XTIC XR Corridor and IICT collaborations focus on

curriculum, internships, and frugal XR innovations are needs of the hour. These focus on curriculum, foundations and innovation is missing in the TN policy.

TN's AVGC/XR innovations, or in general India's AVGC-XR innovation lag global leaders mainly because the ecosystem is still service oriented, under-funded in R&D, and constrained by skills, infrastructure, and IP gaps, even though demand and talent potential are high. Experts therefore argue for a focused "mission mode" policy push around talent, original IP, R&D, infrastructure, finance, and regulation to close the gap.

Education Gap

Curricula in many AVGC/XR institutes are outdated and not aligned with industry needs (realtime engines, XR design, technical art, tools and pipelines). The national task force flags a major skill gap between education and employment, with no single apex academic institute setting standards for AVGC/XR the way IITs/IIMs do in other fields.



Skilling: **Building XR Academia in Tamil Nadu**

The policy already mentions Digital Arts Centres and Naan Mudhalvan scholarships. However, XR skilling needs a sharper, layered approach across school, under-graduate, and research levels, anchored by flagship institutions like IIT Madras (XTIC), Anna University, NITs, IIITs, NIDs, and IICT.

The following are concrete academic interventions:

- Institute a State-wide XR Curriculum Framework, co-designed with XTIC IIT Madras, covering six layers: (1) foundational math/CS, (2) real-time graphics, (3) human perception & HCI, (4) XR hardware & sensors, (5) AI for XR assets, (6) ethics / accessibility / MIPS.
- Fund 10 University XR Centres of Excellence across Tier-1 and Tier-2 cities (Chennai, Coimbatore, Madurai, Tiruchirappalli, Salem,

Tirunelveli, Vellore, Erode, Tirupur, Thoothukudi) with Rs. 10 crore CapEx each for GPU labs, HMDs, haptics kits, mocap studios.

- **Launch the TN XR Fellowship:** 500 funded MS/PhD fellowships in XR/immersive computing / AI-assets, with Rs. 60,000 / month stipend and Rs. 3 lakh/year research grant.
- Create a Professor of Practice in XR pool of 100 industry experts (game studios, XR product teams, AI-asset creators) jointly appointed across state universities.
- Mandate XR and AI-asset modules in all Computer Science, Electronics, Design, and Media programmes of state-run universities from AY 2027-28 onwards.
- Establish a School-to-XR pipeline: AR/VR exposure kits in 1,000 government higher-secondary schools through Naan Mudhalvan, mapped to NEP 2020 creative-tech pathways.
- Fund a State XR Skills-Gap Study every two years, benchmarked on

the XTIC Whitepaper methodology, to guide curriculum and incentive updates.

- Set up 5 Regional XR Innovation Clinics where students, MSMEs, and startups co-develop XR products under academic mentorship, modelled on the XR Corridor archetype.

TN Government Support Expected for Academia

- Ring-fence at least 20% of the R&T Fund for academic XR research, applied and foundational, through competitive calls.
- Create an XR-Academic Block Grant of Rs. 5 crore per year to each anchor institution (XTIC / IIT Madras, Anna University, NITs, IIITs) for labs, faculty, and industry connections.
- Offer 100% capital subsidy for academic GPU / CPU compute clusters dedicated to XR and AI-asset research (minimum 25% usage for student and MSME projects).
- Provide faculty-startup equity-sharing protection: allow professors to hold up to 20% equity in XR startups emerging from their labs without procedural blockers.
- Underwrite a Visiting International Faculty Programme with Rs. 30 crore / year budget, so global XR experts can teach 6-12 week modules in TN universities.
- Incentivise industry-sponsored academic chairs in XR, AI-assets, haptics, perception engineering, and metaverse governance, with matching state contribution.



