Victorian Intelligent Water Networks Program

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18/3/13
Agenda

- Water Sector Context
- What is an Intelligent Water Network? (IWN)
- Background to the program
- Stage 1 and 2 overview
- Managing Director prioritisation process
- Stage 3 our current stage
Water Sector Context

• In the mid 1990’s there were over 400 water organisations in Victoria.

• Today there are 19 rural and urban water corporations.

• Water Act and Water Industry Act.
Heavily regulated - as monopolies providing product and services that directly impact community prosperity, health and environment.

Key regulators include, the ESC, DTF, DSE, DHS, EPA and the various planning authorities.

Key concern is that monopoly business do not extract monopoly rents from its customers and maintain appropriate levels of service.

Productivity is in decline for many asset intensive industries – depends on when productivity is measured in the investment cycle.
ABS Experimental Estimates of Industry Multifactor Productivity

Source: Deloitte: Doing more with less: productivity and data analytics
## ESC Innovation Risk Matrix

**Value**

<table>
<thead>
<tr>
<th>Risk</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Questionable</td>
<td>BAU</td>
</tr>
<tr>
<td>High</td>
<td>Reckless</td>
<td>Innovation</td>
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• We know from a range of studies and sources that efficient business-as-usual is not good enough.

• If your business performance is not improving by around 4% pa then you are already in decline.

• Adaptation, as a strategic response, has significant limitations and will eventually fail – due to rates of change issues.

• Answer – seems to be around creating your own future through risk contained experimentation and continuous learning.

• Key issues – alignment of risk appetite, emergent technologies and propriety systems.
Water Sector Context

• So how do we address these conflicting issues?

• Shared industry projects, to:
  • Share risks and shared investment,
  • Leverage industry knowledge,
  • Create environments for learning,
  • Create an environment where usual discipline business justification requirements do not prematurely kill learning opportunities,
  • Learning and benefits are shared,
  • Ensure, as much as possible, open platforms, systems and standards - to avoid vendor capture.
What Is An Intelligent Water Network?

“Monitors its own performance, remotely senses damage, assesses water availability and monitors real time water use ...”

Mine data to create intelligence “smarter utility decision making”

Remote shut off to stop leakages & re-route resource flows as needed
History and IWN alignment with Government commitments

- Jun 2009: Marchment Hill “cost benefit study” implications smart meters
- Nov 2009: Intelligent Water Network (IWN) Strategy group formed
- IWN strategically meets election commitments providing better value to our customers

<table>
<thead>
<tr>
<th>Election Commitments</th>
<th>Project</th>
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<tbody>
<tr>
<td>Community participation in water</td>
<td>Project 22: Residential Customer Segmentation</td>
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<tr>
<td>- restore fairness &amp; reward householder efforts</td>
<td>Project 23: Non-residential Customer Segmentation</td>
</tr>
<tr>
<td>Efficient use of water</td>
<td>Project 1: Intelligent Water Metering</td>
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<tr>
<td>- every resident has own domestic meter</td>
<td>Project 12: Low cost leak detectors</td>
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<tr>
<td>Repairing leaks in the supply system</td>
<td></td>
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<tr>
<td>- improve leak detection to reduce water wastage</td>
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<tr>
<td>Septic backlog program</td>
<td>Project 7: Household level monitoring</td>
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<tr>
<td>- modernise on-site treatment options</td>
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</tbody>
</table>
IWN Project Delivery Timeline

Now and the future?

