

The importance of collaboration for successful innovation in Agri-Tech

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Overview of presentation

Aim - to showcase the importance of collaboration and funding for innovation in Agri-Tech

Contents:

- 1) Introduction to the Knowledge Transfer Network (KTN) and the benefits of collaboration
- 2) Agri-Tech case studies
- 3) Future opportunities



Introduction to the Knowledge Transfer Network (KTN) and the benefits of collaboration

The Knowledge Transfer Network

What we do

KTN is the UK's innovation network. It brings together businesses, entrepreneurs, academics and funders to develop new products, processes and services

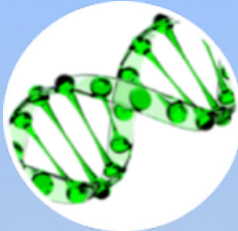
We help business to grow the economy and improve people's lives by capturing maximum value from innovative ideas, scientific research and creativity

KTN – Industry & Technology sectors

Focus is on bringing together groups that would not normally meet



Materials
Chemistry
Environmental
Services



Agri-Food
Biosciences
Medical
Biotechnology
Health



ICT
Electronics,
Sensors &
Phototonics
Defence &
Security
Space



Built
Environment
Transport
Energy



Creative
Industries
Digital Economy
Design



Emerging Technologies, H2020, International, Access to Finance, Design, Manufacturing, Sustainability



What does that entail?



What we do in a nutshell.....

Partnering - Access to a network of industry & research partners, help to find partners for projects, consortia building, commercial partners

Funding – Help with finding & obtaining funding

Organising events – for knowledge transfer & collaboration

Strategic work – Strategy Reports, Roadmaps, International Expert Missions, Special Interest Groups

Information & News – in one place, up-to-date – newsletters, website, social media

Make friends and influence people...

Two thirds of companies who are
introduced by KTN go on to
collaborate

Innovate UK
Knowledge Transfer Network



Find Solutions. Find Markets

90% of the collaborations facilitated by KTN are expected to lead to collaborative R&D activity and the progression of commercial opportunity

Innovate UK
Knowledge Transfer Network



Not the usual suspects

Almost half of the collaborations KTN facilitate involve at least one partner from a different sector

Innovate UK
Knowledge Transfer Network



The solution might be just over there

Over a quarter of the introductions KTN
made were new cross-sector business to
business connections

Innovate UK
Knowledge Transfer Network



Connecting people to accelerate innovation

After working with KTN 42% of
organisations reported faster
outcomes (most commonly
1 to 2 years faster)

