Transfer-ability of lessons from success stories: A review of UK water safety plans implementation
Background
- WSP: definitions and goals
- Why the research?

Objectives

Methodology

Results: Derived themes
- Drivers
- Management buy-in
- Challenges
- Transfer-ability

Possible implications for WSP
Water safety Plans (WSP)

- A preventive comprehensive risk assessment and management approach to ensuring the safety of a drinking water supply from source to tap for public health protection
Goals

- Prevent contamination of source waters
- Treat source waters to remove or reduce contaminations to meet water quality targets
- Prevent recontamination during storage, distribution and handling of drinking water
Water safety Plans (WSP)

- Introduced in 2004 in international guidance documents
- Applied globally in mostly developed nations
- Developed largely for public utilities
- The level of implementation in developing countries and for small systems generally lags behind
Research Objectives

- Review WSP implementation in the UK to identify transferable lessons to public utilities in developing countries
  - Identification of UK water companies with successful WSP implementation records
  - Evaluation of drivers; opportunities / limitations to the uptake of WSP
  - Assessment of success factors / challenges faced in WSP implementation
  - Transfer-ability evaluation with Nigerian water utility context
  - Recommendation of transferable elements (if any)
Why UK Utilities?

- United Kingdom is one of the early adopters of WSP
- Major actors in the UK water industry were involved in shaping the pathway to WSP introduction
- The UK water industry is involved in a lot of research

This research is sponsored by the UK government through the Commonwealth Scholarship Commission, UK
Method

- Employed a qualitative research methodology
  - Generally descriptive comparative case study

Data collection and analysis

- Literature review
- Semi-structured interviews of key informants across utilities organisational structure
- Observations through field visits to water companies
Data collection and analysis contd.

- 11 in person semi-structured interviews employing open ended questions between September – November 2013 with key informants across 7 UK companies

- Captured views of some other relevant agencies: regulatory agency /academic and research institutions (2) / donor agency (1) / independent industry professional consultants (2) / Nigerian context (7)

  - To review and confirm the relevance of critical data categories used during the analysis

  - Generally, coding (initial open coding to selective coding as concept developed), and concept mapping
Key Themes

- Drivers
- Management buy-in
- Implementation barriers
- Success factors
- WSP Futures
- Transfer-ability
Drivers

Initial drive

- Regulation (100%)

Current motivation

Organisational drive

- Investment / Strategic planning
- Public health protection
- Proactive maintenance of equipment
- Quest to be a leading company
- Better understanding of WSP seeing tangible benefits
- Continuous improvement of service

Individual steer

- Desire to see WSP work in org
- Public health protection
- Thrive to make a difference through new technology/process
- Passion/enthusiasm for environmental / WQ performance
Management / Org Buy-in

- Generally huge management support
  - Regulation-induced
  - Existing positive working relationship (e.g. org WQ champions with mgt board)
  - Continued increase in mgt buy-in through more visible output

- Initial shaky org buy-in
  - Getting people to understand WSP/its benefits
  - Workshops and regular meetings
  - Regular visits to frontline staff
Implementation Barriers

- **Regulation induced barriers**
  - Limited time for compliance
  - Utility apprehension
    - More work load/ complex reporting bureaucracy / huge paper work
    - ‘Tick box’ exercise: utility support solely due to regulatory requirement

- **People problem**
  - Introducing the philosophy
  - Getting everybody to understand (buy-in)
Implementation Barriers

- Absence of WSP template/guidance
  - How do you put WSP framework on existing mgt/operational structures?
  - Individual company approach to implementation
    - Start up approach: steering group/independent consultant
    - RA approach: Public Health Impact, PHI vs. Economic Impact, EI (Economic risk / 5 x 5 matrix)
Derived Benefits

- **Systems efficiency**
  - Less failures
  - Reporting more near-misses than incidents
- **Common risk language**
- **WSP-driven investment program**
  - More sensible investments
- **Better understanding of systems, risks & control measures**
- **Discovery of many previously unidentified potential risks**
- **Knowledge capture: reporting & documentation**
Success Factors

- Existing risks and value process
- Quest to be the best or a leading company
- Full mgt/org buy-in
- People who understand what the issues are
- Keeping the RA fairly simple / straightforward
  - Use of common denominator for both customers / mgt (risks in £)
- Opportunity to learn from other companies
- Supportive regulators
○ WSP Futures

● Remove IT barriers to make WSP a useful tool
● Integrate WQ database with other types of risk database to have one spreadsheet for risks and impacts
● Make WSP truly dynamic and intelligent
  ○ Dynamic: living/continued process
  ○ Intelligent: systems talking to each other
● Feed risk management tool into asset mgt tool
Control Measures Report for Hazard Manganese

For: Bocking WTW (System Stage: Groundwater Treatment)

Report took 1.515 seconds to generate

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<thead>
<tr>
<th>Operational controls for Manganese:</th>
<th>Procedural Controls</th>
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<td>Storage Point Cleaning</td>
<td>PSW-POL 6.3 - Our Policy on Treatment of Water</td>
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<td>Storage Point Inspections</td>
<td>AM-APL-PRO-(001-003) Asset Plan Procedures</td>
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<td>Aeration</td>
<td>PSW-POL 1.1 - Our Policy on Risk Assessment</td>
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<tr>
<td>Rapid Gravity Filtration</td>
<td>Policies and standards for maintenance (POSMAINT)</td>
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</tbody>
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PSW-POS 5.0 - Policies and Standards for Abstraction
PSW-POS 2.0 - Policies and Standards for Asset Design and Creation
PSW-POL 2.1 - Our Policy on Asset Creation
PSW-POL 6.2 - Our Policy on Maintenance of Water Treatment Assets
Lessons Learned

- Taking time with internal/external stakeholders
- Previous structure over complicate things. Simplify
  - Communication barriers – customer information/lab test results in different systems
- Ownership of WS planning
- Give WSP implementation enough time
- Communicate more & share information
  - Create opportunity to hear other’s views on how to improve things
- WSP can not be done remotely or as desk study. Site inspection is critical
Transfer-ability

- Generally not
- Transfers across comparable context is feasible but across dissimilar scenario is debatable
- Major considerations:
  - Regulation/non-standardization
  - Privatization/govt. ownership of utilities
  - Action document / lack of it
  - Level of development
    - Expertise/ funding/ condition of infrastructures
  - WQ/WSP champions and sponsorship
  - Individual country cultures
Further Implications for WSP

- Regulation-induced barriers: a concern for WSP effectiveness
  - Company sanctions/prosecution for significant WQ failings (DWI report, 2012)
  - Company sanctions after nearly a decade of WSP engagement raises questions of:
    - Is good WSP in place?
    - Believe in WSP?
**Way Forward**

- **Good use of independent surveillance**
  - Such that gaps that seeps unnoticed through howbeit careful eyes may be spotted for necessary action

- **Externally-driven regulation / compliance**
  - Make WSP a critical investment / funding requirement

**Thank you**