

E-futures: University research in electronics

An EPSRC Network of UK
semiconductor and circuit designers

Historical

Common Vision for UK
research in Microelectronic
Design
(EP/D054028/1)

Silicon Research and
Exploitation For the
Nanotechnology Era
(GR/T07879)

E-futures: University research in electronics

*The need to link the community has never been
greater and the benefits of such a linkage
define the
objectives of this network*

Outputs from previous networks

- Two sets of 'Grand Challenges'
- Two EPSRC signposted themes
 - Circa 50% success rate for proposals cf 20+%
- Road shows around the UK
- Town meetings with academy/industry

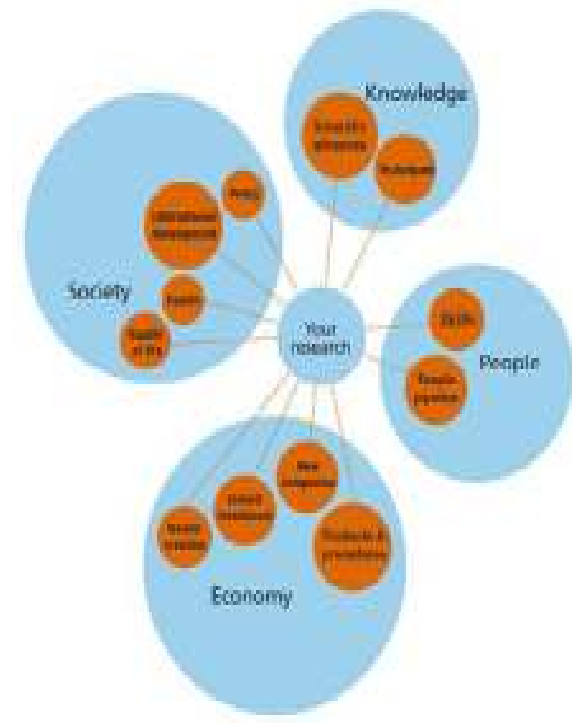
ICT Signposting Update – Feb 10

[source, M. Ball (senior Sector Manager ICT, EPSRC)]

- 26 Institutions involved in 38 submitted projects
 - Total demand £29M
- 29 Projects so far been considered at Panel or sifted
- 15 have been funded with total value of £11.3M
- £5.47M still in system
- Funding Ratios:
 - 52 % by Number
 - 48 % by Value

The next phase

- **Broaden the vision**
- **Recognise national priorities**
 - **EPSRC**
 - * energy, digital economy, nanoscience, Health
 - **Cross-RC**
 - * ageing population, global security, Environmental change



where is microelectronics transformational?
where can it have most impact?

New proposal prepared by a core team

- Asen Asenov (Glasgow)
- Andrew Brown (Southampton)
- Steve Furber (Manchester)
- Steve Hall (Liverpool)
- Anthony O'Neill (Newcastle)
- Roger Woods (QUB)

But the Network belongs to all willing participants

The aims of the network

- **Consolidate** the academic community engaged in all aspects of electronics research technology and design. This is a **broad landscape**, covering topics as diverse as
 - electronic materials, device concepts, miniaturization and diversification
 - design paradigms, systems and networks

The need to link the community has never been greater and the benefits of such a linkage define the objectives of this network

The objectives

- **Recognise** and define the scope of electronics research and address future challenges,
- **Engage** university research with industry,
- **Single voice** for the UK electronics research community,
- **Co-ordinate** UK electronics research,
- **Communicate** UK electronics Research,
- **Leverage** future research funding
- **Engagement** with other communities

Timescales

- **Long term, make the network self-sustaining,**
 - earlier network grants achieved much but short lifespan left many opportunities missed and the ongoing network activity is limited. ..
- **The new network will be an evolving entity,**
 - modulate its activities in the light of changing circumstances in industry and academia
- **Over a 3 year timescale there is a real opportunity**
 - time for effective networking
 - successful projects between the university and industrial sectors
- **Engagement strengthened**
 - as the community sees tangible outcomes from the network
- **Get necessary infrastructure**
 - in place and tested early on to ensure it is fit for purpose during this essential start-up phase.

Plans for dissemination

Principal reason for the network

- **Community events** as we determine the UK electronics research landscape.
- **Web page**, include a wiki interface- members can upload material
- **Who's who register** (as in many EC projects) identifying expertise and facilities at each partner institution
- **Visitor area** will be designed and maintained making use of the resources uploaded by the community,
 - highlight “good news” research and exploitation
 - web pages will contain press releases which will be of use to the trade press
 - material more suited to the media in general
- **Dissemination of our research capability** and needs to the UK commercial sector through existing networks such as NMI and E-KTN,
- **Links to the public sector** will be through EPSRC, TSB and the RDAs
- **Public awareness campaign:** approach politicians directly

Potential for collaboration

- **The network should offer the greatest scope for new collaboration;**
 - raise awareness of electronics research across the whole sector,
- **Break down** many of the existing language/jargon barriers
- **Need for concerted action**
 - on the discipline boundaries has never been greater. Electronics design and technology is at a critical point...
- **Barriers between industry and universities.**
 - In some cases individuals don't know where to go to find partners or else have technical challenges which could be met by researchers in the UK if both parties could meet.
- **Who's who register**
 - will greatly assist this process in the early stages

What we will do (1)

- **Active membership** needs to be facilitated.
- **Focus** to get the combined community to engage with one another and so..
 - a team of three “investigators” from each of the design and technology communities will drive forward with enthusiasm.
- **Day to day management**
 - finances, general administration and ensuring that information flows smoothly around the network will be carried out by the PI with administrative support.

What we will do (2)

- **A Steering Group:** gang of 6 + representatives from the commercial sector in order to maintain industrial relevance, including
 - Derek Boyd (CEO, National Microelectronics Institute, NMI),
 - Ashley Evans (CEO, Electronics Knowledge Transfer Network, EKTN),
 - Nick Appleyard (Lead Technologist, electronics, photonics and electrical systems, TSB),
 - Ian Philips (Principal Engineer, ARM),
 - Ivor Evans (VP of Product Engineering, Cambridge Silicon Radio, CSR)
 - representative from EPSRC.
- **Take advice and identify best practice** from the successful industry facing networks.
- Consider **longer term strategies** (sustainability of the network) must be adaptable to the needs of the community
- Consider large **full community meetings** annually (as UKDF) as well as more **specialised events**.

What we will do (3)

- **Meet every four months** + teleconferencing for more regular updating.
- **Increase steering group** to cover cross-disciplinary issues and engagement with overseas activity as the network develops and its needs evolve.
- **Delivery of specific objectives:**
 - Gang of 6 responsibility -determined at a kick-off meeting (April12th).
 - determine the short term scope of work needed to achieve the longer term network objective.
- **Specific administrative duties** associated with the necessary tasks will be identified and then monitored by the named academic, who will report progress back to the steering group.
- **Web meetings** also represent an inexpensive opportunity for engagement but must be tested during the lifetime of the grant.
- Consider **annual subscription** from each academic partner
 - graded membership costs related to grant income generated resulting from the networking
 - activities, generating revenue from events such as community meetings or an annual dinner
 - sponsorship from the commercial sector.

And finally...

- The network 'belongs' to us all so we trust that we will get a wide-ranging participation
 - Ideas for activities
 - Opportunities for inter-disciplinary proposals

We would hope to convince EPSRC to establish another signposting initiative which greatly enhances success rate

Work with EPSRC to help set Strategy

