

The FutureList

Kumva Insights

Innovation Memo

Innovation In Words



A note from the Co-founder, Kennet Christensen:

Kumva Insights' IoT-based data solutions have been applied in multiple sectors, such as agriculture for optimising crop production and irrigation automation, cold chain monitoring for medical and food storage, and power consumption tracking for both commercial buildings and e-mobility charging stations.

Kumva Insights

Executive Summary

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 Infrastructure

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 Internet of Things (IoT)

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kumva.io

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 Bootstrapped

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 2018

Kumva Insights is an IoT and data solutions provider focused on transforming African industries through technology and data analytics. Established with a goal to harness IoT and data analytics to address complex challenges, Kumva Insights offers solutions that cater to various sectors, including healthcare, agriculture, and energy.

Kumva Insights' IoT hardware includes modular design, solar energy compatibility, and waterproof/shockproof enclosures, ensuring integration and durability in challenging environments.

Despite operating in a landscape characterized by unique environmental and infrastructural challenges, Kumva Insights utilizes locally developed proprietary IoT hardware to ensure robustness and reliability, suitable for the challenging African environments where it operates.

Kumva Insights' approach to innovation includes multi-channel data analysis tools designed to interpret complex datasets. By collaborating closely with clients across industries, Kumva Insights provides solutions tailored to specific needs and goals. Applications include optimizing crop production in agriculture, enhancing cold chain monitoring in healthcare, or improving power consumption tracking in energy, using IoT-powered solutions to drive efficiency, productivity, and sustainability across sectors.



Thom Harvey
Co-founder and CEO

Thom is a passionate and driven entrepreneur with a specific focus on technology, digitalization, and startup development in East Africa. As the founder of Kumva Insights, Thom is dedicated to developing remote sensing technology to track changes and aid smarter decision-making in challenging African environments.



Kennet Christensen
Co-founder and COO

Kennet is a curious entrepreneur known for his strategic thinking, operational expertise, and ability to build and lead teams. Africa. As the co-founder and chief operating officer of Kumva Insights, he leads developing and deploying innovative IoT solutions and mobile data communication tools to drive positive social change in African communities.

Innovation Spotlight

Core Functionality

- Kumva Insights' technology is designed in Africa and has been extensively tested in harsh environments. Their solutions are built on open-source platforms, featuring a modular design for flexibility, incorporating GPS for precise tracking, and offering the versatility of being powered by solar energy or main grid electricity. The communication capabilities are ensured through WiFi and 2G/3G mobile networks, making it reliable even in remote locations.
- Kumva Insights' data solutions are applied in multiple sectors, such as agriculture, to optimise crop production and irrigation automation, cold chain monitoring for medical and food storage, and power consumption tracking for commercial buildings and e-mobility charging stations.
- Kumva Insights' health sector systems are typically installed indoors, whereas their agricultural systems are deployed in greenhouses and open fields, posing unique challenges regarding durability.

Design and User Experience

- Kumva Insights' hardware is enclosed in waterproof and shockproof housings, ensuring durability against extreme conditions. The devices are designed for robustness and ruggedness while remaining affordable to clients.
- Their mobile-responsive web dashboards provide intuitive data visualisation and analysis. The UI/UX design emphasises ease of use, facilitating actionable insights for users.

Performance Metrics

- Kumva Insights' IoT hardware undergoes rigorous testing to ensure durability and reliability, enabling efficient data collection in harsh environments.
- Kumva Insights' data analytics platform delivers quick access to critical insights with high uptime and seamless user interaction, ensuring an efficient user experience.

Integration and Compatibility

Kumva Insights' IoT hardware seamlessly integrates with diverse infrastructures, boasting features like modular design and compatibility with various software applications. Its communication capabilities ensure reliability even in remote areas. Additionally, they cater to partners' unique data preferences, offering visual dashboards and Google Sheets integration for collaborative analysis, ensuring flexibility and accessibility for all users.

Safety and Compliance

Kumva Insights prioritizes safety, compliance, and sustainability in its data and technology through robust design, compliance with industry standards, and data privacy measures. Their hardware is built to endure harsh conditions, complying with global industry standards for security and scalability. Additionally, the company prioritizes data privacy and security, employing secure data management platforms and encryption to safeguard sensitive information and comply with regulations.

Innovation in Business Model

Kumva Insights innovates its business model by offering "Sensing as a Service," which provides affordable access to technology without upfront investment. They prioritize custom solutions, collaborating closely with clients to create tailored product offerings that enhance flexibility and effectiveness.