Scope for Improvements

While the Tamil Nadu AVGC-XR Policy 2026 is a comprehensive framework designed to foster a "creative powerhouse," several areas could be subject to critique based on the dependencies, exclusions, and regulatory shifts it introduces:

1. High Ambition and Market Dependency

The policy's success is heavily predicated on the State's ability to capture 20% of the Indian AVGC-XR service market and create 2 lakh jobs by 2030. These goals are tied to broader projections that India's service industry will grow sixfold to ~\$6 billion in that same timeframe. If national growth fails to meet these projections, or if other Indian states offer more aggressive competing service policies, Tamil Nadu may struggle to meet its stated objectives.

2. Exclusion of the Online Money Gaming Sector

The policy takes a firm stance by banning and providing no support

for "online money games," which it distinguishes from e-sports and social video games. While this is framed as a measure to safeguard consumer interests and address financial irregularities, it excludes a significant and high-revenue segment of the global gaming industry from the state's incentive ecosystem. This choice may limit the total economic impact and tax revenue compared to regions that regulate rather than exclude this sub-sector.

3. Potential Erosion of Worker Protections

To create a "business-friendly environment," the policy proposes significant relaxations of labor laws. Specifically, AVGC-XR companies will be exempt from provisions of the Tamil Nadu Shops and Establishments Act, 1947 regarding work hours and opening/closing times, as well as mandatory festival holiday provisions. In an industry often criticized for "crunch culture," these exemptions could be viewed as potentially detrimental to

employee well-being and work-life balance.

4. Institutional and Bureaucratic Complexity

Despite the focus on "Ease of Doing Business," the policy establishes a multi-layered governance structure, including:

- The ELCOT AVGC-XR Cell for facilitation.
- An apex AVGC-XR Steering Committee to monitor implementation.
- An Inter-Departmental Committee (IDC) to approve structured incentives.
- The Tamil Nadu Online Gaming Authority for regulation. Managing these multiple bodies could lead to bureaucratic overlaps or delays in incentive disbursement, even with the goal of 30-day clearances.

5. Lack of Predictability for Large Investors

While MSMEs and startups have defined rebate structures, incentives for Large and Mega Scale companies are finalized on a "case-to-case basis". This lack of a fixed, transparent incentive table for major players might create uncertainty for international investors who may prefer the standardized tax rebates (25-40%) offered by mature global markets like the UK or Canada.

6. Implementation Risks and "Course Correction"

The policy acknowledges the need for a mid-term review at the end of the second year to identify "course corrections" or "budget



reallocation". This suggests an inherent uncertainty in the initial planning, highlighting that the "nascent stage" of the local industry makes long-term forecasting difficult.

