The FutureList

Sensagrate

Innovation Memo

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Innovation In Words





A note from the Founder of Sensagrate, Darryl Keeton;

By harnessing the power of real-time visual data, our technology enables smarter decision-making and faster responses, helping to prevent collisions and save lives.

> The FutureList

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Executive Summary

As urbanization accelerates and road safety remains a critical concern, Sensagrate emerges as a trailblazer in intelligent transportation systems. The company aims to create safer, smarter streets by leveraging state-of-the-art AI, computer vision, sensor fusion, and infrastructure-to-communication (I2V) technology. With its SensaVision platform, Sensagrate provides real-time traffic data and safety analytics, enabling cities to optimize traffic flow, reduce congestion, and, most importantly, prevent collisions. This innovation addresses immediate transportation challenges and lays the groundwork for the future of smart cities and autonomous vehicles.

However, the journey to revolutionizing urban infrastructure has its challenges. Sensagrate may need to work on integrating its platform with existing systems and staying ahead of rapid AI and sensor technology advancements. Additionally, regulatory changes and data privacy concerns pose significant risks. To overcome these obstacles, Sensagrate is investing heavily in research and development, forming strategic partnerships with tech leaders, and maintaining a flexible approach to regulatory compliance. These proactive measures ensure that the company can navigate the complexities of the market while delivering cutting-edge solutions.

The potential for Sensagrate is immense. As cities worldwide invest in smart infrastructure and sustainability initiatives, the demand for advanced traffic management and safety solutions will increase. Sensagrate is well-positioned to capitalize on this growing market with its scalable technology, strong partnerships, and a clear focus on reducing traffic fatalities and emissions. With continued innovation and strategic expansion, Sensagrate has the potential to contribute to shaping the future of urban mobility and smart cities globally.



Darryl Keeton Founder and President

Darryl is the founder and president of Sensagrate, a company that works in smart city and infrastructure-to-vehicle (I2V) communication. With over 12 years of experience in business and technology development, Darryl has established Sensagrate by using computer vision AI, 2D and 3D sensor technology, and IoT to improve urban mobility and safety through its SensaVision platform. His background includes risk management and cybersecurity roles at Deloitte and American Express, and he has also led his consulting firm, Black Diamond Business Solutions. Darryl is recognized for his innovative contributions, including being a recipient of the Google for Startups Black Founders Fund, and he actively supports community and smart city initiatives.



Innovation Spotlight

a) Core Functionality and Features

- Sensor Technology Sensagrate's products utilize a combination of LiDAR, cameras, and radar to collect data, process it, and analyze traffic, safety, and environmental information.
- IoT Edge Device The SensaVision EDGE is a secure IoT device that processes sensor data on-premises, offering realtime analytics, alerts, and data transmission through 4G/LTE networks.
- SensaVision Software This computer vision AI software uses deep learning models to provide 2D, 3D, and 4D perceptions of traffic environments. It detects and tracks various objects, including vehicles, pedestrians, cyclists, and e-scooters.
- SensaVision Web Application This platform visualizes realtime traffic data, safety metrics, and predictive analytics, offering interactive maps and detailed incident reports.
- SensaVision Stream and Mobile These solutions provide cloud-based, portable analytics for real-time data collection and analysis.

b) Design and User Experience

- Sensagrate's sensor systems are designed for easy installation on poles or within traffic controller cabinets. The rugged design ensures durability, while their small form factor allows for unobtrusive deployment in urban environments.
- The systems are plug-and-play, making installation and configuration straightforward. Users interact with the hardware minimally, focusing more on the data provided.
- The web application features a user-friendly interface that allows traffic engineers, city planners, and other stakeholders to interact with real-time data through intuitive visualizations. The setup process for event management zones and polylines is simplified, enabling users to configure the system without extensive technical knowledge.

