

Ange Frédéric Balma highlights LiFi on both sides of the Mediterranean

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At the head of Lifi-Led start-ups in Abidjan and Sinilux in Aix-en-Provence, the Ivorian entrepreneur Ange Frédéric Balma uses LiFi technology to market light as a wireless communication service. In addition to lighting and connecting rural areas, his solution integrates a number of related services to contribute to the emergence of smart and sustainable cities.

Two for the price of one: lighting and connecting Africa using light. The start-up Lifi-Led Côte d'Ivoire, which was set up in 2014 in the free zone of Vitib in Grand-Bassam, is the first operator to market LiFi technology in Africa. Ange Frédéric Balma, its founder and CEO, has taken up the challenge of generating electricity in rural areas and connecting these remote territories to broadband Internet based on an eco-responsible approach.

To do so, this electrical IT engineer (a graduate of the ESEO engineering school in Angers) has developed an LED lamp with LiFi technology powered by solar panels to transmit an Internet signal from a satellite connection. The system is completed by a local server that can also disseminate educational and agricultural content.

A GREEN, CHEAP AND HEALTHY SOLUTION SOLUTION

It is a crucial challenge: half of Africa's population still does not have access to energy, i.e. 620 million inhabitants, including almost 80% in rural areas. "With Lifi-Led, we are players in the Internet revolution through light," says Ange Frédéric Balma. "We have the ability to serve white areas both with electricity and connectivity, but also to transform urban areas into sustainable cities. Our plan is to offer solutions to market lighting as a wireless communication service."

And, as the young 40-year-old points out, LiFi offers many advantages: "Our solution without an electromagnetic wave is a green technology that respects health and the environment. It is also cheap and ten times faster than WiFi." Another major advantage is that: "By installing a connectivity similar to what is found in cities, we are combating the exodus of young people which drains the workforce of rural areas and increases poverty in urban areas."

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If LiFi is increasingly standing out as a technological solution for the future, it is also because it provides a response to sustainable development objectives. It is for this reason that AFD Group supported a village electrification project in Côte d'Ivoire in late 2018.

The adventure started in 2011 on a family-run cocoa plantation located in Toadji, over 400 km from Abidjan. Ange Frédéric Balma stayed in this village with no electricity or network for two weeks. "It made me aware of the difficulties of people in rural areas and the real problems they have on a daily basis," he says today. And this experience triggered something.

Three years later, in October 2014, while he was Chairman of Groupe Alliance which he set up in 2008, he created the start-up Lifi-Led with three objectives: supply electricity and broadband connectivity, as well as educational and agricultural content in remote villages. After three years of R&D, a prototype for a pole was developed to supply energy and a broadband connection.

Following a successful test using his own funds in 2017 in the Ivorian village of Drongouiné (5,000 inhabitants), Ange Frédéric Balma's company installed some 500 kits in remote villages in the country, with financing from the African Development Bank (AfDB) and United States Agency for International Development (USAID).

In addition to Côte d'Ivoire, LifiLed has already won contracts in some ten African countries: Senegal, Burkina Faso, Madagascar, Morocco, Central African Republic, Liberia, the Comoros and Gabon.

At the same time, the entrepreneur strived to raise funds and conquer markets in West Africa and beyond. And this activism rapidly paid off. In addition to Côte d'Ivoire, Lifi-Led has already won contracts in some ten African countries: Senegal, Burkina Faso, Madagascar, Morocco, Central African Republic, Liberia, the Comoros and Gabon.

THE START-UP WILL CONNECT 100,000 HOUSEHOLDS IN GABON

In Gabon, in late 2020, the start-up won a contract to connect 100,000 households living in rural areas. Due to the size of the contract, Ange Frédéric Balma is going to build a kit manufacturing plant in Gabon, which will allow him to be present throughout the value chain for his solution. The amount of the investment: EUR 12 m.

At full capacity, the unit should produce 220,000 kits a year, 350,000 lamps and 500,000 solar kits. This planned ramp-up is taking place while the entrepreneur is finalising a fundraising drive. Once the site has been commissioned, Lifi-Led aims to prospect in the entire CEMAC (Central African Economic and Monetary Community) zone and supply other market players with its “Made in Africa” products, particularly in Rwanda and Nigeria.

The company’s economic model includes selling its solution to local authorities, which invest in the infrastructure. The final users have benefited from a low-cost subscription since the start-up established a partnership with Konnect Africa, the local subsidiary of the satellite operator Eutelsat.

In 2020, despite the pandemic situation, Lifi-Led, which today has some 30 employees, equipped 216 villages, thereby improving the daily lives of over 430,000 people. It has also achieved a turnover of FCFA 360m (almost EUR 550,000), against FCFA 314m for the previous year.

PROSPECTING THE SMART CITY MARKET IN EUROPE

Winner of a number of international awards, including the prestigious EDF Pulse Award in 2019, Ange Frédéric Balma has rapidly become a key figure in Ivorian and African tech. His innovation has drawn the attention of Business France which helped the entrepreneur set up his new company, Sinilux, in the Arbois Mediterranean Environment Technology Park, in Aix-en-Provence, in September 2019.

From France, his objective is to prospect smart city markets by adding a set of sensors to his connected streetlights to provide, for example, a real-time analysis of pollution in urban areas. “We can collect data which help the decision-making of local authorities and improve living conditions and the quality of life in new African and international cities,” says the expert in big data and connected objects.

Ange Frédéric Balma, who now wants to focus on data collection and processing, set up the Sinilab structure in the Angers French Tech cooperative last year. This laboratory’s mission is to disseminate the uses of LiFi and connected objects in our daily lives.

FROM FRANCE, SINILUX WINS CONTRACTS IN AFRICA

A founding member of the brand new Côte d’Ivoire Innovation 20 platform (#Ci2O), Ange Frédéric Balma continues to witness first-hand the new business dynamics between Africa and Europe.

The entrepreneur, who wants to surf on the many opportunities offered by the implementation of the energy transition on the Old Continent, is very pleased with the vitality of “French Tech”. He especially appreciates the quality of the partnerships established with the technology parks and the visibility this gives to his service, for which he has filed six patents.

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This presence in France also allows this tireless entrepreneur to win contracts in Africa, such as the recent deployment of sensors on 140 sites in Côte d'Ivoire for Météo France International. And if being identified as a European partner is a springboard for his activities, it is because of the internationally recognized certifications and standards that this involves.

This allows the entrepreneur to be confident for the future. "In a few years, my activities will reach the size of a multinational company, strictly taking into account the environmental, social, economic and ethical issues of its activities. A company that will contribute to building African nations", he says, dreaming aloud, as he bursts out laughing.

LIFI TECHNOLOGY

When an electric current is applied to an LED bulb, a flow of light (photons) is emitted by the bulb and opens a bandwidth able to transmit all types of data compatible with smartphones and computers. LiFi (Light Fidelity) therefore refers to a light-based wireless communication technology.

#CI20

Five managers of Ivorian start-ups, including Ange Frédérick Balma, the CEO of Lifi-Led, teamed up in February 2021 to launch the Côte d'Ivoire Innovation 20 (#Ci2O) platform. This initiative aims to bring together and structure the entire Ivorian tech ecosystem to contribute to the emergence of national champions. Speaking with one voice, its promoters now aim to have their say in discussions with the authorities and donors. Their priorities include lobbying for the establishment of a regulatory framework in Côte d'Ivoire.