



Australian Government

Australian Taxation Office

ATO System Outages: Learnings, Challenges and Future Plans

ABSIA Conference, 23 March 2017

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Debrief on systems outage

Outages in December & February were caused by a data centre machine failure.

- The outage was not a cyber attack and data was not exposed or lost;
- Hewlett Packard International were immediately engaged and provided expert technical support. The failure was advised to be the first of its kind in the world. Parts were replaced as diagnosed as necessary for both outages.
- The failure (akin to the disk on your personal computer failing) caused all our systems to stop operating requiring a rebuild / restart of services.
- Business impacts were alleviated where possible.

An independent review has been commissioned to report end March 2017 to address:

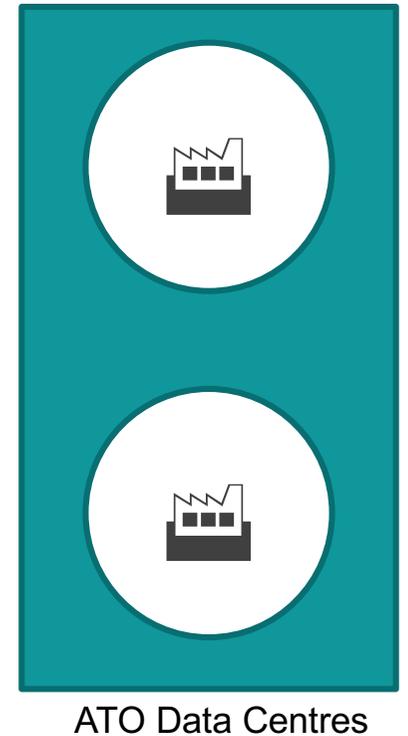
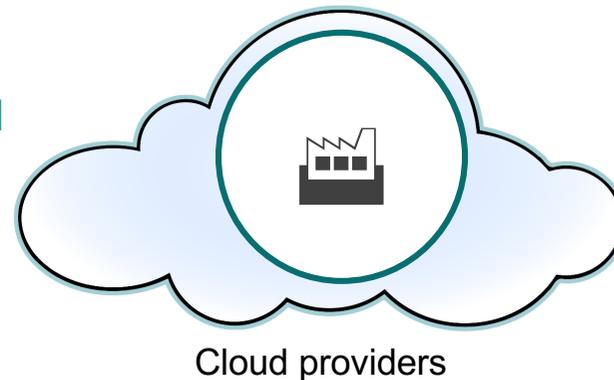
- What caused the outage?
- Why was there such a significant impact?
- Was the ATO response appropriate?
- What are the residual risks – if any?
- What actions can be taken to mitigate further or future issues?

High Availability

Progress in providing highly available services

Re-architecting the ATO systems is in progress for high availability to meet the digital service economy needs:

- ✓ The ATO runs two primary data centres configured in a active and standby modes.
- ✓ We have moved to provide services through Cloud partners. Critical systems in scope:
 - ✓ ATO.Gov.au website
 - ATO Online
 - Australian Business Register (ABR)
 - Tax Agent & Business Portals
 - SBR2 production gateways
 - ✓ SBR2 EVTE testing
- Plus supporting applications
 - AusKey, Access Manager, Messaging...



