Engineering and Physical Sciences
Research Council

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Digital Technologies for Manufacturing Innovation: Embracing Industry 4.0

Rhia Visavadia – Manufacturing the Future

EPSRC Delivery Plan: 2011 - 2015

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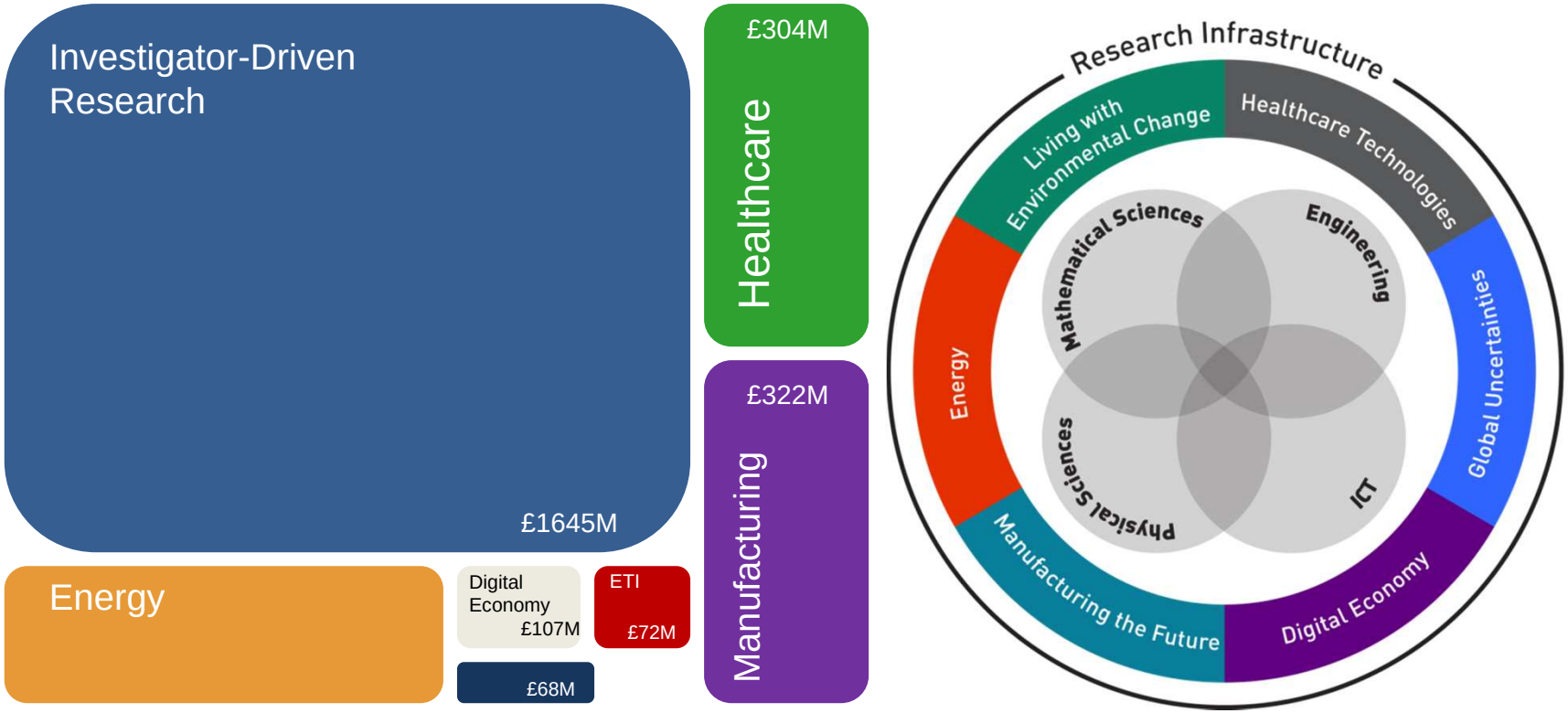

