



LEADing BT

Lean Enterprise-class Agile DevOps in TV & Broadband

Experience from our modernisation journey so far



TV & Broadband
Services Engineering
director



Director of DevOps
Transformation

A photograph showing the lower half of several people's faces and shoulders, appearing to be in a vehicle, looking towards the camera.

We're one of the world's leading communications services companies. The services we sell are integral to modern life.

Our purpose is as simple as it is ambitious: to use the power of communications to make a better world.

A circular icon showing a stylized globe of the Earth from space, highlighting continents and clouds.

A circular icon showing a woman with red hair holding a smartphone to her ear, smiling.

A circular icon showing a soccer or football field with players in action.

A circular icon showing a tall, modern building complex with multiple towers and glass windows.

A circular icon showing a bundle of glowing purple fiber optic cables.

A circular icon showing two young women smiling and posing together.

We're the largest provider of consumer fixed-line voice and broadband services in the UK.

We're the UK's largest mobile network operator.

We're the second largest pay-TV sports broadcaster in the UK.

We serve global multinational organisations with our security, cloud and networking services.

We're helping 12 million homes and businesses go ultrafast by 2020.

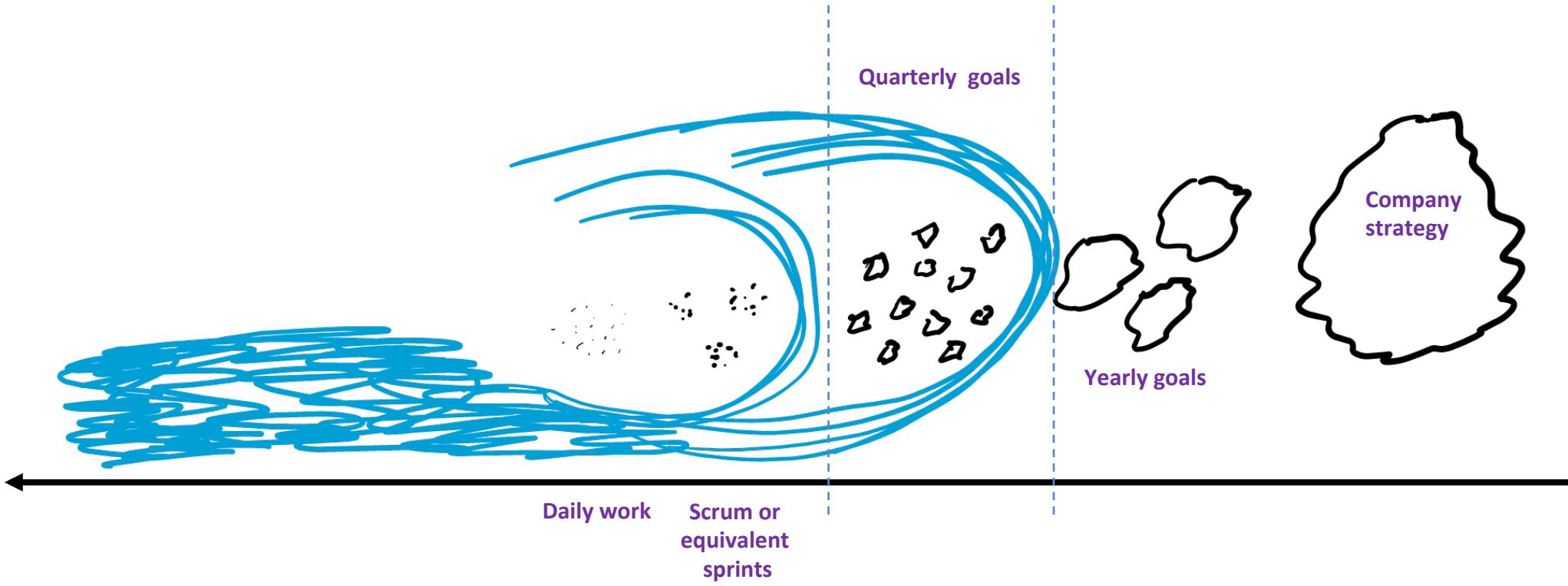
We are committed to improving every aspect of the customer experience.

