

# Materials KTN

## Operations Report

Presentation by  
Dr Robert Quarshie  
KTN Director



## Vision

**To bring together the materials supply chain to  
improve industrial innovation and global  
competitiveness of UK business**

Materials

Knowledge Transfer Network

# MATERIALS KTN

Knowledge Transfer Networks

Accelerating business innovation:  
A Technology Strategy Board programme



**SMART.mat**  
Smart Materials, Surfaces and Structures Network



**ncn**  
National Composites Network



**TechniTex**  
Faraday

**meta<sup>4</sup>**  
Metals & Alloys Network



**Polymer**  
Innovation Network



**PowdermatriX**

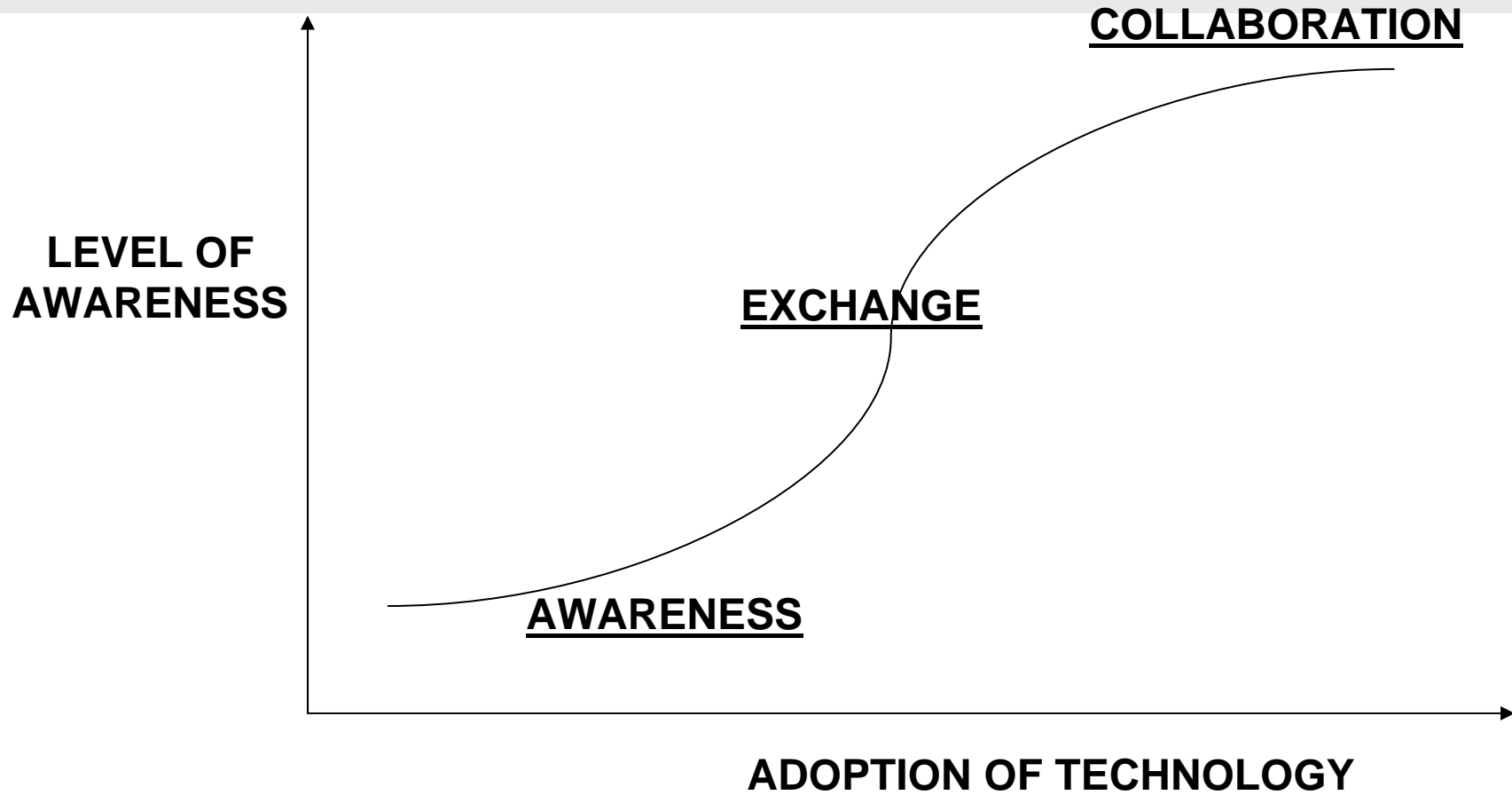
**MATERIALS  
AND DESIGN  
EXCHANGE**

# ACTIVITIES

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- **ADVANCE – TRANSPORT**
- **NCN – COMPOSITES**
- **POWDERMATRIX – PARTICULATE ENGINEERING**
- **SMART MAT – SMART MATERIALS SURFACES & STRUCTURES**
- **META<sup>4</sup> – METALS AND ALLOYS**
- **POLYMER INNOVATION NETWORK – PLASTICS & RUBBER**
- **TECHNITEX – TECHNICAL TEXTILES**
- **MADE – MATERIALS AND DESIGN**
- **PACKAGING – PACKAGING MATERIALS AND DESIGN**

# THE KTN HAS ACTIVELY ENGAGED AT ALL STAGES OF DEVELOPMENT FOR KNOWLEDGE TRANSFER SUPPORTING THE MATERIALS AND DESIGN COMMUNITY



# ACHIEVEMENTS

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- **CURRENT MEMBERSHIP – 7200 INDIVIDUALS/TARGET – 13000**
- **ACTIVE MEMBERS – 1500 COMPANIES/TARGET – 4500**
- **ORGANISED – OVER 250 EVENTS TO DATE**
- **TECHNOLOGY ROADMAPS / STATE OF ART REVIEWS – OVER 20**
- **DEVELOPMENT – PROJECTS – OVER 80**

Portfolio of R&D Projects

CASE Studentship

Short-term proof of concept projects

Collaborations with Government Depts/RDAs

# Packaging Perceptions and Futures

“The potential to **recycle HDPE** resin from milk cartons for **re-use in food packaging**, to the perception that the sound of packaging indicates its freshness, knowledge awareness, courtesy of **Faraday Packaging**”