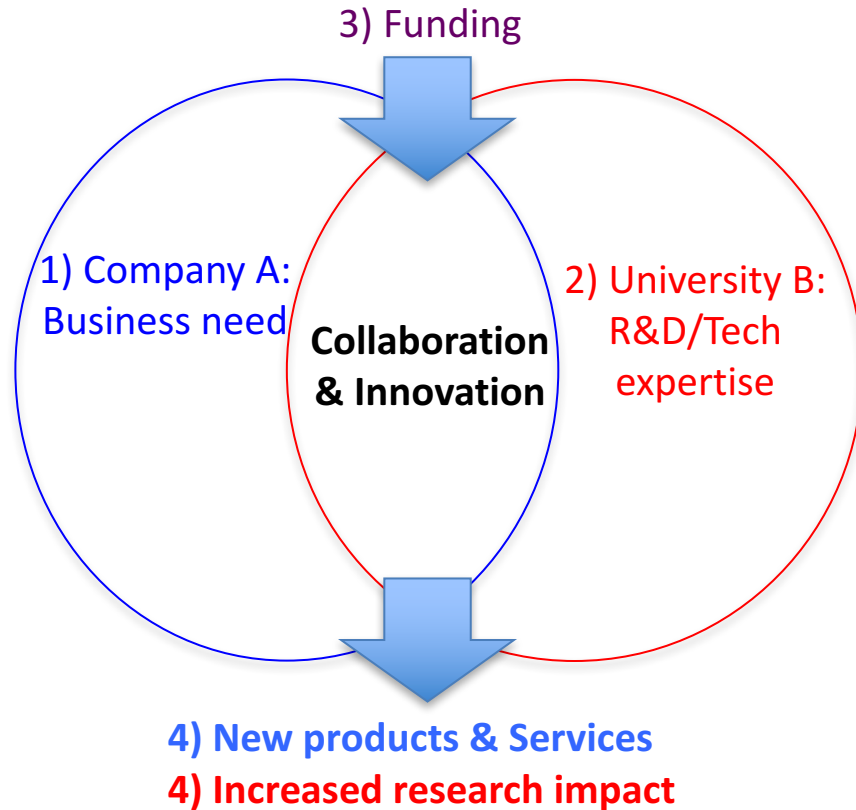
Innovate UK
Knowledge Transfer Network





Agri-Tech case studies

Collaborating & Innovating – key ingredients for success



Successful Collaboration and Innovation:

- 1) Industrial need that can be addressed by
- 2) **Technical capability**
- 3) Funding for new collaborative project
- 4) Outputs benefitting **both partners**

Case Study 1: UWE/BRL & Kingshay

Bristol Robotics Laboratory



- Kingshay – Dairy consultancy SME supporting >2,000 UK dairy farmers
- Industrial need: to accurately monitor body condition, mobility and live weight in dairy cows using new technology to replace labour
- KTN introduced Kingshay to Prof. Mel Smith, Centre for Machine Vision at Bristol Robotics Lab, University of the West of England (BRL/UWE)
- KTN helped Kingshay establish a new collaboration with BRL and obtain funding to develop 3D imaging technology to accurately monitor dairy cows

Case Study 1: UWE/BRL & Kingshay

Bristol Robotics Laboratory



- *Precision cow health management* ~£700k Project, ~£400k Innovate UK grant
- Collaboration between partners who would not usually meet has benefited both:
 - Kingshay - Substantially boosted innovation capacity of SME, & subsequently expanded in to new areas or research, tech development and projects
 - BRL/UWE – further collaborations with Kingshay and prototype technology, also working a lot in Agri-Tech now, a new area, leading to further research grants and industry collaborations, all boosting impact
 - <https://www.ktn-uk.co.uk/articles/creating-a-step-change-in-dairy-cattle-innovation-through-collaboration>

Case Study 2: IceRobotics

- IceRobotics: SME helped to develop cutting-edge herd monitoring tech for cattle with KTN and Innovate UK support
- To improve profitability, dairy farmers need to continuously monitor their cattle – helps identify key health and productivity issues
- Monitoring cattle behaviour such as the amount of time spent lying or standing is very useful e.g. Increased activity identifies when cattle are in heat and ready to be inseminated

Case Study 2: IceRobotics

- IceRobotics supported to develop a leg-mounted sensor to monitor cattle behaviour
- Combined with cloud-based analysis, providing decision support

How the KTN helped:

- 1) Building partnerships – introduced to key University and commercial collaborators
- 2) Building an R&D pipeline to develop technology – winning over £2.8m for projects

“Without this support, our company would not have been able to grow and develop our innovative products” - Robert Boyce, Ice Robotics



Case Study 2: IceRobotics

The Results:

- Now in use on over 200 farms and 50,000 cattle across Europe
- IceRobotics has grown from 5 employees to 21 (between 2008 & 2017)
- IceRobotics has attracted over £3M in private investment

More details:

<https://ktn-uk.co.uk/news/developing-novel-technology-for-precision-dairy-farming-stimulates-sme-growth>



Case Study 3: KTN Agri-Tech Investment Showcase

- Ongoing need for private investment in Agri-Tech to further advance the sustained public investments and technical excellence within the UK
- To address this need, KTN established an Agri-Tech Investment Showcase programme, ran in 2017 and 2018
- Early stage Agri-Tech companies are provided with investment-readiness training, and the best companies selected to pitch to investors