Our modernisation journey so far

Unsustainable brilliance



Quarterly rolling wave planning experience

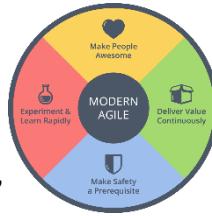


Aligning teams to outcomes & Accelerating the transformation

Not a project hothouse or mobilisation – Product driven

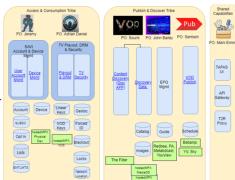
Agile principles & toolkit

OKRs, Product not projects, Cross Functional Teams, Customer centricity, WIP, Small chunks, **visibility and transparency**, collaboration over process, **60/40 new/improvements**



Everyone in the portfolio

All squads, architects, stakeholders, program management, commercial teams, customer operations reps



Existing team constructs

Squads and product structure



Agenda, facilities and food

Teams goals



For customers or address improvements, failures

Portfolio learning and goals



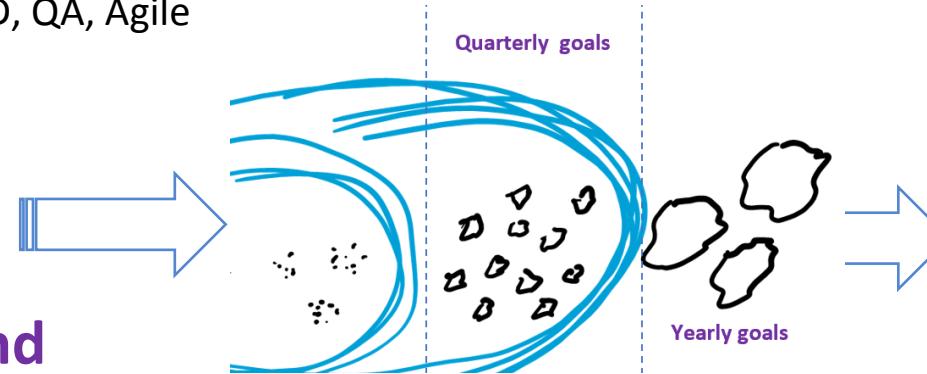
Last quarter commercial update

– did we affect the business as we planned?

