

START-UPS & ENTREPRENEURSHIP

UltraGreen.ai's Sajwan aims to light up the healthcare market with 'matcha powder'

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Solving problems in fundamental industries — water, energy and healthcare — is at the heart of Ravi Sajwan's entrepreneurial journey. "You need water to live, energy to create, and healthcare to enjoy both," he says.

With his newest venture, UltraGreen.ai, Sajwan has focused on healthcare, driven by a deeply personal mission to make it ubiquitous, affordable and accessible. UltraGreen.ai is a medical and surgical imaging company that aims to improve surgery outcomes and patient recovery. Its three main products are indocyanine green (ICG), a type of fluorescence agent, its IC-Flow imaging system and UltraLinq software, which specialises in cloud-based medical imaging solutions.

UltraGreen.ai describes itself as a leading global supplier of ICG, a green powder that, when reconstituted with water and injected into the human body, enhances the visualisation of blood flow, lymphatic systems and tumour margins during surgeries.

While Sajwan affectionately calls it "matcha powder" given its green colour, ICG is often referred to as the "GPS of surgery" for its ability to illuminate critical structures. This enables surgeons to navigate with greater precision, minimise complications and improve patient outcomes in surgeries.

From Silicon Valley to saving lives

Sajwan's journey to this venture has been far from linear. His entrepreneurial journey spans decades, with key contributions to telecommunications and networking.

His first major success was designing a 2,400 bits per second (bps) modem, a major leap from the existing 150-bps standard. He also created a universal network testing device, which Tektronix later acquired.

Sajwan then moved on to StrataCom, a company acclaimed for developing Frame Relay, the backbone of modern internet traffic, which led to the company's acquisition by US networking gear giant Cisco Systems for US\$4 billion (\$5.37 billion). Building on his work at StrataCom, he went on to shrink what he had designed in StrataCom from a box the size of a room to a chip.

Before long, he grew restless with tech and shifted to consumer products, marking the beginning of his journey in what he refers to as "fundamental markets." His subsequent move to healthcare, which led to the creation of UltraGreen.ai, came about by chance. Sajwan first encountered ICG through his investment in a medical device company that sought to measure the size of the hole in hearts. They developed a device that attached to the ear lobes and could, after injecting a fluorescence agent into the body, detect leakage through a heart hole.

The team faced difficulties procuring a fluorescence agent but eventually bought a company in Germany that produced ICG. Unfortunately, that company failed to obtain the necessary regulatory approvals to commercialise. "I had no idea what to do with it," he admits. But as a seasoned entrepreneur, he recognised a unique business opportunity. Understanding that the product was difficult to find, he saw a potential in addressing this supply gap.

Sajwan then secured a reliable source by negotiating lifetime contracts with ICG manufacturers, ensuring UltraGreen.ai would have a steady production of ICG. "The question is, how do you put a competitive moat around it? Our success is also going to be based on how we advance the business."

This thought process prompted Sajwan to build an ecosystem around ICG. Instead of just selling the "matcha powder," he combined the fluorescence agent with the IC-Flow imaging system and UltraLinq software. This ecosystem enables UltraGreen.ai to provide ICG for surgeries, visualise and record the surgery, process the data and feed it back to the surgeons to improve their decision-making process.

"A lot of people come and tell me ICG is a generic product. Absolutely. So is an iPhone, but why is Apple the most valuable company in the world and not something else? It's because the iPhone has an ecosystem other companies don't," Sajwan says. With the product and ecosystem in place, his new challenge is to drive the adoption and implementation of UltraGreen.ai in an industry known for its resistance to change.



UltraGreen.ai's CEO Ravi Sajwan has built an "ecosystem" around the indocyanine green (ICG) fluorescence agent used in surgery and not merely the "matcha powder"

From red tape to green light

Above it all, he takes a light-hearted approach to his interactions with doctors. "First of all, no doctor wants to talk to an engineer," says Sajwan, who graduated from New York University's Tandon School of Engineering with a master's in electrical and computer engineering. "The biggest challenge was actually getting surgeons to come and talk to us and say this is a problem we want to try and solve."