Also, their focus on impacting smallholder farmers and underserved communities sets them apart. They aim to improve productivity and sustainability through data-driven insights and advisory services.

Operational Aspects for Hardware Components

Kumva Insights emphasizes energy efficiency in its technology, offering solar-powered options for sustainability. Its hardware components have a robust payload capacity, handling diverse data streams effectively for comprehensive monitoring. The technology exhibits resilience and reliability, operating in remote areas with a wide range and durability against harsh environmental conditions.

Scalability of Innovation

Kumva Insights' innovation demonstrates scalability through its modular design and adaptable technology infrastructure. Its IoT hardware combined with the data analytics are easily customizable for various use cases and environments without extensive redevelopment.

Market Impact & Future Outlook

Market Impact

- Kumva's IoT technology, designed and tested for harsh African environments, stands out with features like modular design, solar compatibility, and multiple communication options suitable for diverse agriculture, healthcare, and energy management applications.
- Kumva Insights' solution improves productivity and enhances sustainability in agriculture by providing real-time data on environmental conditions, irrigation management, and crop health.
- Kumva Insights' solution revolutionizes cold chain management, vaccine distribution, and medication storage, improving patient outcomes and supply integrity in healthcare.
- Partnerships and collaboration with medical companies and public health organizations showcase Kumva's ability to collaborate effectively and address sector-specific challenges.

Future Outlook

Kumva Insights is poised for continued growth and innovation in the IoT and data space as it leverages advances in wireless connectivity, data analytics, and machine learning to enhance solution capabilities and expand into new markets. The team's focus on building a proprietary data analytics platform emphasizes their drive to create more profound insights for clients and more tangible impact across the industries that it serves.

Societal & Environmental Impact

- Kumva Insights uses IoT technology to monitor grain storage and seedling nurseries, reducing agricultural losses and supporting smallholder farmers.
- Kumva Insights helps to ensure medication quality and safety through cold chain monitoring, improving healthcare access and outcomes.
- Kumva Insights' power consumption tracking identifies inefficiencies, cutting costs, reducing carbon emission footprint, and promoting environmental sustainability.
- By optimising processes, Kumva's solutions boost productivity and economic growth while minimising environmental impact. Farmers earn more and sustainably grow, industries save costs and reduce environmental impact, and the quality of healthcare services is improved.

Kumva Insights initiatives align with multiple United National Sustainable Development Goals (SDGs): 2, 3, 7, 8, 9, 11, 12, and 13. By addressing these goals, Kumva Insights contributes to broader global sustainable and economic development efforts.

Potential Funding & Partnership Opportunities

Potential Funding Opportunities

Kumva Insights has several avenues for potential funding and partnerships to support its mission in the agriculture, healthcare, and energy sectors on the African continent.

- Exploring government grants tailored for technology startups aligns well with Kumva Insight's focus on innovation and societal impact.
- Investment from venture capital firms specializing in infrastructure, IoT, and sustainable technology solutions can provide financial support, strategic guidance, and industry connections for scaling Kumva Insights' operations.
- Impact investors interested in social, environmental, and climate impact alongside financial returns present another strong funding opportunity, given Kumva's commitment to addressing pressing issues such as food security and climate resilience.
- Lastly, forging corporate partnerships in related industries like agriculture, healthcare, and energy can provide funding support, resource access, and market validation through joint product development, pilot projects, or strategic alliances.

Possible Investors that align with Kumva Insights' innovation:

- The African Financial Alliance on Climate Change (AFAC)
- Climate Investment Funds (CFI)
- The African Climate Foundation (ACF)
- Catalyst Fund
- GSMA Innovation Fund for Climate Resilience and Adaptation

Potential Partnership Opportunities

Kumva Insights has already established key partnerships with companies in various industries, such as Sand Technologies, I&M Bank, Kipharma, Zamura Feeds, Ampersand, Hollanda Fairfoods, and Pride Farms.

We propose further partnerships with technology firms, key industry players, non-profit organizations, and research institutions.

- Partnerships with tech firms enhance Kumva Insights' capabilities, while industry collaborations will provide insights and access to more customers, fostering co-development and distribution opportunities.
- Furthermore, engagement with research institutions will fuel Kumva Insights' innovation, leading to grants and sponsored research and product development projects.
- Also, collaborations with non-profits will amplify societal impact, facilitating pilot projects and scaling solutions for food security, healthcare, and environmental sustainability.

By leveraging funding opportunities and forging strategic partnerships, Kumva Insights can accelerate its growth trajectory, expand its market presence, and amplify its societal and environmental impact across Africa and beyond.

