

Exploiting Innovation in the UK Water Industry

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Defining innovation

So many definitions.....

...successful implementation of new ideas...

...dynamic value-driven change...

...exploiting the full potential of new perspectives...

...recognising and implementing new technologies...

...doing things differently...

...adopting better practice...

... innovation is the specific instrument of entrepreneurship... the act that endows resources with a new capacity to create wealth

There's also.....

open innovation, dynamic innovation, facilitative innovation, exploitative innovation, evolutionary innovation, contextual innovation, alterative innovation, revolutionary innovation...

So what does innovation look like?

...its the process by which an idea or invention is translated into something of value;

...its about managed change and continuous improvement

...there are common themes across utilities

Serious time and space!

Somewhere special

Freedom to think

Diversity

Senior leaders' engagement

Encouragement and reward

Some paradoxes

Systems versus freedom

Encouragement versus constraint

Acceptance of risks

Uncertain investment

Gatekeepers: robust assessment of new ideas, concepts and technologies

Outputs become outcomes

Sharing

Imperative

Continuous improvement is the norm

Visibility - everybody knows it's going on and the subject of everybody's conversations

Ownership

Publicise and recognise

Overcoming barriers

Blockers

Markets, regulatory or legislative regimes as an excuse

Lack of creativity

Inertia

Easier lower risk alternatives

No demonstrative support

What do stakeholders really think?

Go for it?

Collaboration?

Worth the risk?

Investment?

Further development?

Can this work in the water sector?

some observations:

...water is strongly linked to energy

...no penalty for not innovating

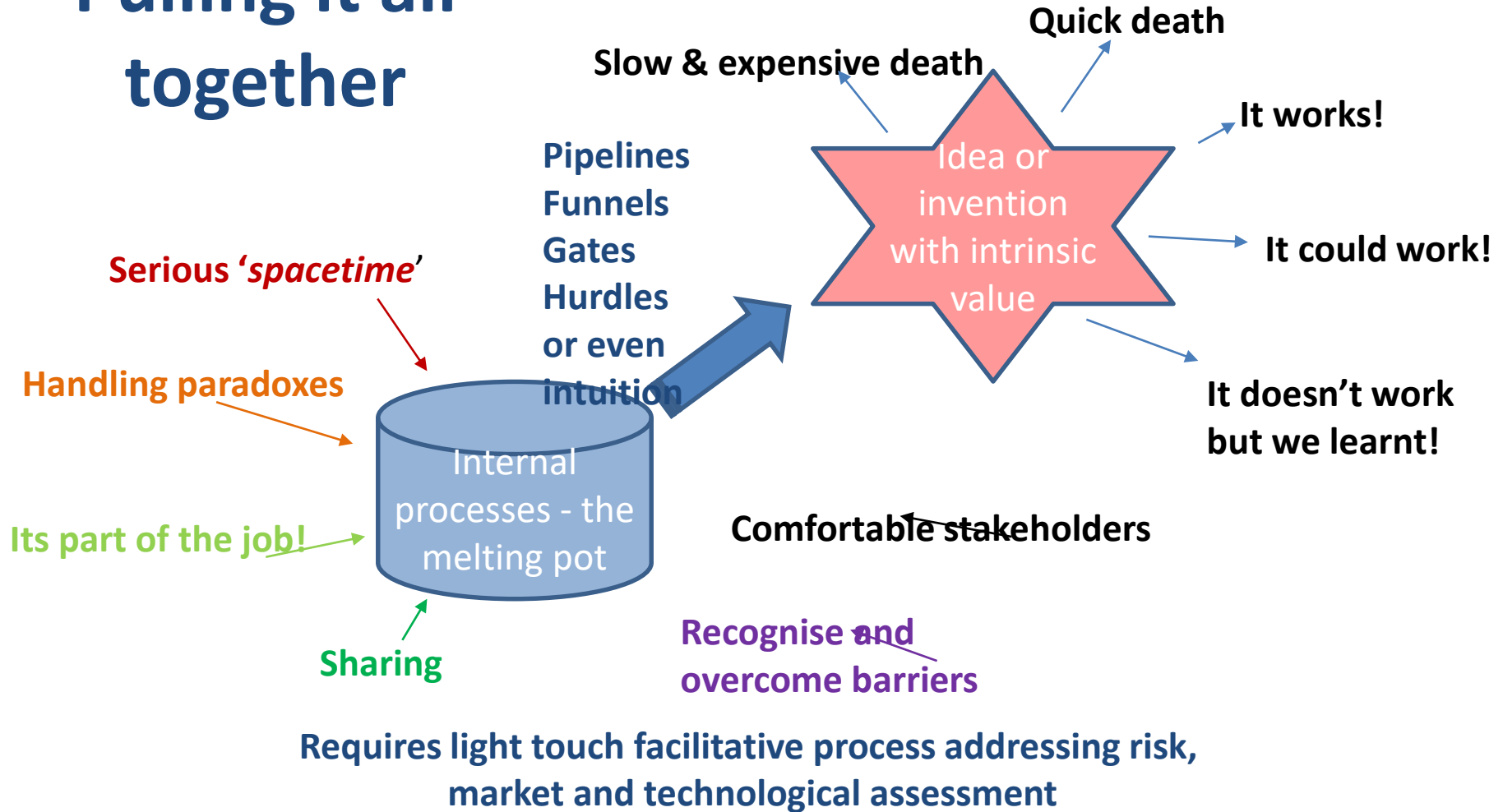
...continual drive for better efficiency