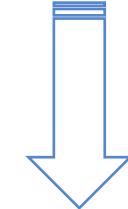
Next Q demand as OKRs

Special subjects updates

e.g. AWS update, CI/CD, QA, Agile techniques



Teams iterate engineering



Teams achievements and learning, Good and Bad – last Q



Goals met

Ways of working learning

Failures

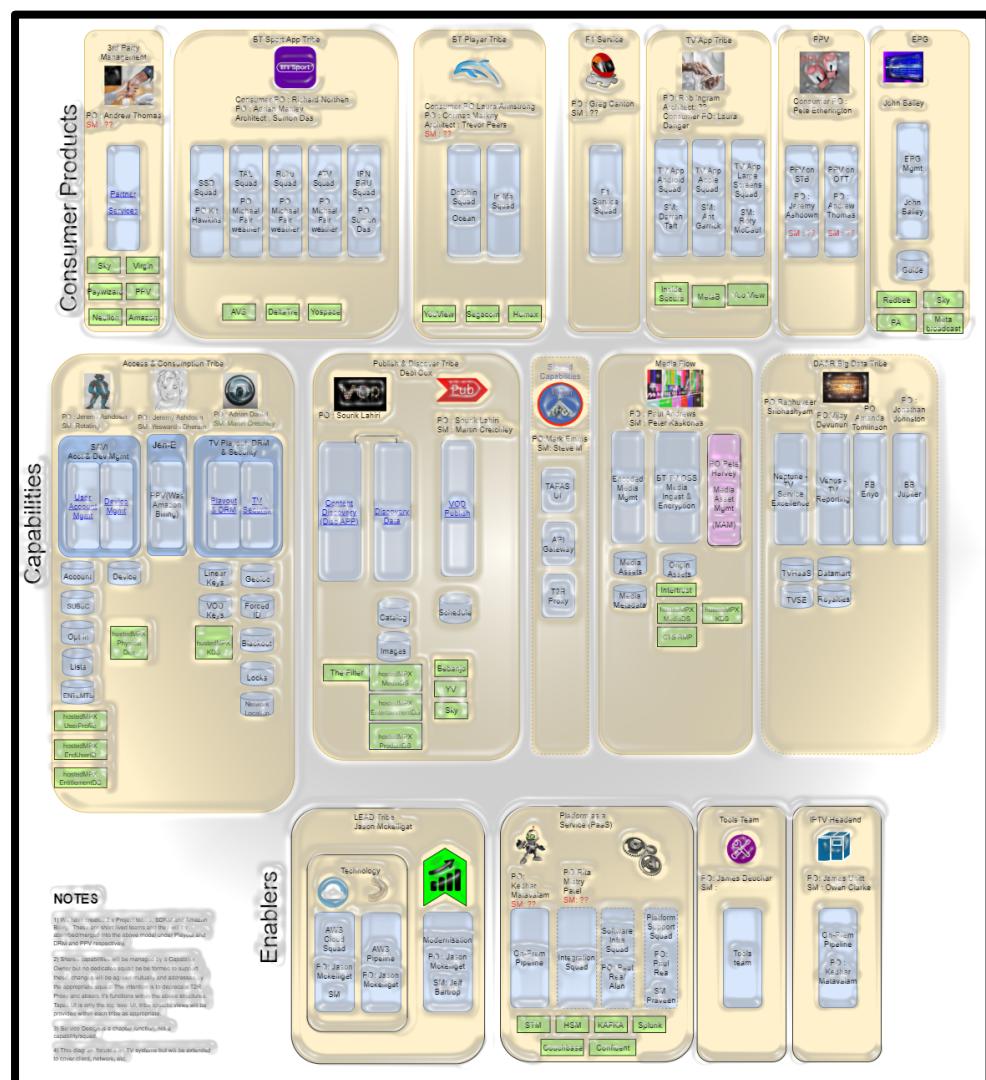


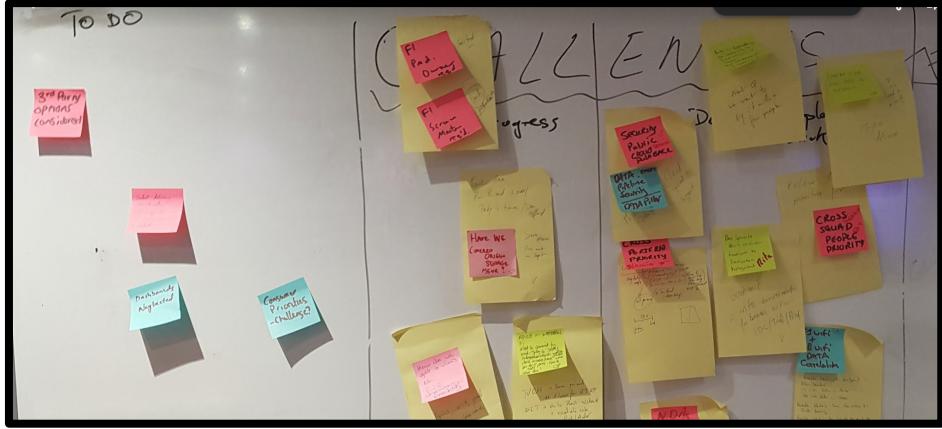
Outcome

	Goal 1	Goal 2	Goal 3	Goal 4	Goal...n
Squad 1	Y	Y	Y	S	S
Squad 2	N/A	N/A	Y		Y
Squad 3	N/A	Y	Y	S	N
Squad 4	Y	Y	Y	S	S
Squadn		

NEW

"52" days but Ready for change

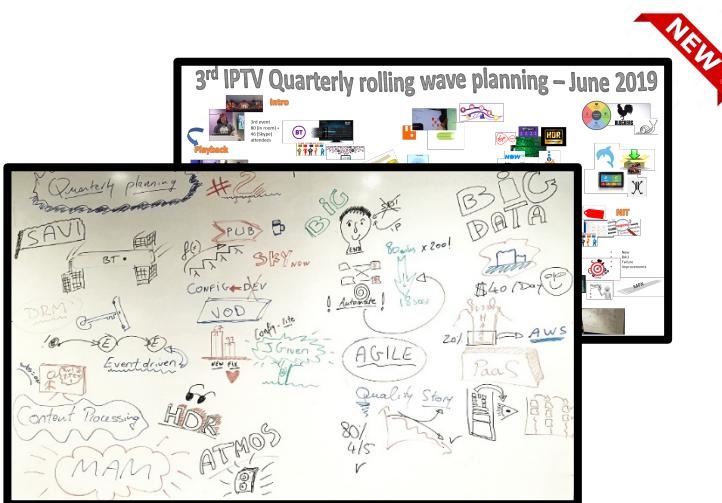




Impediment support board



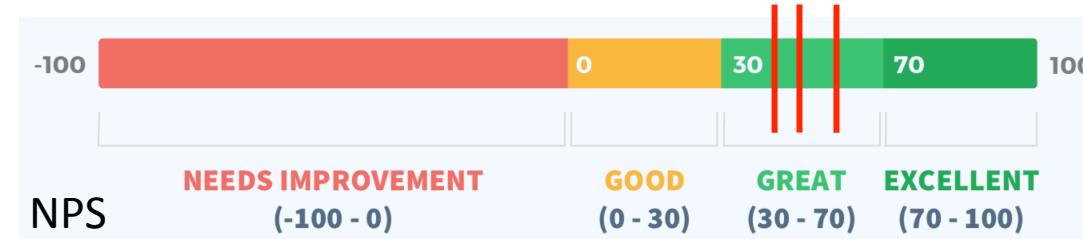
Share with the rest of BT



what did you do for 2ds? – visualise



What makes it work ?



