Lean Software Management: BBC Worldwide Case Study

Peter Middleton, Queen's University Belfast
&
David Joyce, ThoughtWorks Australia

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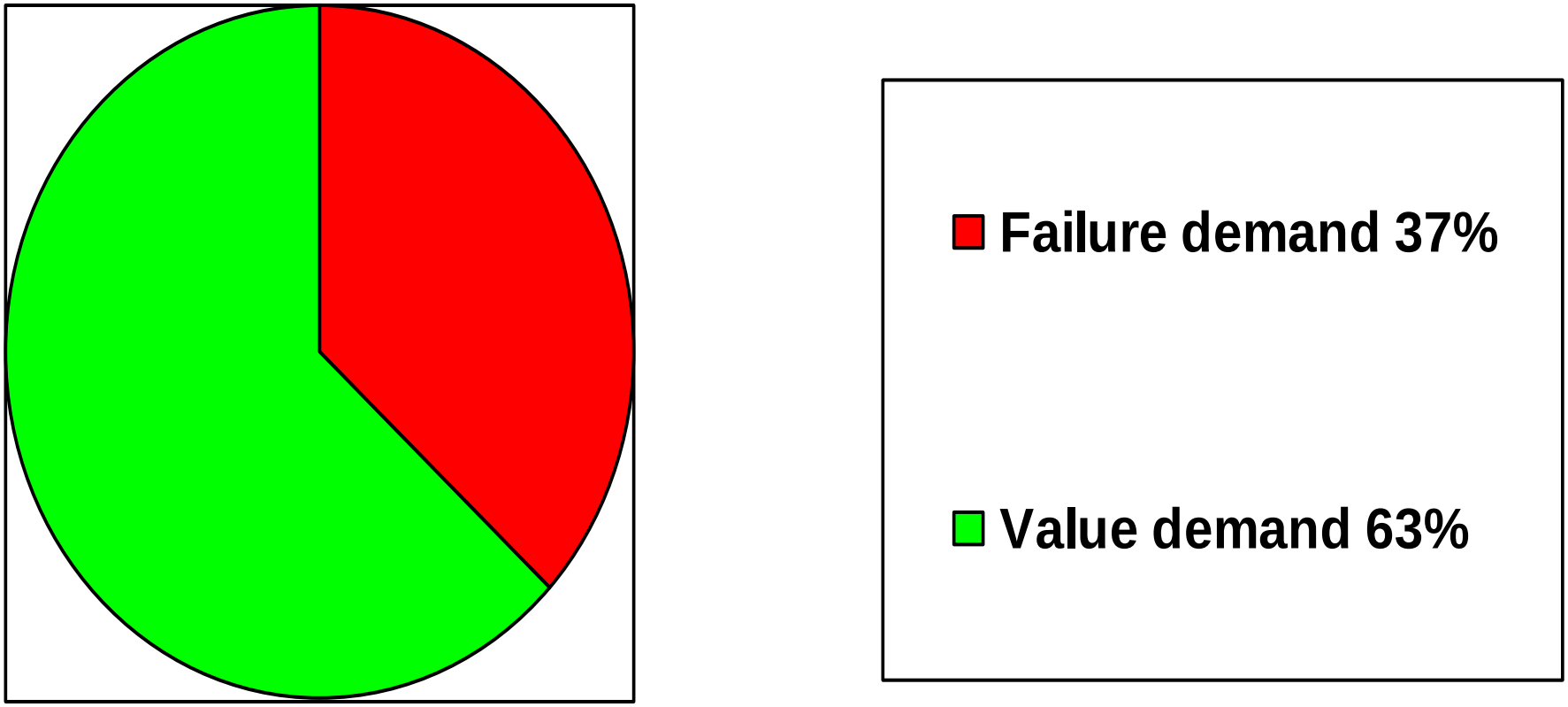
Strategy & analysis

- **Customers**: Statistical Process Control
  - *Total end-to-end time to serve customer*
- **Targets** = System Conditions
  - *Why does system behave as it does?*
  - *Remove sub optimisation, then I.T.*
- **Purpose** of customer interactions
  - *Why did they contact us?*
- **Failure demand**: 30% - 70%
  - *Wrong information, delivery not made*

Analysis of **why** customers call

Failure demand: activity but waste



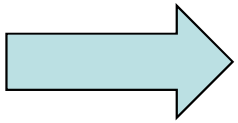
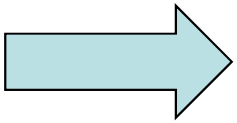
Foundations

- **PRINCE2** unrealistic : ‘Ensuring that the information required for the project team is available’

- **Failure demand**: 30% - 70% of all demand is caused by failures in the system itself

- **Targets** cause massive waste due to sub optimisation. Measures drive behaviour.

