

**A UK STRATEGY FOR DESIGN, ENGINEERING & ADVANCED
MANUFACTURING (DEAM) RESEARCH AND DEVELOPMENT**

A photograph of a sunset over a large body of water, with the sun low on the horizon and its light reflecting on the water. The sky is a mix of orange, yellow, and blue. The text 'UK STRATEGY FOR DEAM R&D' is overlaid in a bold, red, sans-serif font with a black outline, slanted slightly upwards from left to right.

UK STRATEGY FOR DEAM R&D



HISTORY AND CHRONLOGY 1

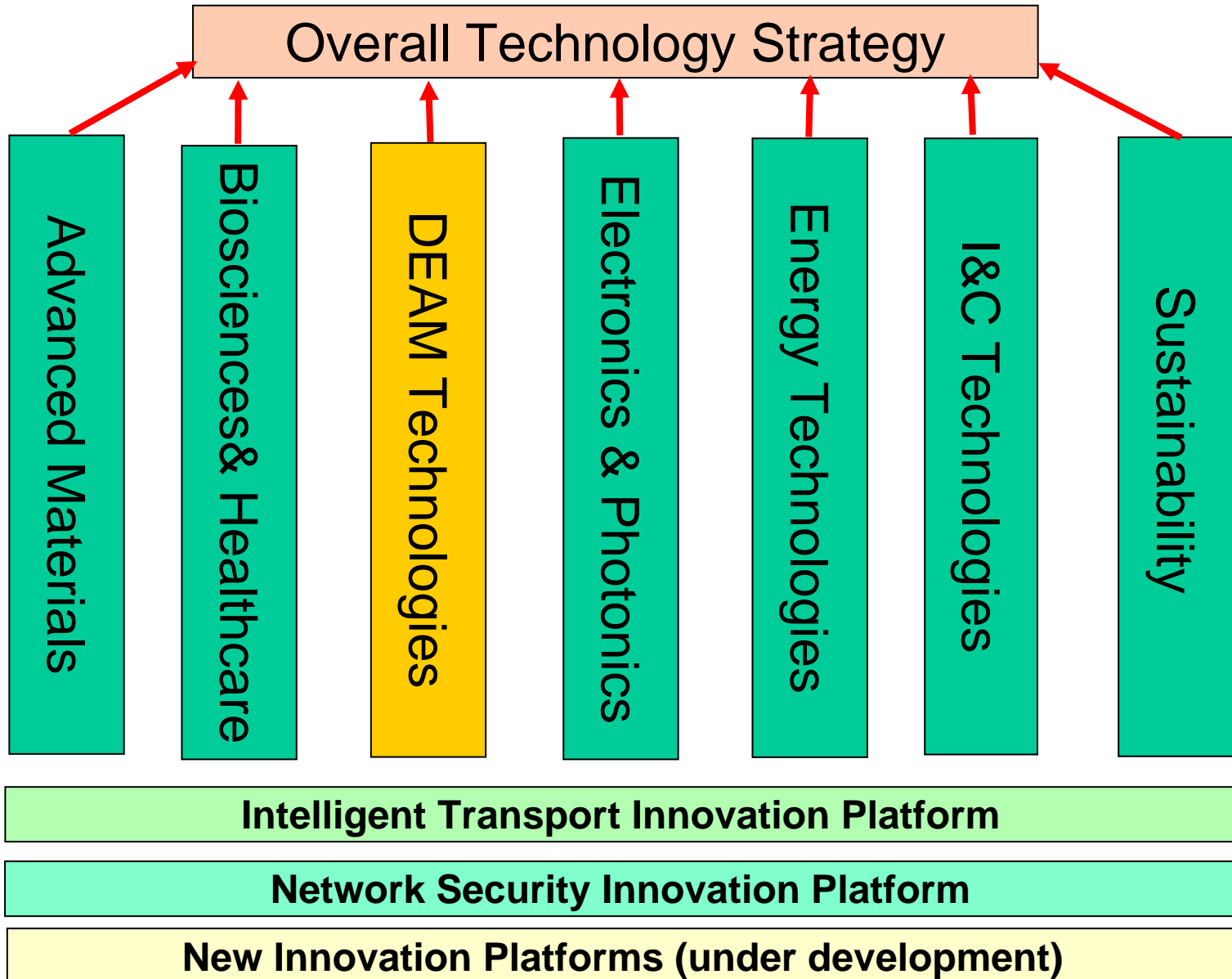
- Innovation Report – December 2003
- Technology Programme – January 2004
- Technology Strategy Board
- Strategy and Priorities
- Brought together all DTI R&D Funding
- Simplified Support Mechanisms (CR&D + KTN)
- 2 Calls per Annum (April & November)
- Arm's length NDPB from 01 July 2007