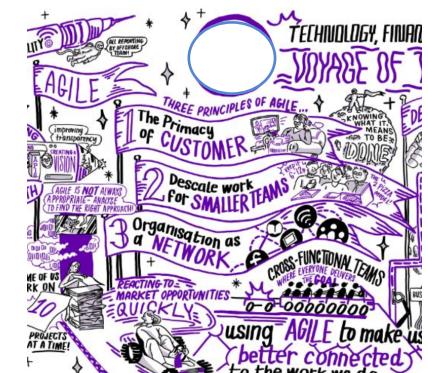
- Make the **issues** with current ways of working **visible** – do we want to sort this out ?
 - Context switching, hours to align, misaligned teams, no time to learn, wrong assumptions, artificial plans, single points of failure
- Senior support – be there, **make it your key event to affect change** and collaborate with the team
- Making it what the **teams need**
- Following up from **external** impetus and having shared key agile **principles**
- Starting with a “**small**” defined scope – don’t boil the ocean
- Be clear this is **real work**, not yet another meeting; decisions will be made – engineering will happen
- Try something **new which will be fun and engaging**

- **It affects the modernisation changes by touching all aspects**
 - Empowered self sufficient teams – products not projects
 - Outcome not tasks
 - Retrospection and continuous learning as well as improvements
 - Create the social network that will deliver the plan
 - Visibility

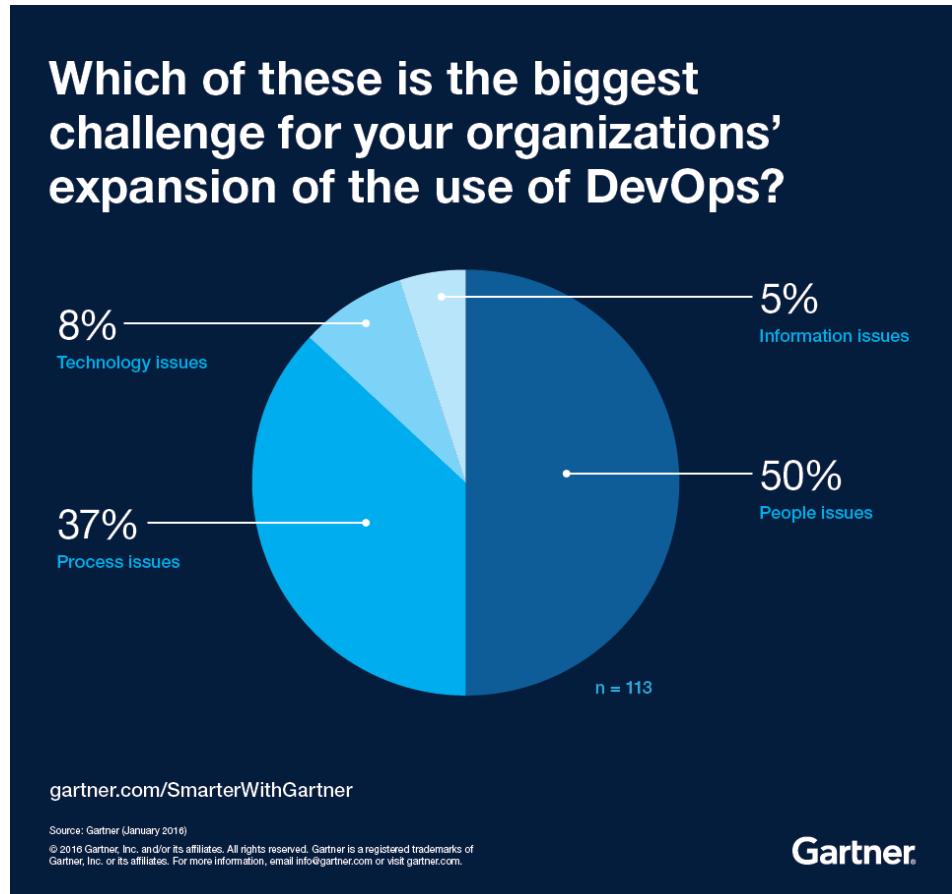
Not only for Software Engineering Leadership as a product

Focus on
Transformational
Leadership

- Leadership teams are hired by engineering teams for a purpose
- Use quarterly wave planning to plan agile leadership work
- **Input:** last Q leadership impact, learnings, people surveys, leadership special subjects, company wide leadership initiatives, leadership team ways of working retro
- **Output:** leadership interventions for next Q, key results to affect, aligned focus across all team leaders, JIRA EPICS/Stories on a leadership board, pull not push, leadership stand ups
- Have also introduced to HR and Finance teams...