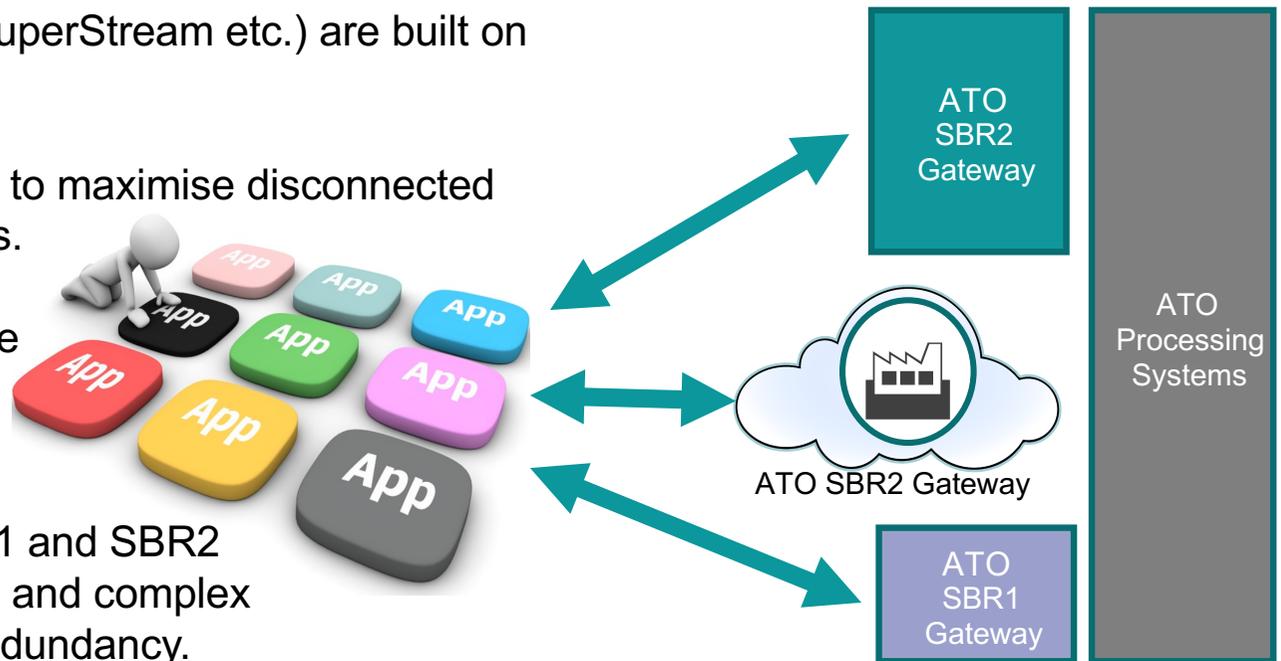
Resilience

Coping with system failure

We are re-architecting our systems to support operations when all is not well and need to work with industry to implement this capability.

Digital service delivery programs (PLS, SuperStream etc.) are built on SBR standards:

- Specifications provide validation rules to maximise disconnected support for preparation of submissions.
- A second, cloud based highly available SBR2 gateway is in final stages of acceptance.
- We have an option to merge the SBR1 and SBR2 gateways to optimise both high speed and complex submissions and provide additional redundancy.



Reducing complexity & cost

Delivering timely, quality working software

The ATO has worked with the SBR program to evolve and make the standards more flexible.

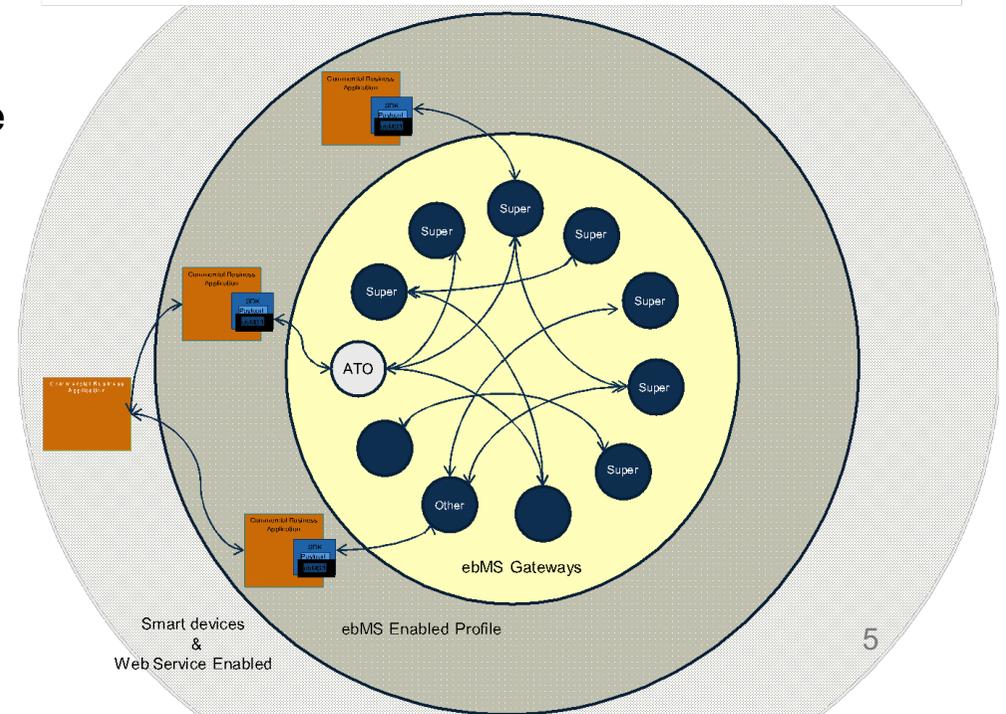
- Initiatives may select choice of the appropriate technology (XBRL vs XML).

