



The Open University

Grand and Global with GRACE:

Software Research Challenges and Collaboration

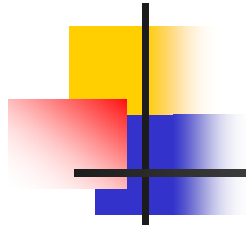
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Three Motivational Themes

1. Addressing **grand challenges**
2. **Global** in scope and activity
3. **A centre of excellence**



Grand Challenges

- Tomorrow's computing systems cannot be built using the methods of today.
- Grand Challenges
 - Focus and integrate research
 - Help determine research priorities
 - Publicise research and engage the population



Grand Challenges [2]

- In 2002, the US Computing Research Association (**CRA**) started a series of conferences on grand challenges in computer science & engineering, initially identifying five
 1. Create a Ubiquitous Safety.Net
 2. Build a Team of Your Own
 3. Provide a Teacher for Every Learner
 4. Build Systems You Can Count On
 5. Conquer System Complexity
- Subsequent conferences focused on:
 - Information Security & Assurance (2003), and
 - Computer Architecture Research (2006)
- **Mixed success**: narrow engagement by the community, National (US) focus



Grand Challenges [3]

- In 2002, the UK Computing Research Committee (**UKCRC**) developed a similar initiative with more precise criteria:
 - A grand challenge should be defined as to have **international scope**, so that contributions by a single nation to its achievement will raise that nation's international profile.
 - The **ambition** of a grand challenge can be far greater than what can be achieved by a single research team in a single research project.
 - The grand challenge should be directed towards a **revolutionary advance**, rather than the evolutionary improvement of legacy products.
 - The topic for a grand challenge should **emerge from a consensus** of the general scientific community, to serve as a focus for curiosity-driven research or engineering ambition, and to support activities in which they personally wish to engage, independent of funding policy or political considerations.
- Nine grand challenges have been identified so far



Grand Challenges [4]

- The GRACE Centre has emerged:
 - in **response** to grand challenges,
 - as a “think tank” to **define** them, and
 - as a vehicle to **address** them.
- It is well positioned to do so due to its **global** focus on research **excellence**.



Globalisation [1]

- Addressing grand challenges requires a **global perspective** at every level:
 - International **collaboration**
 - Global research **skills and talents**
 - **Scalability** provided by a global laboratory
 - International **visibility and access**



Globalisation [2]

- The GRACE Centre already builds on a record of international collaboration by Professor Honiden and his team, with:
 - Memoranda of Understanding
 - Collaborative projects, and
 - A active programme of visitors.

with colleagues in UK, France, the USA, etc.



Globalisation [3]

- Collaboration with **The Open University (OU)**
 - A global university with **200,000+ students** worldwide
 - **Diverse student body** comprises wide age groups, backgrounds, skills; including many practitioner
 - Software engineering **research group** with about 40 members from 20 different countries
 - **10 members here today, from 10 different countries,** representing Europe, Asia, Africa, and America
- **Highlights:**
 - Active MOU: in software engineering and NLP
 - SSE project: workshops, PII Journal Special issue, etc.



A Centre of Excellence [1]

- The goal of a centre of excellence is both to **recognise** excellence and to **aspire** to achieve it.
 - It also highlights the area(s) of excellence for special attention.
- Such a centre is **long overdue in Japan**, given the strength and prospects of **software engineering research** in the country.



A Centre of Excellence [2]

- **There are opportunities**
 - to **emulate** globally successful models, such as the CMU/SEI (USA);
 - to **learn** from the varied experiences of European centres such as ESSI (Spain), and recent National experiences of Lero (Ireland); and
 - to **innovate** in order to create a unique, nationally significant centre, with global outreach and impact.



A Centre of Excellence [3]

- The key is **excellence**.
- Excellence in **people**
- Excellence in **environment**
- Excellence in **outputs**
- Excellence in **delivery**



In conclusion ...

Dictionaries define the term “grace” as:

“elegance and beauty
of movement or expression”





Arigato goziamas – thank you
