

# RAVEN

Surveillance Engine  
For Safer Cities And  
Critical Assets.



2025

Protect people, secure assets, reduce response times





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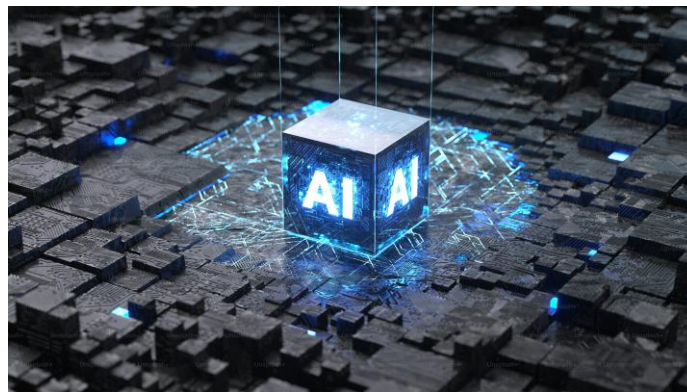
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# Executive Summary

RAVEN is Boldstreet's enterprise surveillance engine built for African cities and mission-critical sites. Using edge-optimized computer vision, audio analysis, thermal imaging and sensor fusion, RAVEN detects and classifies 1,450+ anomaly types spanning human behavior, objects, vehicles, events and environmental hazards. Designed for malls, airports, transport hubs, commercial campuses and municipal control rooms, RAVEN turns scattered signals into verified, actionable intelligence, with evidence hashed on a blockchain ledger for auditability and legal defensibility.

- Reduce average incident detection-to-response time by 60%.
- Cut false positives by prioritizing corroborated multi-sensor evidence.
- Maintain chain-of-evidence using blockchain anchoring for every alert.
- Integrate with existing CCTV, PSIMs, and emergency response workflows.



## Services & Solutions

- AI surveillance
- Enterprise video analytics
- Public safety AI
- Blockchain evidence security.



Home  
Security

Public  
Security

Alarm  
Monitoring

**Service Locations:** World wide

**Founded:** 2024

**Headquarter:** Nairobi Kenya

**Website:** [www.boldstreet.co.ke](http://www.boldstreet.co.ke)

# Understanding Security Needs

Advanced safety and security for Kenya's high-risk environments. Inspired by tragic incidents like Nairobi's 2013 Westgate mall attack, RAVEN provides proactive protection for malls, airports, campuses, and city centers..



**RAVEN's robust, multi-layered approach, ensuring comprehensive protection.**



## Threat of Terrorism

The 2013 Westgate Mall attack, which resulted in 67 deaths and over 175 injuries, underscores the vulnerability of large retail spaces to coordinated terrorist attacks. Malls, airports, campuses, and city centers are high-value targets due to their visibility and crowd density.



## Theft and Vandalism

Malls, airports, campuses, and city center environments are prone to shoplifting, vandalism, and property damage, impacting revenue and overall experience.



## Crowd Management Risks

Sudden crowd formations or aggressive group behaviors can escalate into chaos, as seen in past incidents of looting or protests in urban settings.



## Infrastructure Vulnerabilities

Broken lights, obstructed CCTV, and environmental hazards like gas leaks can compromise safety and surveillance effectiveness.



## Animal-Related Risks

Stray animals, lost pets, or wildlife entering high risk environments can pose safety and health risks, while service animals require proper identification for compliance.



## Cyber Threats

IoT malfunctions (Camera with erratic panning) and cyber-physical attacks (Unauthorized drone) threaten digital and physical security.

# Project RAVEN

Powered by multi-modal sensing, RAVEN combines high-resolution cameras (RGB and IR), audio analysis (gunshots, glass breaks), thermal imaging (body heat or fire), and IoT sensors to create a comprehensive view of your site. When an anomaly is detected, RAVEN triggers real-time alerts to security teams via SMS, email, or control-room panels. Every alert comes with video evidence, so threats are never false alarms.