HISTORY AND CHRONLOGY 2

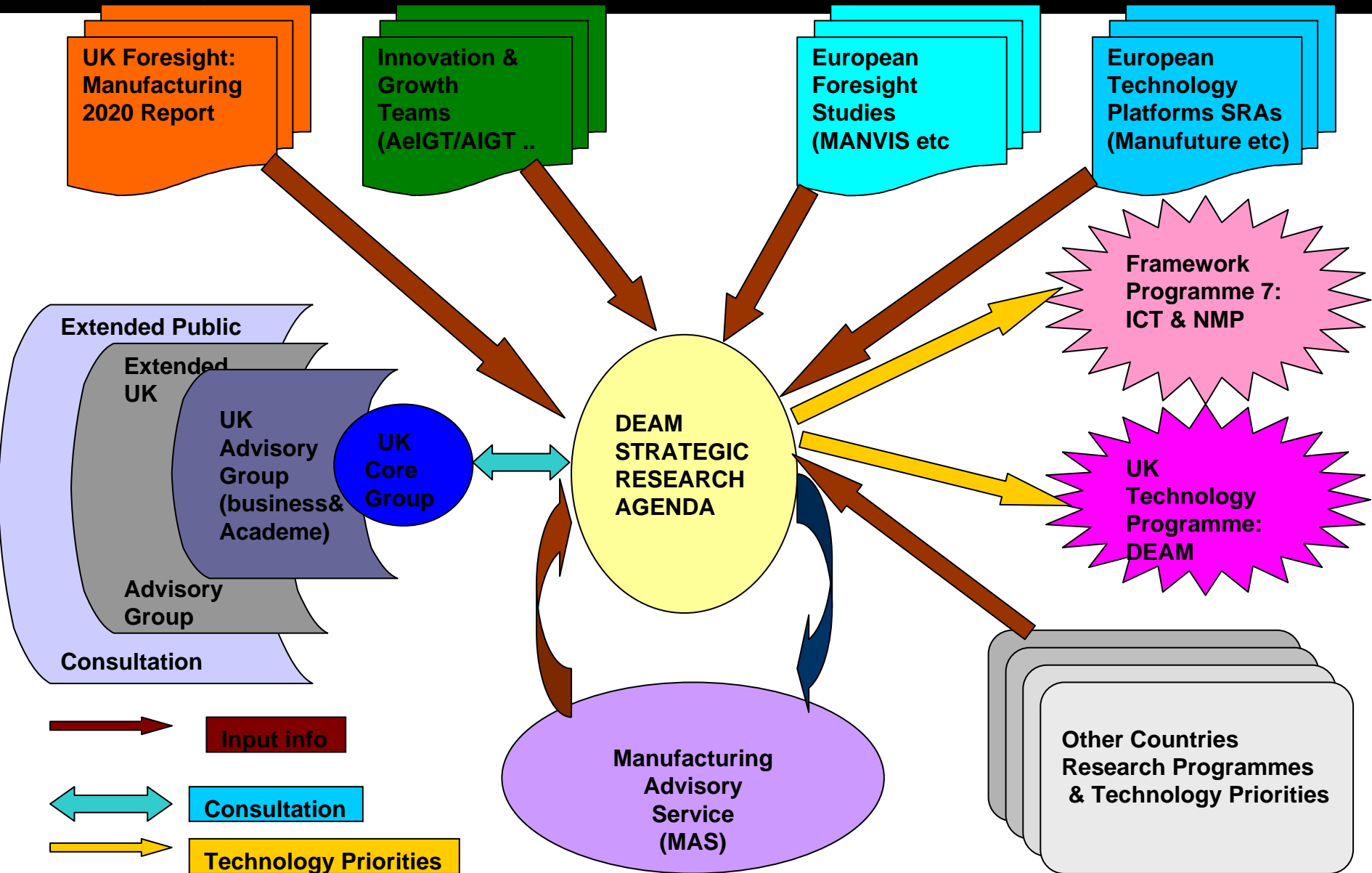
- **CALL TOPICS**

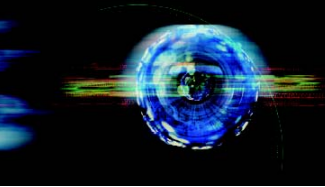
- Inter-enterprise computing (April 04)
- Environmentally-Friendly Transport (April 04)
- Design Simulation and Modelling (November 04)
- Validation of Complex Systems & Direct Write (April 05)