BBC Worldwide
Digital Hub Software Team

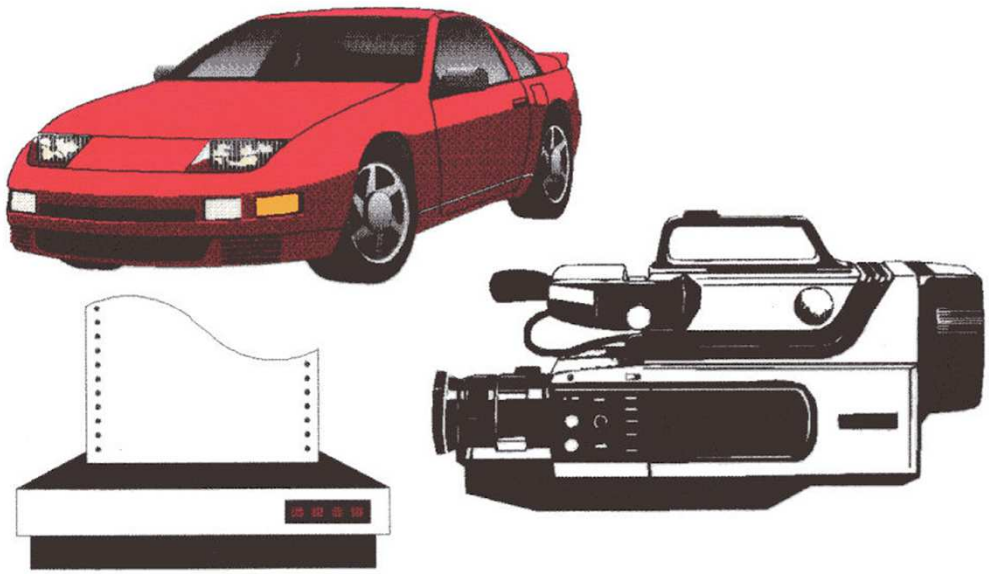
- Media Village, White City, West London
- 9 staff: Analyst, Architect, QA, Developers
- Operating cost: £1.5m p.a.
- C#, .NET, MS SQL Server
- Created and maintained software
- 12 months data: Oct 2008 – Oct 2009
- Reported to Business & Project Boards
- Waterfall  Agile  Lean

Engineering Practices

- Test Driven Development (unit tests)
- Automated Acceptance Testing
- Source Control Software
- Bug tracking software
- Decoupling – improve legacy code
- Minimum Marketable Feature concept
- Daily Stand Up (15 minutes)

Japanese Manufacturing Techniques ?

- Cars, Printers, Cameras



- Just In Time
- Lean Production
- Pull v. Push
- Kanban

Just - In - Time Principles

- Process Control
- Easy - To - See Quality
- Insistence on Compliance
- Line Stop
- Correcting One's Own Errors
- 100% Check
- Project - By - Project Improvement

Lean Software – key idea

- Reduce Work in Process:
  - Analysis
  - Specifications
  - Design
  - Untested code
- Benefits: (flow: concept to cash)
  - Visible management & less risk
  - Flexibility
  - Productivity

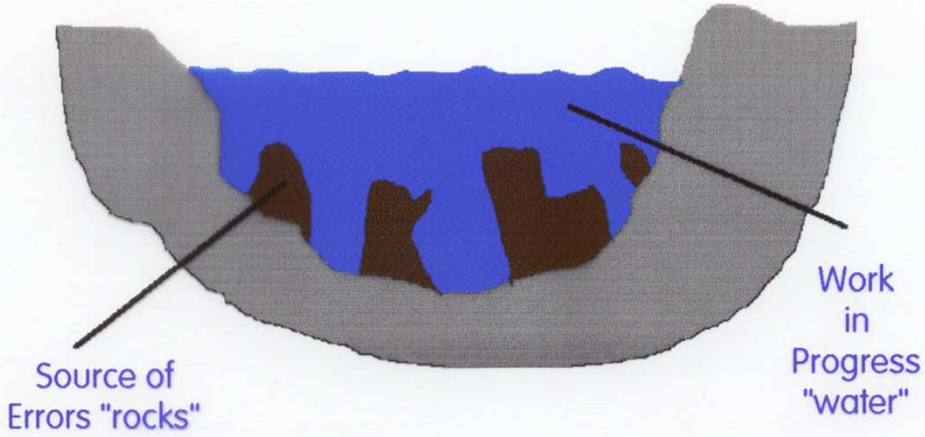


Fig. 1. The Software Pond.
Source of errors masked by
work - in - progress.