c) Performance Metrics

- The sensors and IoT Edge devices are built to withstand harsh environmental conditions. They have an operating temperature range from -20°C to +80°C and an IP68 rating for protection against dust and water.
- The software is designed for real-time processing, ensuring traffic data is analyzed and visualized without significant delays. The IoT Edge Device processes data on-premises to reduce latency and sends real-time alerts to road users.
- The system provides real-time notifications and updates through its edge devices and cloud-based platforms, ensuring high responsiveness to traffic events and safety incidents.

d) Integration and Compatibility

• Sensagrate's platform is designed to integrate seamlessly with existing traffic infrastructure and ITS (Intelligent Transportation Systems) applications. The system can connect to traffic control signals, roadside units, and other transportation systems via APIs. • The platform is agnostic regarding sensor hardware, allowing integration with various LiDAR, camera, and radar manufacturers. This flexibility makes it adaptable to different deployment environments and use cases.

e) Safety and Compliance

The SensaVision EDGE device features encryption and tamper detection to protect customer data and ensure compliance with data security regulations.

The technology is designed to meet country-specific requirements, ensuring it adheres to regional traffic and safety standards.

f) Operational Aspects

Sensagrate offers solar-powered options for its portable systems, reducing energy consumption and ensuring operation in areas without easy access to power.

The hardware is built to operate reliably under various environmental conditions, ensuring continuous functionality in diverse urban settings.

g) Innovation in Business Model

- Data-as-a-Service (DaaS) Sensagrate's business model focuses on providing data and analytics through a subscription-based licensing model. This DaaS approach allows customers to access real-time traffic data and analytics with a flexible subscription, ranging from monthly to annual plans.
- The company distinguishes itself by offering an integrated package of sensors, software, and data analytics, reducing clients' complexity in deploying and managing traffic and safety systems.

h) Scalability of the Innovation

- Sensagrate's technology is designed to be scalable, allowing users to add more sensors and expand coverage as needed. The cloud-based SensaVision Stream and portable SensaVision Mobile solutions allow for easy expansion to new locations.
- With its technology already deployed in multiple communities and pilot programs, Sensagrate is positioned for broader adoption, particularly as smart city initiatives and intelligent transportation systems gain traction globally.

Market Impact & Future Outlook

Sensagrate is positioned in the niche of smart infrastructure, particularly within intelligent transportation systems (ITS) and urban planning. The company addresses modern cities' most pressing challenges by focusing on vulnerable road user safety, traffic optimization, and CO2 monitoring. Its integration of Al and sensor fusion technology offers cities and municipalities a comprehensive solution to enhance road safety, reduce traffic congestion, and lower emissions.

With clients like the City of Tucson and Scottsdale and institutions like UCLA and Arizona State University, Sensagrate has established itself as a reliable partner for both the public nd private sectors.



These collaborations not only validate the effectiveness of their technology but also enhance their reputation within the industry. The company's partnerships with leading sensor manufacturers strengthen its product offerings and market reach.

Sensagrate is well-positioned and forward-thinking in its plans to expand into new markets as the demand for smart infrastructure grows. The company's technology is highly adaptable and can be applied to various sectors beyond traditional traffic management, such as smart campuses, business improvement districts, and electric vehicle (EV) charging stations. These new markets provide significant opportunities for growth, especially as cities worldwide invest in smart city initiatives.

Societal & Environmental Impact

Sensagrate's focus on vulnerable road users (pedestrians, cyclists, and e-scooter riders) directly addresses the significant societal issue of traffic-related fatalities and injuries. By providing real-time data and predictive analytics, the company helps cities identify high-risk areas and implement measures to improve safety, such as adjusting signal timings or redesigning intersections. This leads to a safer environment for all road users and reduces the anxiety of navigating busy urban areas.

Also, Sensagrate's mission aligns with Vision Zero, an international initiative to eliminate traffic fatalities and severe injuries. Sensagrate empowers cities to make informed decisions by offering detailed data and analytics, prioritising safety and working toward zero traffic-related deaths. This contributes to safer communities and enhances residents' overall quality of life.