Values shown are cumulative over four years

Research Areas

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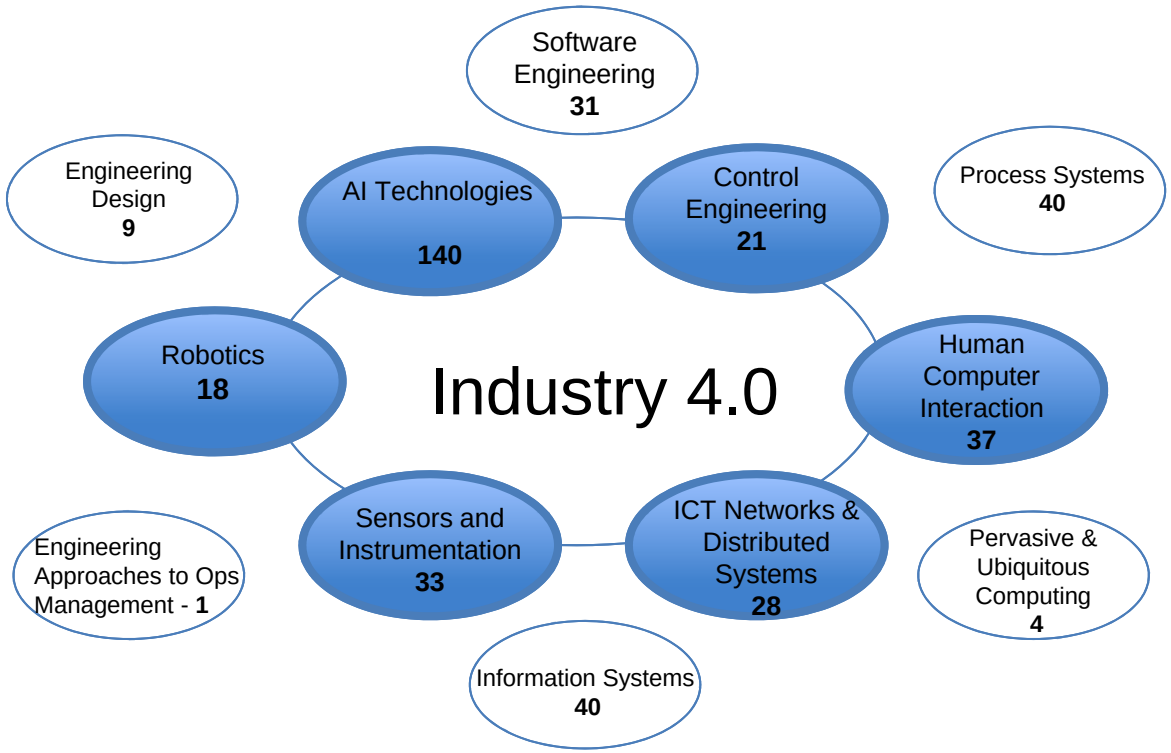

Flexible Reconfigurable Manufacturing Systems

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- **Aim**: To develop manufacturing systems capable of high value, low-volume products
  Processes with short cycle times
  Capacity for rapid and efficient reconfiguration to accommodate new products.

- **Why this area?** Productivity and reliability whilst allowing flexibility and adaptability is a major challenge.

- **Scope**
  Reconfigurable Assembly Systems.
  Self-Adaptive Equipment.
  Automation and Mechanisation

- **7 projects funded**: Combining ICT, sensing, metrology, automation and control engineering

- **Project Partners:**

HEXAGON METROLOGY
AIRBUS
NPL National Physical Laboratory
LAND ROVER | JAGUAR

Future ICT – Enabled Manufacturing

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- **Aim**: Activity to help new ICT techniques transform future manufacturing

- **Why this area?** ICT has a major role to play in improving manufacturing intelligence, supporting collaboration, increasing efficiency, speeding up innovation and enabling new business models and technologies.

- **Scope**
  - Engineering design in the digital world
  - Intelligent information infrastructures and manufacturing decision support
  - Managing product and infrastructure lifecycles

- **6 funded projects:** Bringing together innovative ICT research and innovative manufacturing research.

- **Project Partners**: Delcam, Ford Motor Company, Land Rover, Jaguar

Future Manufacturing with Mathematical Sciences

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- **Aim**: Generate new thinking and ideas, new interactions and new research at the interface of mathematical sciences and manufacturing.

- **Why this area?** Get a deeper engagement with those who would not normally work with manufacturing disciplines to draw on their capability and aim to transform future manufacturing.

- **Scope:**
  - Full life-cycle modelling
  - Model Integration
  - Data Capture
  - Supply Chain modelling

6 funded projects

Project Partners: GKN, Nikon, National Composites Centre, Rolls-Royce, dstl

Calls/Activities/Centres

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Autonomous Manufacturing:

Aim: Further knowledge understanding and innovation of the research challenges underlying the implementation of autonomous systems in UK Manufacturing.