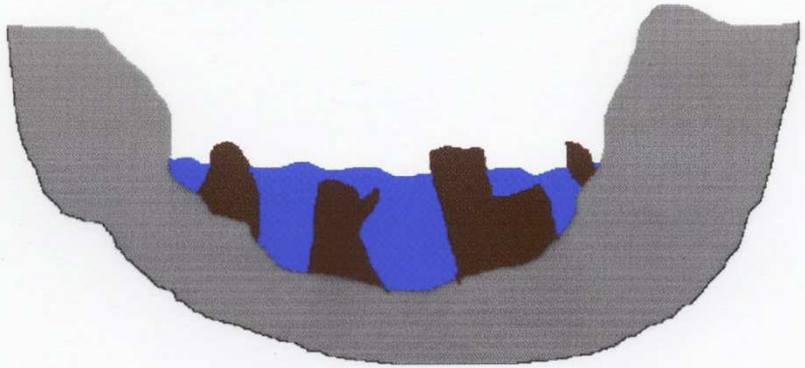
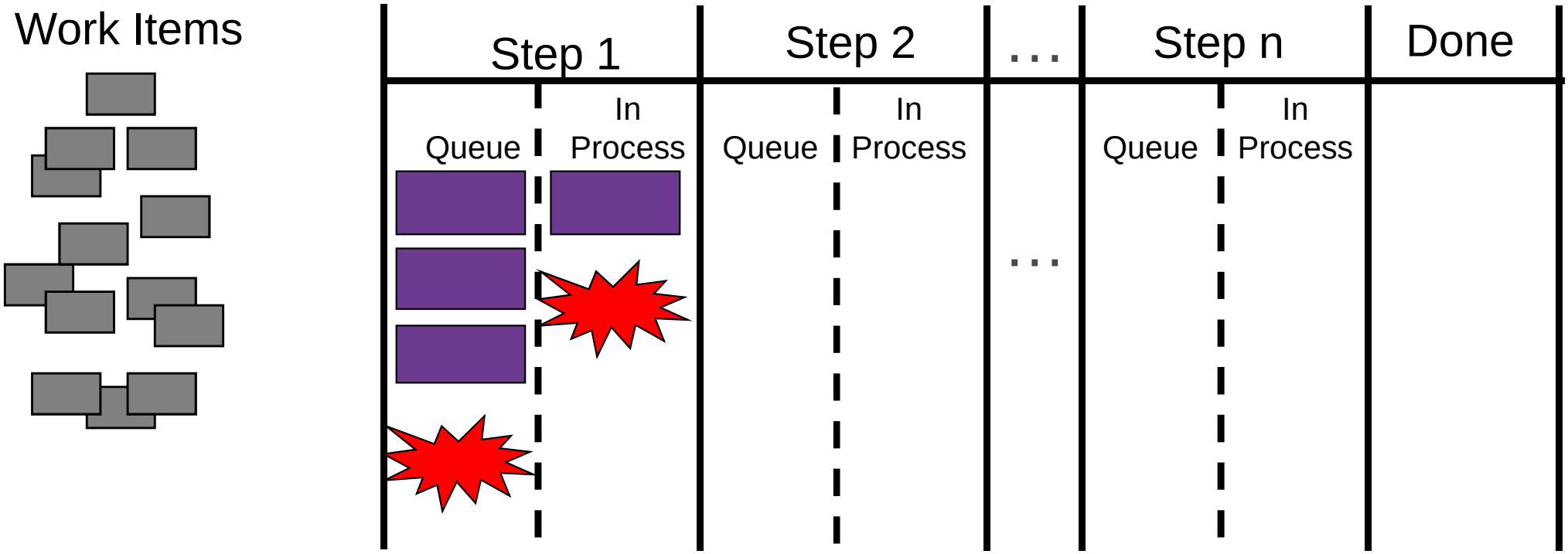
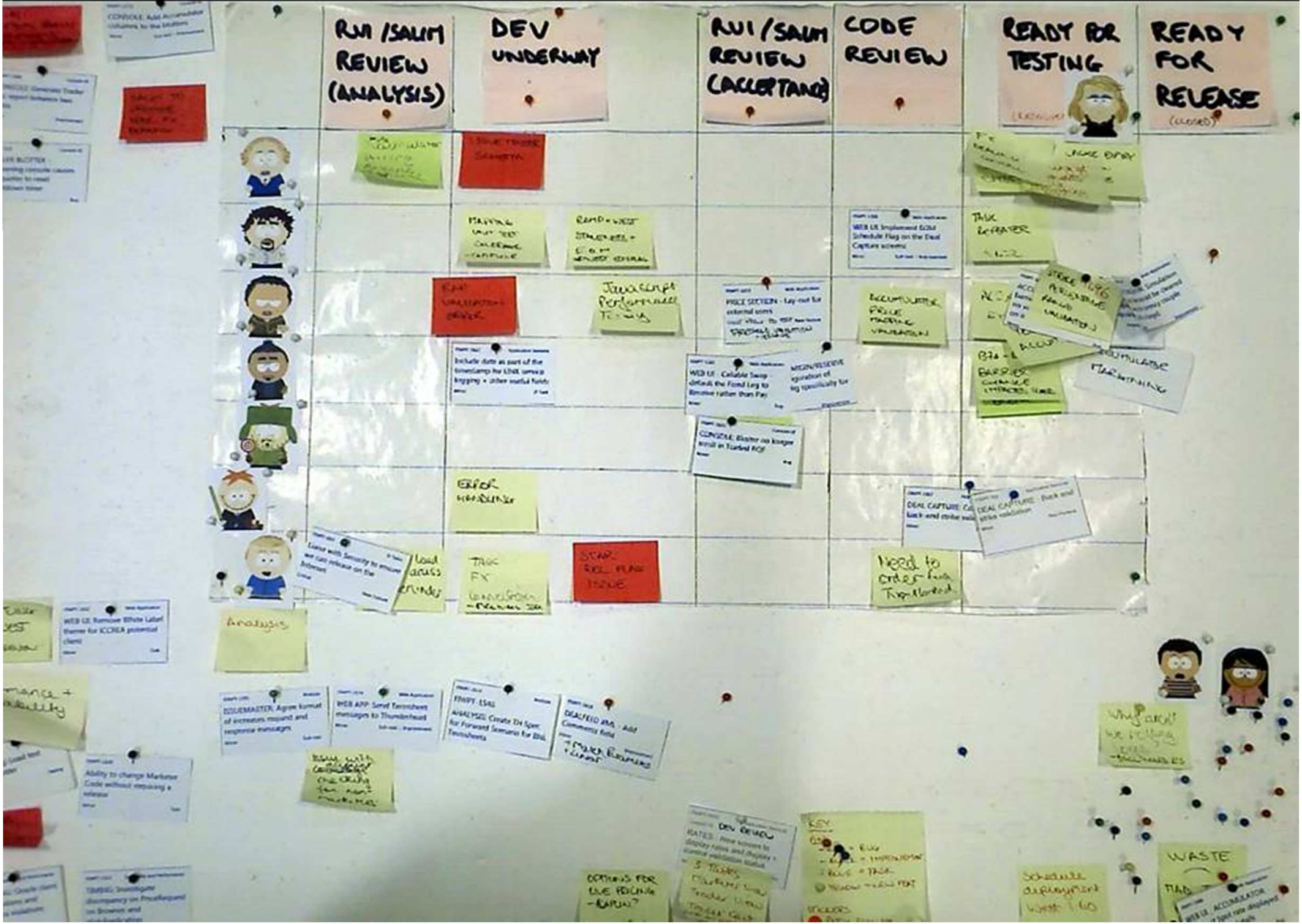