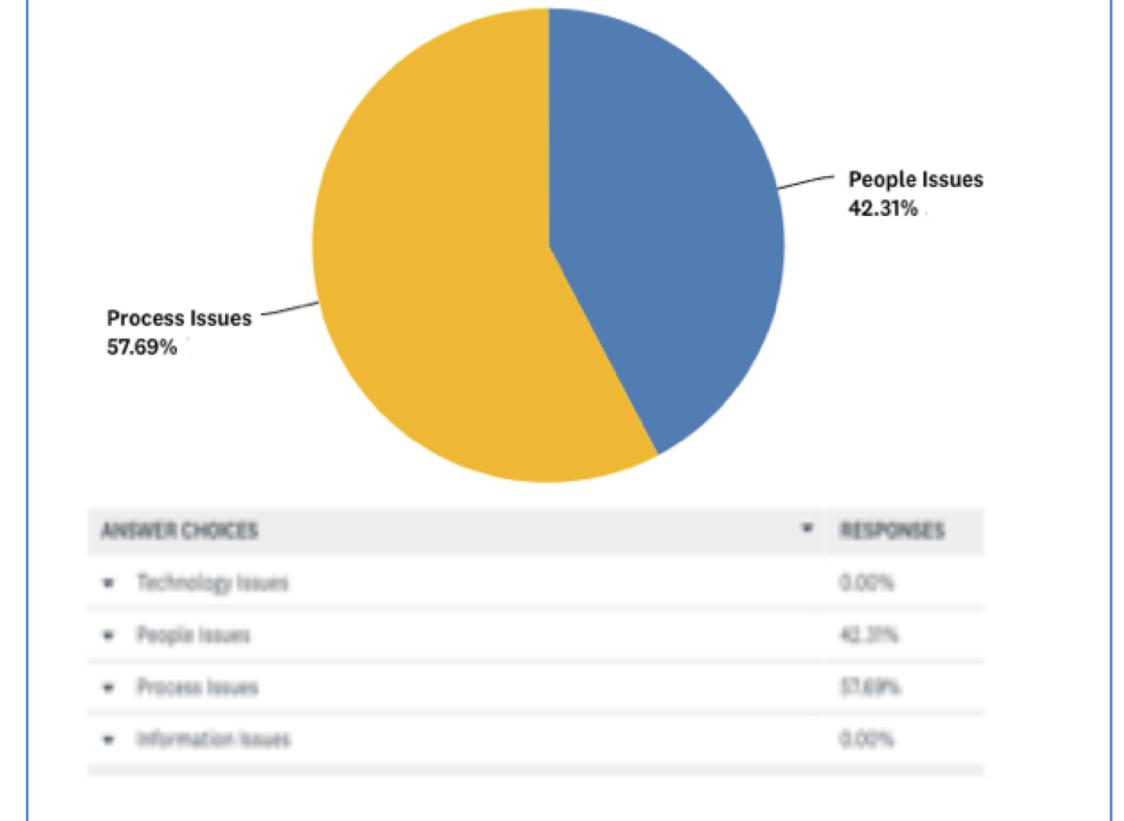


Value Stream Mapping..



1. Total Lead time typically comprises of 95% wait time and 5% Execution time..
2. Tooling and Automation optimise the execution time..i.e. the 5%
3. You should focus on the wait time to improve lead times

We ran our own internal survey at BT and the results were quite interesting..



4. You can start Value stream mapping now! No DevOps or Cloud required..
5. Identify your biggest constraint and go after it.

Guess what? It turns out DevOps is really a pre-packaged set of Constraint killers...