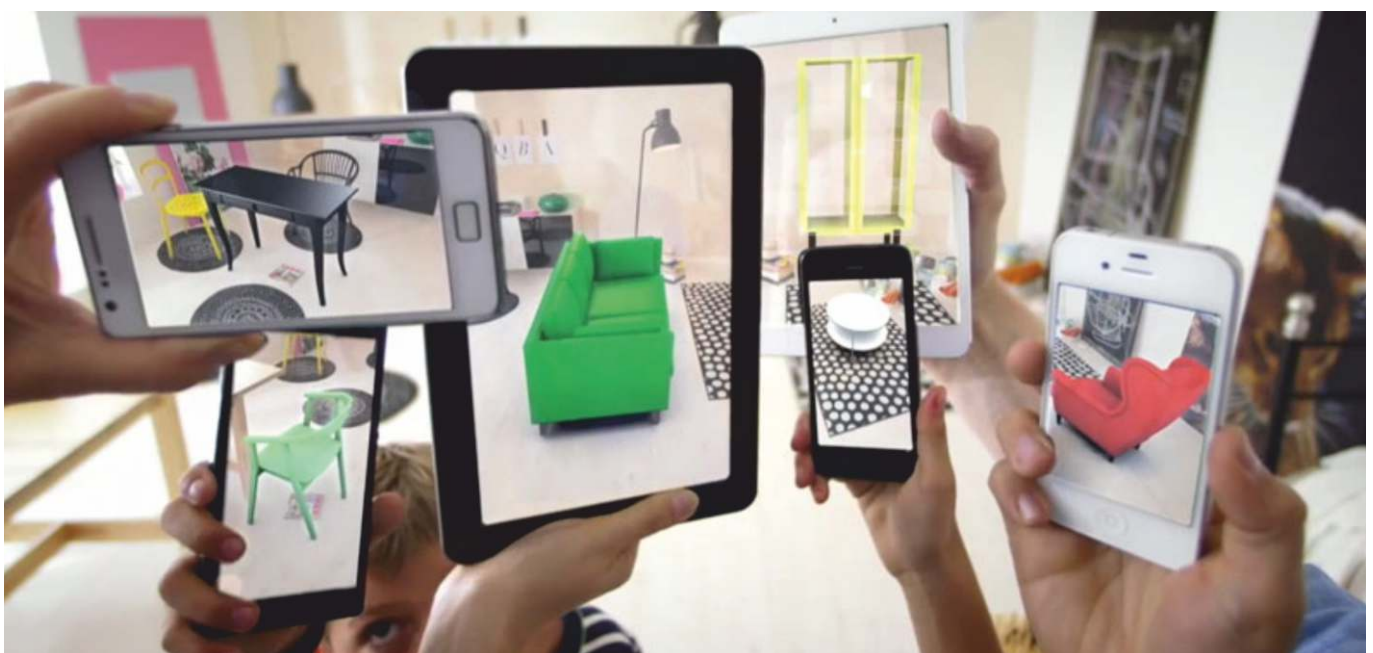
7. Missing Role of Academia

Achieving this 50-50 rebalancing between high-value-chain and service-oriented roles will be impossible without a deliberate, central role for academia—especially institutions such as IITs, IIITs, NIDs and the new Indian Institute of Creative Technologies (IICT). The IICT has been set up in Mumbai as the National Centre of Excellence for AVGC XR, explicitly modelled on IITs and IIMs, with a mandate to offer specialised programmes, drive applied R&D, and anchor innovation and IP creation in the sector. Its mission includes developing over 10,000 domain experts and leaders, skilling more than one million learners by 2035, and catalysing 500+ original Indian IPs, supported by deep partnerships with global technology companies. These are precisely the

kinds of capacities required to supply the high-end product designers, tool developers, technical artists, and XR system architects that a 50% high-value workforce target implies.

IITs can act as powerful regional multipliers. The Experiential Technology Innovation Centre (XTIC) at IIT Madras, for example, has articulated an "XR Corridor" vision to make India a world leader in XR by tightly linking academia, industry, startups, and government around immersive technologies. Through initiatives such as the XTIC Academic Partnership Program (XTIC APP) and the national XR Summit, IIT Madras is onboarding universities across the country to co-develop XR curricula, run joint projects, and train high quality XR system designers and developers in both hardware and software, bridging applied and core R&D. This kind of academic industry network directly supports the creation of the innovation oriented half of the workforce, while also upgrading the capabilities of those who will work in service pipelines.

National policy documents already recognise academia as a structural lever: **the AVGC XR Task Force and subsequent model state policies call for integrating AVGC XR content into mainstream higher education, creating accelerators and innovation hubs inside campuses, and using NEP 2020 to seed creative-tech pathways from school through university. If Tamil Nadu aligns its AVGC XR Policy 2026 with these directions—by treating institutes like IIT Madras, IICT and leading state universities as anchor hubs for curriculum design, advanced labs, joint research, and startup incubation—the state can reliably produce the kind of deep, interdisciplinary talent base needed for high-value-chain roles, while simultaneously mass-training service-oriented professionals through affiliated colleges and vocational programmes. In effect, academia becomes the backbone that makes the 50-50 workforce vision operational, measurable, and sustainable over the life of the policy.**