Sensagrate offers solar-powered and battery-based portable systems, which reduce the energy consumption of their deployments. This makes their technology more sustainable and demonstrates a commitment to reducing the environmental impact of their operations.

Potential Funding & Partnership Opportunities

Sensagrate, with its innovative solutions in smart city infrastructure and intelligent transportation systems, is positioned to tap into various funding and partnership opportunities that align with its mission to enhance road safety, reduce emissions, and support sustainable urban development.

Sensagrate has already received funding from the Google Balck Founders Fund and partnerships with cities and universities. These investments and partnerships showcase Senagarate's potential to receive more funding and potential partnerships to support its operations. Sensagrate can further explore funding and partnerships such as:

• Government grants and public sector funding from smart city initiatives and transportation safety programs (e.g., Vision Zero, BUILD grants).

- Tech-focused VC firms specializing in AI, IoT, and smart infrastructure and sustainability and impact investors.
- Partnerships with sensor and hardware manufacturers can be strategic alliances with automotive and mobility companies (e.g., Tesla, Ford, Waymo).
- More joint research initiatives with universities specializing in AI and transportation will provide pilot resources and technological improvement.

Potential Roadblocks & Risks

• Rapid Technological Advancements and Competition

The pace of technological innovation in Al, sensor fusion, and autonomous systems is extremely fast. Newer technologies and competitors could compete with Sensagrate's current offerings.

 Mitigation Strategy: Continuous investment in R&D, maintaining strong partnerships, and implementing a flexible technology roadmap to stay ahead of technological advancements can help Sensagrate stay ahead.

Integration and Interoperability Issues

Integrating Sensagrate's platform with some existing infrastructure and other ITS applications can be complex and may face compatibility issues.

 Mitigation Strategy: Focusing on robust API development, extensive compatibility testing, and building strong partnerships with ITS and smart city providers will ensure seamless integration and provide customized support to clients.

Market Adoption and Scaling Challenges

Adopting new technology in the public sector can be slow due to budget constraints, lengthy procurement processes, and resistance to change.

 Mitigation Strategy: Demonstrating clear ROI, offering flexible pricing models, and investing in customer education can encourage the adoption of Sensagrate's solutions.

Conclusion

Sensagrate is working on transforming urban mobility and intelligent transportation, offering cutting-edge Al-driven solutions that address critical challenges in road safety, traffic management, and sustainability. By integrating advanced sensor fusion technology with real-time data analytics, Sensagrate improves traffic efficiency and works towards developing smarter, safer, and more sustainable cities. As smart cities and autonomous vehicles become the norm, Sensagrate's innovative approach and solution can contribute to creating safer and sustainable cities for all.

Innovation In View

How Sensagrate brings innovation to life

State-of-the-art Computer Vision AI Data and Analytics System



- Sensagrate develops the SensaVision platform, a cuttingedge computer vision AI data and analytics system.
- The system optimizes traffic flow, reduces congestion, and enhances safety by detecting near-miss collisions with 95% accuracy.
- It provides real-time data that enables cities to make datadriven decisions to improve public safety, especially for vulnerable road users like pedestrians and cyclists.
- Facilitates smarter and more responsive urban environments by continuously refining and deploying technology.

Enhancing Urban Safety and Efficiency Through Innovative Solutions

Sensagrate collaborates with clients to implement solutions that enhance road safety and efficiency:

- Offers solutions in traffic monitoring, behaviour analysis, and CO2 monitoring.
- Provides actionable insights into traffic patterns, pedestrian behaviours, and emissions, leading to targeted infrastructure improvements.
- Integrates with connected and autonomous vehicles (CAVs) through Cellular Vehicle-to-Everything (C-V2X) communications.
- Contributes to smarter urban planning and sustainable development, making cities safer and more efficient through innovation.