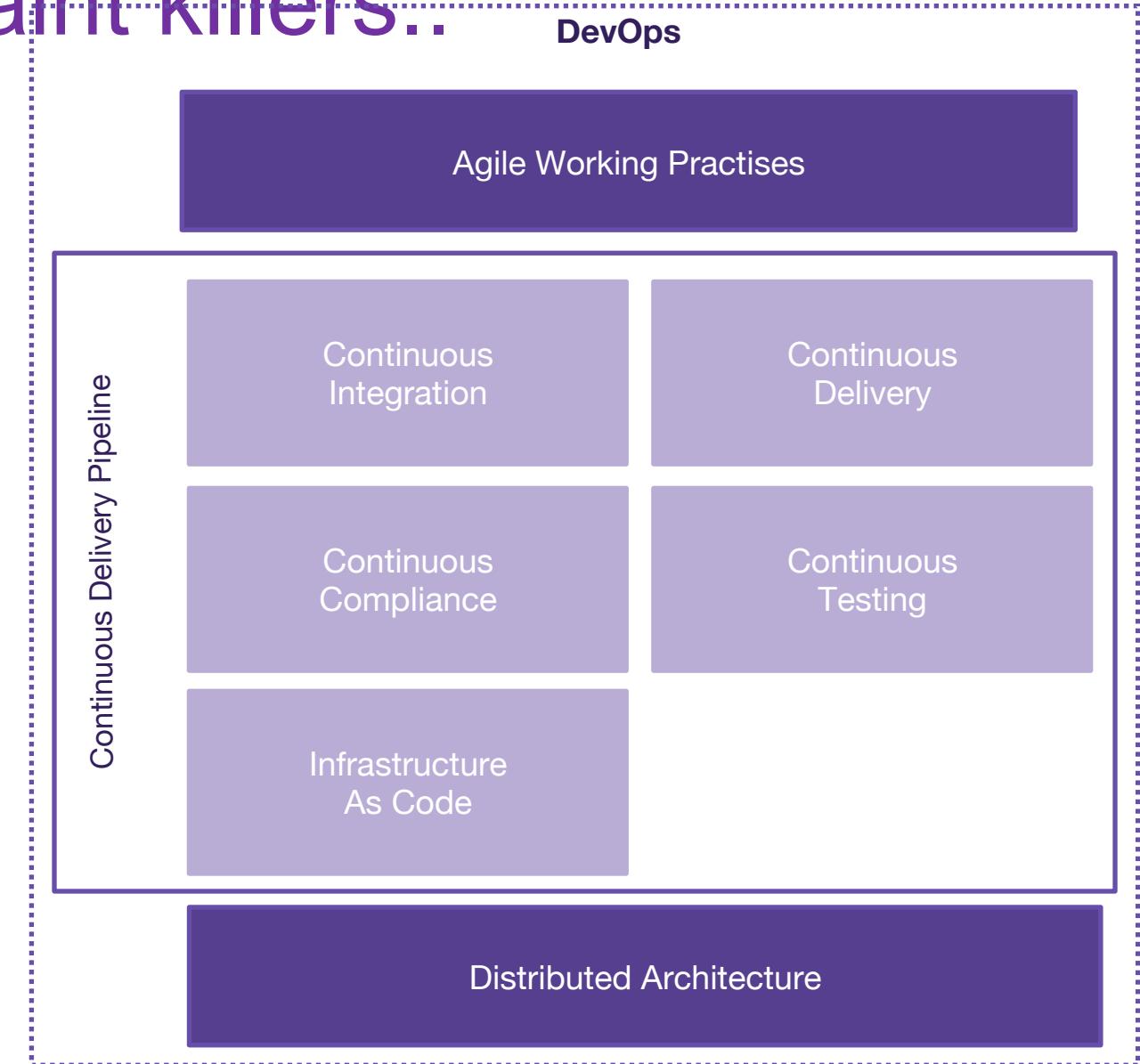
DevOps

Constraints typically addressed:

- Slow environment creation
- Lack of environment consistency
- Slow and complex code deployment
- Slow test setup and execution
- Overly tight architecture

Waste and hardship typically alleviated:

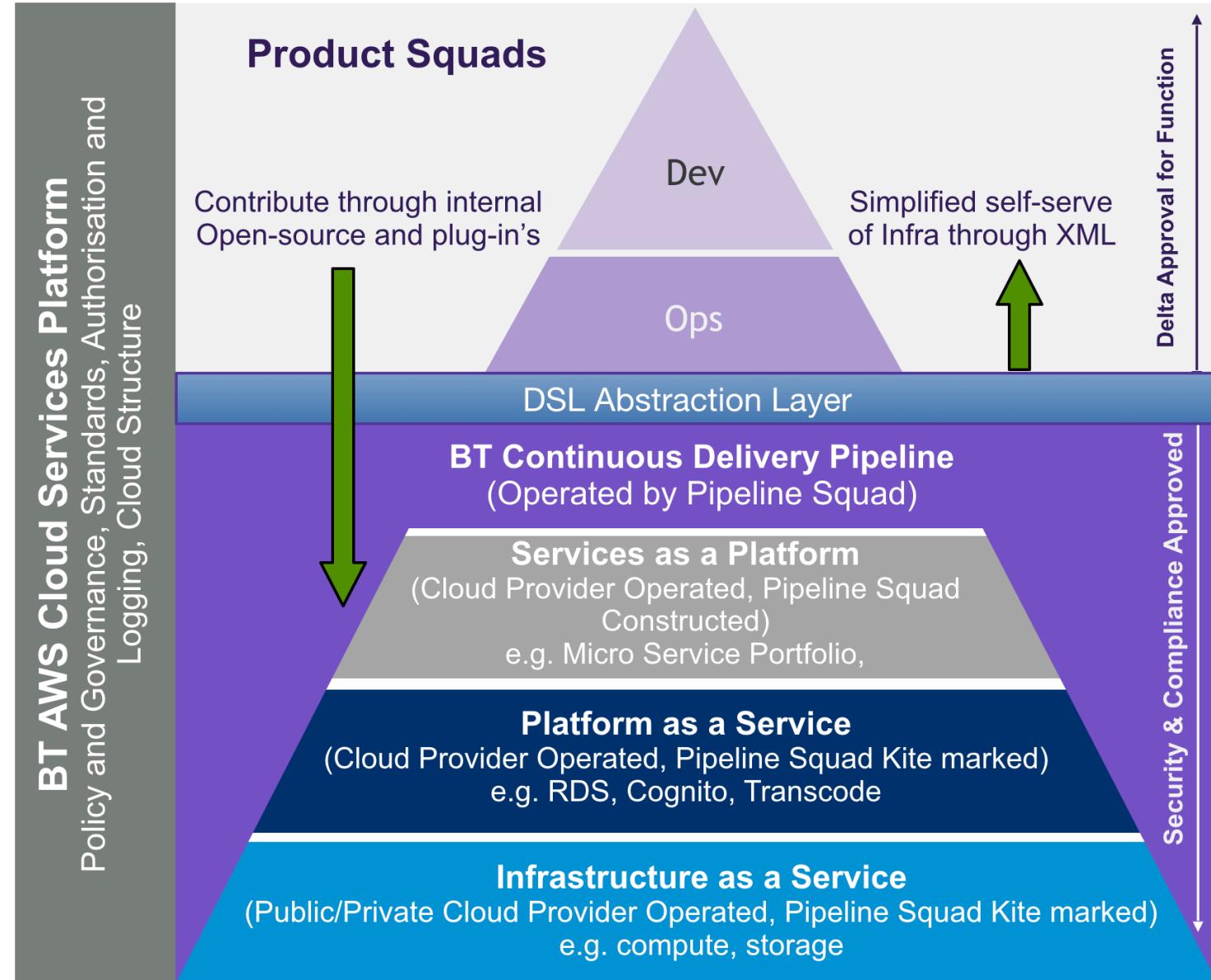
- Reduced Work in Progress (WIP)
- Removal of processes that add no value
- Reduced feature bloat
- Reduced task switching
- Reduced waiting between handoffs
- Reduced motion waste
- Improved defect resolution
- Reduced anti-patterns and manual work
- Less dependency on 'heroics'