- Sustainability & Design of Control & Power Systems (Nov05)
- Complex Fluid Flow (April 06)
- {Design Simulation & Modelling – (Nov 06) – postponed}
- ????? (April 07)



UK TECHNOLOGY STRATEGY: INPUTS AND OUTPUTS

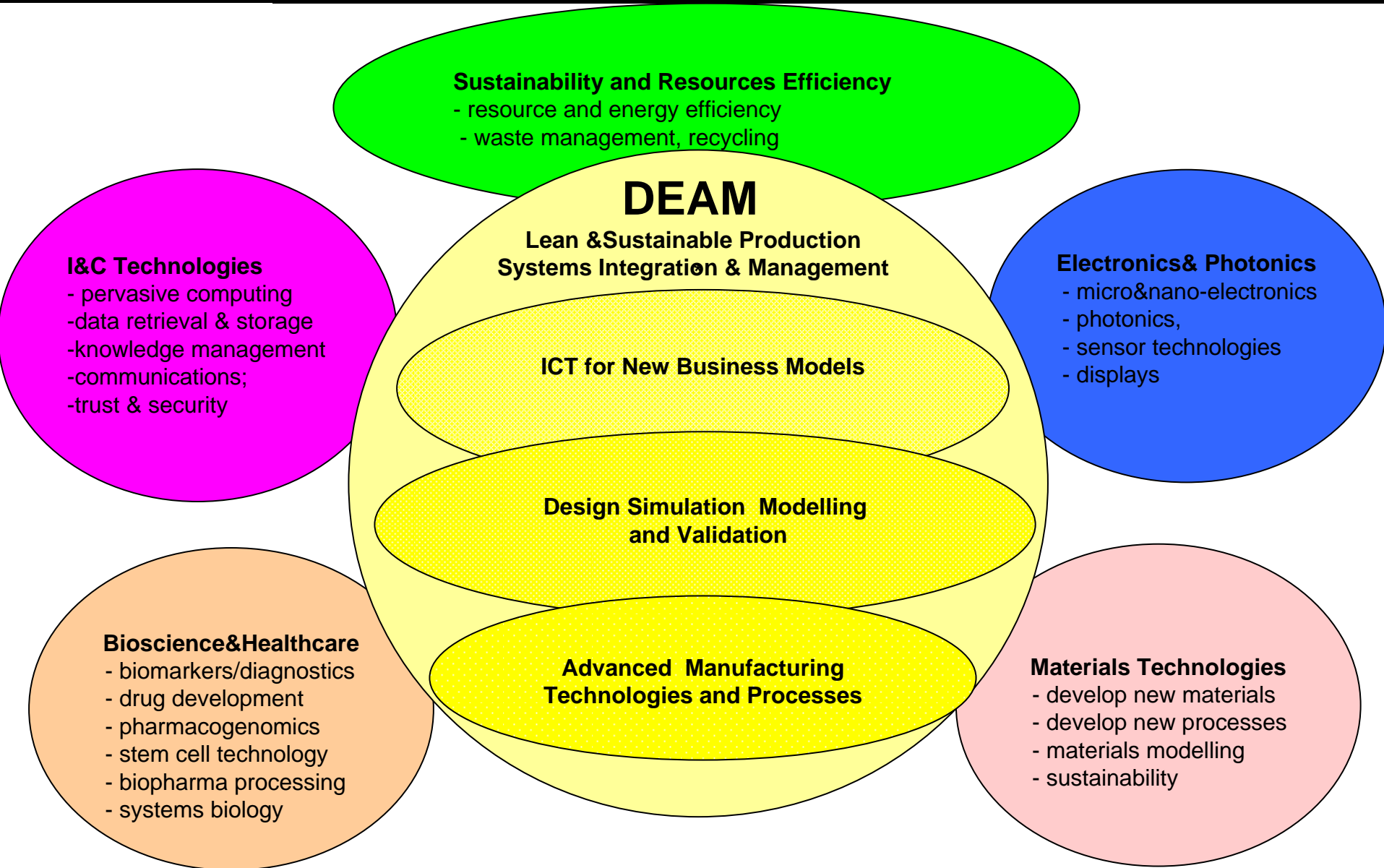
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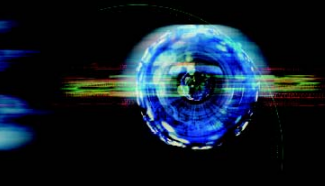