Specifications have moved from word processing to machine readable formats

- We are progressively replacing hand coded with auto generated software.

The ATO gateways are connected and in use with a range of industry parties, from sophisticated gateways to simple applications:

- Developers have choice in the level of SBR implementation and may choose to buy, partner or build capability.



Testing improvements

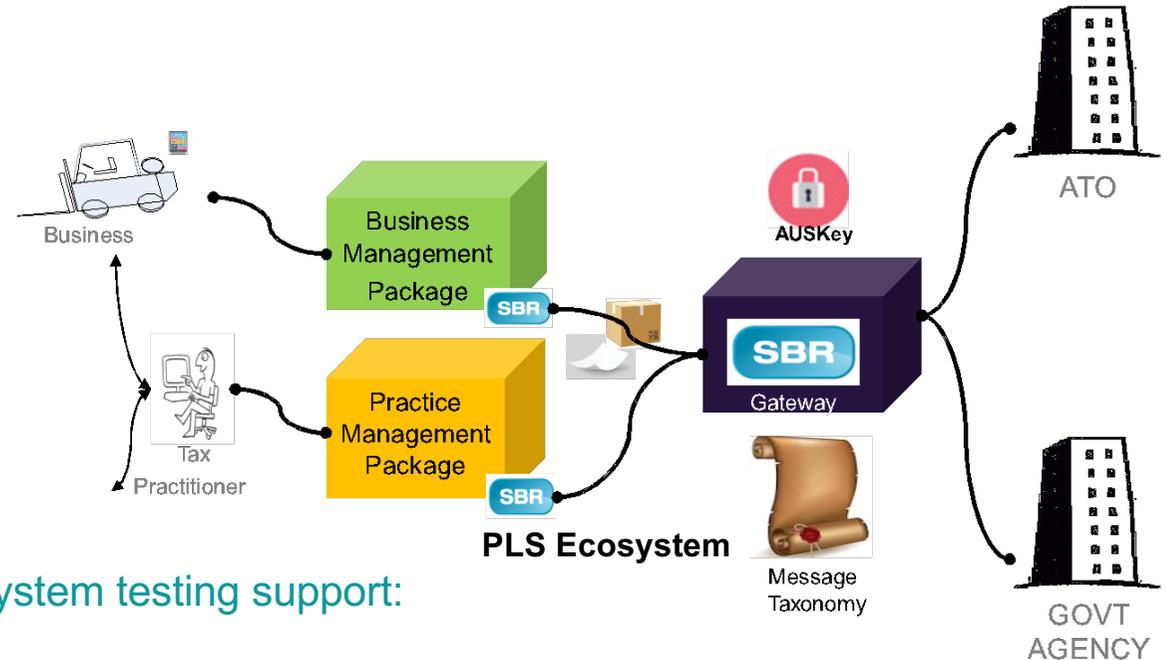
Support ecosystem testing

An independent review was commissioned to review the ATO provided External Vendor Test Environment (EVTE) in November 2016.

Stakeholders from PLS, SuperStream and Government agencies were interviewed with key recommendations:

Move from SBR message conformance to ecosystem testing support:

- 1. Provide production like environments**
 - Support business events and limit/avoid Production Verification Testing (PVT) exercises
- 2. Support load & performance testing**
- 3. Support testing of access & authorisation permissions**
- 4. Provide more stable, reliable EVTE capability**



Questions?