



Hanuroy Global Enterprise

Startup Report

Submitted by

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MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE,GWALIOR (M.P.),INDIA

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June2025



Executive Summary

Hanuroy Global Enterprises is an innovative AdTech startup redefining the landscape of offline marketing through the integration of technology and mobility. This venture introduces a novel advertising model by deploying digital screens mounted on the back of e-rickshaws, effectively transforming them into mobile advertising platforms that navigate organically through densely populated urban areas. Unlike traditional static outdoor media, Hanuroy's solution offers dynamic visibility and real-time audience engagement.

What sets this solution apart is its IoT-enabled infrastructure, powered by embedded systems including Raspberry Pi, gyroscope, magnetic reed sensor, light intensity sensor, and camera module. These components work in tandem to collect valuable data such as real-time location, ad visibility, route analytics, and crowd density. This data is transmitted to a cloud-based backend and visualized on a mobile analytics dashboard for clients, making offline marketing campaigns measurable, location-aware, and performance-driven.

In collaboration with local rickshaw drivers and battery service providers, the startup ensures sustainability and operational feasibility. The startup has successfully secured clients and operates as a registered sole proprietorship under MSME regulations. By bridging the gap between traditional advertising and modern analytics, Hanuroy Global Enterprises positions itself as a forward-thinking player in the field of data-driven offline marketing.



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CERTIFICATE OF INTERNSHIP / PUBLICATION PROOF

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Print : Udyam Registration Certificate

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Permission from Gwalior Municipal Corporation



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सेवा में,
श्रीमान आयुक्त महोदय
नगर निगम
ग्वालियर, मध्य प्रदेश।

विषय: ग्वालियर में ई-रिक्शा के पीछे स्क्रीन लगाने की अनुमति एवं विशेष अधिकार प्रदान करने हेतु।



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Brief About Workshop

The Centre for IoT has launched one Start-UP on e-rickshaw-based marketing startup which fully funded by the MITS-Deemed University. This initiative utilizes e-rickshaws as mobile advertising platforms, benefiting local businesses while promoting eco-friendly urban transportation.

About Start-UP: Our project aligns with Gwalior's vision for sustainable development and supports the **'Vocal for Local'** initiative. It empowers e-rickshaw drivers financially, boosts the local economy, and raises awareness about public safety and environmental conservation. Additionally, it enhances city branding and fosters a smart city concept.

To develop the prototype the following items has been sanctioned from the university

S.No.	Item(s)	Appr. Unit Rate(Rs.)
1.	Raspberry Pi 4	6000.00
2.	Raspberry Pi Camera Module	1500.00
3.	Gyroscope Sensor Module	200.00
4.	GPS Module	800.00
5.	Magnetic Reed Sensor	100.00
6.	Voltage and Current Sensor	200.00
7.	Light Intensity Sensor (BH1750)	100.00
8.	P3 Outdoor LED Screen (3x2.5)	35000.00
Total GST(@18%)		7902.00
Total Amount		Rs. 51,802/-

IoT Integration in the Startup

IoT technology will make the e-rickshaw marketing platform smart, efficient, and scalable.

- Real-Time GPS Tracking: Tracks e-rickshaw locations to optimize ad visibility and routes.
- Gyroscope & Light Sensors: Ensures screen stability and auto-adjusts brightness based on light conditions.
- Remote Monitoring: A dashboard using Raspberry Pi 4 allows businesses to manage ads and view analytics.
- Safety Alerts: Voltage and current sensors monitor battery status and send alerts for maintenance.

Start-UP Proposed Title	HANUROY
Core Team	Ankur Verma- Technical Head and Founder [IoT 04 th Year] Aryaman Sharma- Operations [IoT 04 th Year] Disha Jain- PR & Management [IoT 04 th Year] Akash Yadav- UI and Design [IoT 04 th Year]

Background

In today's hyperconnected economy, advertising continues to evolve in form, channel, and consumer engagement strategy. Traditional outdoor advertising, such as billboards, banners, and wall posters, often suffers from limitations related to static placement, high costs, and lack of performance analytics. These challenges are even more profound in Tier 2 and Tier 3 cities, where digital infrastructure for advertising is still developing.