TECHNOLOGY RELATIONSHIPS

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DEAM SECTORS

ICT for New Business Models

Design & Advanced Engineering Research

Advanced Manufacturing Technologies

- Lean & Sustainable Manufacturing and Processes

- ICT for New Business Models incl:

Design & Engineering Research incl:
- Design for Reliability / Maintainability
- Design, Simulation and Modelling of Advanced Structures incl. Micro &

Adv. Manufacturing Technologies incl.:
- Rapid Prototyping/Flexible Prodn;
- Advanced Forming & Assembly Tools & Techniques (incl. robotics);
- New Processes and Processing Technologies (incl. bioprocesses)
- AMT for Micro- & Nano-Systems
- Intelligent Instrumentation & Controls

DEAM SECTORS

ICT for New Business Models

Design & Advanced Engineering Research

Advanced Manufacturing Technologies

Lean Manufacturing and Processes (resource efficient / low cost / sustainable manufacturing processes)

ICT for New Business Models incl:

- collaborative environments
- networked businesses processes
- services support for products

Design & Engineering Research incl:

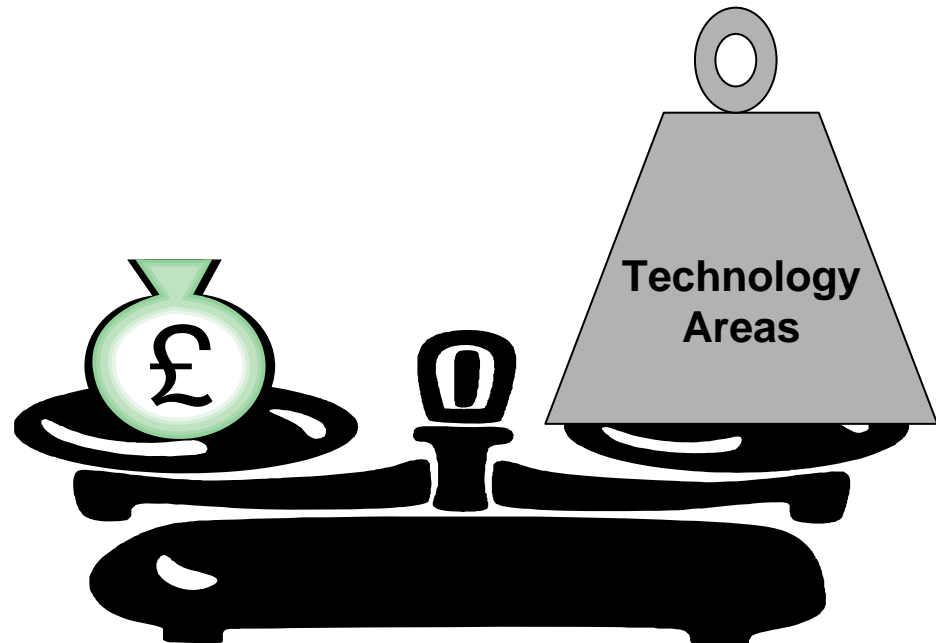
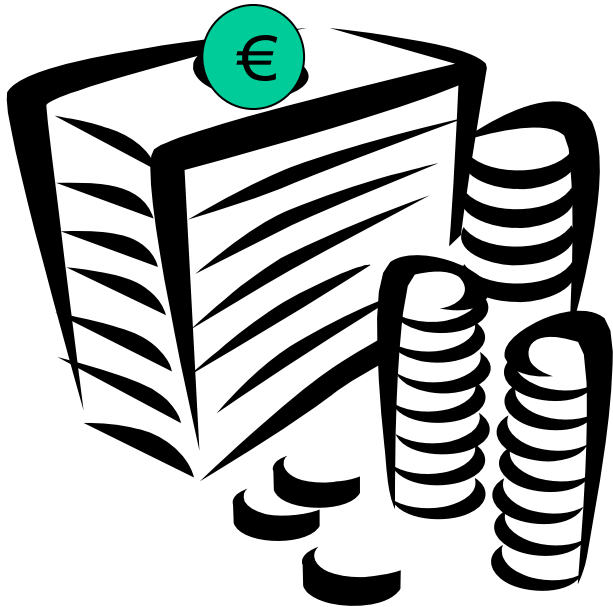
- Design for Reliability / Maintainability
- Design, Simulation and Modelling of Advanced Structures incl. Micro- & Nano-
- Design for Assembly, Disassembly & Recycling
- Validation of large scale systems incl. non-destructive testing, non-contact inspection etc