# Automotive Materials

## - what happens at end of life



“ Under the new directive, **by 2015 only 5% of a vehicle mass can be committed to landfill.** New design and process initiatives are **urgently required to meet this target.** Join the Faraday Advance **DRIVENet project to get on track.** ”





## Improved technology

**Lamplas, the leading UK supplier of composite mouldings for caravans secured a £250,000 contract for products based on new process technology delivering improved performance brokered through the National Composites Network.**

AVD Windcheetah develops advanced carbon fibre chassis  
*NCN technical support has enabled a British bike  
manufacturer to establish the viability of manufacturing a  
chassis from carbon fibre composite materials.*





# New from old

“  
Recovery of **carbon fibre** from  
**waste composite material**,  
while preserving a high level of  
**virgin fibre properties**, is  
allowing the network to support the  
**advancement** of new products  
**valued at £36m** in the UK.”

# Glass lightweighting gets green light

Edge Transfer Networks  
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Industry Strategy Board programme

“A substantial **environmental benefit** coupled to significant **operational and cost improvements** was achieved through the direct involvement of **Faraday Packaging** with our **Grolsch brand**.”



# Knowledge transfer reduces production cost

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accelerating business innovation:  
Technology Strategy Board programme

“Linking the **specialist surface analysis skills** available in UK academia to a UK windscreen manufacturer, the Network helped to provide an estimated **£300k saving in lost output** on the production line.”