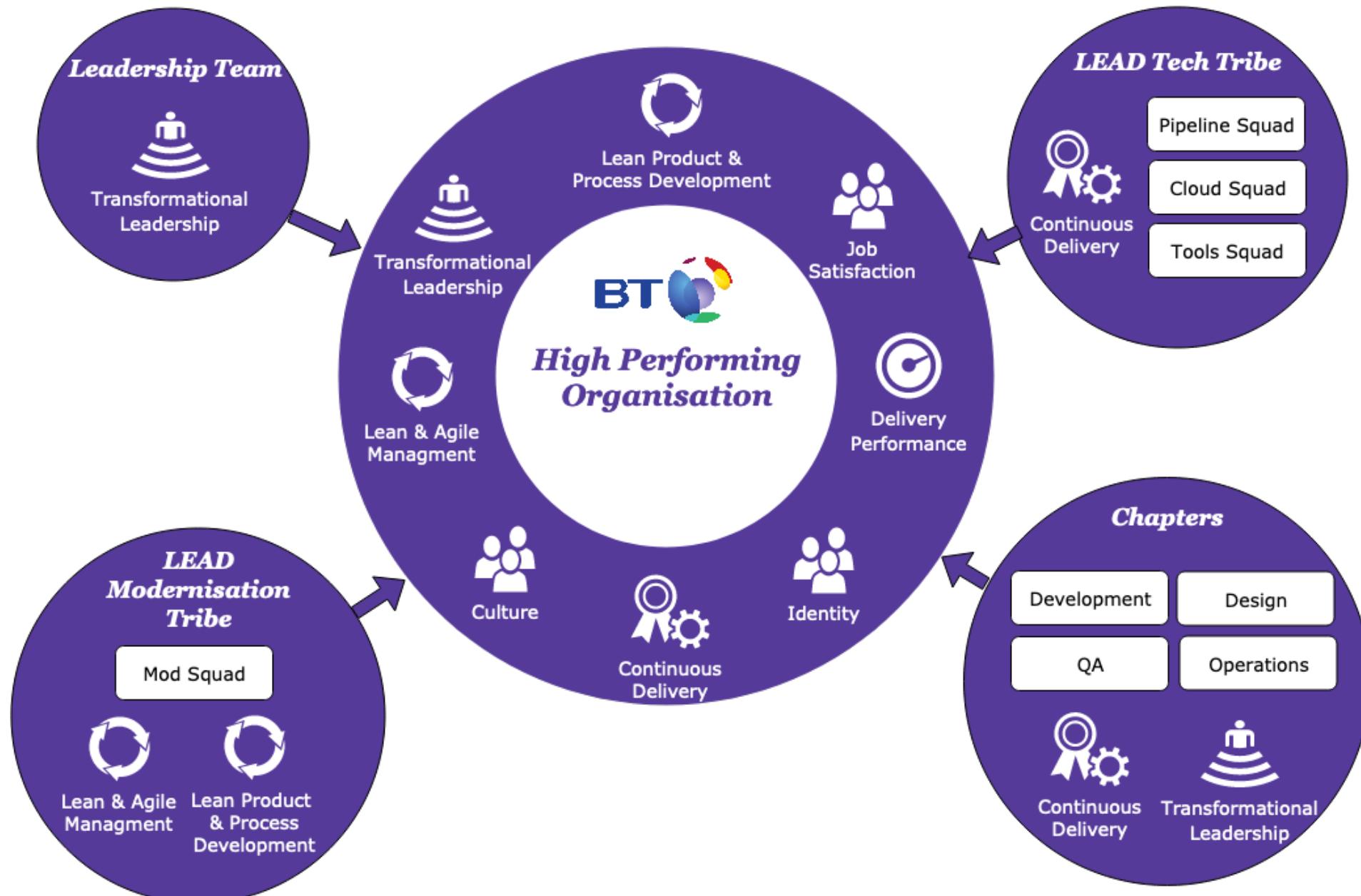
DevOps underpinned by Cloud and Continuous Delivery

