

Bolstering India's XR Startup and Innovation Ecosystem

A case study of the
Madhya Pradesh AVGC-XR Policy
2025



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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 Madhya Pradesh's XR Policy 2025 as a case study, it provides actionable perspectives adaptable to other state and national frameworks.

Madhya Pradesh has the talent, the institutions, and the manufacturing depth to become India's (and Asia's) XR startup hub and its AVGC-XR Policy 2025 is an excellent first effort. However, many additions that are proposed in this report would convert it from a policy for the services industry into a policy for the product-and-IP industry. That single shift would meaningfully improve both the number and the quality of XR startups that choose Madhya Pradesh as their home over the next decade.

Specific recommendations include on 1) Emphasis on IP Generation, 2) Emphasis on AI based XR Skills development, 3) Expand AVGC-XR Labs to 300+ Colleges, 4) Add Regional Hubs in Gwalior, Jabalpur, Sagar, Rewa, 5) Launch Industry Mentorship Programs, 6) Integrate AVGC-XR Modules in School Curriculum, 7) Create AVGC-XR Training Fund, 8) Launch "Train the Trainer" at Scale, 9) Build Rendering Farms & Mocap Studios, and 10) Create Industry-Recognized Certification.

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, NITs, IIITs, state universities, and design schools as anchor institutions, not mere stakeholders or training vendors, for MP's AVGC-XR skilling ecosystem.





Introduction

India's XR ecosystem is experiencing rapid growth, driven by over 1,000 startups targeting healthcare, defense, education, and manufacturing sectors. Foundational initiatives like IIT Madras's XR Corridor and government programs provide momentum, yet focused strategies can fast-track progress toward Viksit Bharat 2047 objectives.

The country now supports more than 1,000 XR SMEs, predominantly software-centric, with standout ventures like Skillveri (manufacturing training), Merkel Haptics (medical skilling), and Parallax Labs (aviation simulators) building significant traction. This ecosystem thrives on 5G deployment, Digital India momentum, and a digitally native demographic, despite persistent gaps in hardware production.

Experiential Tech (XR) Potential

Experiential technologies, encompassing XR, haptics, and immersive simulations, offer transformative potential to revolutionize India's workforce upskilling, healthcare delivery, and industrial productivity on an unprecedented scale. By delivering hyper-realistic, risk-free training environments, they can slash skill acquisition time by 40-75%, empower

remote diagnostics in underserved regions, and enable precision manufacturing simulations that cut defects and costs dramatically.

XR for Global South

India is uniquely positioned to lead the Global South in XR innovation by leveraging its vast talent pool, frugal engineering ethos, and government-backed initiatives like the XTIC XR Corridor at IIT Madras. With over 1000+ XR startups innovating cost-effective XR solutions for healthcare, defense, and skilling-tailored to resource-constrained contexts-the country can export embodied technologies like haptics-enabled simulators to Africa, Southeast Asia, and Latin America. This leadership aligns with Viksit Bharat 2047, fostering a "Global South XR Stack" through open-source frameworks and CAVE consortium collaborations that democratize immersive tech beyond Western hardware dominance.

In order to make India a great XR destination, here are recommendations based on the challenges in talent gaps particularly in hardware and R&D, plus funding hurdles. The MIPS committee has taken MP XR Policy as a case study, and the perspectives and tailor-made on the recent XR Policy of Madhya Pradesh 2025. However, similar perspectives can be made for each state policy and India's overall policy. Recently the MIPS committee released a similar report on the Perspectives of TN AVGC-XR Policy.

Experiential technologies in India extend far beyond AVGC (Animation, Visual Effects, Gaming, Comics), unlocking transformative use cases in high-impact sectors like healthcare, defense, manufacturing, heritage and

tourism, skilling and education. In healthcare, haptics-enabled XR simulators from startups like Merkel Haptics facilitate remote surgeries and physiotherapy training, reducing errors by up to 50% in rural clinics. Defense applications, led by Parallax Labs' aviation simulators, enable immersive pilot and maritime training under iDEX funding, cutting costs while enhancing readiness. Manufacturing benefits from Skillveri's VR platforms for zero-defect assembly lines and predictive maintenance, while education leverages frugal XR for skill certification in underserved areas-positioning Tamil Nadu's ecosystem, with IIT Madras's XR Corridor, as a Global South hub for embodied AI and digital twins.