...incentives: capex. versus opex. - alternatives to 'pouring more concrete'

...expenditure on innovation must come from net profits so there will be a limit

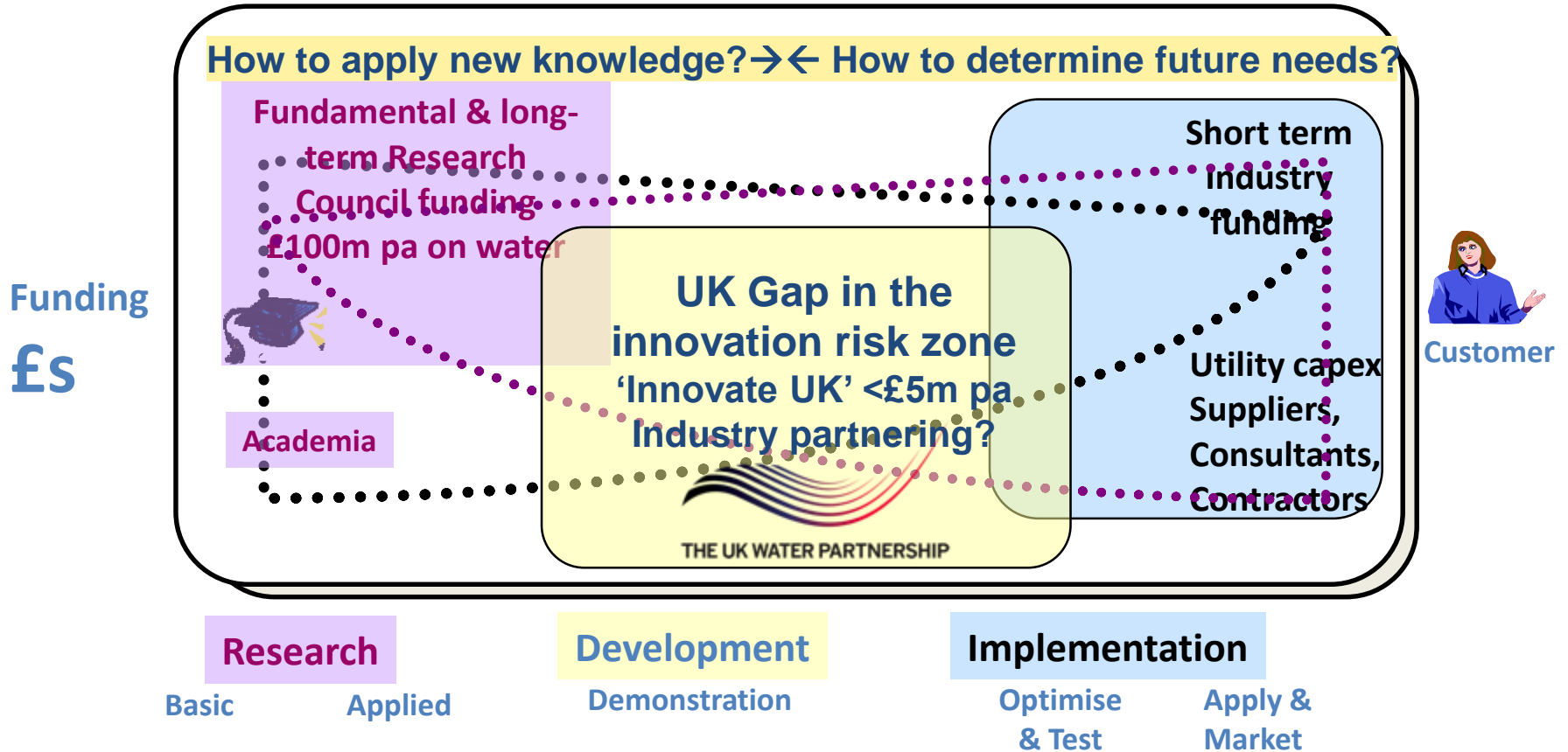
...valuing water; is water a right rather than a need?