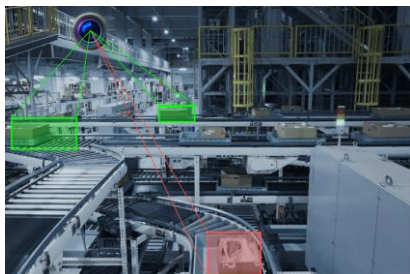
## Comprehensive Anomaly Detection

- **Human-Related Abnormalities (250 anomalies):** Detects violent behaviors (e.g., 1: Punching with clenched fist), intrusions (51: Climbing a restricted fence), loitering (101), and suspicious behaviors (151: Photographing security infrastructure).
- **Object-Related Abnormalities (200 anomalies):** Identifies unattended objects (201: Backpack with ticking sound), weapons (251: Firearm in public), suspicious cargo (301), and falling objects (351).
- **Vehicle-Related Abnormalities (200 anomalies):** Monitors illegal parking (401), suspicious vehicle activity (451), and abandoned vehicles (501).
- **Event-Based Anomalies (150 anomalies):** Detects fires (551), explosions (601), and water leaks (651).
- **Counter-Terrorism Intelligence (150 anomalies):** Tracks financial transactions (701), communication patterns (731), behavioral indicators (761), and cyber threats (821).
- **Infrastructure and Crowd Anomalies (200 anomalies):** Monitors broken lights (1001), environmental hazards (1051), obstructed CCTV (1124), and crowd behaviors (1151, 1176).
- **Animal-Related Anomalies (100 anomalies):** Detects pet issues (1201: Unattended dog barking), wildlife intrusions (1231: Bird flying into glass door), and animal-induced hazards (1261: Pet feces on walkway).
- **Advanced Behavioral Anomalies (50 anomalies):** Identifies deceptive behaviors (1301: Avoiding eye contact) and coordinated group actions (1326: Group splitting to avoid detection).
- **Advanced Technological Anomalies (50 anomalies):** Monitors IoT malfunctions (1401: Camera with erratic panning) and cyber-physical threats (1426: Unauthorized drone).

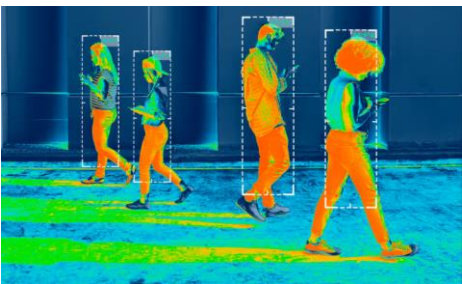


# Advanced Technology Integration

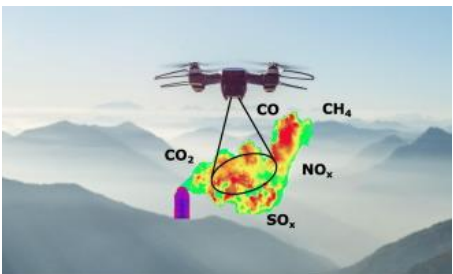
RAVEN leverages cutting-edge technologies:



Visual Detection: RAVEN-powered cameras detect objects, behaviors, and animals (e.g., 1158: Crowd with erratic movements, 1231: Bird flying into glass door).

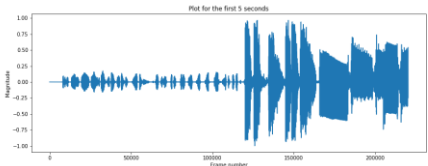


Thermal Imaging: Detects heat signatures from weapons (252), human stress (1155), animals (1204), and devices (1402).



Chemical and Radiation Sensors: Identifies hazardous substances (1051) and radiation spikes (1052).

Audio Analysis: Identifies sounds like gunshots (253), barking (1201), or mechanical noises (1403: Access control with beeping).



Data-Driven Intelligence: Analyzes financial transactions (701), communication patterns (731), and network activity (1429: Wi-Fi spoofing).