Case study of MP XR Policy

Madhya Pradesh offers several distinct advantages for hosting industries, particularly high-tech sectors like XR and manufacturing, such as central location, infrastructure, talent, policy support, and quality of life.

Strategic Central Location & Connectivity

- Centrally located business hub with access to major consumer markets across India
- Strong North-South Corridor; key industrial node Vikram Udyogpuri (Ujjain) influencing 10 districts
- Reduced logistics costs in Tier-2 cities like Indore and Bhopal, improving supply chain efficiency

World-Class IT Infrastructure

- Over 15 IT parks including Crystal IT Park



- 12 formally approved Special Economic Zones (SEZs), out of which 7 are notified and 5 are fully operational.
- 50+ major IT companies operating in the state
- ~1,200 tech startups in the ecosystem
- Dedicated infrastructure support for data centers with land rebates and power tariff reimbursements

Massive Skilled Talent Pool

- Over 300 technical colleges / institutes
- 50,000+ technical graduates per year
- Top institutes: IIM Indore, IIT Indore, NIT Bhopal, IISER Bhopal, IIITDM Jabalpur, International Institute of Foreign Trade & Research (IIFTR)
- Labour cost advantage: US\$3.7/day-significant cost advantage over metros

Progressive Sector-Specific Policies

- IT, ITES & ESDM Investment Promotion Policy (2023): CapEx subsidies, land rebates up to 75%, interest subsidies, patent support
- Global Capability Centers (GCC) Policy (2025): CapEx, payroll, upskilling subsidies + R&D support

- Semiconductor Policy (2025): Manufacturing cluster development, testing calibration support
- AVGC-XR Policy (2025): 25–30% reimbursement on production, up to Rs.500 crore incentives
- Drone Policy (2025): Promotion and utilization incentives
- MPIDC scored 97% in investment promotion worldwide

Cost Efficiency & Business-Friendly Environment

- Significantly lower cost of living than Tier-1 cities with better work-life balance
- Up to 75% land rebate for IT/ESDM
- 24×7 reliable power; strong renewable energy contribution
- Single-window clearance, proactive administration, streamlined regulatory framework
- Tax & duty incentives combined with subsidies

Quality of Life & Tier-2 City Advantages

- Indore: Cleanest city in India; low commute times; exceptional quality of life
- Bhopal: One of the greenest capitals; excellent work-life balance

- Jabalpur & Gwalior: Emerging tech hubs with state-of-the-art IT parks
- Tier-2 cities offer low commute times, ease of living, and work-life balance unmatched by Tier-1 cities

Energy & Natural Resources

- Strong renewable energy contribution; 750 MW Rewa Solar Plant powers Delhi Metro
- Raw materials available for data centers; stable subtropical climate
- No extreme climate risks: avoids cyclones, moderate humidity (~47%), year-round operations possible
- Largest producer of manganese ore and diamonds in India

Strong Industrial & Startup Ecosystem

- Over 1 lakh acres of industrial land offered by MPIDC (88 developed + 51 developing industrial areas)
- 1,200+ tech startups with growing MSME and startup ecosystem
- ~30 auto component/ancillary units in automotive cluster
- Rs.5 lakh crore economic impact, positioning MP as premier tech hub.





Highlights of the MP's AVGC Policy 2025



Vision and Mission

- Investment: Attract Rs. 2,000 crore in AVGC-XR sector
- Jobs: Create more than 20,000 jobs
- Startups: Promote over 150 startups
- Vision: Establish Madhya Pradesh as a leading AVGC-XR hub in India, integrating IT/ESDM with filmmaking sectors.



Infrastructure

- AVGC Media Park: 20-acre state-of-the-art facility under Public-Private Partnership (PPP) model
- Advanced production & post-production studios
- Plug-and-play workspaces for startups
- Specialized data centers for AVGC companies
- AVGC-XR Labs: Set up in fine arts colleges
- Centres of Excellence (CoE): In emerging technologies like AR, VR, AI
- Standalone AVGC-XR studio projects: Rs.50 crore support
- Subsidized rates: Available for AVGC companies.



Employment and Skill Development

- Employment generation incentive: Rs.3,000 per employee per month for

One year, up to Rs.10 lakh per company

- Training reimbursement: Companies reimbursed for employee upskilling expenses
- Training assistance: 50% reimbursement on AVGC-XR training fees
- Skill development goal: Train at least 1 lakh skilled professionals by 2029
- Scholarships: Available for students pursuing animation, gaming, and related fields.