Case Study 3: KTN Agri-Tech Investment Showcase

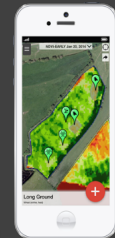
- Between 2017 and 2018, we found a large increase in both the number of investors interested in agri-tech, and also early stage agri-tech companies looking for investment
- >50% of 24 companies selected in 2018 are relevant to Ag. Engineering and related areas e.g.: Imagination Factory (solar powered irrigation pump); RoboScientific (Sensor technology), Small Robot Company (Arable robots)
- <https://ktn-uk.co.uk/news/ktn-investment-event-to-showcase-the-uks-cross-sectoral-agritech-expertise>



Future opportunities

Agricultural Engineering Precision Innovation Centre (Agri-EPI Centre)

- Agri-Tech Centre established by government
- Focuses on the delivery of R&D, demonstration and training on precision agriculture and engineering for all agri-food sectors
- 20 projects already established
- Network of ~100 members - great way to generate new collaborations
- Speak to EPI staff members today





Knowledge Transfer Partnerships (KTPs)

- Collaboration between a business and academic, with Knowledge Transfer via a recent graduate who moves to the business partner, and is supervised by the academic:
<https://www.gov.uk/guidance/knowledge-transfer-partnerships-what-they-are-and-how-to-apply>
- KTPs can last between 12 and 36 months. The amount businesses need to contribute is different for SMEs and larger companies, and ranges from £20-30k/annum.
- **£25m additional funding:** Chancellor Philip Hammond announced on 29th October 2018 an additional £25m to boost business productivity through KTPs

What is a KTP: Partnership



Discuss a KTP today with Kamran Hussein, Knowledge Transfer Adviser



Industrial Strategy Challenge Fund (ISCF)

- The Industrial Strategy Challenge Fund aims to bring together the UK's world-leading research with business to meet the major industrial and societal challenges of our time.
- The ISCF provides funding and support to UK businesses and researchers. The fund is part of the government's **£4.7 billion** increase in research and development over 4 years.
- It is designed to ensure that research and innovation takes centre stage in the Government's [Industrial Strategy](#).
- <https://www.gov.uk/government/collections/industrial-strategy-challenge-fund-joint-research-and-innovation>

ISCF - Transforming Food Production Challenge



- **£90m new funding for agri-tech**
- £90 million of new funding for agri-tech to help businesses, researchers and industry to transform food production, by making it easier to embrace technology and innovation
- **Business Secretary calls for new tech revolution in agriculture:**
 - *“To make it easier for farmers and agricultural supply-chain businesses to embrace technology and innovation, Mr Clark today announced £90 million of new funding to bring together the UK’s world-class agri-food sector with expertise in **robotics, AI and data science**” – 22,2,2018 <https://ktn-uk.co.uk/news/business-secretary-calls-for-new-tech-revolution-in-agriculture>*
- First £20m funding call, **Productive and sustainable crop and ruminant agricultural systems** closed in October 2018, more calls in 2019.

Transforming Food Production: Objectives



- Create disruptive data-driven solutions to drive primary agricultural productivity and reduce environmental impacts
- Embed adoption of precision approaches to bridge the productivity gap
- Establish novel high value production systems
- Strengthen connections between researchers and practitioners
- Drive Growth in UK Companies and develop export opportunities



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IoT device installation in Agriculture is forecast to increase at the rate of 20% compound annual growth by 2024

Transforming Food Production: Funding



£50M

Industry-led Collaborative R&D
Creating disruptive solutions and high value production system

Feasibility of novel approaches proven



£10M

Community of practice
Strengthening connections between research and practice and enabling adoption

Opportunities for large scale demonstration



£20M

Demonstration
Embedding adoption of precision approaches to bridge the productivity gap

International
Building opportunity in partnership and driving export growth

£10M

UK Research and Innovation



Thank you for your attention

To keep up to date with funding, events and other activity,
register for KTN newsletters: <https://ktn-uk.co.uk/newsletter>