Fig. 2. The Software Lake -
Drained by Lean Production.
Source of errors exposed by
reducing the work - in - progress

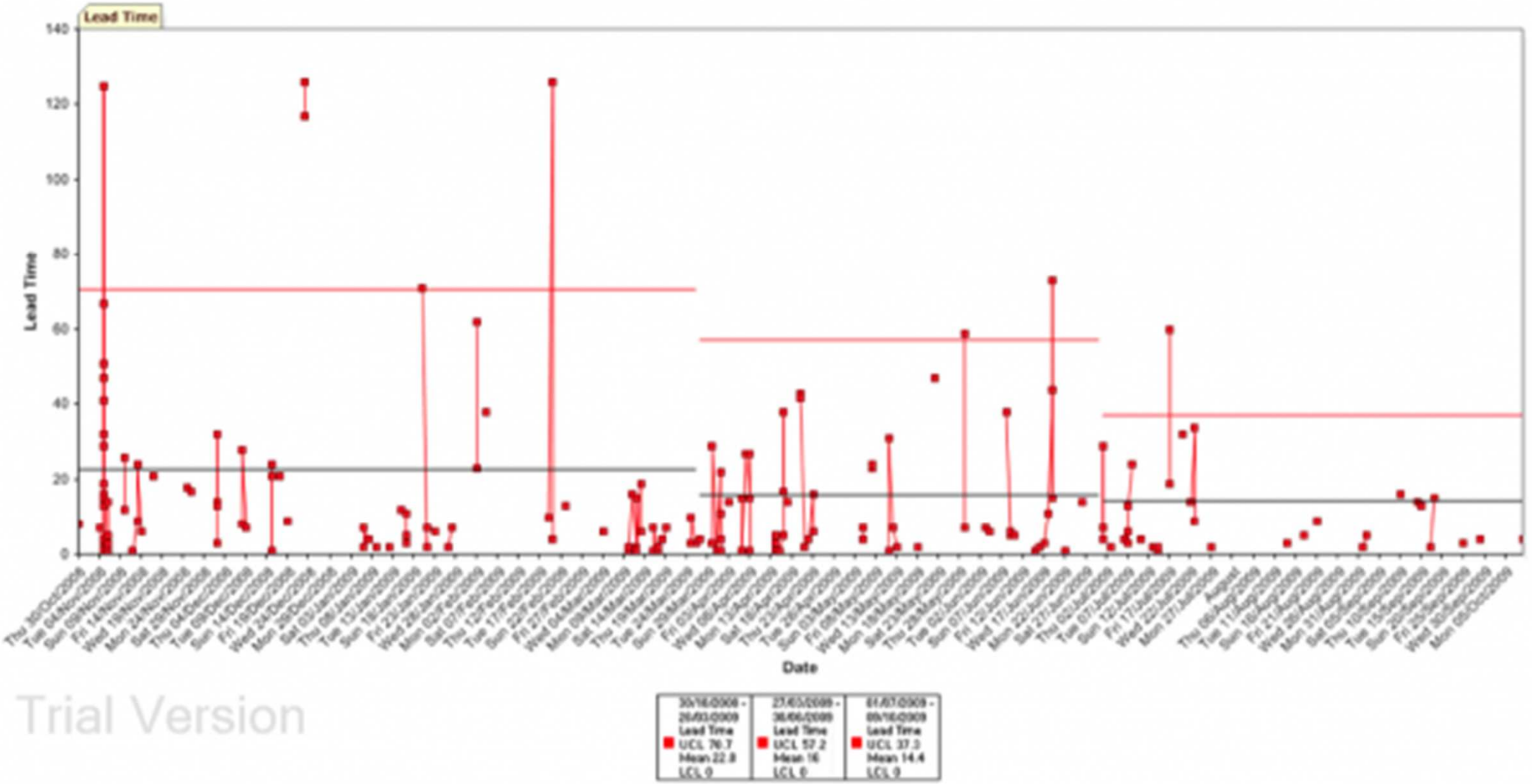
Kanban 101 (BNP Paribas)