# Real-Time Threat Response

RAVEN provides instant alerts to security personnel, with detailed anomaly descriptions and recommended actions.



A detected backpack with ticking sound near an entrance triggers an immediate alert to evacuate the area and deploy bomb disposal units.



01



Suspicious financial transactions linked to a visitors profile prompt discreet monitoring and coordination with law enforcement.



02



Sudden crowd formation with aggressive chanting activates crowd control protocols to prevent escalation



03

Our solution is fully customizable to Critical environments layout, integrating with existing CCTV systems, access controls, and emergency protocols. The system scales to cover high-traffic areas like entrances, parking lots, and food courts, ensuring comprehensive protection.



# Benefits



## Enhanced Safety

Proactive detection of threats like terrorism, theft, and environmental hazards ensures a secure environment for patrons and staff.

01

## Reduced Financial Losses

Mitigating shoplifting, vandalism, and infrastructure damage protects revenue and assets.

03



02

## Customer Experience

A safe, well-monitored environment fosters trust, encouraging repeat visits and tenant satisfaction.

04

## Response to Incidents

Real-time alerts and actionable intelligence minimize response times, preventing escalation of threats.

05

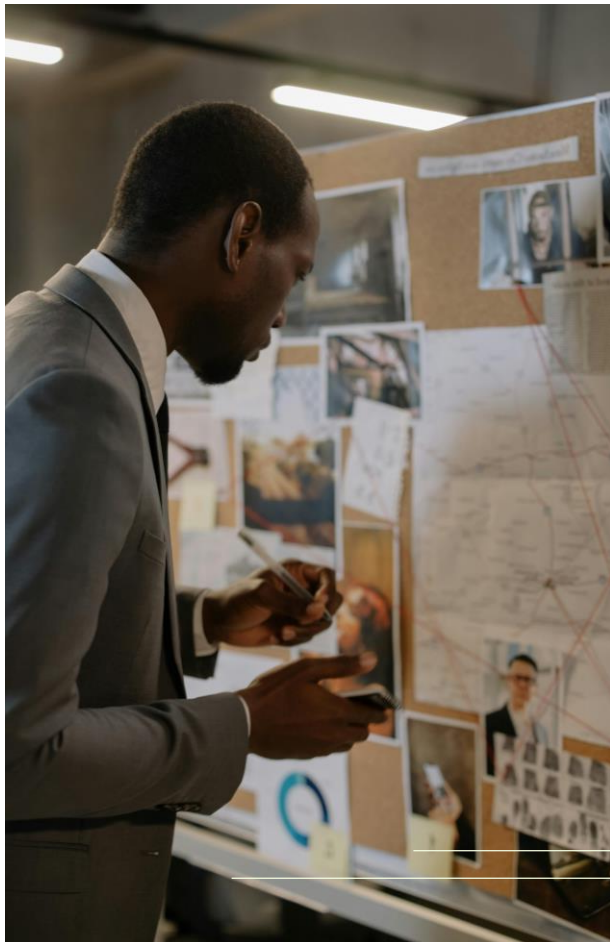
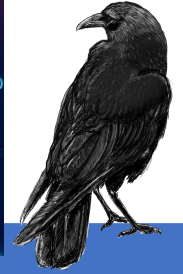
## Reputation

Project RAVEN aligns with global security standards, enhancing reputation of spaces as safe destinations.