Potential Roadblocks & Risks

• Regulatory Compliance Risk

Kumva Insights is well-informed about the regulatory environment in Rwanda, particularly regarding data privacy regulations. While they currently do not store personal information, they are prepared to undergo the DPO process as they plan to communicate directly with farmers via mobile in 2024. Additionally, they use third-party platforms that are GDPR compliant, providing even more robust data protection measures than the Rwanda legal frameworks.

• Technological Obsolescence

Kumva Insights is proactively addressing technological obsolescence by planning an upgrade to its tech stack in 2024, including wireless technologies like LoRaWAN and Bluetooth. They keep abreast of industry trends through various means such as webinars, conferences, and research, and while introducing new features may take time due to being a small startup, it remains a constant focus as part of their ongoing product development strategy.

• Privacy and Data Security Concerns

To mitigate security concerns, Kumva Insights ensures robust cybersecurity measures are in place. This includes encryption, authentication, and intrusion detection systems to protect their hardware and data transmission channels. They comply with Rwanda's legal frameworks and utilize third-party platforms from major international IoT and data storage companies, which offer robust security features and allow Kumva to manage and govern access parameters for their devices and data storage.

• Market Competition

To stay competitive, Kumva Insights can differentiate itself by focusing on its unique value proposition, such as its expertise in deploying technology and data solutions in challenging environments and its commitment to tailored client-centric solutions with societal impact.

• Dependency on Partners

Kumva Insights can mitigate dependency on partners by diversifying its partner network and fostering relationships with multiple stakeholders across different industries and regions. Clear communication, mutual trust, and contractual agreements outlining roles and responsibilities can help mitigate partnership risks. Kumva Insights has already started work with key non-profit organisations in Rwanda to diversify its revenue streams.

Conclusion

Kumva Insights stands at the forefront of innovation in IoT technology, spearheading transformative solutions tailored to address the unique challenges faced in African environments. With a steadfast commitment to robustness, adaptability, and data-driven insights, Kumva's proprietary hardware and remote sensing technology are revolutionising industries ranging from agriculture to healthcare. Through their market-driven solutions and innovative business model, Kumva Insights helps businesses increase productivity and efficiency and supports green industrialisation without compromising growth potential.

In the larger industry context, Kumva Insights represents a paradigm shift towards data-driven solutions for sustainable development. By aligning with the UN's Sustainable Development Goals and addressing key challenges such as food security, climate resilience, and energy efficiency, the company sets a precedent for responsible innovation in emerging markets. As the company continues to expand its reach and impact, it holds the potential to transform industries, empower communities, and shape a more resilient and prosperous future for the continent.

Looking ahead, Kumva Insights remains dedicated to advancing its technology. Its vision is to expand wireless connectivity, enhance data analytics capabilities, and build a proprietary data platform to unlock even deeper insights and impact. With a relentless pursuit of excellence and a passion for driving positive change, Kumva Insights continues to redefine the landscape of IoT innovation, paving the way for a brighter and more sustainable future across Africa and beyond.

Innovation In View

How Kumva Insights brings innovation to life

Robust, Secure and Remote-Ready IoT Solutions



- Kumva Insights' technology is designed to withstand the harsh conditions prevalent in Africa. Utilizing waterproof / shockproof housings ensures their solutions remain robust and built to last.
- Kumva Insights' infrastructure, cloud operations, and connectivity layers adhere to global industry standards. This ensures their systems can seamlessly scale up or down following user requirements.
- Their connectivity solutions are tailored for remote locations, particularly in East Africa. Whether utilizing 2G, 3G, WiFi, or radio technologies, Kumva Insights engineered their systems to connect seamlessly, even in the most challenging and hard-to-reach environments.

These features facilitate real-time data transmission to their analytics engine, empowering informed decision-making regardless of location.

Utilizing a Multi-Channel Strategy for Data Visualization

Kumva Insights augment its robust hardware infrastructure with a multi-channel approach to visualise data to assist its clients in making effective and efficient decisions.

- Kumva Insights' versatile data visualization tools, including mobile-responsive web dashboards and automated reports, facilitate trend analysis and presentation within office settings.
- Their real-time SMS alerts enhance situational awareness and prompt immediate action in response to critical changes.
- USSD and IVR technologies also enable engaging data-driven interactions with broader user communities, particularly among demographics lacking smartphone and internet access, such as smallholder farmers.



Contributors

The FutureList

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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, 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

The FutureList