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Hanuroy Global Enterprises emerged as a response to these gaps—introducing a cost-effective, data-driven, and highly visible form of offline marketing. The core idea involves installing high-brightness LED display screens on the backs of e-rickshaws, transforming these commonly used public vehicles into mobile advertising units. As these rickshaws traverse



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various parts of the city daily, the advertisement reaches diverse demographics in different geographic zones.

Problem Statement

Despite the rise of digital advertising, a significant portion of the population—particularly in semi-urban and rural areas—still engages more actively with offline marketing. However, traditional offline marketing lacks measurable outcomes, targeting, and cost-efficiency. Moreover, brands find it challenging to assess how many people their ad reached or what areas had the highest footfall when the ads were displayed.

Objective

The primary goal of Hanu Roy Global Enterprises is to bridge the gap between offline marketing and technological intelligence. This startup aims to:

- Introduce a moving advertisement medium that is visible, localized, and cost-efficient.
- Utilize IoT devices to collect data such as location, time, route, and ambient conditions.
- Provide real-time campaign analytics to businesses through a mobile application dashboard.
- Promote employment and sustainability by collaborating with local rickshaw drivers and battery vendors.

Traditional Advertising Practices

Conventional outdoor advertising relies on static placement—such as billboards, hoardings, and posters—positioned at fixed locations. While such methods offer visibility, they fail to provide interactivity, movement, or any actionable data. Studies have shown that static advertisements have diminishing returns over time, especially in frequently traversed routes where the target audience becomes desensitized to repeated visual content (Kumar & Yadav, 2018).

Emergence of Mobile Advertising

Mobile outdoor advertising, such as LED trucks or on-vehicle displays, is a growing trend. Research by Singh et al. (2020) highlights how mobile advertising units have higher engagement rates due to unpredictability and dynamic reach. However, these models are often expensive to operate and are limited to premium markets.

IoT in Marketing

IoT has transformed industries by enabling data collection and real-time analytics. Its application in advertising is gaining traction, as it allows brands to monitor campaign performance through sensors and analytics dashboards. As noted by Sharma et al. (2021),



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IoT-enabled devices can measure visibility conditions, track locations, and collect environmental data—enhancing offline campaign intelligence.

Data-Driven Decision Making

Analytics-driven campaigns are shown to result in better ROI and campaign optimization. Studies emphasize that when businesses are equipped with location-wise performance metrics, they can allocate budgets more effectively and target relevant demographics more precisely (Bose & Abraham, 2019). This is especially beneficial for SMEs that require accountability in every rupee spent.

Gap Identification

While the idea of mobile and IoT-based advertising exists, there is a clear gap in implementation at the grassroots level—especially in cost-effective, community-driven models. Hanuroy Global Enterprises fills this niche by bringing cutting-edge analytics to the offline marketing space, tailored for broader accessibility and local empowerment.

Start-Up Overview

Name of the Startup:	Hanuroy Global Enterprises
Type of Venture:	Sole Proprietorship
Industry Focus:	Advertising Technology (AdTech), Data-driven Offline Marketing
Founded by:	Ankur Verma, Disha Jain, Aryaman Sharma
Operational Region:	Gwalior, Madhya Pradesh (Pilot Region)
Stage:	Early-Stage Startup with Pilot Clients Onboarded

Vision

To revolutionize offline advertising by making it data-driven, mobile and hyperlocal, thereby creating meaningful brand engagement for both small and large enterprises through cost-effective, community-integrated ad campaigns.

Mission

Hanuroy Global Enterprises aims to bridge the digital divide in offline advertising by integrating technology with traditional transport mediums (e-rickshaws) to deliver impactful, measurable, and mobile advertisements powered by IoT and analytics.

The Concept

The startup introduces a mobile screen-based advertising system mounted behind electric rickshaws, which act as roaming billboards across the city. Unlike static hoardings, these screens cover multiple neighborhoods and busy streets throughout the day, ensuring broader visibility. This approach combines high mobility, local engagement, and dynamic content display—turning everyday transport into a marketing channel.

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Fig. 1. Startup Logo.



Fig. 2. Our Product.

System Architecture and Technology Stack

System Overview

Hanuroy Global Enterprises integrates hardware, IoT, mobile applications, and cloud computing to provide an end-to-end AdTech solution for offline, mobile advertising. The system is modular and consists of four key components:

- Mobile Display Unit (MDU): Mounted on the back of e-rickshaws.
- IoT Sensor Network: Embedded inside the rickshaw to track, monitor, and send real-time data.
- Mobile App Dashboard: Used by advertisers and the admin team.
- Cloud Backend: Manages data storage, analytics, and system logic.

