watef

Defining service innovation approaches for efficient urban water management

SERVICE INNOVATION TECHNICAL COMMITTEE

Strategy 2015/16

1. Background

Increasing pressures on water resources from climate change, population growth and environmental standards require innovation in the water sector. This has been recognised in the UK in the Cave Review, Water White Paper and through recent efforts by Defra and Ofwat. However, the focus has remained on technological innovation rather than service innovation.

Innovation is broadly defined by Ofwat, the UK water industry economic regulator, as the application of new technology, business processes or management expertise that delivers any improvements to customer service, the environment or cost efficiency. However, "Service Innovation" within the context of the UK water industry is widely discussed but often not defined further. More generally this has been broken down into innovation around products, processes and organisational change. Therefore, defining what this means in practice is one of the roles of the Technical Committee.

The next five years will see another round of water resources management plans (WRMP19) and water company business plans (PR19) being delivered. There are many changes proposed on resilience, competition, moving to total expenditure TOTEX and new decision making methods. An improved understanding of service innovation can support these plans as well as changes at the city and neighbourhood scales around more integrated water management.

This Strategy provides a brief review of the activities of the Service Innovation Technical Committee in 2014/15 and outlines proposed activities and a timeline for 2015/16.

Review of activities in 2014/15

Initial areas of scope for this committee for 2014-15, based on the themes service innovation and water efficiency, were:
- Retail competition service innovation for water efficiency;
- Innovative approaches to delivering services with customers and considering aspects such as the hydro-social contract and who is thought to be responsible for water efficiency delivery and messaging;
- Delivering partnership working for water efficiency (energy and social housing retrofit programmes – lessons learned, extent of implementation, further roll-out);
- Ensuring water efficiency is part of wider integrated service innovation such as Water Sensitive Cities

Key outcomes:

- An improved understanding of service innovation in general and for the water sector.

Service innovation for the water sector places the water service provider customer as the focus of service innovation. The customer is both the catalyst and recipient of transformative change in concepts (ideas and initiatives, such as alternative tariffs, data visualisation), technological solutions (especially ICT), delivery systems (for example accurate billing, email, instant messaging) and supple organisational structures (for instance responsible processes, people and teams). Service Innovation enables the customer to select the appropriate options to enhance their experience, leading to a valued integrated water management service.

- An initial understanding of future innovation trends in the sector through case studies and interviews.

- The paper presented at WATECON 2015 outlined how we are moving towards a fourth generation of water infrastructure and services provision (Figure 1). A summary of key activities undertaken by the Technical committee in 2014/15 are outlined in Appendix A. We have an active core group of committee members (Appendix B) and this has enable us to develop our thinking in this area whilst drawing on the wider WATEF membership and being able to communicate back to them via the WATEF Conference.
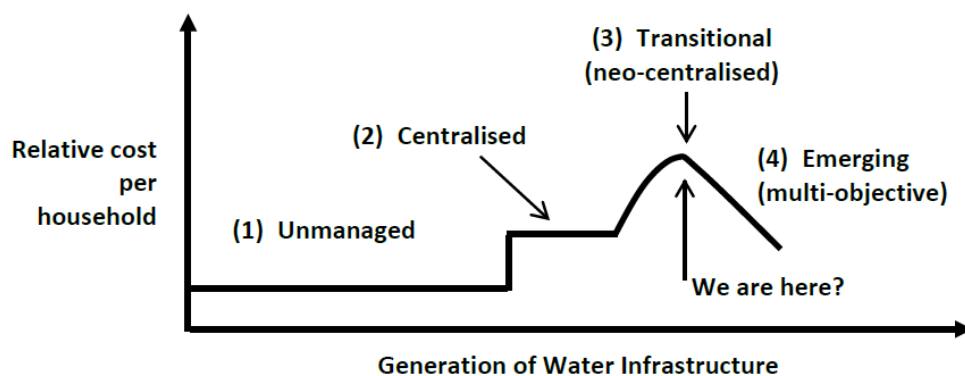

Figure 1 Four generations of water infrastructure (Institute for Sustainable Futures)

Structure of this strategy

This strategy outlines our proposed outcomes and four key tasks to deliver these in 2015/16:

1. Papers and Journal Articles

2. Webinar and workshop

3. WATECON 2016 conference

4. Collaboration and communication

2. Work plan 2015/16

Proposed Outcomes

Following initial work to develop a definition of service innovation we will expand this as below:

- Trial our definition of Service Innovation in a range of scenarios with different water sector stakeholders - what are the benefits (economic, environmental, carbon, social etc).
- Investigate how can service innovations be compared with technological innovations in PR19, WRMP19 and in relation to TOTEXT approaches
- Engage with other innovation networks in the UK
- Expand our case-studies analysis through interviews and a gap analysis and identify how can we transition to alternative models of service innovation and deliver the fourth generation of water infrastructure
- Communicate our findings through a journal paper, webinar and at WATECON 2016
- Support government and water industry needs in WRMP19 and PR19
- Identify service innovation for efficient water management linked to property developers
- Explore service innovation in the context of resilient cities
- Identify service innovation for water in production and in-use (e.g. research from Unilever)

The relevant objectives are repeated against each key task we plan to undertake in 2015/16.