We are here

Commenced Feb 2011

Water Plan 3
Draft – March 2013
Final – May 2013

Stage 3
PoC, PoP
Investigation & Technology
TRIALS

Mar 2012

Stage 4
‘Demonstration’ PILOT projects to confirm applicability

Apr 2013

Jun 2018

Water Corporations
– Information to substantiate investment decision

Project Funding
Stage Gate 2

Project Funding
Stage Gate 3

Water Plan 4
Confirm benefits

• A summary of IWN timelines, following project management best practice.
Four Stages of IWN

- Stages 1 and 2 – Completed
- Stage 3 – Water Plan 3 Proof of Concept / Trials
- Stage 4 – Water Plan 4 Large Scale Implementations

Stage 1 - Completed

Stage 2 - Completed

Stage 3 – Future

Stage 4 – Future

Identify Programs that require more investigation

Run Proof of Concept Pilots / Trials in Water Plan 3 and share with industry

Commence Full Scale Rollouts TBC

We are here

Identification

Mar 2011

Nov 2011

Jan 2012

Jun 2018

Jul 2018

Feb 2011

 +/- 20%

 +/- 15%
IWN Project Delivery Timeline

Over 100 participants Victorian Wide – Stages 1 and 2

- 6 x Water Corporation MD’s, Tony CEO VicWater, DSE
- Funding managed and approved at this level (Stages 1 – 4)

- Recommendations / sounding board / industry view.
- Work with Water Corp’s and Project Teams
- Recruit teams within Industry
- Deni Warwick (DSE), Andrew Jeffers (Wannon Water), Penny Dent (Western Water), Program Manager (TBD)

- Oversee and manage program
- Framework / Standards, Reporting, Contracts, IP management, share knowledge, auditable practices
So What Was IWN Stage 1 and 2?
Stage 1 and 2 Objectives

• Stage 1: What is IWN and identify areas of investigation

Stage 2:

• Design report for technology trials

• Determine potential projects for Stage 3 (project identification)

• Consistent approach to collect data and establish pricing for next water plan
Stage 2 Deliverables

- Customer Needs and Values Report
  - Identifies what Customers think of us!
- Identifies Customer Segments
Customer Needs and Value

- Identification of customer segments

**Water Customer Segments**

- **I’m just trying to get by, water isn’t a primary concern**
- **Water is as sustainable and ethically sourced as possible**
- **Need to hear about water in an “engaging” way, that captures attention**
- **Need direction on how to manage water in the future**
- **Need Water Corps to provide water at a low cost**
- **How does water fit into what is important for them**
Customer Needs and Value

The Water Corporation Trust Bubble:
What does the Water Corporation currently have the Community's Permission to do?

Tolerated
- Estimate Usages for Billing Purposes
- Provide Customer Usage Data to Third Parties

Trusted
- Advice on Water Restrictions
- Billing Customer for Water
- Advice on Water Management
- Fix and Maintain Infrastructure
- Set Community Water Targets
- Provide Safe Drinking Water
- Sewage Disposal

Expected
- Include Recycled Water in Drinking Supply
- Provide Household Usage Comparisons
- Public Leak Detection
- Retail Water Saving Products (eg Garden Mulch)
- Enter New Markets for Commercial Gain
- Provide Recycled Water
- Refer Customers to Utility Website for Information
- Retail Non-Water Related Products
Stage 2 Deliverables

- Asset Condition Report
- Decision Trigger and Proactive Enablers Report
Network Efficiency

• Report includes NPV analysis on various technologies
• Outlines suggested pilot trial guidelines (i.e. soil types, materials, pipe sizes etc.)
• Summarises current industry practice (i.e. CCTV – sewers)
• International practices
Stage 2 Deliverables

- Governance on how Stage 3 will be managed
- Procurement and project management framework considerations
- Intellectual Property / Ownership considerations
Stage 2 Deliverables

- Two Reports separated into two phases
- Phase I – Data collection, transfer and data sets
- Phase II – Detail options, availability
Key Learning’s

- Data becomes information, understand what & why information is captured
- All projects have an Information Management element
- Intelligent meter, sewer meter, leakage logger – all captures data
Key Learning’s

- Avoid capturing “everything – just because”
- Records Management, security, privacy, other considerations
- Opportunity shared services
- Pattern recognition, data analysis – universities, others...
- Intellectual Property – clarity and allocation critical.
- SoO
- Regulators and Stakeholder Management.
Key Learning’s

- Balancing experimentation against business case expectations.
- If it's not improving services and reducing costs for our customers it is missing the point!