Ambiguities in the Policy

The innovation component of the Tamil Nadu AVGC-XR Policy 2026 is ambitious, aiming to make the state a leader in Real-time Content Development (RCD) and Intellectual Property (IP). However, a critical analysis reveals several potential friction points and structural risks:

1. Operational Lag in High-Risk Initiatives

The policy introduces a "pioneering initiative" for IP-Collateralisation, allowing companies to use intangible IP as collateral for loans. While innovative, the policy admits that the "commencement of this initiative will be announced at a future date" and requires the creation of a complex validation process involving third-party valuation firms. This delay means that for the immediate future, startups may still face the same capital constraints that currently hinder original IP development.

2. Ambiguity in R&D Funding Tailoring

The Rs.250 crore Research & Technology (R&T) Fund is not exclusive to AVGC-XR; it is a shared resource for various sunrise sectors based on 2021 and 2022 industrial policies. Since the eligibility and operational methodology follow these older, broader frameworks, there is a risk that the fund may not be agile enough to support the rapid, iterative innovation cycles unique to the AVGC-XR sector, such as breakthrough advancements in AI-driven content delivery or niche Computer Graphics research.

3. Dependency on Private Partners for Infrastructure

A significant portion of the innovation infrastructure, specifically the Centres of Excellence (CoE) for Emerging Technologies, relies on a Public-Private Partnership (PPP) model. The policy depends on "global players" to establish these centres to nurture the local ecosystem. If the state fails to attract these global partners due to competition from other regions, the high-end innovation labs-essential for "Real-time Content Development"-may remain underfunded or under-equipped.

4. Fragmented Institutional Oversight

The innovation roadmap is managed by a dense web of agencies, including ELCOT, StartUpTN, iTNT Hub, TIDCO, and the Inter-Departmental Committee (IDC). For a researcher or a small innovator, navigating this fragmented landscape to access "Grand Challenge" funding or "Technology Transfer Offices" could create bureaucratic "red tape" that slows down the very

speed of innovation the policy hopes to accelerate.

5. Innovation "Blind Spots" via Exclusions

By explicitly banning and providing no support for online money games, the policy may be cutting off innovation in high-concurrency technologies. Historically, sectors involving real-time transactions and high-user loads often pioneer advancements in server architecture, data security, and low-latency networking-technologies that have massive cross-sectoral applications in the broader XR and gaming world.

6. High Target vs. Nascent Reality

The policy sets a target to account for 20% of research inventions created nationwide. However, it also describes the local industry as being in a "nascent stage". There is a potential disconnect between the current technical capacity of the local ecosystem and the highly specialized R&D required to capture one-fifth of India's research output in a field dominated by global giants.



Recommendations



This document strongly recommends revising the Tamil Nadu AVGC XR Policy to place a much stronger and explicitly quantified emphasis on innovation-led roles, so that at least 50% of the state's AVGC XR workforce is systematically groomed for high-value-chain functions, while the remaining 50% is trained for the service segment. This recommendation is anchored in the growth trajectory and structure of India's AVGC XR industry and the Skill-gap analysis of XR in India by the XTIC's "**Whitepaper on XR in India**".

Nationally, the sector currently employs about 2.6 lakh professionals but is projected to require between 20 and 23 lakh direct jobs by around 2030-2032, implying almost a tenfold expansion of the talent base over the next decade. At the same time, sectoral revenues are expected to rise from roughly USD 3 billion today to more than USD 26 billion by 2030, driven by both domestic demand and continued global outsourcing. However, India today accounts for only about 0.5-1% of the global AVGC XR market, even though

government and industry assessments suggest that a 5% global share is realistically attainable with the right mix of policy, investment, and skilling. A central reason for this gap is the industry's historic concentration in relatively low-margin, service-oriented work for overseas clients, where ownership of intellectual property, brands, engines, and platforms, and therefore the bulk of long-term value, remains outside India.