The architecture follows a four-tier model:

Tier1: Hardware Layer (Edge Devices – On Rickshaw)

- Raspberry Pi 4: Acts as the central controller.
- GPS Module: For real-time location tracking.
- Gyroscope: To measure orientation/movement.
- Light Intensity Sensor: Adjusts screen brightness dynamically.
- Magnetic Reed Sensor: Detects vehicle movement events.
- Camera Module: Optional, for collecting ad impression data.
- HDMI-Connected Screen: Displays brand advertisements.

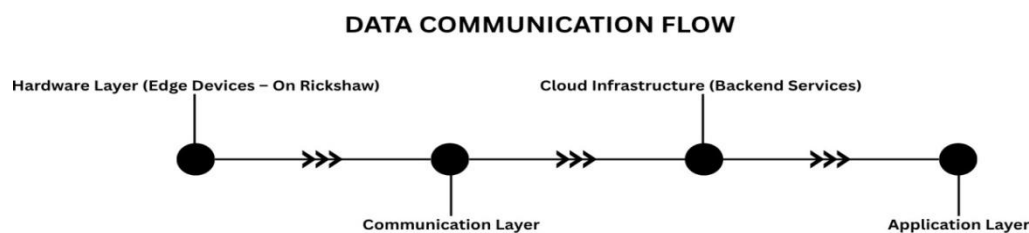


Fig. 3. Communication Flow.



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Tier2:CommunicationLayer

- Communication Protocols: MQTT or HTTP (Firebase SDK-based).
- Network:Mobilehotspotorcellulardongle(4GLTE)forconstant connectivity.
- DataPushed:GPScoordinates,sensordata,systemstatus.

Tier 3: Cloud Infrastructure (Backend Services)

- Supabase Storage: Stores sensor data, logs, campaign details.
- Supabase Authentication: Secures app access for clients/admin.
- Supabase Realtime Database: Handles live status updates.
- Supabase Cloud Functions: Processes events, triggers analytics.
- SupabaseCloudStorage:Storesimages,advertisementcontent,camerasnapshots(if used).

Tier4:ApplicationLayer

- Android App (built with React Native or Java/Kotlin): Used by clients and admins to
 - Monitor campaign reach
 - Viewlocation-basedanalytics.
 - Receive reports ¬ifications.
 - Select advertising packages.
- AdminDashboard(WeborApp):Manages
 - Client onboarding.
 - Campaign assignment.
 - Device management.
 - Analytics visualization.



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Technology Stack

Table1.TechStack

Category	Component	Description/TechnologyUsed
Frontend(Mobile App)	Language	JavaScript/TypeScript(ReactNative)
	UI Framework	ReactNativePaperorNativeBase
	StateManagement	ReduxorContextAPI
	Navigation	ReactNavigation
	Authentication	SupabaseAuth(Email/OTP/Google)
	Platform	Android(iOSsupportinroadmap)
Backend(Cloud)	Platform	Supabase(Nodededicatedserverrequired)
	Database	Bucket(NoSQL,document-oriented)
	Storage	SupabaseStorage(Adcreativesanduser uploads)
	Functions	SupabaseCloudFunctions(Node.jsruntime)
	Hosting(optional)	SupabaseHosting(forwebdashboard)
Hardware& Embedded	Microcontroller	RaspberryPi4ModelB
	Programming Language	Python3.x
	Libraries	OpenCV,RPi.GPIO,smbus,GPSD, picamera
	Display	HDMI-poweredLEDpanel
	Connectivity	4GLTEUSBdongleorMobileHotspot
IoTCommunication	Protocol	MQTT(viaHiveMQorFirebaseeequivalent)
	PayloadFormat	JSON

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Product Implementation

Hanuroy Global Enterprises developed and deployed a mobile offline advertising system through the following core implementations:

- Rickshaw Integration: LED display screens were mounted on the back of e-rickshaws, integrated with an IoT-based control unit (Raspberry Pi, GPS, sensors) to manage content and gather real-time data.
- Mobile Application: A React Native-based app was built for brands to monitor live location, view analytics (including time- and location-based density graphs), and manage campaigns remotely.
- Field Testing: The system was tested in collaboration with actual rickshaw drivers on active city routes to ensure real-world stability, sensor accuracy, and power efficiency.