To tackle this challenge, UltraGreen.ai set out to win over and educate the medical community by establishing the International Society of Fluorescent Guided Surgery. This initiative created a platform where surgeons, camera manufacturers and the UltraGreen.ai team could gather to explore the potential of ICG.

UltraGreen.ai also engaged leading teaching surgeons from various specialties. These key opinion leaders integrated UltraGreen.ai's ICG into their practice and, as educators, introduced it to medical students, who would likely adopt the system when they became practising doctors. "Ultimately, we are driven by how to educate all surgeons about what we do," Sajwan adds.

Another challenge UltraGreen.ai faced was navigating the complex and time-consuming regulatory approval processes in healthcare. The situation was further complicated by the fact that each market had its own regulatory body.

Comparing the regulatory approval process required for his previous telecommunication start-ups with UltraGreen.ai, Sajwan notes that "the effort for [the] regulatory [process] (referring to ICG) is about the same, multiplied by 50 countries."

The time needed to set up a local presence and make the first dollar in that market can easily be three to five years. Sajwan candidly states that it is his determination, not passion, that gives him this patience.

His efforts and patience have not been in vain. UltraGreen.ai's ICG has successfully been registered for distribution in 28 countries and supplied under the exemption in over 40 countries.

Ultimately, a product's popularity lies in its effectiveness. In gallbladder removal surgeries, UltraGreen.ai's ICG improves the identification of anatomy by 300% and reduces the conversion to open surgery by 26 times, a process that can cost up to US\$8,300 per case.

The use of ICG in colon surgeries leads to a threefold reduction in colon leaks and a 44% reduction in hospital stays. A colon leak can potentially cost an additional US\$54,000. In breast reconstruction cases, breast flap failure occurs in 30% of cases, costing an additional US\$10,500. However, the use of ICG reduces the incidence of breast flap failure by half, with a 56% reduction in breast flap loss.

Prescribing the future of healthcare

After spending considerable time in the US, Sajwan relocated to the city-state over a decade ago, attracted by its strategic location, which provides easy access to nearly 50% of the world's population within a five- to six-hour flight. He intends to use the city-state as a base for the company's expansion across the region. "We find the reach from here into markets where we want to expand is much easier," he says.

Sajwan adds that doctors and surgeons in Singapore are highly regarded across Asia. It is easier for people from nearby countries like India, Indonesia, and Malaysia to visit and learn about UltraGreen.ai than to travel to the US.

He praises Singapore's efficiency in business and its ability to create a conducive environment for growth. "I think there's no place I've seen which can build faster than Singapore. I mean, every time I land here, I come here, and almost every month, I see two new buildings that didn't exist before. So it's incredible how fast [Singapore is]," he adds.

Sajwan similarly praises Singapore's regulatory approval processes, noting that while his team often "splits hairs" with regulators in other countries, the process in Singapore is "much better" due to its high level of automation.

When asked about the investors backing UltraGreen.ai, Sajwan, as founder and co-CEO, offers a straightforward response. "Me and my family. We go through all the pain. One of the things we have recognised is [that] I am very scared of not returning people's money. So what I do is, typically, I'll invest in a business until I know it's for sure going to work and then make it profitable."

"And when I get to a point where I say, this is something doable, repeatable, I can manufacture and sell it, and I have a great team which executed [it]. At that point, I can go talk to other people; until that time, I don't take people's money," he adds.

While UltraGreen.ai is entirely self-funded, it has secured strong support. Kwa Chong Seng, a Singapore Inc. figure who chaired Singapore Technologies Engineering, MediaCorp, and SGX Group, among others, is the chairman of UltraGreen.ai.

Sajwan appreciates Kwa's invaluable advice, adding: "I have met a lot of people his age, but I have never seen a person that clear, concise and to the point; it is mindblowing."

"Obviously, he is an exceptionally bright person, but it comes from sheer experience of working from small all the way to large companies," he adds. "I would never get there because I've always been a start-up kind of person, but he can scale from a single person company to 100,000 people."

When asked about the possibility of going public, Sajwan says that while he cannot predict whether it will happen soon, the company is continuously assessing the right timing. He adds: "Is going public an option? Of course, it is always an option, but it's one of those things where you decide later what you need to do. Our goal is to keep building the company." ■