Support for International Collaboration

- International co-productions: 30% reimbursement of eligible expenditure, up to Rs.2 crore
- Encouraging global partnerships to showcase Madhya Pradesh's cultural and ecological wealth
- Supporting projects like virtual tours of UNESCO World Heritage Sites and interactive wildlife encounters.



Women-Focused Initiatives

- Special scholarships for women working in AVGC-XR field
- Additional assistance for women entrepreneurs starting startups

- Special incentives for women and support for women-led startups
- Focus on inclusive participation in the sector



Tourism Integration (Digital Tourism)

- Skill development for digital tourism: Scholarships and training in AVGC-XR fields centers
- Digital infrastructure: AVGC-XR labs at fine arts institutions to harness AR, VR, AI for experiential tourism
- Immersive tourism experiences: Virtual tours, interactive wildlife encounters
- Economic impact: Projects like Beyond Studios's \$12 million investment expected to generate 2,500 jobs.



Policy Integration & Ecosystem

- Integrates IT/ITES/ESDM sector with filmmaking sector for holistic environment
- Promotes R&D and IP creation through financial incentives
- Streamlined regulatory approvals for AVGC businesses
- AVGC-XR Center of Excellence to promote cutting-edge research
- Supports pre and post-production activities.



What the MP AVGC-XR Policy 2025 Has Missed or Not Mentioned

A careful reading of the policy reveals Madhya Pradesh's AVGC-XR Policy 2025 offers solid operational incentives (rent assistance, employment incentives, bandwidth support) but lacks critical foundational elements that neighboring states like Maharashtra, Tamil Nadu, and Karnataka have already implemented, and compared to international policies. These gaps could significantly reduce MP's competitiveness for large studio investments and IP-driven startups.

1. Comparing Foundational Elements for AVGC-XR

Incentive Type	MP AVGC-XR 2025	Maharashtra AVGC-XR 2025	Karnataka AVGC-XR 2024	Tamil Nadu AVGC-XR 2026
Industry & Infrastructure Status	Not Granted	Granted	Granted	Granted
Stamp Duty Exemption	None	100% (5 Years)	Partial	Specified
Tax Holiday	None	5-10 Years	5 Years	Proposed
Power Tariff Reduction	None	Reduced Tariffs	Reduced Duty	Noted
Original IP Creation Support	Only Registration (Rs.20 Lakh)	IP Creation + Royalty	AVGC-XR Fund	Original Game IP
Patent Support Fund	None	Rs.3,268 Crore Infrastructure	AVGC-XR Fund (Active)	Noted
Working Capital Support	None	Production Fund	AVGC-XR Fund	Noted
Zoning Flexibility	None	Any Zone	Flexible	Noted
24×7 Operations	Not Mentioned	24 x 7 Allowed	24 x 7	24 x 7
Essential Service Status	Not Mentioned	Yes	Yes	Not Specified
Skill Development Scale	100 Labs (Fine Arts Colleges)	School Curriculum	CoE (2024)	300-400 Colleges
Job Target	20,000 Jobs by 2029	2 Lakh Jobs by 2050	Not Specified	2 Lakh Jobs by 2030
Startup Target	150 Start-ups	Not Specified	Not Specified	200+ Start-ups
Market Share Goal	Not Specified	Rs.50,000 Crore Investment	Not Specified	20% India Market
Regional Hub Cities	2 Cities (Indore, Bhopal)	8 Cities	4 Cities	6 Cities
Media Park Timeline	Not Specified	Film City Hubs (2025)	CoE (2024)	ELCOT Viyan (2026)
Import Duty Reimbursements	None	Yes	Yes	Noted
Grievance Redressal	None	Not Specified	Not Specified	AVGC-XR Facilitation Cell



Incentive Type	MP AVGC-XR 2025	Maharashtra AVGC-XR 2025	Karnataka AVGC-XR 2024	Tamil Nadu AVGC-XR 2026
Women Empowerment	Special Focus	Not Specified	Not Specified	Not Specified
Tourism Integration	AR/VR for Heritage	Not Specified	Not Specified	Not Specified
Lease/Rent Assistance	25%, Rs.10 Lakh / Year	Not Specified	Not Specified	Not Specified
Employment Incentive	Rs.3,000/Month	Not Specified	Not Specified	Not Specified
Bandwidth Support	Rs.50,000/Year	Not Specified	Not Specified	Not specified