Against this backdrop, Tamil Nadu's AVGC XR Policy 2026 sets ambitious quantitative targets: **capturing around 20% of India's AVGC XR market by 2030, creating approximately two lakh jobs within the state, and enabling the growth of more than 200 startups and about 100 larger companies.** Publicly available descriptions of the policy also highlight the establishment of an AVGC XR Centre of Excellence in Chennai, a hub-and-spoke model extending to cities such as Madurai, Coimbatore, Tiruchirappalli, Salem, and Tirunelveli, and the introduction of specialised AVGC XR courses and

Digital Arts Centres across 300-400 colleges, supported by scholarships under the Naan Mudhalvan programme. In parallel, the policy proposes a research and technology fund on the order of Rs.250 crore, as well as reimbursement schemes for participation in international events and for IP filings, signalling that innovation and intellectual property are recognised policy levers. Yet, in the absence of an explicit workforce composition target, there is a real risk that the majority of the new jobs created will naturally gravitate toward production and service functions, reproducing the same "**service provider**" pattern that national commentators have already identified as a structural challenge for India's AVGC XR sector.

A deliberate 50-50 design principle for the AVGC XR workforce would help Tamil Nadu avoid this trap. National and international experience shows that ecosystems which capture the greatest share of value are those that combine strong delivery capabilities with a substantial base of innovation-oriented, IP driven talent. In India's case, recent analyses estimate that the AVGC XR workforce must grow from about 2.6 lakh professionals today to between 2 and 2.3 million by 2030, with especially acute shortages in high-end skills such as gaming, XR, simulation, real-time rendering, and tool development. Simultaneously, employers report a persistent skills mismatch: even as many graduates struggle to find suitable jobs, studios find it difficult to recruit people with the right mix of technical, creative, and business capabilities, particularly for mid to high-end roles. If Tamil Nadu achieves its stated target of

around two lakh AVGC XR jobs, ensuring that at least half of these-on the order of 100,000 roles-are located in the high-value part of the chain (original IP creation, game and XR product design, advanced technical art, engine and tools development, R&D, and IP management) would directly address this high-end talent gap while simultaneously anchoring more long-term value in the state.

From a macro-economic standpoint, creative economy studies also emphasise the strong employment multiplier of AVGC XR: for every direct job, two to three indirect jobs are generated in allied areas such as digital marketing, infrastructure, localisation, testing, and platform support. High-value-chain roles tend to have even larger multipliers because they spawn reusable assets, franchises, and technology layers that can be licensed, localised, and extended across markets. A 50-50 workforce mix in Tamil Nadu would therefore not reduce the importance of services; rather, it would complement and upgrade them. Service oriented training for the other 50% of workers would continue to supply production houses, outsourcing contracts, and back-end operations that are essential for scale, while the innovation oriented half of the workforce would create the IP, products, and tools that determine the state's long-term bargaining power and share of global value. In practice, this would mean explicitly orienting at least half of all training seats, scholarships, incubation slots, and Centre of Excellence programmes toward high-value-chain outcomes, and monitoring the resulting workforce composition over the life of

the policy. Such a calibrated rebalancing would align Tamil Nadu's AVGC XR strategy with emerging national priorities-such as the proposed National AVGC XR Policy and the Indian Institute of Creative Technology's mandate to push India up the value chain-while positioning the state as not just a large delivery hub, but a genuine global leader in creative and immersive technology innovation.

1. Reframe from service-centric to value-chain leadership



- Explicitly state that Tamil Nadu aims not only to be a global hub for AVGC XR services but also for experiential technologies (XT) across hardware, software, and systems, in line with XTIC's call for India to move beyond a purely services role and take significant ownership of XR technology and IP touchlab.
- Set a workforce composition target (for example, at least 50% of AVGC XR talent trained for high-value XT roles such as XR system design, perception engineering, hardware, tools and engines, and metaverse infrastructure, with the remaining 50% in service and production pipelines).
- Create a distinct incentive track for IP and product-led firms (XR tools, haptics devices, engines, metaverse platforms) in

addition to generic service export and employment linked incentives, so that IP creation and deep tech are explicitly rewarded.