Pulling it all together



World class water research in industry & UK Universities

Gap in funding at development & demonstration stage?



UK Strengths - Tapping the Potential Report 2014

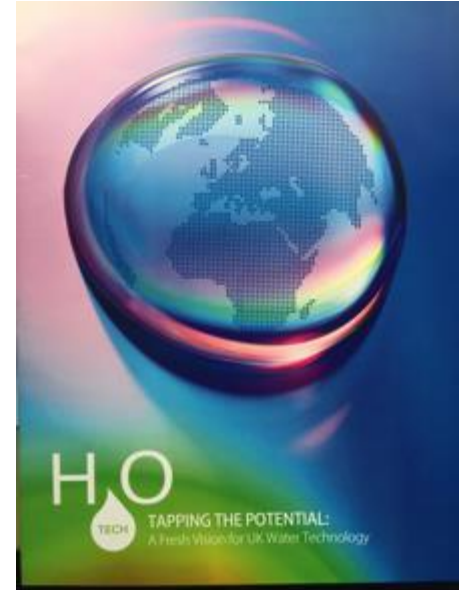
Identified \$500 bn global market. UK has <3%

UK water sector strengths identified:-

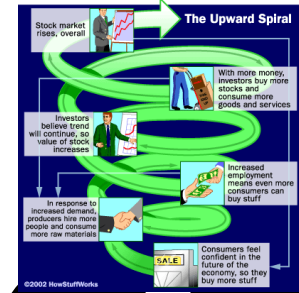
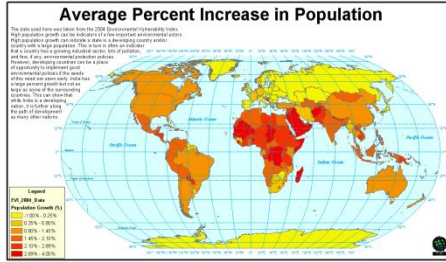
Engineering & financial consultancy
Asset management & optimisation
Smart water: leakage management
Flood resilience – prediction & risk models
Customer & network data analytics
Energy management & recovery
Integrated catchment & EIA monitoring tools

Recommended:-

- form UKWP
- develop UK test & demonstration sites
- international marketing strategy for UK innovation