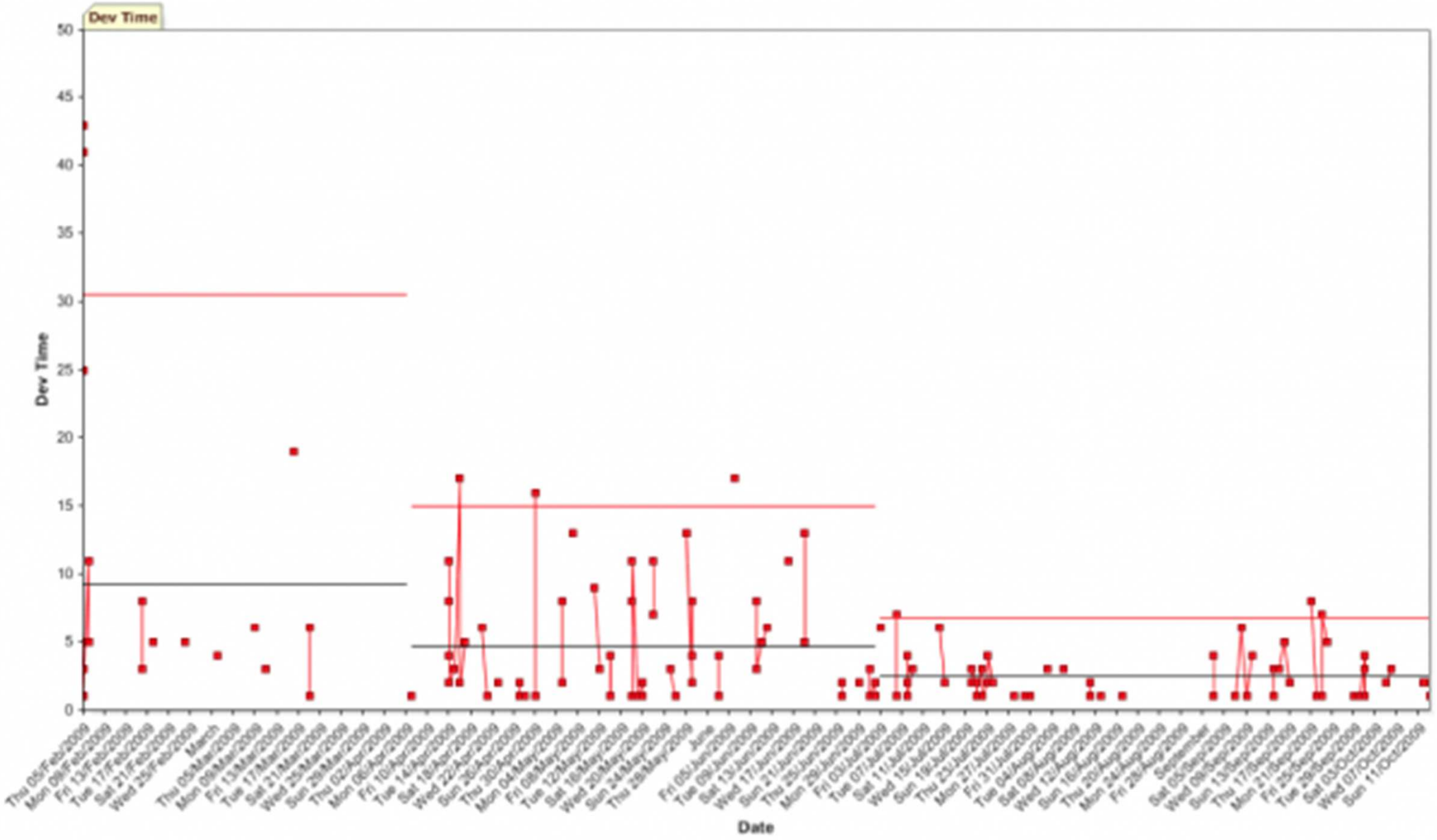

RUI /SALM REVIEW (ANALYSIS)
DEV UNDERWAY
RUI /SALM REVIEW (ACCEPTANCE)
CODE REVIEW