2. Embed the XR Corridor architecture into the state policy



- Adopt the XR Corridor / Superhighway framework proposed in the whitepaper-XR Innovation Centres, XR Skill Training Centres, XR Experience Spaces, XR Manufacturing Centres and XR Education Centres-and map Tamil Nadu's planned Centres of Excellence, Digital Arts Centres, and incubators explicitly to these archetypes.
- Declare Tamil Nadu a core node in the national XR Corridor, with Chennai as the primary XR hub and other cities (Coimbatore, Madurai, Tiruchi, Salem, Tirunelveli, etc.) as corridor spokes, with quantified targets for labs, joint projects, and events (hackathons, Game Jams, XR Summits).
- Use corridor language and metrics (number of connected institutions, corridor-wide pilots, shared XR infrastructure) in the policy's monitoring framework to align with the national XR Corridor vision.

3. Make academia an anchor of the ecosystem



- Recognise IITs, IIITs, state universities, and design schools as anchor institutions for the Tamil Nadu AVGC XR ecosystem, not just stakeholders or training vendors.
- Enter long-term programme level MoUs with XTIC for curriculum co-design, joint XR labs, faculty development, multi-institution research projects, and state-wide dissemination of XTIC's Academic Partnership Program (XTICAPP).
- Ring-fence a dedicated share of AVGC XR funds for university based XR research in perception engineering, haptics, embodiment, and human-computer interaction, reflecting the whitepaper's call for strong theoretical and mathematical foundations for experiential technologies.

4. Launch a Tamil Nadu XR Skill Gap and "XR Gap" Programme



- Commission a Tamil Nadu specific XR skill gap study using the methodology of the XTIC white paper, which found that most of India's XR community remains at basic application levels and highlighted urgent needs in advanced education and R&D.
- Based on this analysis, create a Tamil Nadu XR Gap Programme that directly funds advanced courses, micro-credentials, and bridge programmes in high-deficit areas such as XR hardware design, sensor integration, haptics, low-latency networking, and human-centric design.
- Set explicit targets to shift a defined proportion of learners from basic XR applications (simple demos, marketing AR) into advanced XR domains over the policy period, operationalising the white paper's "move up the value chain" mandate.

5. Align state incentives with open-source, interoperability, and MIPS



- Provide bonus points or higher subsidy slabs in state incentive schemes for projects that build on or contribute to open-source XR hardware and software stacks, reflecting the

whitepaper's emphasis on open standards and interoperability for an inclusive, scalable ecosystem.

- Require that state-funded XR deployments (for example in skilling, tourism, education) prioritise interoperable, standards-based solutions that can plug into the national Metaverse India Policy and Standards (MIPS) framework.
- Establish a Tamil Nadu Metaverse and XR Standards Working Group that collaborates with MIPS on privacy, security, accessibility, content moderation, and trust frameworks tailored to state level use cases (schools, healthcare, public services).

6. Treat XR hardware and manufacturing as strategic priorities



- Add a dedicated XR hardware chapter to the policy, recognising devices (HMDs, haptic interfaces, tracking systems, specialised sensors) as strategic manufacturing sectors in line with the whitepaper's emphasis on hardware and industrial development alongside digital growth.
- Develop an XR Manufacturing Centre/cluster within existing electronics and automotive corridors, with targeted

incentives and common facilities for prototyping, testing, and small-batch manufacturing, mirroring the XR Manufacturing Centre archetype.

- Align with central PLI and electronics schemes to attract anchor XR hardware and component manufacturers to Tamil Nadu, enabling the state to move from import dependence to technology leadership.