2. Comprehensive International Comparison Table

Incentive Type	MP AVGC-XR 2025	South Korea	Canada	France	UK	International Standard
Industry Classification	Not Granted	Strategic Sector	Cultural Industry	Cultural Exception	Cultural Industry	All Countries
Production Tax Credit	25% Re-imbursement (Rs.2 Cr.)	30-40% (No Cap)	25-32% (No Cap)	20-30% (100M EUR)	25-32% (No Cap)	25-40%, No Cap
Co-Production Support	30% (Rs.2 Crore)	30-40% + KOCIS	100% Labor Credit	20-30% + CNC	25-32% + BFI	20-40% + funding
IP Creation Funding	Only Registration (Rs.20 Lakh)	KOCCA Fund (500M KRW)	10-50M CAD	100M EUR	50M GBP	10-100M+
R&D Grants	Not Mentioned	40-60% (1B KRW)	35-45% (10M CAD)	30-50% (50M EUR)	25-40% (20M GBP)	30-60%
Labor Tax Credit/Subsidy	Rs.3,000/ Month (Rs.10L)	15-25% (No Cap)	25-35% (100% Labor)	20-30% (50M EUR)	20-25% (100% Exp.)	15-35%
Infrastructure Support	25% CapEx (Rs.30 Crore)	50-70% Land (No Cap)	50% Construction (20M CAD)	40-60% (100M EUR)	30-50% (10M GBP)	40-70%
Export Promotion	Not Mentioned	KOCCA Fund	Export Program	CNC Subsidies	Enterprise Int.	Export Funds
Training Support	50% Re-imbursement	50-70% (No Cap)	75% (5M CAD)	50-60% (20M EUR)	40-50% (10M GBP)	40-75%
Tax Holiday	Not Mentioned	10-15 Years	5-10 Years	5-10 Years	5-7 Years	5-15 Years
Corporate Tax Reduction	Not Mentioned	50-70%	20-30%	25-35%	20-25%	20-70%
Stamp Duty Exemption	Not Mentioned	100%	50%	Not Specified	50%	50-100%
Property Tax Reduction	Not Mentioned	50%	100%	Not Specified	100%	50-100%



Incentive Type	MP AVGC-XR 2025	South Korea	Canada	France	UK	International Standard
Import Duty Exemption	Not Mentioned	100%	100%	100%	100%	100%
Game Development	25% (Rs.20 Lakh)	30-50% (500M KRW)	25-35% (10M CAD)	20-30% (50M EUR)	25-32% (10M GBP)	25-50%
Animation Production	25% (Rs.50 Lakh)	30-50% (1B KRW)	25-35% (10M CAD)	25-35% (100M EUR)	25-32% (10M GBP)	25-50%
VFX Production	25% (Rs.50 Lakh)	30-40% (1B KRW)	25-35% (10M CAD)	25-30% (100M EUR)	25-32% (10M GBP)	25-40%

Skills Gap in India and MP

The AVGC-XR sector in India is experiencing massive growth but faces an acute talent shortage despite high demand for specialized talent that threatens to limit the industry's expansion, particularly in IP generation. Madhya Pradesh, despite its ambitious AVGC-XR Policy 2025, faces the same critical skills gap challenges as the rest of India. 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. The industry value is projected to grow from \$3 billion to \$26 billion, requiring 900% expansion fueled by both local demand and global outsourcing. This growth has positioned AVGC-XR as the top sector for employment growth alongside Manufacturing, Semiconductors, Healthcare, and Green Tech. 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.

Critical Technical Skills Shortage in India

India faces severe gaps in high-demand technical skills. In 3D modeling and animation, VFX and compositing, the gap severity is high with very high industry demand but only moderate availability. Game development skills using Game Engines such as Unreal Engine 5 and UNITY3D show critical gaps with extreme industry demand but low availability, representing a 95% shortage. XR development also faces critical gaps with extreme demand and 90% shortage. AI integration for procedural generation, motion capture, and rendering technologies all show critical gaps with 90-95% shortage. High-end VFX and animation require spatial awareness and aesthetic judgment, areas where AI still fundamentally struggles, making these roles significantly more future-proof than standard IT roles.

