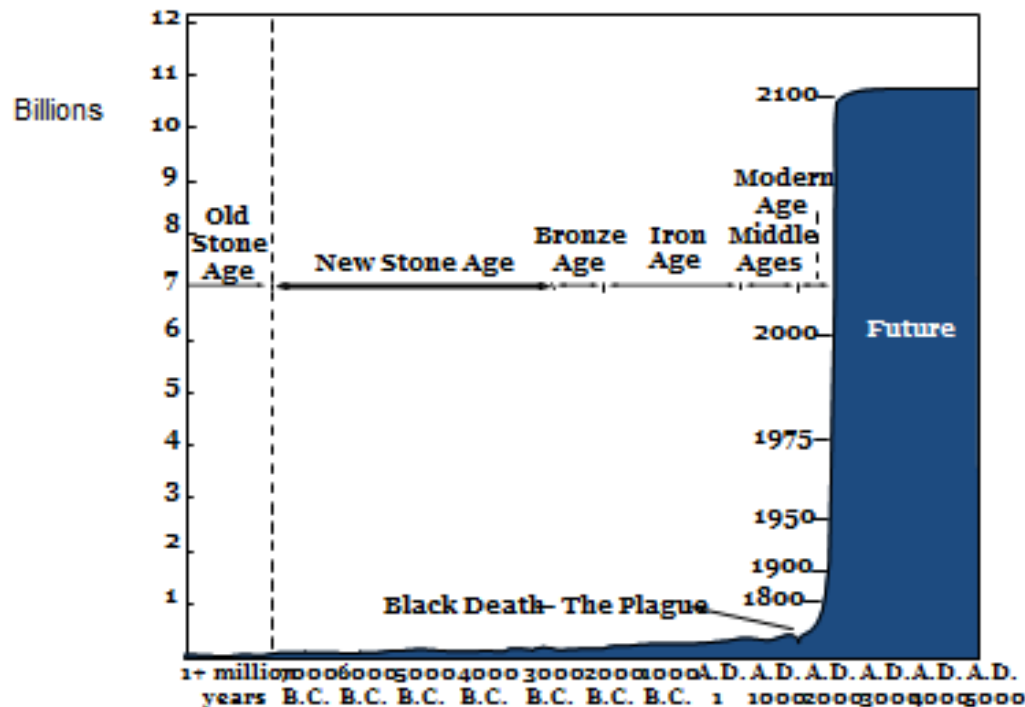


Precision Pig Farming (PPF) 'iFarming'

Charlotte West and Harry Heath

Why Is Precision Livestock Farming Important?



- * Exploding Population size
- * Need to achieve sustainable animal production
- * Limited availability of technical labour on-farm

Source: Population Reference Bureau; and United Nations, *World Population Projections to 2100* (1998).

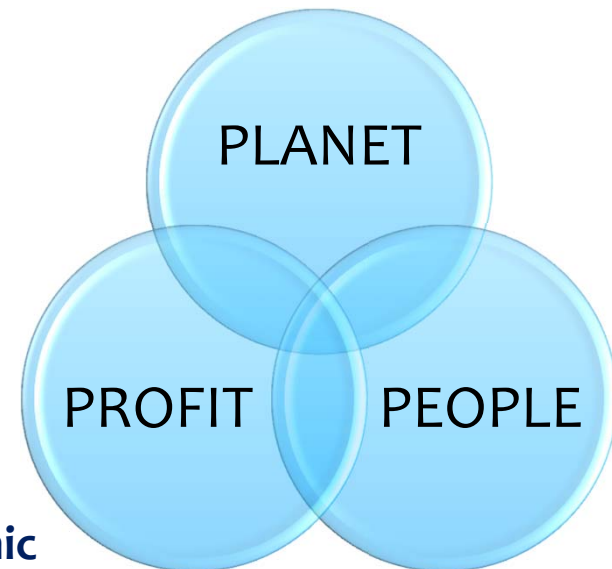
PLF: A CONCEPT

- * **What is it?**

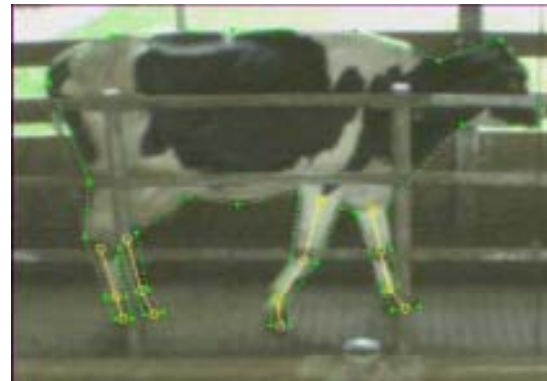
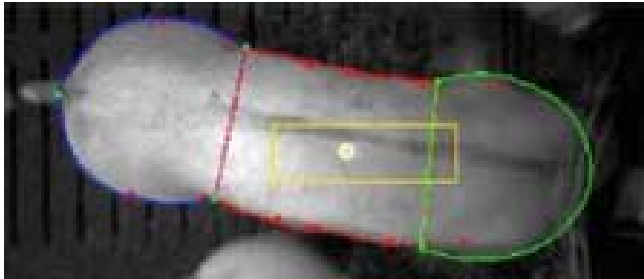
- * “Management of livestock farming by continuous automated real time monitoring / managing of production / reproduction, health and welfare of livestock and environmental impact”*
D.Berckmans (EU PLF Project)



**Pigs are:
Complex; Individual; Time-Varying and Dynamic**



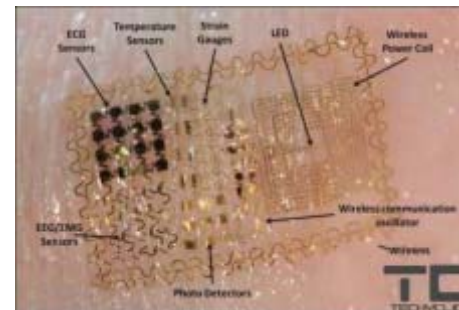
Types of Technologies



Vision



Sound



Sensor

Laborious Process of Labelling

Labelled variables:

- Duration of aggression (start-finish time)
- Time of feeder activation
- Aggression interrupted/not interrupted

- Type of aggressive interaction
- Aggression initiator and receiver
- Individual reaction to feeder activation



PROBLEMS WITH PLF

- * Technology is moving faster than development
- * Time and Cost of Development (e.g. Data Labeling)
 - * Lack of cross discipline / sector collaboration
- * Lack of Cost Benefit Analysis (Part of EU PLF Project)
 - * Quantifying both Tangible and Intangible Benefits Difficult
- * Society want high quality, high welfare food, but is unwilling to pay for it.... This Needs to Change!!



Future of PLF on-farm?

Outputs/actions:

Individual growth curves; list of pigs ready for slaughter; pigs for treating;



Sound ←

- Vocalisation
- Coughing



→ Image

- Time at drinkers
- Time at feeders
- Weight
- Aggression
- Body marks/scratches?

- Individual monitoring via ear tags
- One sensor doing multiple jobs
- Convert data into actions (and then delete)
- Multiple stakeholders paying for data?

Sensors: Lameness monitoring; listlessness



CONCLUSIONS

- * New Technology Needs to Be Cheap & Simple
 - * ROI: At Least 30%
- * Tangible benefits of PLF need to be costed correctly
 - * Don't forget about the intangible benefits!!
- * Real time monitoring will allow producers to improve the production efficiency of pigs before sale
- * Farmer legally owns the data produced on farm, what are you going to do with it?
- * Anything is technically possible!!

Any Questions?