Engineering and Physical Sciences
Research Council

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Why Tier 2 Centres?

Dr Susan Morrell
Head, Research Infrastructure

WHY E-INFRASTRUCTURE?

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- Computational science `third leg` of scientific enquiry, alongside experiment and theory;
- Expert users need access to competitive infrastructure to tackle increasingly complex problems: complex simulations and calculations, multi-scale modelling;
- Large experiments (e.g. CERN, telescopes, genomics) – need to analyse all the data
- Social, medical, health data – analytics plus secure access
- New fields now using computational techniques for the first time – large numbers of `non-experts`;

UK's HPC Ecosystem

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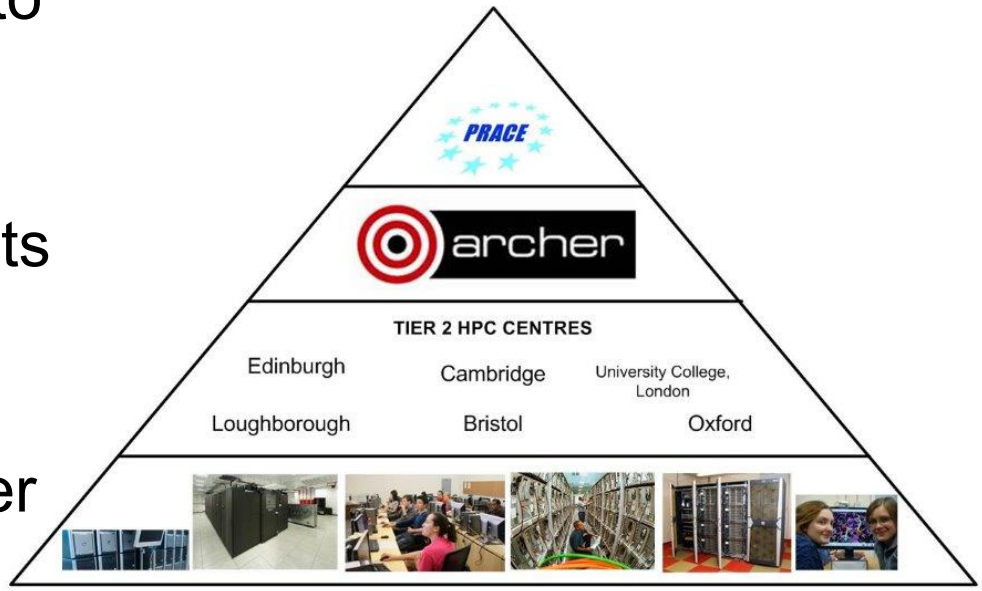
- Gap in capability from local university systems to the National Service (ARCHER);
- 2012 regional centres: lots of useful lessons and examples of impacts
- Recognition that this layer needed a refresh and clear strategy