India's AVGC-XR policy, while ambitious on skills and industry growth, has gaps in dedicated IP development and IP protection, which risks turning a large portion of the younger workforce into execution-focused labor (digital coolies) rather than innovators and IP creators. Without a stronger emphasis on building and owning original IP, the workforce may remain locked into outsourced production roles much like the early IT era, unless policy and ecosystem changes tilt incentives toward IP-led growth.

Madhya Pradesh's Specific Skills Challenges

Madhya Pradesh faces a 70% training capacity gap with only 100 AVGC-XR labs compared to 300-400 needed, which is 4x smaller than Tamil Nadu's 300-400 Digital Arts Centres. The state has only 2 Centers of Excellence in Indore and Bhopal compared to the 5+ regional hubs needed. Game development talent faces critical gaps with no game development hubs in MP and 0% industry presence. AR/VR development faces high gaps with only CoE labs but no production studios. VFX pipeline professionals show high gaps with no major VFX



studios in MP and talent migration to Mumbai and Bangalore. Technical artists specializing in shaders and lighting face critical 90% shortages requiring Unreal Engine expertise. Motion capture technicians face high gaps with no mocap facilities in MP and 0% availability. Rendering engineers face critical 95% shortages with no cloud rendering infrastructure. AI/ML for AVGC faces critical gaps with no AI training programs in MP and 100% shortage.

MP's AVGC Policy is focussing on the skill development, not on the IP generation. This risks turning a large portion of their younger workforce into digital coolies rather than innovators and IP creators. Without a dedicated strategy for building and owning original IP, the workforce may remain locked into outsourced production roles much like the early IT era, unless policy and ecosystem changes tilt incentives toward IP-led growth.

Root Causes: Education System Mismatch

While India is in the Era of Post-AI, MP universities teach last-generation tools like Maya and Photoshop only, while 80% of graduates need 6-12 months of retraining. AI skills in XR are not focussed. Training labs focus on only theory rather than real projects, with 70% of graduates lacking portfolio experience. No mandatory industry mentors exist in programs, and 90% of graduates lack pipeline understanding. Limited hands-on projects mean 85% of graduates lack deadline management skills. Emerging technologies like Unreal Engine 5, Houdini, and AI are not taught, creating 95% shortages in critical tools. MP's policy mentions labs in fine arts colleges but not in technical and engineering colleges,

also not in practical production training, which is essential for industry readiness.

Infrastructure and Resource Gaps in MP

MP has limited hardware with no rendering farms, mocap studios, or VR labs, and 90% of students can't access professional tools. No cloud infrastructure exists with no cloud rendering facilities, and 95% of students can't do distributed rendering. Software access is limited with no licenses for Unreal Engine 5 or Houdini, and 95% of students can't learn industry tools. No studio partnerships exist with production studios, and 80% of graduates lack real production experience. Only 100 labs exist compared to 300-400 needed, creating a 70% coverage gap. MP's CoE labs are limited to fine arts colleges and not accessible to technical college students.

Industry-Training Disconnect in MP

MP's training programs hardly include internships, and 85% of graduates lack work experience. There are no industry-recognized certifications, and 90% of employers don't trust training. Industry experts rarely teach, and 95% of students lack exposure to real workflows. No guaranteed job placement programs exist, and 70% of graduates are unemployed after training. No upskilling programs exist for working professionals, and 60% need retraining every 2 years. MP's policy mentions "Train the Trainer" initiatives but not industry mentorship programs, which are essential for bridging the gap.

Regional Distribution Issues in MP

MP has only 2 hub cities (Indore,

Bhopal) compared to, for example, Tamil Nadu's 6 cities in a spoke-and-hub model. Training centers exist only in fine arts colleges, while Tamil Nadu has 300-400 colleges. MP has no regional hubs in Gwalior, Jabalpur, Sagar, or Rewa, while Karnataka has 4 cities. Rural access is not mentioned, while Maharashtra includes school curriculum integration. MP's limited geographic spread misses talent in emerging urban centers, creating significant regional talent access gaps.

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 Rs.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 MP policy.



Current Workforce vs. Future Demand

The workforce needs to grow 9x (from 260K to 2.3M) to meet industry demand.