Challenges



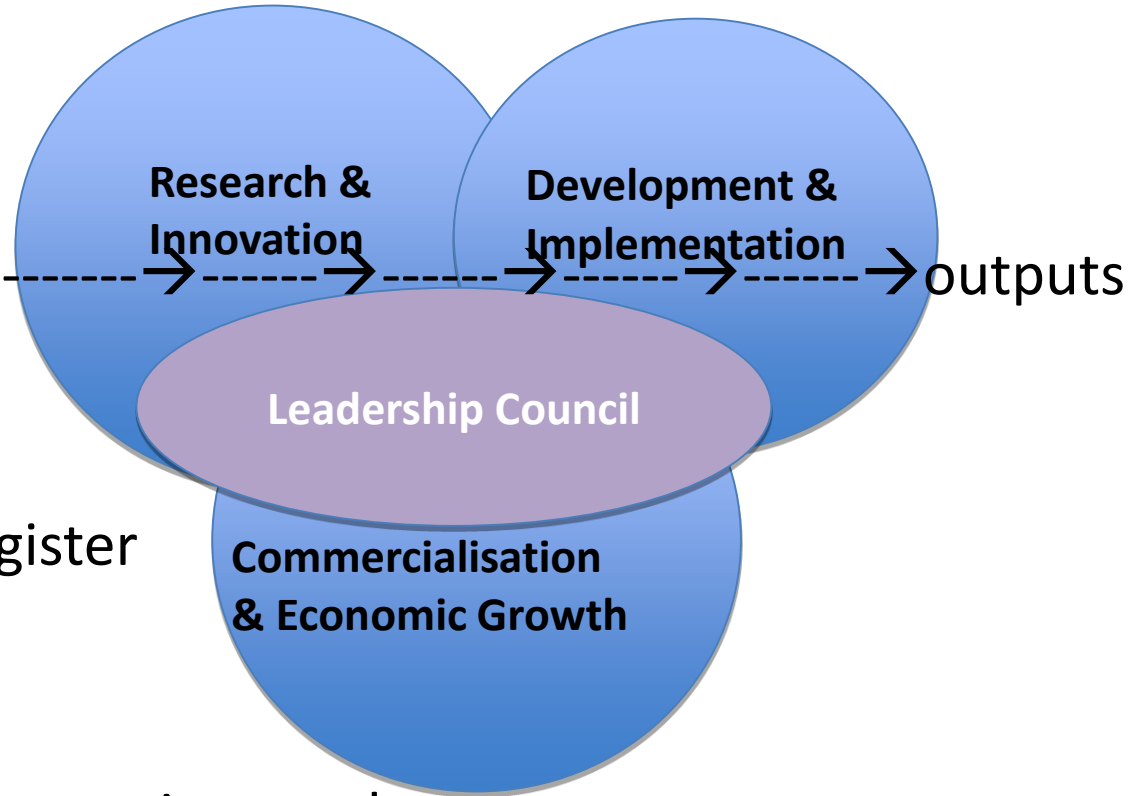
Global Warming



Activity structure

Task forces

- Water & cities
- Water & agriculture
- Flood & droughts
- Innovation facilities register
- Supply chain register
- LITSON & Accelerator
- International for UK economic growth



UK Floods & Droughts Resilience

Thought piece on integrated floods & drought catchment approach & affordable resilience.

Supporting establishment of new



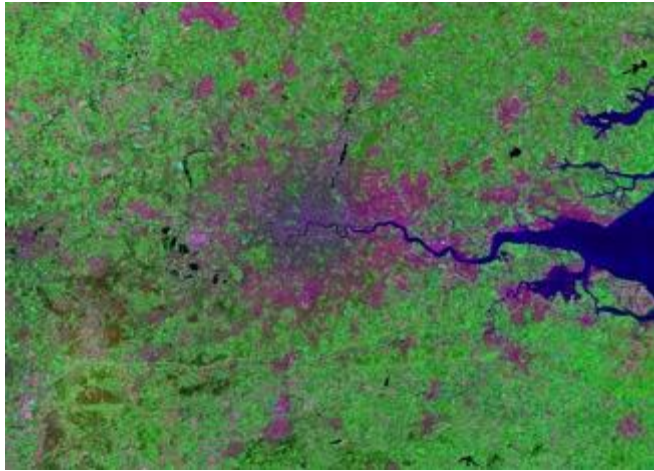
BFA
British Flood Association



International strategic development

Build upon UK reputation for identifying, regulating and implementing integrated catchment solutions:

R&D + Government to Government



“Clean-up of the Thames” story – how to help India with the Ganga project?
- Joint UKWP, Defra, Scottish HydroNation, NERC+ supply chain initiative

UK Water Partnership Register of Testing and Demonstration Facilities



A Need to Demonstrate

The UK is a world leader in the provision of water and sewerage services. For the sector to continue to innovate there is a clear need for researchers and developers to test new technologies and processes in facilities that represent realistic deployment situations. The lack of easy access to real-life sites has been highlighted as a barrier to market entry by the UK Water Partnership in their Report: "H tech O - Tapping the Potential"

The development lifecycle of innovative products and processes for the risk-averse water sector tends to be lengthy compared to other sectors. Taking a product out of the laboratory and into a more realistic operating situation is a major undertaking and frequently becomes an insurmountable barrier. Spread out across the UK is a wealth of research and testing facilities but to find out exactly what exists, and how access can be obtained, can require extensive searching. The UK Water Partnership has therefore established this Register of Testing and Demonstration Facilities to provide a publically available searchable Register of test facilities.



Map of current facilities on the Register



Scottish Water Horizons: Gorthleck Development Centre

Transformed from a membrane Water Treatment Works, the Centre is no longer connected to the distribution network, providing the opportunity to trial new equipment on full scale assets in a low risk environment.



Plymton Open Air Laboratory, Centre for Ecology & Hydrology

Managed by the Centre for Ecology & Hydrology (CEH), Plymton is among the key European and world sites in terms of catchment science – not just for the length of the records gathered (40 years and counting) but crucially because of the breadth of measurements, spanning hydrology and including water chemistry, groundwater studies, geomorphology, ecology and atmospheric science.

Improve UK water sector innovation

Develop a partnership approach for strategic challenges (*Government, Utilities, Supply Chain, Academia*)

- * get water recognised (by HMG) as a strategic opportunity to improve UK resilience & deliver international economic growth
- * examine case for strategic UK demonstration scale projects?
- * engage more in current Innovate UK programmes;
 - Future Cities, Circular Economy, Infrastructure Resilience

www.theukwaterpartnership.org



Website



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