READY FOR TESTING
READY FOR RELEASE
Analysis


BBC

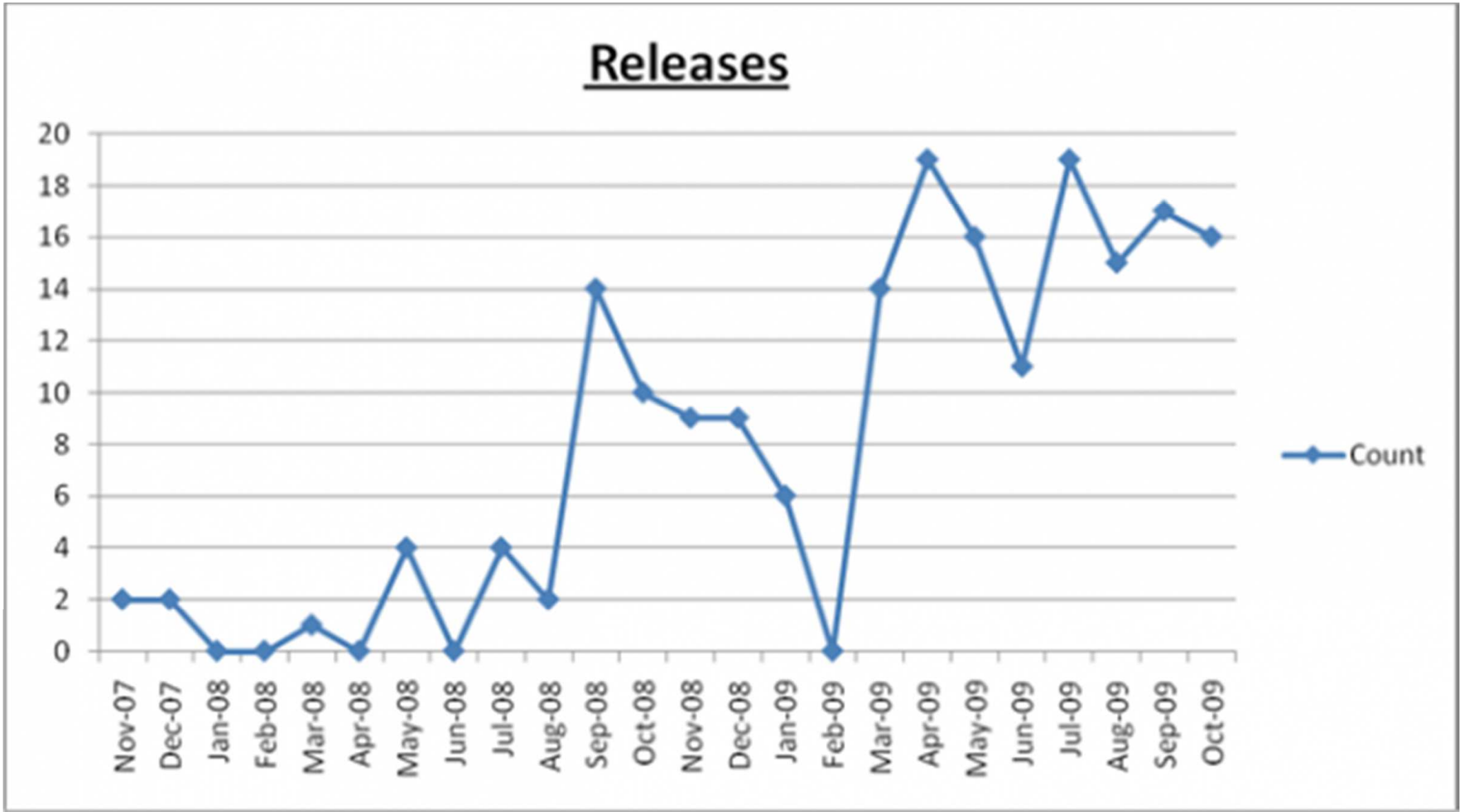
Lead time to customers -37%
Variance -47%



