

UNIVERSITY OF WALES
Trinity Saint David
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DIGITAL SKILLS AND RESEARCH METHOD

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Presented : Face to Face

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1)BACKGROUND OF THE ORGANISATION (APOLLO)

2)THE CHALLENGES FACED BEFORE THE INTRODUCTION OF AI-SEE AND SPRAY (DONATAS)

3)INSIGHTS OF AI-SEE AND SPRAY (STEPHEN)

4)THE IMPACT OF AI (SEE AND SPRAY) ON AGRICULTURE(MICHEAL)

5)LESSONS THAT CAN BE DRAWN FROM CASE STUDY(CHRISTINA)

BLUE RIVER TECHNOLOGY

Introduction

BLUE RIVER TECHNOLOGY



Blue River Technology, is a California based company that is using machine learning to build more intelligent on farm machinery. It helps farmers make decisions based on data analysis and interpretation, which will help improve profitability and adapt to changing environmental and consumer trends. They empower farming communities to implement more sustainable solutions to make the best or most effective use of chemicals and by recreating routine processes to improve harvest year after year.



BLUE RIVER TECHNOLOGY

HISTORY



JOHN DEERE

Blue River Technology founded in 2011 by Jorge Heraud and Lee Redden, both graduate students at Stanford as they set off on a mission to "make farming more sustainable through robotics and computer vision."

Their first smart machine, Lettuce Bot, has been called a "Roomba for weeds" by Modern Farmer magazine, with the ability to identify and target weeds with help from a vast database of images and advanced computer vision technology. Blue River's "0that need pesticides and fertilizer, which in turn makes the farming process more efficient. It's no surprise, then, that Deere & Company, the folks behind the John Deere agricultural brand, scooped up Blue River for a reported $305 million in 2017.

The challenge(s) before the introduction of modern Technology - AI (See and Spray)

Challenges faced by farm industry to deal with weeds before the artificial intelligent technology.

Methods used include:

- PULLING UP WEED
- DINGING
- DISKING
- MOWIN



- Pulling up the weeds from the farm
- Digging out weed from the soil
- Traditional disking the farm
- Mowing down the grass



Insights of AI- See and Spray

- See & Spray technology is fitted onto tractors like standard weed spraying machinery, but it's also equipped with an array of cameras and machine-learning software. This enables it to tell the difference between weeds and crops, and actually improve performance as it learns. The system is so precise, in fact, that it can tell the difference between cotton plants and weeds in 30 milliseconds.

- See & Spray isn't Blue River Technology's first foray into automated crop equipment. It saw great success with its LettuceBot, which is deployed on fields where young lettuce plants grow. The bot initiates a sort of controlled Darwinism, not only eliminating weeds, but actually thinning out the lettuce it deems too small to be viable and creating space for the larger, stronger plants to thrive. Today, 1/5 of all lettuce grown in the United States has been thinned by a LettuceBot, according to Bloomberg.

- The development of See & Spray technology wasn't without its early hiccups either. Initial models experienced issues during the testing phase like leaking nozzles, which dripped concentrated fertilizer on acres upon acres of seedlings on test fields in Arkansas.

- In response to this problem, Heraud and his team added a fail-safe automatic abort function, which stops any nozzle that flows for more than five seconds. To make things right with the farmers whose crops they killed, the company thinned their next 100 acres for free.





The impact of the Modern Technology on Agriculture

Technology in agriculture affects many areas of agriculture, such as fertilizers, pesticides, seed technology, etc. Biotechnology and genetic engineering have resulted in pest resistance and increased crop yields. Mechanization has led to **efficient tilling, harvesting, and a reduction in manual labour.**









- Technological innovations have greatly shaped agriculture throughout time. From the creation of the plow to the global positioning system (GPS) driven precision farming equipment, humans have developed new ways to make farming more efficient and grow more food.

- Improved farm equipment has probably had the most significant impact on how farmers raise crops and care for livestock. Tractors, planters, and combines are much larger and efficient

- Benefits include, h**igher crop productivity**. decreased use of water, fertilizer, and pesticides, which in turn keeps food prices down. Reduced impact on natural ecosystems.



Lessons that can be drawn from the case study

- We may have been acquired by the biggest name in agriculture, but we keep our independent ways of working and culture. Everyone is all-handson-deck until the job gets done. It doesn't matter what time, what task, or what person – if you see something that needs to get done, you jump in and contribute. We focus on the right things. We want to see our solutions change the world, and we want to see our solutions in the hands of our customers. This requires a talented, innovated and nimble team.'





- As a world-famous company, Blue River Technology have provided highly efficient for the suppliers and customers what they are expecting. The feasibility of a company determines the ability to achieve its vision and mission successfully, by analyzing their financial stability, organizational flow, product and service effectiveness, also market efficiency.

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