Metric	Current (2026)	Target (2030–2036)	Gap
Total Professionals	260,000	2.3 million	1.84 Million Shortage
Industry Value	\$3 Billion	\$26 billion	900% Growth Needed
Annual Growth Rate	14–16%	14-16%	Sustained
Employment Growth	Ranked #1 Sector	Top 5 alongside Manufacturing, Semiconductors	Highest Priority

Critical Skill Gaps

MP must immediately expand AVGC-XR labs to 300+ colleges, add regional hubs in 4 new cities, and launch industry mentorship programs to match national standards, focus on IP generation. Without these actions, MP's AVGC-XR Policy 2025 will fail to achieve its 1 lakh professional training target by 2029.

India's AVGC-XR Skills Gap

- 1.84 million professional shortage (260K current vs. 2.3M needed)

- 900% industry growth (\$3B ? \$26B) requires 9x workforce expansion
- Critical gaps in Unreal Engine 5, Houdini, AR/VR, AI integration (90-95% shortage)
- 80% of graduates lack industry-ready portfolios and real production experience
- Hardly any emphasis on IP generation in AVGC-XR

Madhya Pradesh's Skills Gap

- 70% training capacity gap (100 labs vs. 300-400 needed)

- 100% regional access gap (only 2 cities vs. 6 needed)
- 90-95% shortage in critical tools (rendering farms, mocap, cloud infrastructure)
- 80% industry readiness gap (no mandatory mentorship, no practical production training)
- Hardly any emphasis on IP generation.

Technical Skills Shortage

High-end VFX and animation require spatial awareness and aesthetic judgment - areas where AI still fundamentally struggles.

Skill Area	Gap Severity	Industry Demand	Current Availability
3D Modeling & Animation	High	++++ (Very High)	++ (Moderate)
VFX & Compositing	High	++++ (Very High)	++ (Moderate)
Game Development (Unreal Engine 5, Houdini)	Critical	+++++ (Extreme)	+ (Low)
AR/VR/XR Development	Critical	+++++ (Extreme)	+ (Low)
AI Integration (Procedural Generation)	Critical	+++++ (Extreme)	+ (Low)
Motion Capture & Rendering	High	++++ (Very High)	++ (Moderate)
Post-Production & Editing	Moderate	+++ (High)	+++ (Moderate)
Character Design & Concept Art	Moderate	+++ (High)	+++ (Moderate)



Emerging Technology Gaps

Mastering engines like Unreal Engine 5 or Houdini allows professionals to climb to senior roles much faster than saturated fields:

Technology	Training Available	Industry Need	Gap
Game Engines	Limited	Extreme	90% Shortage
Procedural Animation	Very Limited	Extreme	95% Shortage
VR/AR Development	Limited	Extreme	90% Shortage
AI for VFX Automation	Very Limited	High	95% Shortage
Cloud Rendering	Very Limited	High	90% Shortage
XR Platform Development	Limited	High	85% Shortage

Soft Skills & Industry Readiness Gaps

Training labs risk creating volume without readiness - without deep studio integration, graduates lack industry-ready skills.

Skill	Gap Severity	Why It Matters
Industry-Ready Portfolio	Critical	80% of graduates lack real production experience
Collaboration & Workflow	High	Studio teams require pipeline understanding
Project Management	High	70% of juniors lack deadline management skills
Communication (English)	Moderate	Critical for global outsourcing projects
Adaptability to New Tools	High	Technology evolves rapidly; 60% need retraining

MP's Current Training Infrastructure

Training labs risk creating volume without readiness - without deep studio integration, graduates lack industry-ready skills.

Infrastructure	Count	Target	Gap
AVGC-XR Labs	~100 (Fine Arts Colleges)	300+ (like TN)	200+ Missing
Centers of Excellence	2 (Indore, Bhopal)	5+ (Regional Hubs)	3+ Missing
Training Programs	Limited	1 Lakh Professionals by 2029	80% Gap
Industry Partnerships	Not Specified	Mandatory Mentorship	100% Missing



Lack of Local Industries

MP's talent migration to Mumbai, Bangalore, and Hyderabad reduces local industry confidence.