# Case Study: Mitigating Past Threats

The 2013 Westgate Mall attack highlighted the need for advanced surveillance in retail environments. RAVEN could have mitigated such an incident by



**Detecting suspicious behaviors**  
(e.g., *photographing security infrastructure*) in the planning phase.



**Identifying weapons**  
(e.g., *concealed firearms*) during entry.



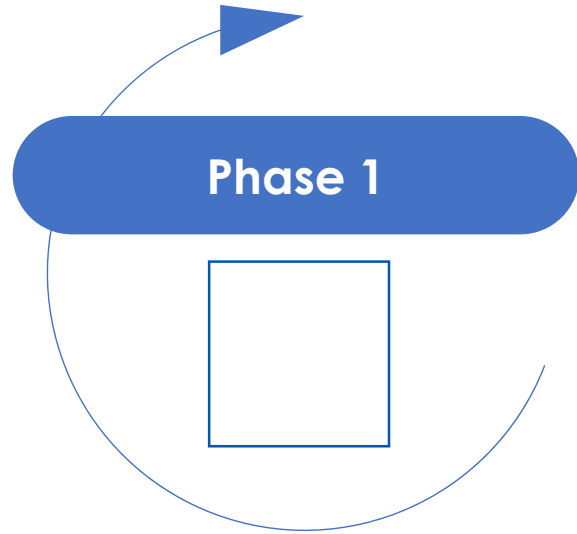
**Alerting security to sudden crowd dispersal or aggressive behaviors** during the attack.



**Providing real-time data to law enforcement** for coordinated response.

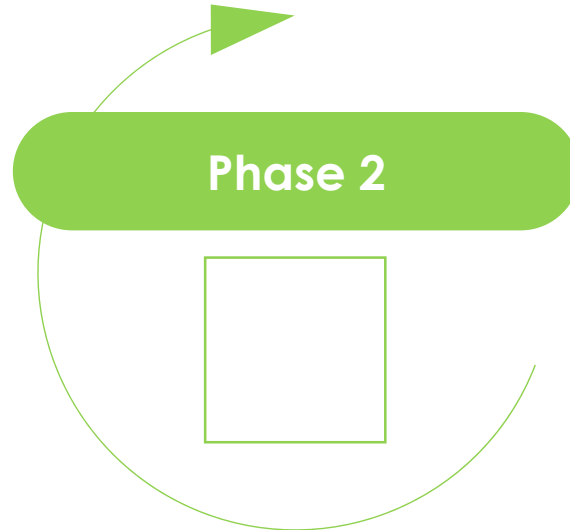
Similarly, RAVEN can prevent incidents like the 2019 DusitD2 attack by detecting financial transactions, communication patterns, and behavioral indicators associated with terrorist planning.

# Implementation Plan



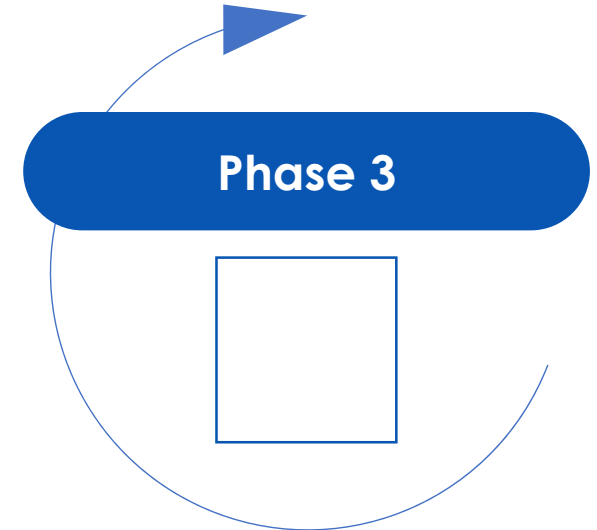
Conduct a security audit of Critical points to identify high-risk areas and integration points.

**Assessment (2 weeks)**



Deploy cameras, sensors, and software, integrating with existing systems.