Task 1 Papers and Journal Articles

Part A - Journal Article based on first paper

- *Communicate our findings through a journal paper, webinar and at WATECON 2016*

Lead: Sarah Ward, Steve Brown, Aaron Burton

Additional interviews have been discussed as an option to expand on our existing paper. However, the conference paper has now been submitted for the British Journal of Environmental and Climate Change. Lead authors to update paper based on comments and ask for input from wider TC. Any gaps highlighted by the peer review process should support Paper B.

Part B - mapping existing innovations onto that definition

Leads: Aaron Burton, Sarah Ward, Steve Brown, Michael Green
- *Trial our definition of Service Innovation in a range of scenarios with different water sector stakeholders*
- *Investigate how can service innovations be compared with technological innovations in PR19, WRMP19 and in relation to TOTEXT approaches*
- *Expand our case-studies analysis through interviews and a gap analysis*
- *How can we transition to alternative models of service innovation and deliver the fourth generation of water infrastructure*
- *Support government and water industry needs in WRMP19 and PR19*
- *Identify service innovation for water in production and in-use (e.g. Unilever work)*
- *Communicate our findings through a journal paper, webinar and at WATECON 2016*

We will develop a paper applying our definition of service innovation to case study examples. This will help identify gaps. Table 2 outlines potential interview subjects to develop this paper. A follow-up exercise will be undertaken with the energy sector depending on time and resources.

Table 1 Potential interview subjects

Subject	Interviewee	Interviewer
Integrated water and energy efficiency programme Green Dr home visits	Groundwork London/ Thames Water	Aaron Burton
Decentralised water company/ upstream competition CentralPark Sydney	Flow Systems	Aaron Burton
Retail competition for Water	Business Stream Anglian Water Services	Aaron Burton
Water Innovation Network	Anglian Water	Michael Green
Other...	...	...

Deliverables

- Interview notes and case studies
- Paper - Applying a definition of service innovation for efficient urban water management
- Paper - retail competition and service innovation for efficient urban water management

Part C Gap analysis

Lead: All TC to contribute
- *How can we transition to alternative models of service innovation and deliver the fourth generation of water infrastructure*
- *Communicate our findings through a journal paper, webinar and at WATECON 2016*

Based on the peer review of Paper A, outputs from Paper B and the webinar/ workshop we will identify gaps in our knowledge around service innovation and efficient urban water management. These can be discussed at WATEFCON 2016.

Task 2 Webinar and workshop

The combined webinar and workshop format has been applied in several WATEF events. We will develop an event for WATEF members to communicate and explore ideas around service innovation and water efficiency/ future water management.

Lead: Aaron Burton and Steve Brown

Aims and objectives of webinar

The workshop aims to
- Communicate our findings on service innovation - implications for AMP6, WRMP19 and PR19
- Provide views from from water company, academic and industry aspects on service innovation
- Workshop discussions to further our aims for 2014/15

Audience and timing

- WATEF Members (Government, academia, industry)
- Members of other innovation organisations
- June/July timing for webinar allows time to develop papers and presentation, seek speakers and invite attendees

Speakers

Webinar speakers/ panel:
- Sarah Ward/ Steve Brown on paper (covers academic)
- Water company – e.g. Anglian Water (Steve Kaye)
- Industry

Workshop facilitators:

- Members of technical committee will be invited

Deliverables

- Recorded webinar - Adobe Connect
- Studio recording of event at University of Surrey
- Presentation slides

Task 3 WATEFCON 2016 Conference

- *Communicate our findings through a journal paper, webinar and at WATECON 2016*

Lead: Aaron Burton

The technical committee will have dedicated sessions at WATEFCON2016 in Coventry. The description submitted for the service innovation technical committee is below.