Constraints addressed:

- Lack of common provisioning, security and logging framework across tiers
- Couldn't manage all infrastructure resources and services as code
- Inflexible or non-existent on-prem infrastructure-as-a-service capability
- Limited Internal infrastructure capacity
- Lock in with Capex investment model
- Service and infrastructure provisioning lead times of weeks
- Lack of easy to use and scalable PaaS services
- Slow time-to-market impacting our appetite for innovation
- Long Security sign off process for new solutions
- Too much time being spent creating snowflake infrastructure solutions



How have we done it?



We ate our own dog food..

Jira Software Service Platforms Jira Dashboards Projects Issues Boards Links Requirements Create Search Board ▾

Pipeline Kanban Board
Kanban board

QUICK FILTERS: CloudJinjaCore PipeCleaner CloudJinjaPlugins Bamboo Remote Agents SonarQube Notifications Veracode Security Scanning Task Runner

4 Scheduled 1 Evaluate 7 Blocked 3 To Do Min 2 5 In Progress Max 7 6 Completed Max 4 2 In Testing 0 Ready to Deploy Max 4 0 Deploying 7 of 719 Release... Done

Reactives and Support Requests 4 issues

BTPS-979 Remove utility deployment None	BTPS-772 Please run pipecleaner against None	BTPS-980 Bamboo very slow to load logs. None	BTPS-978 VRP-Adaptor deployment remove the Bamboo Service					
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Feature Stories 31 issues

BTPS-975 install_requisites and versioning Q1 Cloud... CloudJinjaCore	BTPS-914 Enable IP whitelisting with SES Q1 Task ... Task Runner	BTPS-804 Convert IAM Policy to Plugin Q1 Cloud... CloudJinjaPlugins	BTPS-775 Modify scheduler so that it adds Q1 Pipecl... PipeCleaner	BTPS-899 Full docstring documentation Q1 Cloud... CloudJinjaCore	BTPS-883 Cleaner API lambda that queries locks Q1 Pipecl... PipeCleaner	BTPS-444 Support plugins for rendering Q4 Cloud... CloudJinjaCore		BTPS-956 pytest-cj: add means to patch Q1 Cloud... CloudJinjaCore
BTPS-976 CJ Backend Versioning Q1 Cloud... CloudJinjaCore		BTPS-586 Centralise Shield Alerts Q1 Task ... Task Runner	BTPS-967 Package and push code to Veracode Q1 Verac... Security	BTPS-766 Implement SNS Message Q1 SNS Mod... Task Runner	BTPS-803 Convert IAM Group to Plugin Q1 Cloud... CloudJinjaPlugins	BTPS-805 Convert IAM Role to Plugin Q1 Cloud... CloudJinjaPlugins		BTPS-957 Get two non-LEAD Tech Tribe Q1 Sonar... SonarQube
BTPS-977 py-test CJ Versioning Q1 Cloud... CloudJinjaCore		BTPS-973 Install Gitlab Runner on instance in Q1 Cloud... CloudJinjaCore	BTPS-961 Bamboo Repositories to be Bamboo Service	BTPS-934 Port sns delivery status Q1 Cloud... CloudJinjaPlugins	BTPS-944 Implement RDS Q1 Cloud... CloudJinjaPlugins			BTPS-965 HealthCheck GracePeriod Seconds to Q1 Task ... Task Runner
			BTPS-968 Add Nexus Credentials	BTPS-971 GET the Bamboo Service	BTPS-847 Regional WAF for Bamboo Service			BTPS-974 Move all

Outcome so far

- AWS components in live services
- Services as a Platform solutions
- Lead times from twice a year to every 2 weeks – Cloud/Pipeline teams on demand
- Squad engineers doing design, dev, test, deploy
- Team has “time to learn” – 6 communities of interest created – blocked time in diaries
- CI/CD pipeline
 - Number of times a non-prod environment was automatically torn down = 190
 - 1301 changes through pipeline over 19 working days
- Personally transformed: ways of working ; continuous learning and sharing
- 12 Product Quarterly Rolling Wave Planning sessions done