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The FutureList

Kenna Taylor Innovation Ecosystem Manager

Henry Duah Research Analyst

Sensagrate

Darryl Keeton Founder and President

The FutureList

Notes on our methodology

About The FutureList

The FutureList is dedicated to identifying and linking innovative technology companies with the investors, talent and strategic growth partners they need to rapidly scale their innovation. The FutureList leverages its network of local Innovation Scouts, a comprehensive online platform, and curated events to rapidly spot and match opportunities. The FutureList network has already profiled over 6,000 innovative companies, investors and partners globally.

We scout across a broad range of sectors in tech, aiming to identify the most innovative startups globally. This includes everything from AI to biotech, renewable energy, and more. The 10 categories we currently focus on are: Agriculture (farming, food, beverages, crops, forestry, aquaculture, livestock, irrigation, veterinary, etc.), Climate (electricity, energy, environment, renewables, recycling, circular economy, carbon credits, cleantech, etc.), Education (e-learning, school management, assessments, upskilling, tutors, languages, etc.), Enterprise (legal services, AI, cyber security, market research, recruitment, HR, customer success, consulting, SaaS tools, business analytics, etc.), Finance (banking, capital, trading, lending, personal finance, insurance, crypto, real estate, etc.), Health (medicine, biotech, medical equipment, pharmaceuticals, public health, digital health, hospitals, health records, wellness, fitness, beauty, etc.), Infrastructure (architecture, materials, computer networks, safety, law enforcement, construction, data centers, machinery, telecom, wireless internet, manufacturing, etc.), Media (marketing, influencers, animation, arts, gaming, fashion, content, platforms, music, publishing, translation, editing, etc.), Mobility (delivery, transportation, etc.), and Supply Chain (e-commerce, warehousing, logistics, retail, etc.)

About Our Innovation Scouts

Our Innovation Scouts are experienced professionals from diverse sectors with a keen eye for groundbreaking technologies and business models. They undergo rigorous training to ensure they provide maximum value to the startups they work with. They conduct their research on a volunteer basis. We have strict ethical guidelines in place. Any Scout with a potential conflict of interest is recused from the process to ensure fairness and objectivity.

About Our Innovation Memos

Innovation Memos provide a comprehensive profile of an innovator, whether its a startup, hub, investor or more established corporate, highlighting technological and business model innovations. The Memo is written in direct consultation with a verified representative from that entity, and also outlines suggestions around how to rapidly scale their innovation further through use of The FutureList's network. Once published, the Memo accessible to our network of investors, partners, and the general public for free on our platform. The Memo process is completely free for the companies featured as well. The entire process, from initial contact to publishing the Innovation Memo, typically takes about 4-6 weeks, but this can vary based on the startup's availability and responsiveness. Our goal is to promote and scale innovation globally. The FutureList platform and events are sponsored by partners.

Scaling Innovation

How The FutureList identifies and scales innovation globally



Ecosystem and sector mapping

Our Innovation Scouts identify the most innovative early-stage and growth-stage tech companies across key sectors in tech hubs around the globe.



Innovation memos and platform profiles

Our Innovation Scouts interview founders and tech executives to publish innovation memos and create a comprehensive company profile on our public online platform.



Introductions to strategic opportunities

Our Innovation Scouts share company profiles with relevant investors and strategic growth partners across our global ecosystem, and facilitate warm introductions where requested.



Private dinners and fireside chats

Our exclusive evening events bring together founders, tech executives and other special guests for networking and interactive discussions around technology and innovation.



Global summits & learning trips

Featured companies will be invited to larger annual events held at the regional and global stage that connect the most innovative companies with opportunities for further visibility.

Sponsor

The FutureList platform and events are sponsored by partners.

SAND TECHNOLOGIES

Sand Technologies, a global technology services company with presence across Silicon Valley, France, the UK, Romania, and several emerging markets, is at the forefront of supporting scale-ups worldwide in overcoming the challenges of rapid growth. We're currently aiding businesses in the United States, New Zealand, Denmark, the Netherlands, the UK, the UAE, South Africa, Kenya, and numerous other locations in developing scalable technology products, constructing world-class tech teams, enhancing revenue generation, and elevating customer satisfaction.

Learn more at www.sandtech.com





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