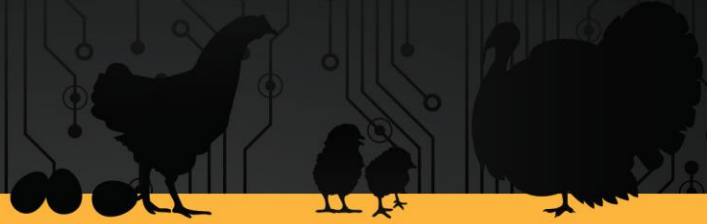


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# **Innovations that are transforming the way we intensively farm poultry, today and tomorrow**

David Speller



# Introduction

Whom am I and why am I presenting to you today

# Who am I



OPTiFarm  
15 countries  
Globally



Contract  
Farming



Applied



Innovation &  
Trials



Applied



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# Innovations

Based on what I am seeing arrive within my own and my global client's businesses

# Notes About Innovations

Innovations are specific to:

- Species
- Regions
- Economics
- Market Demands
- Facilities (such as internet)
- Personal preferences
- What is being asked automation or information



# What I am Seeing Today

## Main Area Where We See Innovation coming in

- Both Productivity & Welfare
  - > Intensive Sectors with tightening margins
  - > Global regions with high growing demand for animal proteins
  - > Regions with a switch to higher welfare concerns
  - > Regions where staffing is a major risk to the business

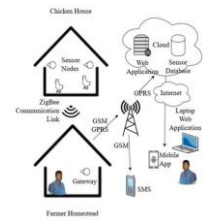
# Start With Good Data

## The Issue

- Legacy units with no ability to export data
- Poorly maintained or poorly situated sensors
- Data in different code that cant be blended with each other
- Getting data off site

## The Solution

- Wireless, cost effective sensors,
- Sensors are becoming a commodity item
- Business models supplying sensors with a service
- 4G & 5G networks are a viable option



**5G networks are fast and allows real time control and feed back**





# Software, AI, ML, Algorithms.....

We are seeing huge innovation in data analytics

- More and more data analytics done by the software
- Platforms strive to have all data in one place for one big data exercise
- Software designers are trying to solve some of the key issues e.g.
  - predicting living animals, productivity, weight, etc
  - Accurately understanding a variable population
  - Cross referencing many factors & influences
- But remember all analysis is only as good as the data

# On Farm Hatching



# On Farm Hatching



# Robotics

Many are developing robots for poultry, but few are commercially viable yet

Either doing something or analysing (or maybe both)

Internet and data access maybe a challenge



# Robotic Examples



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# Robotic Examples



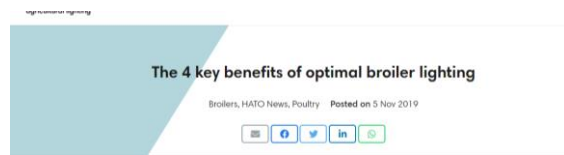
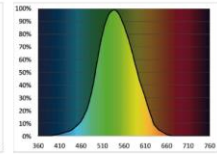
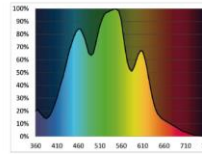
# Chicken Boy



# Lighting

We are now seeing LED companies with light manipulation in real-time

- Red light to stimulate
- Blue light to relax
- UV light to ?
- All adjusted in real time as the bird requires

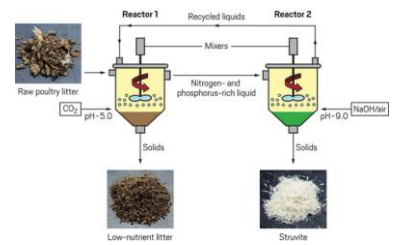




# Poultry Litter

In some parts of the world the disposal of litter is an issue leading to innovation:

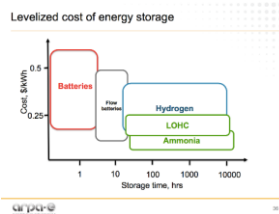
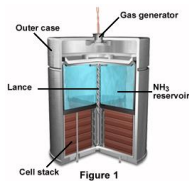
- Nutrient run off is leading to water pollution
- Does it have more value than simply manure



# Emissions & Air Scrubbing

What started as a need to meet local planning regulations mainly in Europe is changing:

- The focus we see is on capture and re use
- e.g. Ammonia captured to make fertilizer or other things
- Ultra new concepts including ammonia batteries instead of lithium
- The main take home is waste is not waste



# Image Analysis

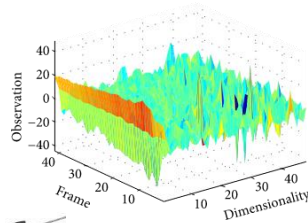
We see automated analysis of imagery more



# Sound Analysis is Gaining Momentum

Different areas are being looked at

- Stress, particularly at placement
- Health
- Productivity



# New Business Models are Coming

Why buy the product or hardware when you can buy the outcome

- Healthy birds
- Clean sheds & disinfection
- Clean air
- Lighting
- Heating

REINVENT  
YOUR  
BUSINESS  
MODEL



## But What We Haven't Seen Much Of;

Innovation around what is possibly the biggest variable on all farms globally:

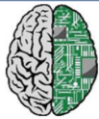
- The People
  - Skills assessment
  - Training
  - Retaining
  - Stimulating
  - Attracting new entrants
  - Rewarding
- The Data, how clean is it and how clean does it need to be for all this innovation to work

# Lets Understand The Benefits of Humans Vs Computers When Innovating



Computing  
wins

- Input and output
- Information processing and memory



Closely  
matched

- Complex movement
- Vision
- Language
- Structured problem solving



Brain still  
wins

- Creativity
- Emotion and Empathy
- Planning and Executive Function
- Consciousness

# What we might need is both AI + AI

## Artificial Intelligence combined with Anthropology Intelligence

- Neither on their own offers the complete solution so why not have both
- i.e. the concept of 'Human in the Loop'
- Computers do their thing within boundaries and once they don't understand it goes to the humans to assess



### Anthropology

Field of study

Anthropology is the scientific study of humanity, concerned with human behavior, human biology, cultures and societies, in both the present and past, including past human species. Social anthropology studies patterns of behaviour, while cultural anthropology studies cultural meaning, including norms and values. [Wikipedia](#)



## Innovations Transforming Intensive Poultry Farming



Support & Optimisation for Smarter Farming

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