Fig.5.RickshawMountedScreen.



Fig.6.IoTBox.



Fig.7.Application.

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Client and Revenue Model

Clientele:

Hanuroy Global Enterprises primarily serves local businesses, retail stores, and startups seeking targeted marketing within specific city areas. The platform offers a high-visibility solution for brands aiming to reach local audiences effectively.

Revenue Model:

The company follows a subscription-based pricing structure, offering daily and weekly ad slots on a pay-per-screen model. Brands can select city zones, time windows, and duration based on their campaign needs.

Cost Advantage:

Compared to traditional digital vans, Hanuroy's model offers significantly lower operational costs while ensuring hyperlocal targeting. The use of public transport (rickshaws) as ad carriers enhances visibility in high-traffic, populated zones, making it a cost-efficient and impactful advertising solution.



Fig. 8. Client Portfolio.

Ad Campaign Impact Report



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Client	Industry	LocationCoverage	Visibility	InquiryGrowth	PriceCharged
PrakashEnterprises	Solar Company	DDNagar(23%), City Center (31%), Girraj Market (21%)	4,268+perday	27%	₹6,000
EasyGurukul	Coaching	Hazira(18%),Sarafa(30%),Bus Stand(20%)	5,593+perday	42%	₹3,500
Sanskriti Gurukulam	School	Rampura(26%),DaalBazaar(29%),GolPahadiya(17%)	4,110+perday	34%	₹3,500
IFM	Local Brand	Girraj Market (33%),Phoolbagh(28%),DDNagar(15%)	3,705+perday	39%	₹3,500
EduBirds	School	Lashkar(31%),NayaBazaar(22%),CityCenter(27%)	4,380+perday	36%	₹3,500

Common Audience Responses

- “I noticed new brands I hadn’t seen before, especially while passing through City Center. The ads were eye-catching!”
- “The visuals on the autos were really attractive. I ended up searching for two of the brands I saw!”
- “I came across EasyGurukul while commuting daily — never knew it was so close to my area!”
- “It’s a nice way to know about local businesses. I saw EduBirds and IFM both on my route and it caught my attention.”
- “The ads made me curious. I visited the store after seeing it multiple times in Girraj Market.”
- “Never heard of Prakash Enterprises before, but their ad design was so professional I Googled them.”



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DriveLink:Photos/Videos,Udyam Registration certificate

Video Link:

https://drive.google.com/file/d/1DGFxLYcPCMm_6htlUnPsdhN9LSdDIX2n/view?usp=sharing

Material : <https://drive.google.com/drive/folders/1G-KwbTymzo6KALDFpRmHN-GIVRzjjJ-m?usp=sharing>





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About Team

AnkurVerma

Co-Founder,CEO



The strategic mind behind the operations, partnerships, and long-term vision. Ankur leads with passion for grassroots innovation and has a strong background in tech and community-centric solutions.

Aryaman Sharma

Co-Founder,CreativeLead

The creative force of the team. Aryaman ensures that every campaign stands out with compelling design, storytelling, and brand identity that speaks to the local audience.

Disha Jain

Co-Founder,FinanceLead

The financial anchor, Disha ensures all campaigns are cost-effective and scalable. Her expertise keeps the business sustainable and investor-ready.



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Conclusion and Future Plans

The results clearly highlight the positive impact of our mobile advertising model, with impressive daily visibility figures and a consistent rise in inquiries across all featured brands. The engaging presence of localized ads has not only boosted awareness but also helped connect businesses with untapped audiences — many of whom discovered these brands for the first time through our platform.

Building on this success, we plan to scale and innovate further:

- Expand to 5 Advertising Vehicles: Increase our fleet to cover more routes and ensure repeat visibility in high-footfall zones.
- Introduce Digital Screens Inside Rickshaws: Add dynamic ad displays and storytelling through digital screens to enhance engagement and deliver richer content formats.
- Collaborate with Government & Large Enterprises: Partner with municipal bodies and reputed companies to support public campaigns, awareness drives, and CSR activities alongside brand promotions.
- Attract Strategic Investors: Open avenues for impact-driven investors to join us in transforming urban advertising while promoting local businesses and creating employment.

With these upgrades, we aim to not just be a medium of advertisement — but a movement for local discovery, smart advertising, and inclusive urban growth.