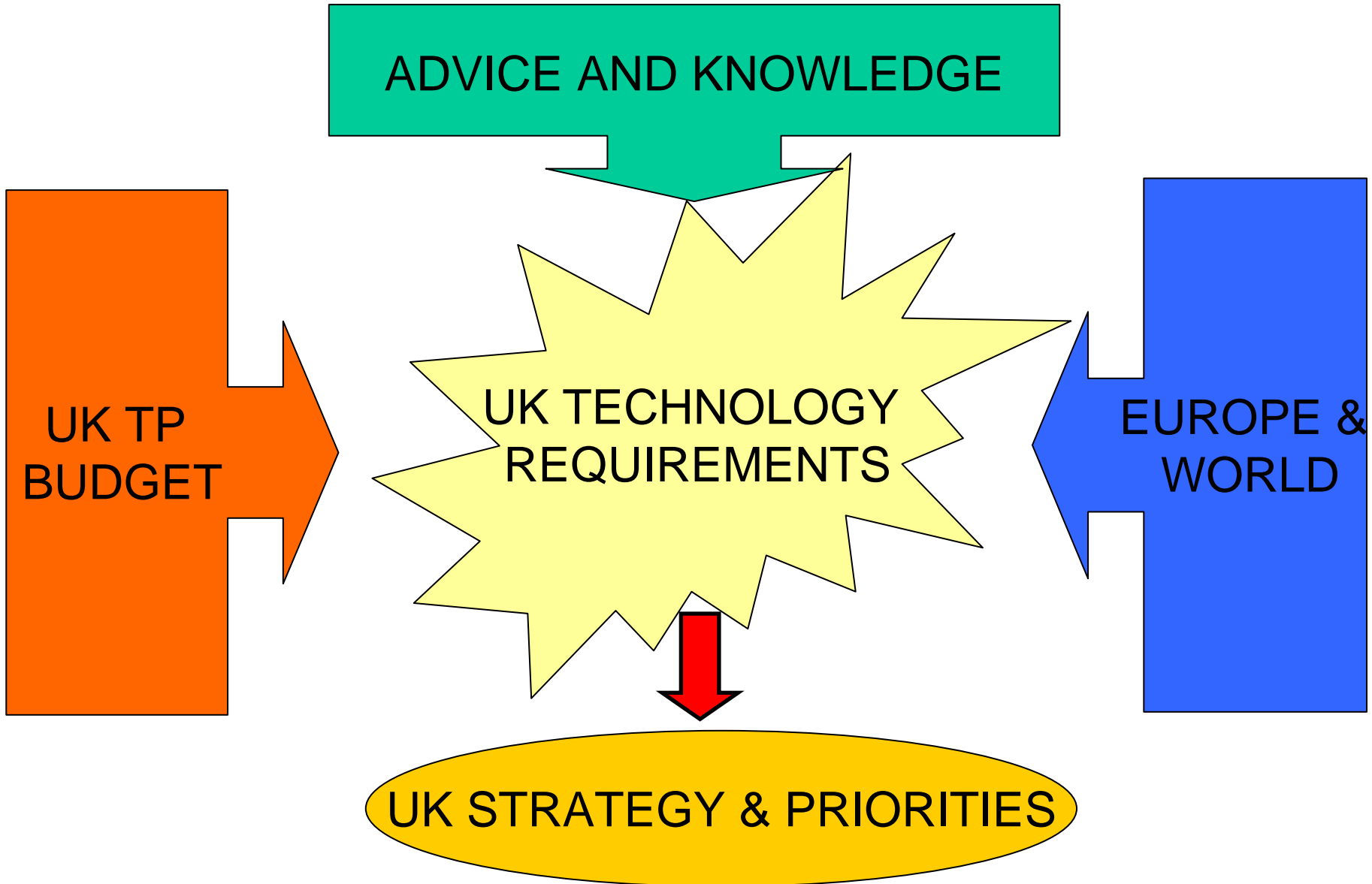
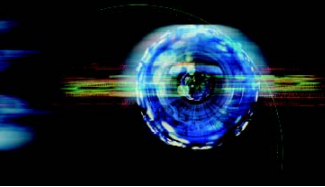
Adv. Manufacturing Technologies incl.:

- Rapid Prototyping/Flexible Production
- Adv Forming & Assembly Tools & Techniques
- New Processes and Processing Technologies
- AMT for Micro- & Nano-Systems
- Intelligent Instrumentation & Controls

Technology Strategy Board Selection Criteria

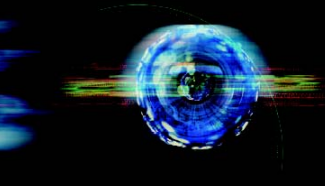
- **Size of global market opportunity**
- **UK capacity to develop & exploit technology**
- **Potential impact and timescale**
- **Clear role for TSB**





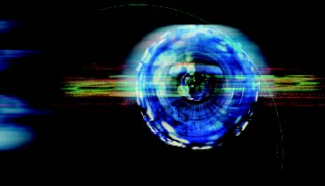
A POSSIBLE STRATEGIC APPROACH

- Focus on technologies which have maximum cost effectiveness for UK budget e.g.:
 - ICT for New Business Models
 - Design Simulation Modelling & Validation
 - Low cost generic AMT
- Special Projects for Key Industries (budget?)
- Links between Business & Research: KTNs
- More holistic approach to bring together ICT / materials / electronics/ bio / sustainability themes
- Prepare UK players for EU programmes



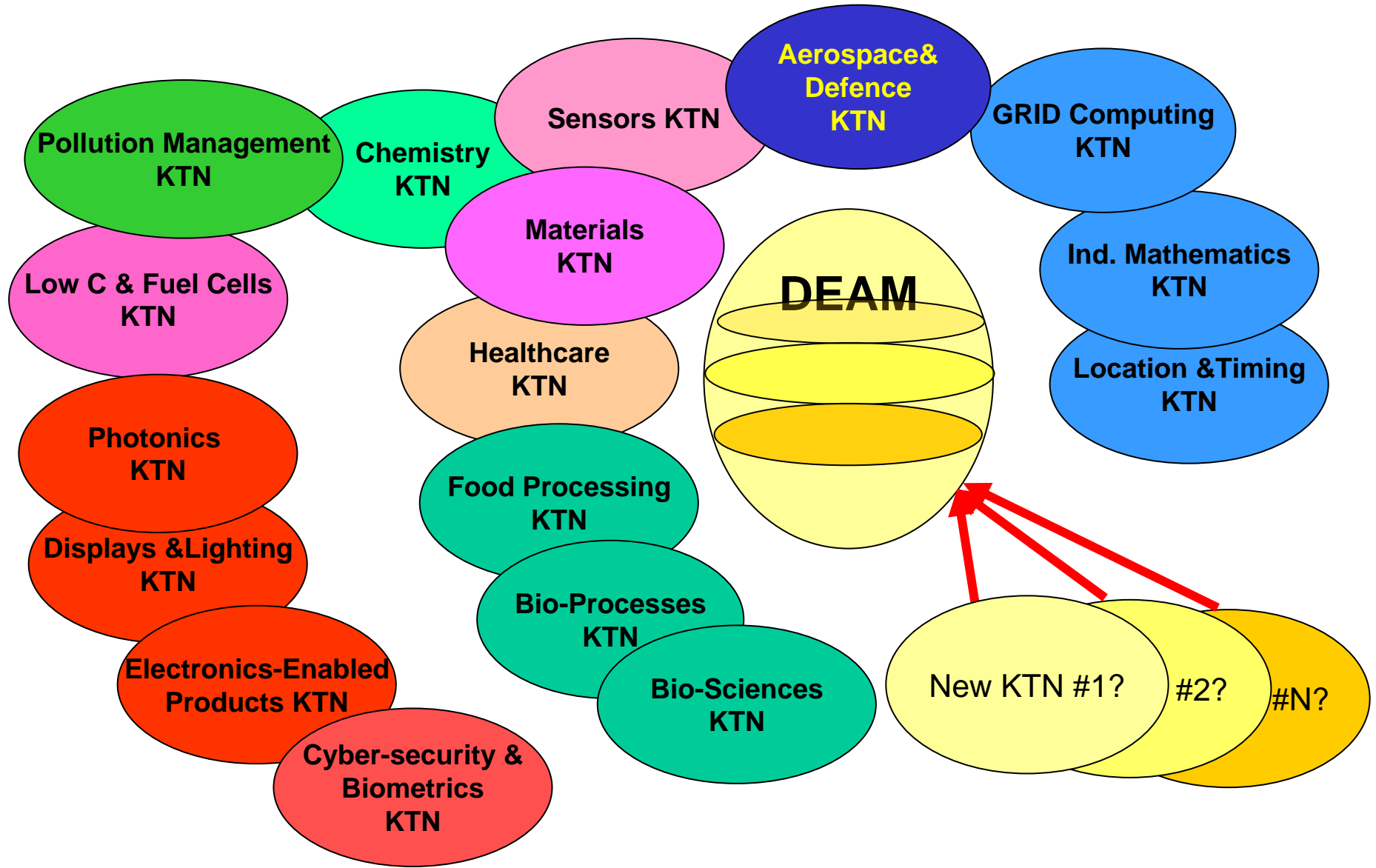
A POSSIBLE STRATEGIC APPROACH (contd)

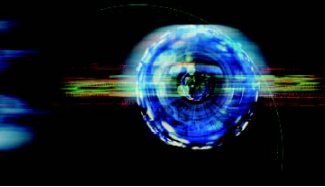
- **Relationships with EU programmes:**
 - **EU & UK Priorities**
 - **European Technology Platforms (eg.Manufuture)**
 - **ERA-Nets / ERA-Net+ / JTIs / EUREKA!**
- **Relations with Science Base / IMRCs**
- **Manufacturing Advisory Scheme (MAS)**
- **Metrology & Standards / Interoperability**



