DevOps Transformation in Government

Balancing autonomy and governance

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Service NSW
I would like to acknowledge Aboriginal and Torres Strait Islander peoples as the traditional custodians of our land, Australia and acknowledge the Gadigal of the Eora Nation and pay my respects to their elders past and present as the traditional custodians of this place we now call Sydney.
Service NSW is a ‘One Stop Shop’ for government.

Our aim is to make it easy for customers by removing the complexity and legacy of government.

Stats: 4.69m ‘MyService’ Accounts
97% customer satisfaction rating

“Great Place to Work” #8 in Australia 2019
“In the new world it is not the big fish which eats the small fish, it’s the fast fish which eats the slow fish.”

Klaus Schwab
Founder & Executive Chairman World Economic Forum
So how do we keep pace with customer expectations, deliver high quality services and build products customers love...?
The digital journey so far...

- 2013: "Monolithic" Architecture
- 2017: Cloud Foundations
- 2018: Product Team Agile Methodology
- 2019: API / MicroServices Refactoring
- 2020: "Continuous Assurance"

Key milestones:
- 2013: OpEx Funding
- 2017: Scale & Performance
- 2018: Culture & Capability
- 2019: Transformation
- 2020: Agility
Culture Shift: Product Teams

Product Manager:
- Customer Engagement
- Roadmap

Product Engineers:
- Build / Run Product Features
- Test Driven Development
- Pair Programming

Designer:
- Design Feature Releases
- Customer Journey Mapping
- Process Feedback
Culture Shift: ‘Ways of working’

- Making Work Visible
- Active Collaboration
- User-Centred Product Design
- Extreme Programming
Agility requires practise...

**Engage** in the practice of refactoring and refining processes.

**Experiment** with solutions and build only enough functionality to validate assumptions

**Use Data** to validate those assumptions or revise them.

“It’s like a finger pointing away to the moon. Don’t concentrate on the finger or you will miss all that heavenly glory.”

*Credit: Bruce Lee, Enter the Dragon*
Unicorns and Rainbows?

Engineers want to drop code, technology is perceived as a means to an end.

“All you can eat” infrastructure can lead to “zombie” architecture;
• abandoned experiments
• misconfigured instances
• “public” storage containers
• divergent technology choices

Risk and complexity increase over time…
Autonomy

Guard Rails!

{Balance}
Environment Boiler Plates + Automation = “3 Data Centres in 20 Minutes”

- Environment Boiler Plates
- Automation
- Reference Architecture

“Immutable” Logging
Configuration Management
Ingress / Egress Patterns
Cost Optimisation
Data Protection
Test Automation
Product-Based Environments Management - Promoting Evolutionary Architecture

API Integration
Cost Management
Backup & Recovery
“Immutable “ Logging and Auditing
Patching / System Updates
Internet Ingress/Egress
Code Repository / Deployment Tools
Test Automation
Security Compliance Automation

Environment Boiler Plates
Automation

Code
QA
Dev

Prod
“Blue”

Shared
“Green”

Code
QA
Dev

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Operational Excellence can be built out of a continuous improvement culture.

**Agility x Quality = Speed**

Guardrails support **decentralised governance**

**Repeatable Deployment Patterns:**
‘Environment Boilerplates’ to manage risk.

**Continuous Assurance**
- Environment Monitoring
- Static Code Analysis
- Self Service Regression Testing
- Fuzzing
Security Champions Assemble!

**Force multiplier** to embed Security awareness in product teams.

Designated **security liaison** within each product team promotes knowledge sharing.

Frequent **engagement**, training and problem sharing.
Survivorship Bias:

Where do you put the armour plating?

What blind-spots do you have in your reporting?

Telemetry is your friend

https://commons.wikimedia.org/wiki/File:Survivorship-bias.png
Bug Bounty Program

Extending the security practise through Community Engagement

Detecting issues “outside the norm”

Resilience through developing a continuous release cadence.
DevOps Transformation in Government: Balancing Autonomy and Governance

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- **Innovation**
- **Agility**
- **Resilience**
- **Survivability**
- **Stability**
Thank you...
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