Service innovation best practice: Technological innovations need to be supported by service innovations to transition towards water sensitive cities and efficient water management. Topics include: Retail water supply competition and water efficiency for businesses; International approaches to service innovation; Innovative water service provision models (upstream competition/ decentralised water supply); Service innovation for tariffs, billing and communication to enable water efficiency and behaviour change; Organisation structure and governance for integrated water management; Exporting service innovation approaches from the UK water sector

Options for conference:

- SI TC combined paper submission
- Individuals submit papers
- International papers on service innovation also - SI TC members to use contacts
- Panels to critique paper - 4 senior innovation
- Special issue in Journal of Cleaner Production depending on papers received

Task 4: Collaboration and communication

- *Engage with other innovation networks in the UK*

With the focus on Innovation there are a number of existing networks that we could link to develop concepts of service innovation for efficient water management. An initial outline of these organisations is provided in Table 3 below.

Table 2 Wider innovation networks in the UK

Network	Description	TC Lead
UK Water Partnership	To improve understanding, cooperation and coordination across the diverse water community, allowing the UK to respond more effectively to the challenges of global water security and the need for resilience in a changing environment To more effectively deliver and implement research outputs and innovation, so that the UK wins a greater share of the global water market.	Siraj Tahir
Water Innovation Network	Delivered in partnership between Opportunity Peterborough and Anglian Water, with an aims to stimulate innovation in the supply chain through the creation of a water cluster; a national network of businesses, organisations and research institutions which operate in the water industry, providing a networking and collaboration platform to enable innovation and growth.	Michael Green
The Water Cluster	The Water Cluster is a network which provides a platform for bringing together a wide range of stakeholders, including academia, business, government, NGOs, SMEs and others. The aim is to share ideas on the forum and encourage collaboration and the development of long-term partnerships, with the purpose of innovating and improving water efficiency and urban water management in the East of England.	Michael Green
Water Innovation Research Centre	In collaboration with Wessex Water, University of Bath have launched the Water Innovation & Research Centre: WIRC @ Bath, providing a unique environment to engage globally in research and policy on water technologies and resource management.	Kemi Adeyeye
Oxford University Water Network	The network is a multi-disciplinary research community, harnessing Oxford University's diverse strengths to address the challenge of managing water in a complex and uncertain world.	Steve Brown
CIWEM	Working with innovate UK	Kemi Adeyeye

Communication activities to be undertaken by the SI TC with these include:
- Leads in tables above to get in contact with other organisations
- TC member to attend a meeting/ event
- Invite to present paper on service innovation at WATEFCON2016
- TC members to share outputs from attending events
- Identify opportunities to collaborate on projects - e.g. Horizon 2020, UK innovation funding

3. Timeline

See full Gantt chart at https://docs.google.com/spreadsheets/d/1DUr0yGLRw_Ubz9Tz8kFJ-_hPWHzTqpZbNjYx1se-xvA/edit?usp=sharing

Activity/ Month	Aug-2015	Sep-2015	Oct-2015	Nov-2015	Dec-2015	Jan-2016	Feb-2016	Mar-2016	Apr-2016	May-2016	Jun-2016	Jul-2016	Aug-2016	Sep-2016
Update paper/ new paper														
Update case study template														
Update interview template														
Additional case studies														
Additional interviews														
Writing-up														
Webinar														
Decide on speakers and adience														
Communicate with WATEF Network														
Hold Webinar														
WATEFCON16														
Submit theme to conference committee														
Communicate with TC and wider WATEF membership on papers														
TC paper and individual papers						Abstract end jan			Paper due					
Review papers														
TC member to chair session														
Collaboration and communication														
Identify innovation networks														
Initial contact introducing WATEF SI TC														
Attend events and report back														
Agree joint events/ outputs and WATEFCON16 papers														
Meetings														
WATEFCON2015														
Meeting Oct 2015														
Meeting Dec 2015														
Meeting Feb 2016														
Meeting April 2016														
Meeting June 2016														
WATEFCON2016														

Appendix A Key Activities in 2014/15

Table - Service innovation TC activities in 2014/15

Activity	Description
Survey	Online survey
Case studies	12 main case studies
Interviews	Key water management experts
Conference paper	Water Sector Service Innovation: what, where and who?
Conference presentation	Presented by Sarah Ward
Meetings	Inaugural meeting held on 26 January 2015 Meeting held on 17 March 2015 Meeting held on 5 August 2015 Meeting held on 8th October 2015

Appendix A: Members list November 2015

Mr Aaron Burton	Amec Foster Wheeler (Chair)
Mr Steve Brown	BRE
Mr Siraj Tahir	UCL
Dr George Chen	Heriot Watt
Dr Kemi Adeyeye	WATEF Network Lead
Mr Noel Mannion	Galliard Homes
Dr Sarah Ward	University of Exeter
Craig Gordon	Oxford Innovation
Suzy Armsden	WATEF Network Administrator
Michael Green	Angela Ruskin University
Jai Restall	Affinity Water