# Support for textile growth

**DCS Designs**, a start-up business, and  
**Camira**, an SME, both assisted by **Technitex**,  
are on track to **produce new generation  
technical textiles for the NHS** and other  
markets with **initial sales exceeding half  
a million pounds.**

# The Advance network provides global lead

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**A network activity dedicated to the recycling of aerospace materials encouraged Boeing to link with two UK SMEs and four UK universities to assist in Boeing's recycling needs.**

**"I am convinced this would not have proceeded as quickly without support from the Faraday"**

**Bill Carberry, Boeing, Everett WA**







# Process demonstrator

**Quickstep™**, a new process for  
**composite curing**, offers the potential to  
**slash expensive curing times by 80%.**

**The process is being tested under licence at the  
National Composite Network.**



# Bridges get SMART

“**1000 railway bridges are at risk from random road transport strikes.**

**We need a smart structure, communicating damage and condition with self repair to provide a future solution.**

Network Rail

# Production activity triples

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“Building upon the results of a **PowdermatriX** Spark Award, we have **increased production** on the coating line of our new Armatech product from **one to three shifts** to meet customer demand.”



# focus

NEW RESOURCES FOR PRODUCT INNOVATION

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## Foreword

by Dr Robert Quarshie,  
Materials KTN Operations Director

We all know that science and innovation is central to our future economic prosperity. Technology and scientific understanding are changing our world faster than ever before and creating new opportunities. Developments and applications of new materials are amongst the technologies creating a new wave of innovation and new opportunities for business, large and small, to create a competitive advantage for the UK.

The key is to match the ideas being developed with commercial and social wealth and this is an enormous challenge. This is where I believe the Materials KTN has been making a difference and will continue to do so. Knowledge transfer has been given a high profile since the Lambert Review of business-university collaboration in 2003. Translating the knowledge being created in our rich research base into commercial products and services is vital to the future of the UK economy.

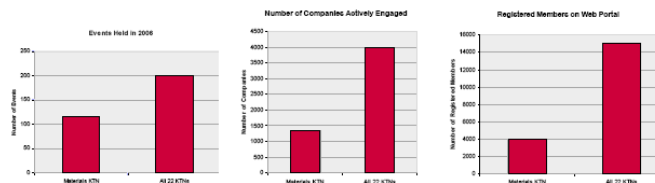
Since January 2006, when Lord Sainsbury formally launched the Materials KTN, it has made a difference in providing companies doing business or interested in doing business in the UK with opportunities to break into new technologies, new markets, new processes and production methodologies. The KTN, through its technology translators, knowledge transfer practitioners, business innovators and design mentors, have helped bring together academics, researchers and businesses to understand what materials design and technology can do for them and get the benefit of the country's investment in the science base.

This edition of Focus shows a number of examples of where the KTN has made a difference both at home and abroad. It also gives credit to the valuable work being done by the Regional Development Agencies for Innovation. Their

policies are now working better and in a more focused way to address the challenges in commercialisation, knowledge transfer, promotion of innovation, and improvements in skills. The Materials KTN, through its activities in Advanced Composites, have benefited from RDA investment in a wide range of regionally-based technology facilities.

As our main sponsor, the Technology Strategy Board, has often pointed out, Knowledge Transfer is a body-contact sport. Collectively we really do touch each other's lives and make a significant contribution to the UK economy. Thank you to you all for your continuous engagement with the Materials KTN and helping to make a difference with Materials.

The Materials KTN contribution to the cumulative total of all 22 KTNs activity in 2006:



# ***There is still a lot to do:***

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- **Sustainability is a key focus**
- **The impact of REACH**
- **Energy costs and availability**
- **Threats from developing economies, e.g. China, India and Brazil**
- **Innovation in the Industry with materials, machinery, automation and in process monitoring needing to move at a rapid pace**
- **Growing competitive advantage through:**
  - **design, predictive modelling and simulation**
  - **rapid manufacturing – additive or tool-less**
  - **Rapid adoption of green technologies – manufacturing for the world**

# The Materials Knowledge Transfer Network

Bringing together networks in materials

Creating leadership in innovative  
materials development, manufacture and use

**Visit [www.materialsktn.net](http://www.materialsktn.net) to register**