Centres for Through Life Engineering and Intelligent Automation

Re-distributed Manufacturing Networks

IUK-EPSRC Call in Manufacturing through Automation

3 RCUK Digital Economy Hubs

Visions for productive, innovative, competitive manufacturing

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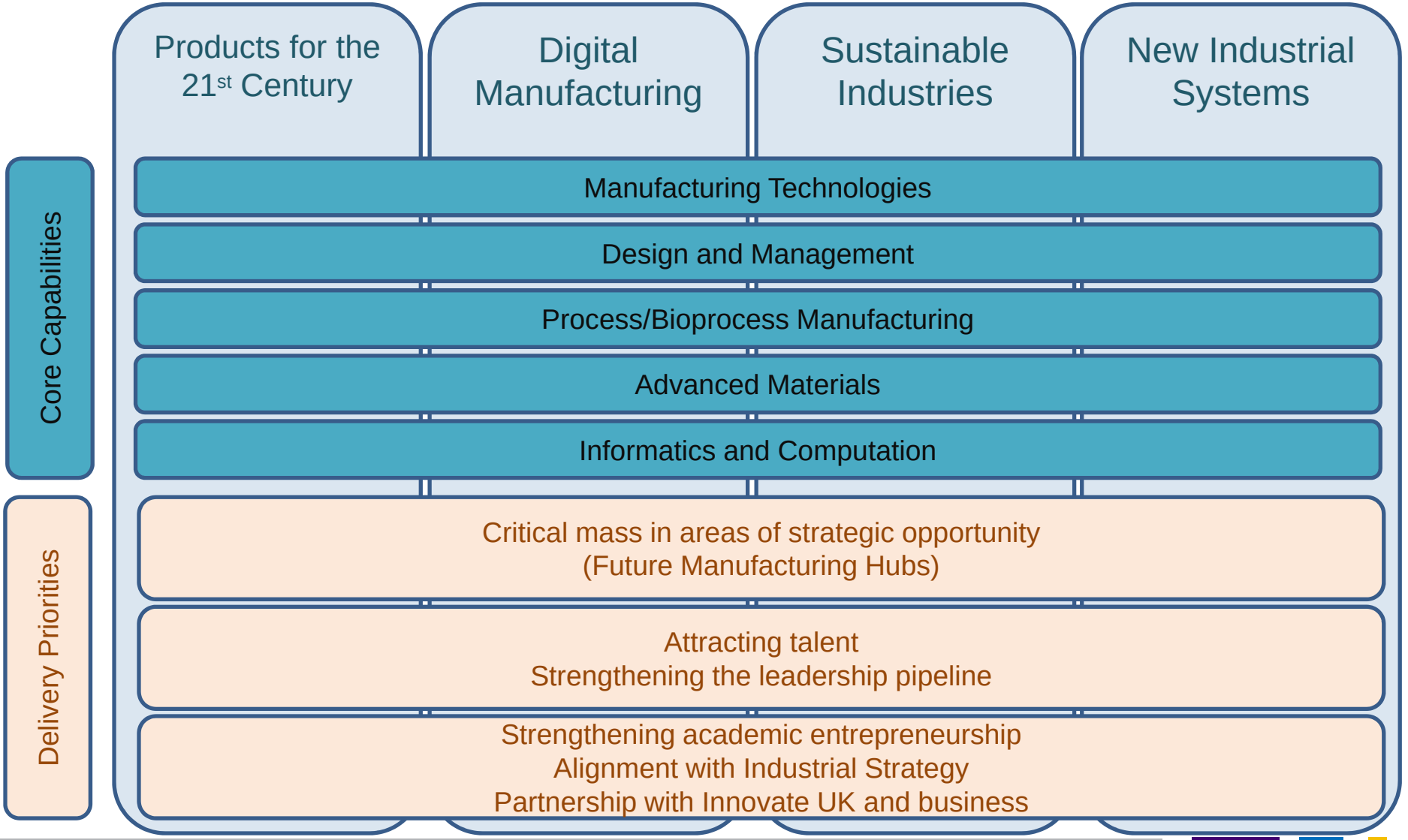

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Future Funding….

Networks Plus

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- **Aim:** is to bring together disparate disciplines and sectors to explore opportunities for greater multidisciplinary working.
- **Funding available**: £1million
- **What can funds be used for?** Engagement activities, secondments and feasibility studies
- **Duration:** up to 3 years
- **Objectives:**

- Contribute to the development of a cross network vision and research agenda for Industry 4.0
- Inclusivity – actively seeking new perspectives and contributions from a wide range of experts and other stakeholders, both nationally and internationally.
- Lead to novel collaborative multidisciplinary research with the potential for 'responsive-mode' grant submission to the EPSRC
- To support and advise EPSRC on development of strategies for Industry 4.0 research.

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Thank you

Questions….?