NOT JUST COMPUTERS

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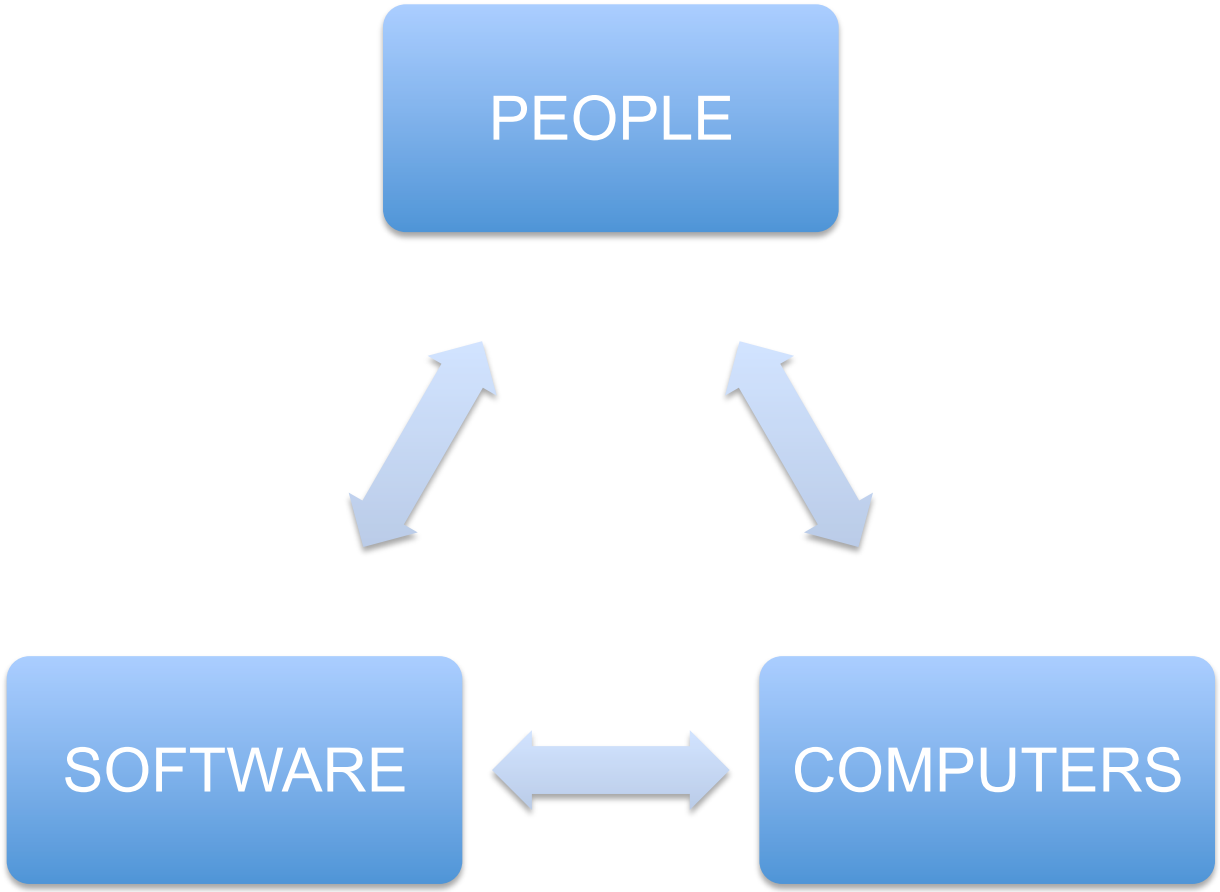

EPSRC Strategy for Tier-2 HPC

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Our vision is to work towards a diverse and flexible UK Tier-2 HPC provision with the capability and capacity to meet the scientific needs of the academic and industrial computational science community. The diverse computational science needs and user requirements, including the range of compute job shapes and sizes, needs to be met. In addition, we have a goal to enable researchers to future-proof their research in relation to new and emerging hardware architectures for the future.

Aims:

- Provide capacity and capability
- Future-proofing for new technologies
- While mainly available for local users, each will have a proportion available nationally
- Creation of a truly national Tier 2 layer

EPSRC investment in Tier-2 HPC

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- Enables new discoveries, drives innovation and allow new insights into existing scientific challenges;
- Is open to any UK EPSRC researcher and provides easy local access and training for users;
- Broadens access to researchers new to HPC;
- Provides access for industry;
- Encourages skills and expertise in software engineering to support the range of tier-2 architectures;
- Is integrated with the HPC ecosystem across the UK, both vertically (into tier-1 and tier-3) and horizontally to other tier-2 hubs;
- Provides a diversity of computing architectures.

Tier 2 Centres

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- **£20 million investment in 6 Centres**
- Each Centre is a partnership between several Universities across the UK.

Centre	Type
Cirrus (Edinburgh)	Standard cluster
HPC Midlands Plus	Standard cluster
MMM	Standard cluster
Isambard (Bristol)	ARM
Peta-5 (Cambridge)	Knights Landing Data analysis
Jade (Oxford)	GPU

Access routes

- Applicants can access the Materials Hub through the Materials HEC Consortia see their website: https://mmmhub.ac.uk/2017/06/14/access/.
- Pilot open access call launched August 2017 for the 5 other centres;
  - Coordinated with the ARCHER RAP process;
  - For EPS users across the UK to access the centres;
  - Peer review process involves enabling applications to be referred to another more appropriate centre if needed;
  - Process will be reviewed at the next Directors meeting and at a Follow-up meeting with the Panel.
- Resources (and relevant costs) can also be included on grant applications.