Dyson – our Agile journey

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Introductions

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- Motorola
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- Dyson

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- 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
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