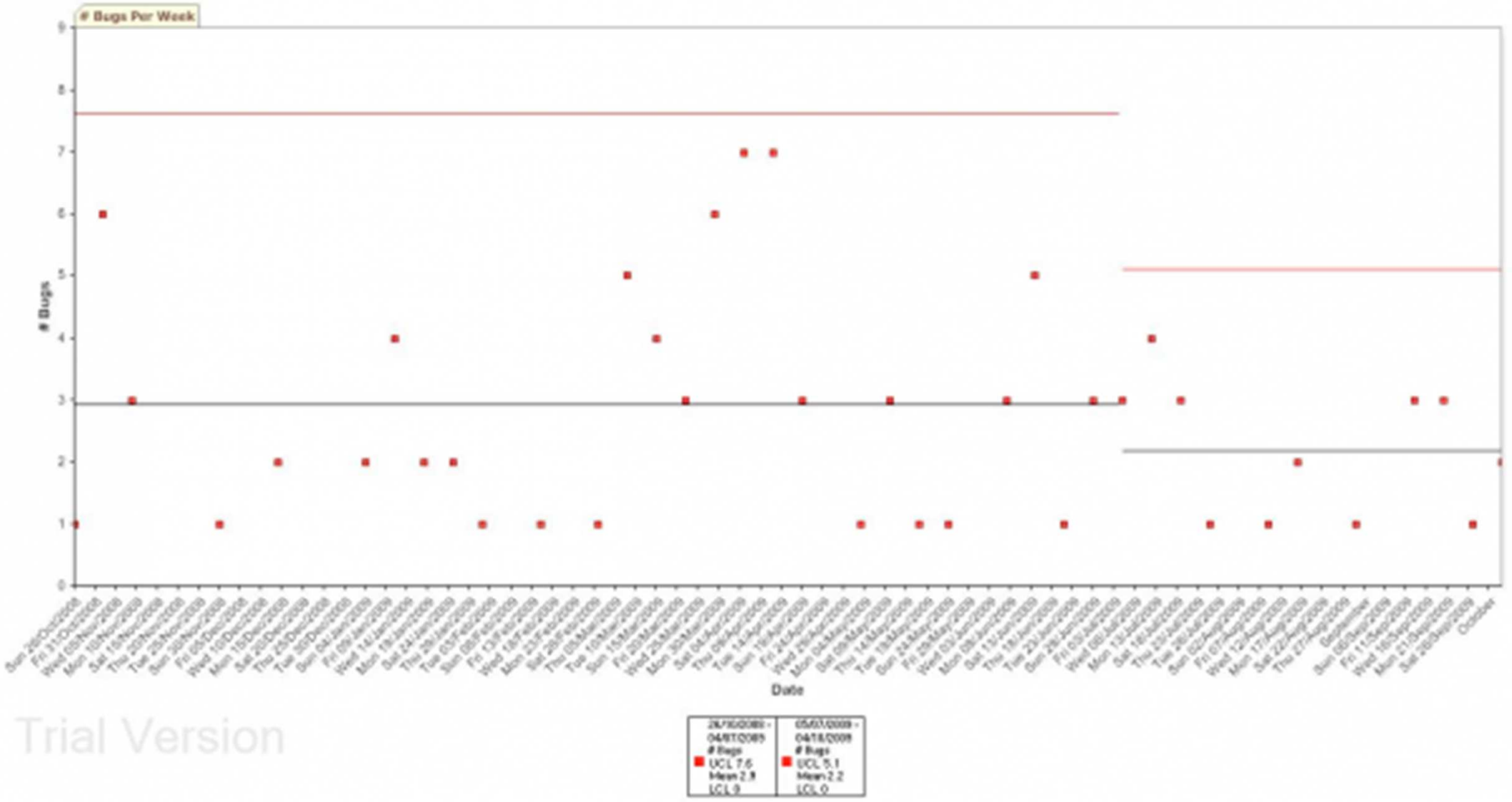
Development Time -73%; Variation -78%



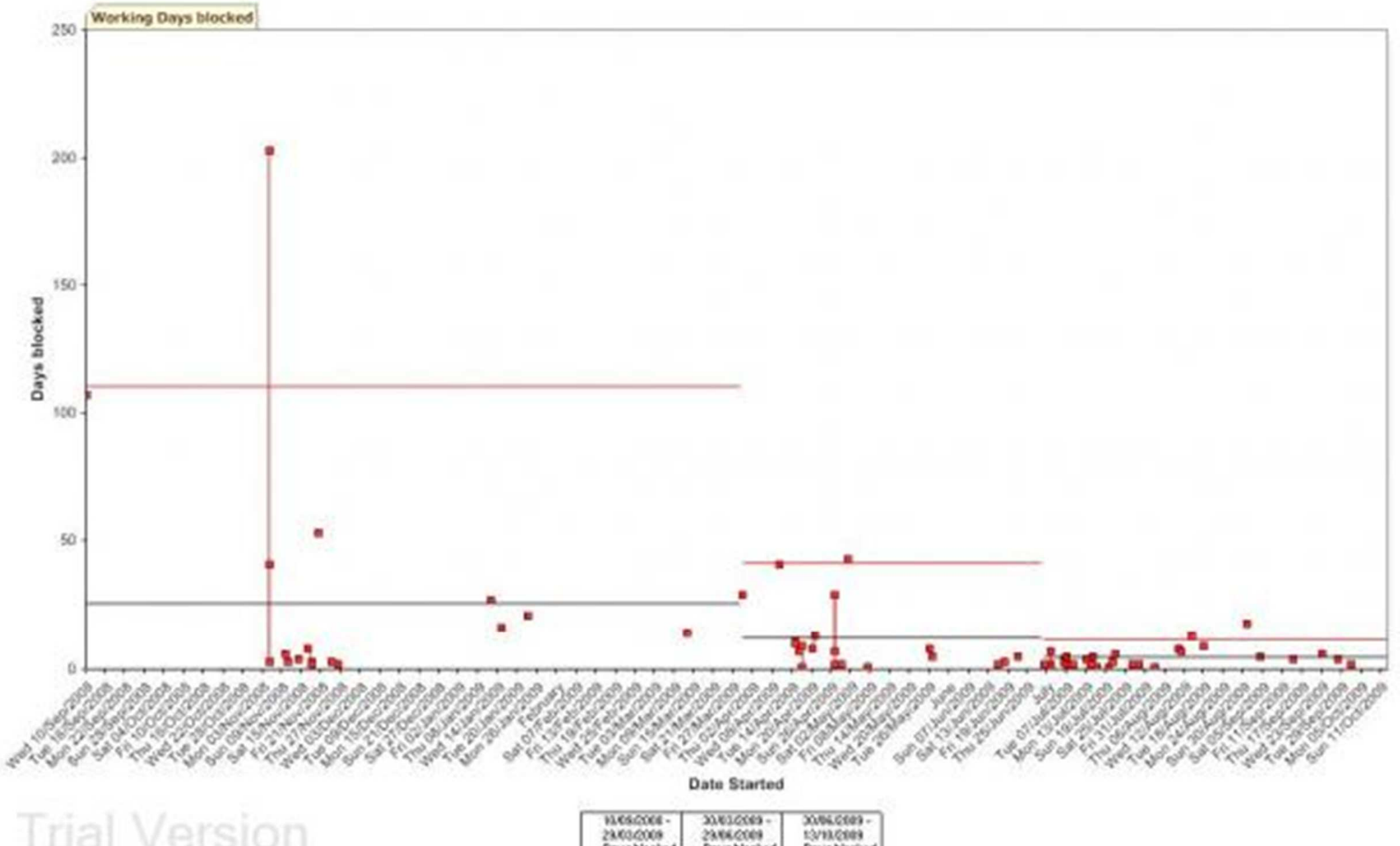
Throughput:
smaller, incremental deliveries



Fewer Bugs: -24%;
Variance: -33%



Continual Improvement
Days lost: -81% 26 to 5 days



Possible problems

1. Space needed for Kanban & info boards
2. Plan driven, document centric process
3. Poor fit with standardised reporting
4. Remit of IT – upstream & downstream
5. Command & control compliance model
6. Staff initiative and multi skilling

Lean handles risk by low WIP, transparency, small units & frequent deliverables

Lean & Kanban software process

- -37% reduction in lead time
- -47% reduction in lead time variation
- -73% reduction in development time
- -24% reduction in errors
- -33% reduction number of open errors
- -81% delays reduced continual imp.
- *8 increase in frequency of delivery

- Frequent small deliverables reduce risk

Value delivered

- The digital assets produced rose by hundred of thousands of hours of content
- 610% increase in valuable assets output by software products written by the team.

Differences Agile and Lean

- Batch / Push versus Pull
  - *Time-boxed iterations*
- Reliance on Data
  - *Focus on people*
- Continual Improvement
  - *‘Velocity’, features, story points*
- Multiskilling
  - *‘impediment list’ / ‘improvement backlog’*
- Evolution v. Revolution

Conclusion

- Lean applies from idea to release
- Iterates on continual customer feedback
- Software under quantitative control
- Pareto effect: 80 – 20 rule
- Frequent, small, high value deliverables
- Lean provides both discipline and agility

Lean Software Management: BBC Worldwide Case Study, P. Middleton & D. Joyce, IEEE Trans. on Engineering Management, accepted for publication Sept 2010

Follow up

- to the IEEE article http://leanandkanban.wordpress.com/2011/04/09/lean-software-management-bbc-worldwide-case-study/

- p.middleton@qub.ac.uk
- dpjoyce@googlemail.com
- Twitter: @dpjoyce