

Knowledge Integration and Knowledge Exchange: broadening the concepts and tools that we use
S. Hoste, CIEL and Quantech Solutions

A hammer the Tool that can fix everything



Quantech Solutions
Food Chain and Bioscience





OXFORD

KNOWLEDGE INTEGRATION & INNOVATION

Critical Challenges Facing International
Technology-based Firms

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Definitions

Knowledge Transfer or Knowledge Exchange

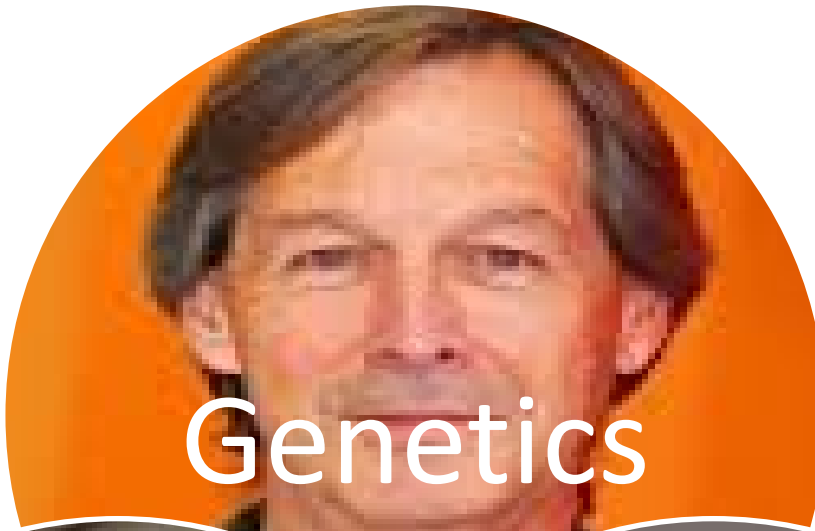
Sharing or transferring knowledge

Knowledge Integration

The combination of *specialised, differentiated* but *complementary* knowledge

Why an interest?

- Significant innovation occurs at Knowledge boundaries
- KTN in UK
- “Translation”
- Industry demand
- Centre for Innovation Excellence in Livestock
 - E.g. Campylobacter



Genetics



Nutrition



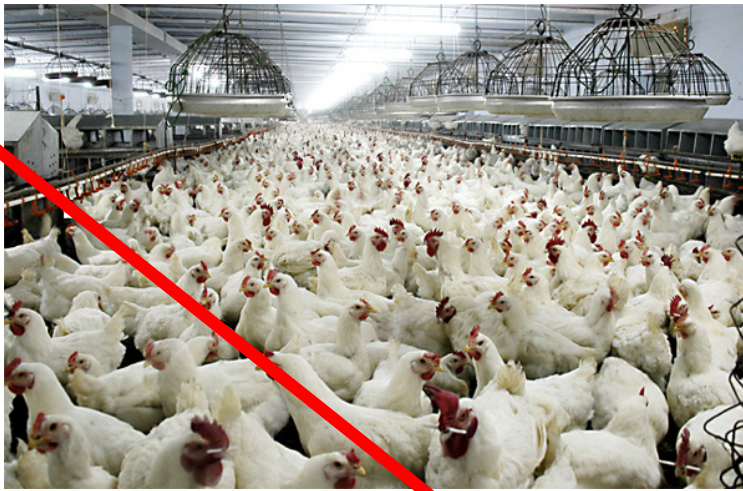
Health

If the traditional problem of the division of labour is to trade off the superior task efficiency against its inferior coordination properties, the fundamental tension in the division of knowledge is between superior learning efficiency of specialisation and its inferior integration properties.

Postrel (2002)

It may be argued that knowledge integration of completely specialised knowledge is not possible, since the required common knowledge is lacking

Grant, 1996



Tackling problems at multiple levels

- Genetic resistance
- Novel vaccines and vaccine delivery
- Nutraceuticals and/or antimicrobials
- New Production systems
- Novel Detection/Diagnostics
- Processing



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Tackling problems by integrating knowledge from multiple levels

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Knowledge integration
across knowledge
domains

Learnings from case studies

- Mobile scientists
- Identify people who transcend boundaries
- A few key people often make a sig. diff.
- Encourage end to end involvement in projects
- Project based when complexity is high
- KI is often a hidden cost

Source: Berggren *et al*, 2013

Where next...

- Many opportunities to do better?
- Research
 - Into “translators” in animal science
 - Is it a continuum?
 - Is integration necessary?
- Use of common spaces
- How to create common ground
- I’m interested in examples