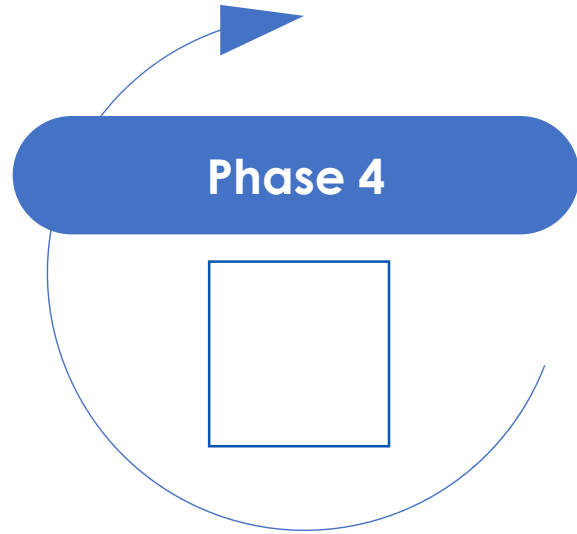
**Installation (4 weeks)**



Train security personnel on system operation and response protocols.

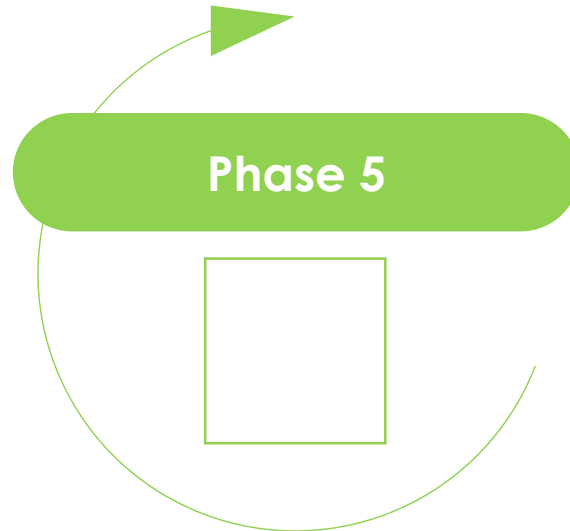
**Training (2 weeks)**

# Implementation