# Dyson – our Agile journey

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# Introductions

Rod Sinclair
*Head of Intelligent Platforms*
- Motorola
- GE Aviation
- Dyson

Ian Jordan
*Technical Lead*
- Motorola Systems Group
- Alcatel-Lucent
- Dyson

# Culture

- Dyson DNA
- No shareholders
- One man to impress
- Strong prototyping culture already
    - 5,127 iterations to develop our first vacuum cleaner
- Design – Build - Test
- Washing Machine
- Dyson 360 Eye

# Dyson Becomes a Technology Co.

- New products – more complex SW
    - IoT – all products becoming connected
- Grow SW team
    - Embedded, Mobile App, Cloud
- SW Development Process needed
- SW Complexity requires control and iteration
    - Agile fits well with Dyson

# The challenges & Goals

- Iteration and Feedback
  - Dyson culture encourages changes based on feedback from early builds
  - Techniques developed to achieve this for mechanical design
  - Electronics (software and hardware) critical to the USP of new products
  - Requirement elaboration and iteration moves into the electronics space

- Development of hardware and Software in Parallel
  - Information sharing and synchronisation between disciplines

- International Collaboration
  - At all points in the lifecycle
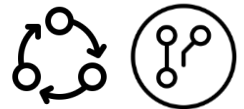
# Basic Set-up

- Scrum framework
  - Follow standard Scrum ceremonies
  - Two week sprints
- Atlassian tools
  - JIRA, Confluence, Bitbucket, Crucible, Bamboo
- Hardware team part of the scrum team

2 Weeks

# Introduction of Agile

- Engineer buy-in
  - Discussed Agile principles with team members
  - Selected those who were keen to apply them
- Experienced scrum master
  - Dedicated product owner
- Introduced to new & existing projects over a few months
  - Staggered, to avoid discovering the same issues across multiple projects

# First Project for Team

- Engineers typically fairly new to Dyson, due to the rapid expansion, generally had not worked together before

- Some had previous experience of Scrum Agile at their previous employers

# The beginning

- Team started coding early
  - Architecture evolved
- Concentrated on delivery of functional blocks
  - User stories not end to end
  - Reduced ability for demos, stakeholder feedback received later
- Specialisation
  - Reduced interaction in sprint planning
- Over optimistic estimation
  - Challenge to complete the sprint goal

# The middle

**By end of First Project**

- Continual Improvement
  - Move towards end to end user stories
  - Team interaction in stand-ups grew
  - Specialisation reduced
- Reacting to change
  - Regular demonstrations -> Regular feedback
  - Automated unit tests allowed changes to be made with confidence
  - Codebase became entangled
- Team reported that they enjoyed the project
  - Felt informed as to progress
  - Keen to apply their knowledge to next project

# Not the end!

**Improvements for Second Project**
- Initial design sprints
  - All team members involved in initial design proposal
  - Improved overall knowledge of project and reduced specialisation
  - Design for iteration
- CI introduced to allow better control over Definition of Done
  - Bamboo
- High level of trust in Scrum ceremonies, candid sharing of views
  - Team challenged themselves
  - Estimation improved
- End to end user stories
  - Focused on walking skeletons and the MVP
  - Earlier demos to get feedback on direction

# Hardware – initial project

- Common team with software developers
  - Attended the same stand-ups
  - Better understanding of hardware and software integration points
- Shared backlog and sprint board with software
  - Challenge to frame tasks into a sprint cadence
  - Skewed the sprint burn-downs
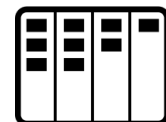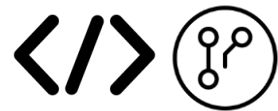
# Hardware – second project

- Continued to attend stand-ups
  - For overall project understanding
  - Everyone kept stand-up to the 3 questions, with follow on meetings if necessary
- Continued to have common backlog
  - Separate hardware Kanban board
- On-going task to improve story decomposition

# Cross-site Collaboration

Used Scrum ceremonies as a framework for collaboration

- Two approaches
  - Common backlog, multiple scrum teams, team collocated, different teams in different sites
  - Single scrum team spread across multiple sites
- Trust and communication is key
  - Video and audio calls, twice-weekly scrum of scrum
  - Initial visits for team to bond in person
- Still to reach level of collaboration seen on single site
  - On-going!

# Conclusions

- Agile fits for Dyson
  - Early feedback from stakeholders
  - Able to steer to solution more quickly
- Allows better control of complex SW projects
  - Atlassian suite gives quantitative data on status of project
- Engineer engagement and project understanding increased
  - High level of engineer motivation and involvement
  - Team able to make more powerful, informed decisions
- Enables a global development team
  - Leverage global experience at all stages of the life cycle

# Next Steps

- Have made good strides since transition started
- Continue to refine procedure
- Integrate hardware development more closely into Agile
- Build on cross site collaboration