7. Use Tamil Nadu as a multi-sector XR testbed



- Identify "XR lighthouse" departments-health, school and higher education, skill development, industries, tourism-as early adopters and co-designers of flagship XR pilots, reflecting the whitepaper's emphasis on XR's horizontal applications across healthcare, manufacturing, education, tourism, defence, and more.
- Establish public XR Experience Spaces (museums, science centres, district skill parks) that showcase locally built XR solutions and provide hands-on exposure for students, MSMEs, and citizens, aligned with the XR Experience Space archetype.
- Create domain-specific

sandboxes (e.g., surgery training, industrial safety, climate adaptation, logistics) with clear pathways from pilot to procurement, so startups and academic labs can graduate from proof-of-concept to scaled deployments.

8. Integrate metaverse governance and human-centric safeguards



- Incorporate a full chapter on metaverse and XR governance into the policy, drawing on the XTIC whitepaper's concerns about privacy, security, fairness, accessibility, monetisation, content moderation, interoperability, and trust.
- Define age-appropriate, accessible, and inclusive guidelines for XR use in education and training, and require impact assessments for deployments in sensitive domains (policing, behavioural interventions, surveillance).
- Encourage research, via academia, on perception engineering, embodiment, and psychological impacts of XR to inform evidence-based governance and safety norms, as envisaged in the whitepaper.

9. Set up a permanent XTIC-Tamil Nadu XR Policy Council

- Create a Tamil Nadu XR Policy and Implementation Council



that includes XTIC/IIT Madras, other universities, industry bodies, startups, and civil society, mandated to keep the state policy aligned with the evolving XR Corridor, MIPS, and national XR strategies.

- Task this council with defining and tracking metrics that reflect the XTIC vision-such as the share of workforce in high-value-chain roles, number of XR IPs and patents, open-source contributions, XR hardware units produced, and number of multi-sector deployments-rather than only counting total jobs or service exports.

10. Integrating AI-Asset Building into the XR Industry



- AI-generated and AI-assisted assets (3D models, textures, rigs, motion, NPC behaviour, voice, environments) are already compressing XR production cycles by 5-10x. The TN policy may explicitly recognise AI-asset pipelines as a core XR capability rather than as a peripheral tool.

- Define AI-XR Studios as a recognised sub-class of AVGC-XR enterprises, eligible for all AVGC-XR incentives plus an additional 10% CapEx subsidy on AI compute and licensed model infrastructure.
- Establish an AI-Asset Marketplace operated by ELCOT / StartUpTN where TN-built AI pipelines, fine-tuned models, LoRAs, and generative templates can be licensed nationally and internationally, with royalty protection.
- Fund a State AI-XR Foundation Model Initiative at XTIC / Anna University to train India-specific models for Indic characters, architectures, costumes, scripts, languages, and cultural assets, ensuring the next wave of XR IP is Indic by design.
- Create clear copyright, attribution, and provenance standards for AI-generated XR assets aligned with national IP rules, so investors and publishers can trust TN-produced output.
- Offer GPU compute subsidies specifically for XR + AI pipelines (text-to-3D, neural rendering, Gaussian splats, neural avatars, procedural worlds, motion synthesis).
- Mandate AI-asset and generative-XR literacy in the state-wide XR curriculum framework, not as an optional track but as a core competency.
- Support 25 AI-XR Lighthouse Projects with Rs. 50 lakh grants each, across health (surgical sims), tourism (heritage twins), manufacturing (factory digital

twins), and education (Indic learning worlds).

11. To Improve the XR Startup Business in Tamil Nadu



- Tamil Nadu already leads in engineering talent, manufacturing, and higher education density. To translate this into a vibrant XR startup pipeline, the following targeted levers are recommended:
- Create a dedicated XR Startup Track separate from general AVGC schemes, because XR startups have hardware, sensor, and compute needs that are fundamentally different from animation/VFX studios.
- Mandate a minimum 25% allocation of the Rs. 250 crore R&T Fund for XR hardware, haptics, tracking, and perception-engineering startups, so that deep-tech does not get crowded out by content services.
- Launch an XR Startup Passport providing single-window access to subsidies, CoE facilities, GPU credits, IP filing rebates, and GeM-listing support within 30 days of registration.
- Create an XR Venture Co-Investment Fund (Fund-of-Funds) where the TN Government matches up to Rs. 1 for every Rs. 2 invested by

SEBI-registered VCs, capped at Rs. 5 crore per XR startup.