Plan



Conduct system tests and launch full operations

**Testing and Go-Live (2 weeks)**



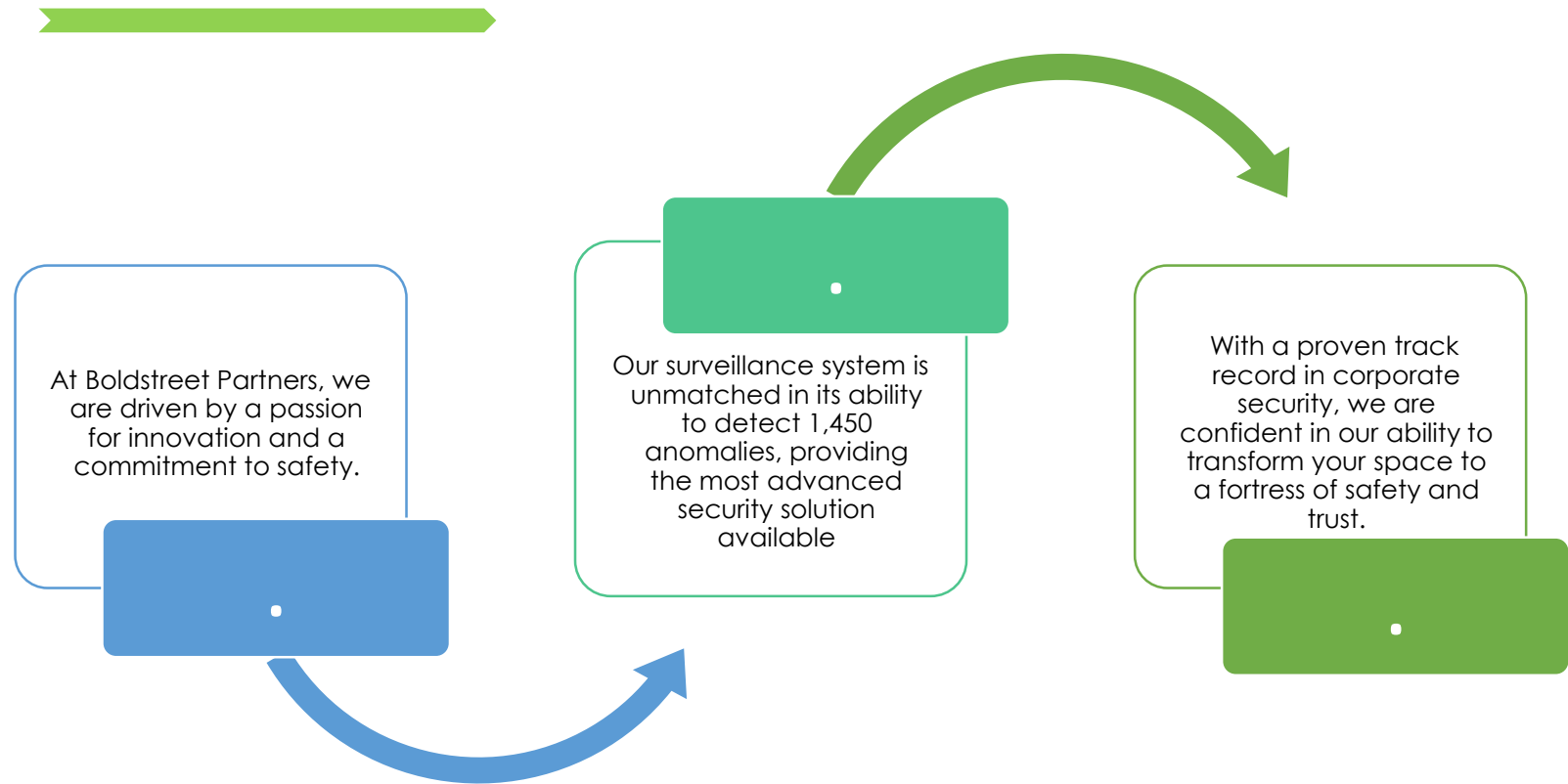
Provide 24/7 monitoring, maintenance, and updates to ensure optimal performance.

