IntegrityKEY

Food traced, safe and sustainable.

UNIVERSITÀ POLITECNICA DELLE MARCHE

CONTACTS

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COMPANY INFORMATION

Innovative Startup
Year of establishment: 2022
Development phase: growth
Share capital: € 11.000,00

TEAM

1 PhD in Food Tehcnology
1 IoT Specialist & HW/SW Developer
1 Strategy Manager & Business Developer
1 Marketing Executive & Social media Manager
1 Academic Referee (Professor AGR/15)
1 Engineer TCL, Network & Security

OTHER INFORMATION

IntegrityKEY S.r.l. is a start-up, among the 63 most innovative in Italy 2021, according to the National Innovation Award 2021. Born in 2019 at contamination Lab, winner of Ecapital 2020 and start-cup Marche 2021, currently in the EIT FOOD 2022 incubation program. It combines computer and food technologies to provide transparent traceability in a unique way for high-value, safe and sustainable food.

VISION

IntegrityKEY (IK) promotes authenticity by monitoring and certifying the quality of food thanks to innovative technologies. IntegrityKEY wants to become global excellence in the digitalization of the food supply chain to reduce the environmental impact and promote the socio-economic development of the territory, creating a transparent reality for the consumer, avoiding waste, and paying attention to our planet, with a look facing the future.

THE PROBLEM, MARKET OPPORTUNITIES

Micro and small food companies (98% of the total in Italy) do not have continuous digitization of traceability, which causes inefficiencies in quality control and management. Producers of high-quality foods thus risk suffering a decline and/or failing to make the final consumer perceive the quality. Producers, on the other hand, want to protect (by controlling temperature, humidity, and light) and increase the value of their products (from certified quality to perceived quality), to differentiate themselves. SmartAgriFood in Italy is worth 400 million euros, but only 1% of cultivated land uses blockchain technology. The size of the initial market is therefore estimated at 30% of SmartAgriFood. Italy is the second-largest exporter of organic products and, specifically, cereals and oil are among the most consumed products (+ 133% 2020/21 market).

SOLUTION

IK provides a system capable of certifying the traceability of a product (origin and route), through the use of GPS coordinates (and blockchain technology) in real-time, as well as being able to control some parameters that determine the quality (temperature, humidity, exposure to light), through sensors positioned in the production batches and which transmit the data to a platform. (Summary of the three elements: platform developed; blockchain technology under development; prototype sensors).

COMPETITIVE ADVANTAGE

IK, for the first time in Italy, combines sensors for monitoring quality parameters with the certification of blockchain traceability in real-time. This technological advantage (compared to the current 133 solutions) offers the producer (in the crucial control phase) a simple and continuously usable service, which allows him to differentiate himself and amplify the perception of the value of his product.

VALUE PROPOSITION

Digitization and management of food traceability in transparency to increase the quality and safety of food, enhancing and increasing the quality of high-quality food for the final consumer.

TARGET

The profile of the first customers is represented by small-medium agri-food companies/start-ups in the Marche region, which want to protect and enhance particular and quality products, such as ancient grains, legumes, wine, and other niches products.

BUSINESS MODEL

Annual subscription to the IntegrityKEY platform services (QR-CODE implementation of blockchain traceability transactions, consultancy) and sale of the sensor implementation, to the commercial dimension of the customer.

AGRI-FOOD SECTOR

SERVICES AND PRODUCTS

The IntegrityKEY service consists of hardware that uses sensors installed on IoT devices positioned on the food lot, acquiring data for traceability as a passage/transition/operation. The hardware component is based on modular sensors and with internet connections to the platform (software). The sensors work with various wireless technologies. Software, the platform that is connected to IoT devices and contains the paths and data on food batches in a permanent record that no one can modify, thanks to the use of blockchain technology. Connected services arise from the collection of data through the sensors and the platform.

All services are adaptable and customizable, capable of increasing food safety and quality, such as the efficiency of the supply chain and its digitization, minimizing waste, and improving the reputation of our customers' brand.

S.1 – TRACEABILITY MANAGEMENT
Identify sensitive data during internal/external audit checks in seconds as part of voluntary (e.g. organic) and mandatory certifications. Reports for organic certification can be generated.

S.2 – MANAGEMENT OF BATCHES
Through the data collected in the platform for food companies.

S.3 – QUALITY MONITORING
Automatic temperature and humidity control of food batches, as these are parameters that drastically affect food quality and safety during the storage of raw materials and transport.

S.4 – HELP IN DECISION-MAKING CHOICES
Decision-making service on business efficiency management (data mining): reduction of waste resources with consequent reduction of the carbon footprint, processing statistics on the data collected by generating reports.

S.5 – SCIENTIFIC AND INFORMATICS ADVICE
The highly specialized technical staff provides assistance and consultancy services in IT terms, scientific food, and agricultural research activities.