- Recognise XR hardware (HMDs, trackers, haptic interfaces, volumetric rigs) as a strategic manufacturing sub-sector, eligible for capital subsidy under Tamil Nadu's electronics/MSME schemes.
- Establish a First Customer programme where state departments (health, tourism, skill development, education, police training) procure XR solutions from TN-based startups under a fast-track GeM window.
- Extend the Freelancer Registry to include XR developers, technical artists, and AI-asset creators, so invoice settlement within 45 days is contractually enforceable.

12. Compute Infrastructure: CPU / GPU Expectations from Government



XR and AI-asset workflows are compute-hungry. A single high-fidelity XR simulation run or a generative-asset training job can exhaust the budget of an early-stage startup. Without subsidised access to CPU and GPU infrastructure, Tamil Nadu cannot realistically host a deep-tech XR ecosystem. The following are concrete expectations from both Central and State Governments:

State-Level Compute Infrastructure

- Establish a State XR-AI Compute Cloud (TN-XR Cloud) at TIDEL NEO Chennai with at least 1,000 high-end GPUs (H100 / B200 class) and 5,000 CPU cores, operated by ELCOT, with subsidised per-hour billing for TN-registered startups and academic users.
- Offer GPU credits of Rs. 5 lakh per DPIIT-recognised XR startup per year for the first 3 years, and Rs. 25 lakh for university research groups, redeemable on TN-XR Cloud or empanelled private cloud providers.
- Guarantee 30-50% tariff discount on TN-XR Cloud versus public cloud list prices for startups, academic users, and MSMEs throughout the policy period.

- Set up Regional Edge-Compute Pods in Coimbatore, Madurai, Tiruchirappalli, Salem, and Tirunelveli (minimum 50 GPUs each) so Tier-2 startups and colleges have latency-competitive access.
- Publish uptime, queue time, and carbon-intensity SLAs for TN-XR Cloud, with independent audits every six months.

Central Government Expectations

- Extend the India AI Mission GPU subsidy to include AVGC-XR / AI-asset startups as an explicit eligible category, not just pure AI / LLM players.
- Create a priority-allocation pool for TN-registered XR startups within the national AI compute scheme,

proportionate to the state's 20% market-share target.

- Permit duty-free import of specialised XR hardware (mocap systems, haptic rigs, HMDs, depth sensors, specialised GPUs) for DPIIT-recognised startups and accredited academic labs.
- Support a Make-in-India XR Hardware PLI track covering HMDs, haptic devices, trackers, depth cameras, and specialised ASICs, with Tamil Nadu as a preferred location given its electronics manufacturing ecosystem.
- Offer concessional GST (ideally 5%) on XR hardware sold to educational institutions, hospitals, and registered skill-development bodies.



Closing Note

Tamil Nadu has the talent, the institutions, and the manufacturing depth to become India's (and Asia's) premier XR startup hub. The AVGC-XR Policy 2026 is an excellent first effort. The additions proposed here, a startup-first incentive matrix, a deep academic partnership, a formal AI-asset pipeline, subsidised compute via a TN-XR Cloud, and a transparent governance mechanism, would convert it from a policy for a services industry into a policy for a product-and-IP industry. That single shift would meaningfully improve both the number and the quality of XR startups that choose Tamil Nadu as their home over the next decade.

The main objective of this document is to validate the actual XR policy, specifically TN as a case study to validate the framework. Since the framework is robust, similar analysis can be done for any other state and country.

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