**Ongoing Support**





# Why Boldstreet Partners Group?



Led the way in security by partnering with Boldstreet Partners Group. RAVEN addresses the core pain points of modern Critical environments, offering real-time protection against a wide range of threats..







# Privacy, Compliance & Security



RAVEN is built with privacy-by-design

- **On-edge anonymization:** Faces and PII are blurred at the edge unless an explicit lawful override is triggered.
- **Data minimization:** Only metadata and short clip extracts from triggered events are stored.
- **GDPR & local compliance:** Configurable retention policies and access logs for audits.
- **Secure infrastructure:** TLS for data in transit, AES-256 for data at rest, role-based access control and SOC II-style practices ready for SLAs.

“

Because evidence is blockchain-anchored, operators have clear, immutable chains for incident handling, reducing legal risk and strengthening relationships with law enforcement.

”







Airport Deployment





Transport Hub Deployment





Mall Deployment





Campus Deployment





**BOLDSTREET PARTNERS**  
beyond impressions

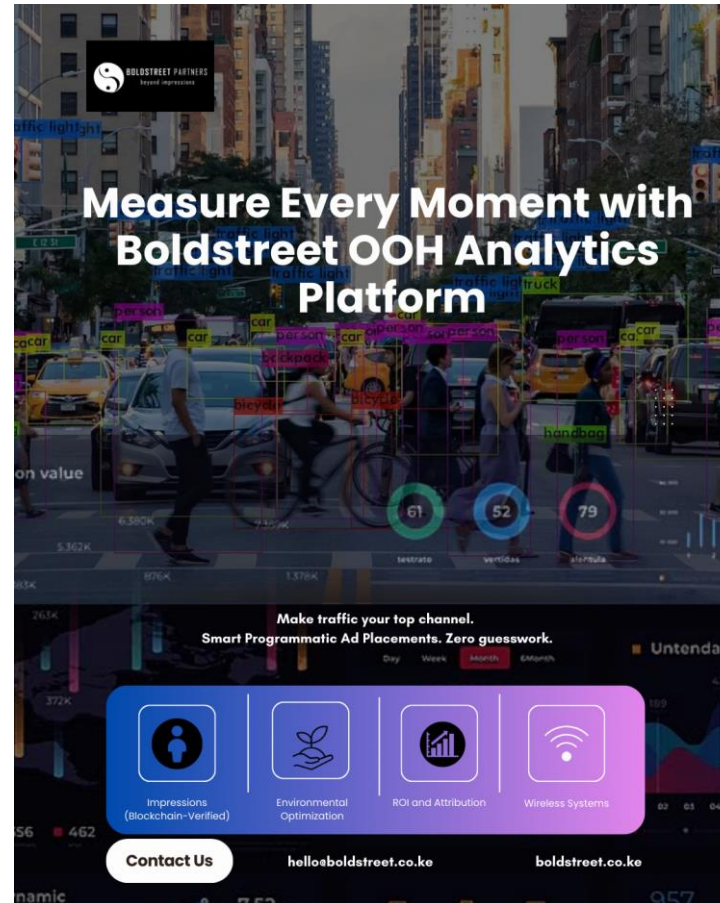
**RAVEN:**  
**EVERY threat detected.**  
**Zero chances taken.**

From theft to terrorism—RAVEN sees it before it happens.

**Your Safety. Secured by RAVEN.**

**Contact Us**  
hello@boldstreet.co.ke boldstreet.co.ke

RAVEN Agent  
Alarm Monitoring  
Sensor Integration



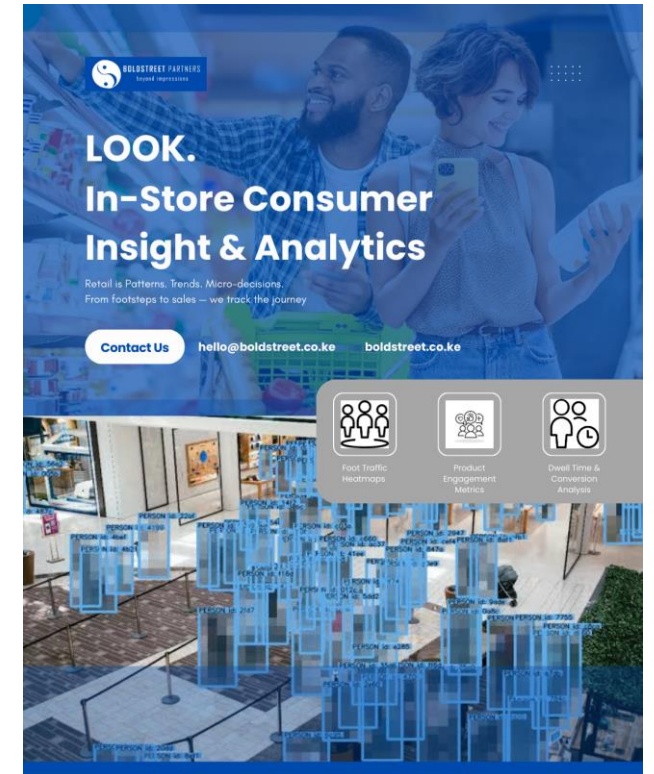
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Make traffic your top channel.  
Smart Programmatic Ad Placements. Zero guesswork.

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Wireless Systems

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**LOOK.**  
**In-Store Consumer Insight & Analytics**

Retail is Patterns. Trends. Micro-decisions.  
From footsteps to sales — we track the journey

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Foot Traffic Heatmaps  
Product Engagement Metrics  
Dwell Time & Conversion Analysis

## LEARN MORE ABOUT OUR OTHER PRODUCTS

1. Boldstreet OOH - Out-of-home Advertising Engine
2. LOOK - Consumer Insight Engine
3. ONFIX - Smart Cities Engine
4. ALLTHEWAY - Logistics Engine



*Your Partner in Safety and Innovation*

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