Gap Area	Severity	Impact
Game Development Talent	Critical	No game development hubs in MP; 0% industry presence
AR/VR Development	High	Only CoE labs, no production studios
VFX Pipeline Professionals	High	No major VFX studios in MP; talent migration to Mumbai/Bangalore
Animation Directors	Moderate	Limited production experience; 0% senior leadership
Technical Artists (Shaders, Lighting)	Critical	90% shortage; requires Unreal Engine expertise
Motion Capture Technicians	High	No mocap facilities in MP; 0% availability
Rendering Engineers	Critical	No cloud rendering infrastructure; 95% shortage
AI/ML for AVGC	Critical	No AI training programs in MP; 100% gap

Education System Mismatch

MP's policy mentions labs in fine arts colleges but not practical production training

Problem	Description	Impact
Curriculum Not Industry-Aligned	Universities teach outdated tools (Maya, Photoshop only)	80% graduates need 6-12 months retraining
No Practical Production Training	Labs focus on theory, not real projects	70% lack portfolio experience
No Industry Mentorship	No mandatory industry mentors in programs	90% graduates lack pipeline understanding
Limited Hands-On Projects	No practical production project requirements	85% lack deadline management skills
No Emerging Tech Coverage	Unreal Engine 5, Houdini, AI not taught	95% shortage in critical tools

Infrastructure & Resource Gaps

MP's CoE labs are limited to fine arts colleges - not accessible to all students, and not involving Technical institutes such as IITs, NITs and Design Institutes such as NIDs.

Gap	Description	Impact
Limited Hardware	No Rendering Farms, Mocap Studios, VR Labs	90% can't access professional tools
No Cloud Infrastructure	No cloud rendering facilities	95% can't do distributed rendering
Limited Software Access	No licenses for Unreal Engine 5, Houdini	95% can't learn industry tools
No Studio Integration	No partnerships with production studios	80% lack real production experience
Limited Training Centers	Only 100 labs vs. 300-400 needed	70% coverage gap



Industry-Training Disconnect

MP's policy mentions "Train the Trainer" initiatives but not industry mentorship programs.

Problem	Description	Impact
No Mandatory Apprenticeships	Training programs don't include internships	85% graduates lack work experience
No Skill Certification	No industry-recognized certifications	90% employers don't trust training
Limited Guest Lectures	Industry experts rarely teach	95% lack exposure to real workflows
No Job Placement Support	No guaranteed job placement programs	70% graduates unemployed after training
No Continuous Learning	No upskilling programs for working professionals	60% need retraining every 2 years

Regional Distribution Issues

MP's limited geographic spread misses talent in emerging urban centers (Gwalior, Jabalpur, Sagar).

Issue	MP	Comparison
Hub Cities	2 (Indore, Bhopal)	TN: 6 cities
Training Centers	Fine arts colleges only	TN: 300-400 colleges
Regional Hubs	None (Gwalior, Jabalpur, Sagar, Rewa)	Karnataka: 4 cities
Rural Access	Not mentioned	Maharashtra: School curriculum integration

Solutions & Recommendations

Nationwide Solutions (India Level)

India's AVGC-XR policy, while ambitious on skills and industry growth, has gaps in dedicated IP development and IP protection, which risks turning a large portion of the younger workforce into execution-focused labor (digital coolies) rather than innovators and IP creators. Without a stronger emphasis on building and owning original IP, the workforce may remain locked into outsourced production roles much like the early IT era, unless policy and ecosystem changes tilt incentives toward IP-led growth.

Solution	Status	Impact
National AVGC-XR Policy	Announced (2022)	Standardizes training, curriculum, certifications
IICT Mumbai (National CoE)	Operational (2025)	17 specialized programs in gaming, post-production, animation, comics, XR
XTIC IIT Madras	Operational (2023)	Industry-aligned curriculum, applied R&D
AVGC Task Force	Active	Realizes PM's vision for employment + global market leadership
Industry-Certified Programs	Not implemented	Would reduce retraining needs by 80%
Strategies for IP generation	Not started	Would develop workforce that are skilled international requirements



Madhya Pradesh - Specific Solutions

Priority 1: Immediate Actions (0-6 months)

1. Emphasis IP Generation

- Current-nil
- Target - 200 patents and copyrights by 2030 by collaborating with technical institutes such as IITs, NITs, NIDs etc.
- Budget:Rs.50 Crores
- Impact: 200x increase and global competition, not local competition

2. Emphasis on AI based XR Education

- Current-nil
- Target - 100% XR curriculum integration with AI
- Budget:Rs.10 Crores
- Impact: 100x increase and global competition, not local competition

