
T.I.S INDUSTRY TALK : TECH-DRIVEN INNOVATION

NEWSLETTER

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URBAN FARMING SOLUTION (I-FARM)

I-Farm, developed by Dr. Seah Choon Sen, combines data analytics and IoT for precision farming. Originating as a response to the 2020 Covid-19 vegetable shortage, I-Farm offers a variety of reference vegetables through e-commerce. Users can monitor the growing process, utilize environmentally friendly materials, and reduce dependence on pricier imported vegetables. This technology enhances productivity, controls supply, and minimizes market disruptions, with self-collect service centers for convenient harvesting and freshness maintenance in condominiums.



SUMMARY BY HUWA JIA SHENG

Dr. Seah Choon Sen, an Assistant Professor at UTAR, holds a Doctorate in Information Technology from UTHM. With expertise in Data Science, Digital Entrepreneurship, Precision Farming, and more, he's published 20+ articles, won awards, and mentored startups on and off campus.

INTRODUCTION TO TECHNOLOGY

BY SEIFELDIN TAHA & TAY CHING XIAN

Smart Urban Farms represent a shift towards decentralized and tech-driven agriculture within urban settings. It Utilizes advanced agricultural technologies, including automation, artificial intelligence, and precision farming techniques. Integration of vertical and horizontal farming methods are used to optimize space and resource utilization efficiently.

ISSUES

The persistent fresh vegetable shortage continues post-MCO restrictions, creating sustained challenges even after the Movement Control Order is lifted. Consumers find themselves obliged to adhere to social distancing measures, enduring long queues at supermarkets to purchase groceries. Traders face difficulties in independently carrying heavy crates of vegetables, compounded by limitations in labor availability due to dependence on migrant workers. Despite the abolition of MCO, citizens are required to adapt to the new normal, exercising self-control, and proactively avoiding crowded places and traffic whenever possible. This ongoing situation necessitates a collective effort in adjusting to the evolving circumstances surrounding the availability and accessibility of fresh vegetables.

SOLUTION AND BENEFITS

Introduction of Smart Urban Farms as a cutting-edge solution to bridge the gap in fresh vegetable availability. In envisioning the future of vegetable supply and distribution, several innovative approaches can be implemented. A key aspect is the introduction of a user-friendly AI platform for intuitive and predictive vegetable ordering, coupled with advanced contactless delivery systems employing autonomous vehicles or drones to enhance the shopping experience. Embracing technology in the supply chain is crucial, involving the adoption of blockchain for transparency and traceability, alongside smart contracts facilitating seamless transactions and real-time tracking of vegetable production, transportation, and delivery. Labor-saving solutions, including the incorporation of robotic systems for heavy lifting, aim to minimize reliance on human labor, complemented by upskilling programs for workers to manage advanced farming infrastructure. Urban agriculture initiatives further contribute to self-sufficiency by transforming underutilized urban spaces into high-tech farms, utilizing rooftops, vertical structures, and vacant lots for sustainable local vegetable cultivation. Sustainability remains a priority through the integration of renewable energy sources like solar panels and wind turbines, coupled with closed-loop systems for water recycling to minimize environmental impact. Community engagement and education play a pivotal role, with the establishment of community-driven smart farms and educational programs to raise awareness about futuristic agriculture, encouraging active community participation in sustainable practices and urban farming initiatives. Finally, building a resilient post-pandemic food system is essential, reducing vulnerability to disruptions through localized and tech-driven solutions that ensure a consistent supply of fresh vegetables.

REFLECTION

In the industry talk, we delved into the persisting issues in the fresh vegetable supply chain following the Movement Control Order (MCO). Challenges like a vegetable shortage, crowded supermarkets, and a lack of labor for traders were discussed, underlining the necessity for citizens to adapt to a "new normal." An exciting solution proposed was the introduction of Smart Urban Farms, utilizing advanced technologies to transform vegetable cultivation in urban areas. Dr. Seah Choon Sen's I-Farm technology, with its precision farming capabilities using data analytics and IoT, emerged as a standout solution. I-Farm's e-commerce platform for fresh vegetables allows users to monitor the growing process, promoting sustainability and community engagement. Highlighting Dr. Seah's tech expertise and I-Farm's potential impact, the group sees a transformative shift in ensuring a steady supply of fresh vegetables and fostering eco-friendly practices. To sum up, Smart Urban Farms and I-Farm present a comprehensive solution to post-MCO challenges, integrating technology, sustainability, and community participation. We look forward to the positive changes this innovative approach can bring to local agriculture.