KNOWLEDGE TRANSFER NETWORKS

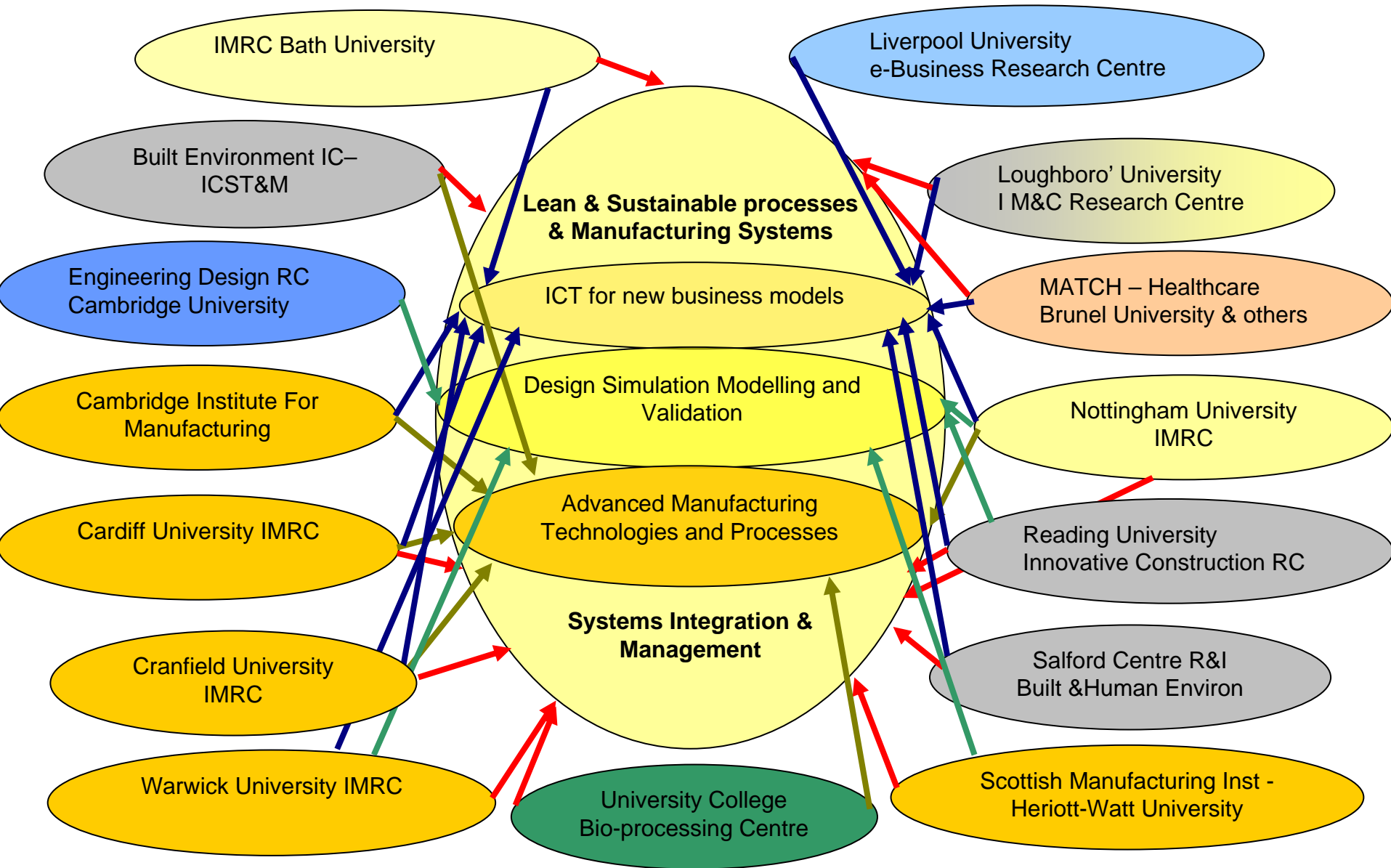
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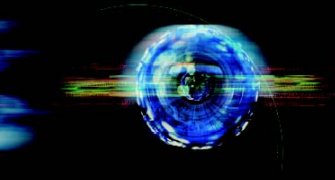
MAP OF IMRCs & DEAM STRATEGY

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FUTURE CALLS IN DEAM

- **1 Call per year on Design, Simulation & Modelling**
 - Complex, dual element human-technology systems
 - DSM of advanced systems and components
 - Design for performance, reliability, availability & maintainability
 - Design for sustainability (assembly, disassembly, recycling)
 - new paradigms in simulation & visualisation (creative industries)
 - new CAD tools and design methodologies
- Indicative Budget: ~£35-40M
- Timing: Beginning Spring 2007
- **1 Call per year on ICT for Business / AMT / Specials**
- Indicative Budget: ~£10-20M?
- Timing: Beginning Autumn 2007?



THANK YOU