3. Expand AVGC-XR Labs to 300+ Colleges

- Current: ~100 labs (fine arts colleges)
- Target: 300+ colleges (like TN's 300-400 Digital Arts Centres)
- Budget: Rs.500 crores (Rs.1.5 crore per college)
- Impact: 70% increase in training capacity

4. Add Regional Hubs in Gwalior, Jabalpur, Sagar, Rewa

- Current: 2 hubs (Indore, Bhopal)
- Target: 6 hubs (like TN's spoke-and-hub model)
- Budget: Rs.200 crore (Rs.50 crore per hub)

- Impact: 40% increase in regional talent pipeline

5. Launch Industry Mentorship Programs

- Current: No mandatory mentorship
- Target: 100% programs with industry mentors
- Budget: Rs.50 crores (Rs.5 lakh per mentor, 100 mentors)
- Impact: 80% increase in industry-ready graduates

Priority 2: Medium Actions (6-12 months)

4. Integrate AVGC-XR Modules in School Curriculum

- Current:Not mentioned
- Target: Mandatory in 500+ schools (like Maharashtra)
- Budget: Rs.100 crore (Rs.2 lakh per school)
- Impact: Early talent identification, 50% increase in pipeline

5. Create AVGC-XR Training Fund

- Current: 50% reimbursement on fees
- Target: Rs.500 crore fund for training subsidies
- Budget: Rs.500 crore government + Rs.500 crore private
- Impact: 75% reduction in training costs, 3x enrollment

6. Launch "Train the Trainer" at Scale

- Current: Advisory committee will design trainer programs

- Target: 1,000 teachers trained annually
- Budget: Rs.100 crore (Rs.1 lakh per trainer)
- Impact: 50% increase in training quality

Priority 3: Long Actions (12-24 months)

7. Build Rendering Farms & Mocap Studios

- Current: No cloud rendering, no mocap facilities
- Target: 5 rendering farms, 3 mocap studios
- Budget: Rs.300 crore (Rs.60 crore per farm, Rs.30 crore per studio)
- Impact: 90% access to professional tools

8. Create Industry-Recognized Certification

- Current:No certification
- Target: MP AVGC-XR Certification (industry-recognized)
- Budget: Rs.50 crore (curriculum development, testing)
- Impact: 90% employer trust, 70% job placement

9. Partner with XTIC IIT Madras & IICT Mumbai

- Current:No partnerships
- Target: 500 annual trainees through MoUs
- Budget: Rs.100 crore (Rs.2 lakh per trainee, 500 trainees)
- Impact: 80% industry readiness, 90% job placement.



Expected Outcomes if Recommendations Implemented

Metric	Current	Target (2030)	Improvement
IP Generation	Nil	200	200x increase
Trained Professionals	10,000/year	100,000/year	10x increase
Industry-Ready Graduates	20%	80%	4x improvement
Job Placement Rate	30%	90%	3x improvement
Regional Talent Access	2 cities	6 cities	3x coverage
Training Cost Reduction	50% reimbursement	75-100% subsidies	25-50% reduction
Industry Mentorship	0%	100%	100% coverage

Special Recommendation



It is recommended to actively promote R&D and IP creation through financial incentives. This policy strongly suggests to emphasize fundamentals of XR in order to promote R&D and IP creation. IIT Madras is offering a NPTEL course on the Foundations of XR taught by global leaders such as Oculus Cofounders (Prof. Steven LaValle and Prof. Anna LaValle) and Prof. M. Manivannan of IIT Madras. Startups, Industries, academicians, working professionals and students are encouraged to register for this course which is currently on.

<https://nptel.ac.in/courses/106106699>

The NPTEL Foundations of Virtual Reality course can help India build strong IP bases in XR, and an XR Corridor by creating the highly skilled talent base, technical understanding, and research capacity needed for a national immersive-tech ecosystem. Since the XR Corridor is meant to connect academia, industry, startups, and government, a course like this directly supports that pipeline by training students in the fundamentals of VR systems, human perception, hardware, software, and content development.



Closing Note

Madhya Pradesh has the talent, the institutions, and the manufacturing depth to become India's (and Asia's) XR startup hub. The AVGC-XR Policy 2025 is an excellent first effort. The additions proposed here, expanding AVGC-XR labs to 300+ colleges, emphasising the AI based XR skills, adding regional hubs in 4 new cities, and launching industry mentorship programs to match national standards, emphasis on IP, 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 Madhya Pradesh as their home over the next decade.

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

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