AGRICULTURE

IMPROVING CROP YIELD

DEFINING THE UNIVERSE OF ROBOTICS AND AI

AUTOMATION FOR ORGANISATIONS

1. OBJECTIVE

The aim of this study case is to present findings about Magnus in Agriculture Business, especially in improving crop yields (Agriculture).

The Blockchain phenomenon is gradually settling into people's lives, making it imperative to understand its applications and limitations. After the introduction of Ethereum, altcoins became a popular way to showcase ideas for new cryptocurrencies. We are currently in a period of hype, where many developers are proposing crazy ideas to solve either nonexistent or trivial problems. It's vital that society and developers focus on applying Blockchain to relevant and important projects, rather than assuming Blockchain technology is a one-size-fits-all panacea.

Food and eating

Food quality is clearly related to chronic illnesses such as heart disease, liver damage, stroke, diabetes and cancer, to name a few. We can significantly reduce chronic illnesses by improving the quality of food available. That requires an answer to the following question: Why do we eat poor quality food?

This large problem can be divided in three parts: production, delivery and sale.

Food production starts at the farm. Farming always implies high risks — natural disaster, harvest failure, accidents, etc. — that directly affect what a farm can offer. Market conditions and large agricultural corporations can also make the lives of small farmers challenging. The companies often abuse their positions by using expensive fertilizers and patented GMO-seeds to gain competitive advantages over smaller operations.

Producers are often unable to sell their products directly to consumers, having to appeal to traders or distributors who buy their product cheaply. Large companies are able to cheaply mass-produce food and fill the distribution channels, but this food is never completely consumed. The result is the creation of a new problem: food waste and disposal. Resources like fuel and fertilizers are used to produce and distribute food that will never be consumed, creating waste.

Fortunately, health, eating, farming, agriculture and logistics are interconnected, and we can solve these challenges through modern technologies, utilizing experts who understand the systems.

Blockchain technologies offer good financial instruments to provide farmers a timely and complete payment for their efforts. Using these technologies will help to avoid risk and make the farmer's life easier.

Blockchain & Agriculture Example 1: Sustainability (& Fair Trade) Certification

Palm Oil is an edible vegetable oil derived from the fruit of the (oil) palm tree. Palm oil is used as a cooking oil and as an ingredient for many packaged goods – snacks, baked goods, spreads, soaps and detergents etc. Palm oil is incredibly versatile in use along with very high yields (approx. 4-10 times that of rapeseed or canola) – this has ensured that the usage of palm oil has more than doubled over the last decade.

Blockchain & Agriculture Example 2: Cotton Information Exchange

Identifying practical applications of Blockchain technology in the agriculture sector

Blockchain has so far been most useful in the agriculture sector in terms of understanding the source and journey of produce. This is vital for both farmers and consumers: it allows farmers to negotiate better prices throughout the supply chain, while giving consumers confidence in the knowledge of exactly where produce they buy comes from. This is key aspect when considering the growing lack of trust in the sourcing of produce sold in markets.

Role of Magnus in Improving crop yields (Agriculture)

A farmer has diminishing returns on his crop production the past years. He has made the decision to purchase new equipment with sensors to identify the root cause, as he has some 1000 acres of land.

The farmer installs his purchased moisture sensors and picks up his new trucks.

In the following weeks, he notices from th data from the moisture sensors, that there is a hug patch where the moisture level is too low, and other patches where the rain water collects after a long rainstorm.

After the crops have been harvested, he addresses the issue by re-sloping the terrain.The truck used to harvest the crops has collected data about the crop yields, which are automatically analyzed by an AI engine, and the results are shared back to the farmer. He concludes, based on shared representative data, that he should seed a few weeks earlier in the year.

The next year, the crop production sees an increase, and the farmer continues to optimize his farming using the data collected from the sensors.