Agile Best Practices and Patterns for Success on an Agile Software development project.

Tom Friend
SCRUM Master / Coach

AGILE ON TARGET LLC

Tom Friend / Experience

Industry Experience:
Banking, Cable, Broadband, Telecom, Mutual Fund, Healthcare, Energy, Federal Sector.

Roles:
Agile / XP / Scrum, QA, DEV, BA, PM, Federal Contracting Officer.

Education:

- BS Aeronautics / Embry Riddle Aeronautical University.
- Air War College / US Military.

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24 Years US Military Pilot, Retired:

- 10 Years Navy / 14 Years Air Force.
- 2 Squadron Commands / 12 Deployments
- JTAC Ground Combat with Marines and Army.

Topical Overview For Discussion

- Selecting Frameworks
  - » Architecture Foundations
  - » Tools and Coding Standards
  - » Frameworks & building blocks
- Automated Testing
  - » J-unit testing / Sonar
  - » Automation Regression
  - » End To End Automated regression
- Best Practice Technology Techniques
  - » Maven conversions
  - » Tiles 3
  - » JPA 2
  - » Spring Security POC

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Proper Preparation and Frameworks from the start
Architecture Foundations

- Frameworks:
  - Spring framework 3.2.X
  - Hibernate 4.2.1
  - JUnit 4.8.1
  - Log4J 1.2.17
  - HTML 4.01
  - JSTL 1.2
  - JQuery 1.7.1, Jquery supported plug-ins
  - JSON
- Web Server: Apache 2.2
- Application Server: WebLogic Server 10.3.5.0
- JDK: JRockit 1.6.0_29
- Database: Oracle 11g Enterprise Edition Release 11.2.0.3.0 - 64bit
- Webservices: JAXB/AXIS, Spring webservices, Restful

Framework Patterns and setting Foundations
Tools and Coding Standards / Unit Testing

- Build & Release Management Jenkins 1.438 Maven
- Code Quality Scans Sonar
- Unit Testing JUnit 4.11
- Code Review IntelliJ IDEA static code analysis
- Continuous Integration, Integrated Development Environment (IDE) Eclipse (most developers) Idea IntelliJ 12.1.4
- Performance Testing HP Mercury LoadRunner v11.0
- Test Automation HP Mercury Quicktest Professional QTP v11.0 Axe 3.5
- Test Management HP Mercury Quality Center Excel Add-in v11.0
- Source Code Management Subversion
- Story, Requirements, JIRA with GreenHopper Others?

QA Technology Frameworks and Techniques used on the example Project

Technology	UI Speed	Transactional Performance	Code Reuse	Data Management
Tiles 3	Yes	Yes	Yes	
JPA 2		Yes	Yes	Yes
JPQL		Yes	Yes	Yes
DAO		Yes	Yes	Yes

- **Summary of technology to benefits** Technology used to attain above objectives Traceability Matrix:
- **TILES 3** Apache Tiles is a HTML template framework base on a composite model of pagelets that are combined to make a final HTML within a JSP Java Server Page.
- **Java Server Pages (JSP)** helps create dynamically generated web pages based on HTML, XML, or other document types.
- **Java Persistence API (JPA 2.0**) Manages relational data in application using the Java Platform using (JPQL) Java Persistence Query Language.
- **The Java Persistence Query Language (JPQL**) is an independent object oriented query language that is part of the Java Persistence API (JPA) specification.
- **Data Access Objects Frameworks (DAO**) is an object that provides an abstraction interface to a database or other persistence mechanism.
- **Maven conversions,** Maven is a build automation tool used in Java projects.
- **SPRING Security,** Is a Java/Java EE framework that provides authentication, authorization and other security features for JAVA applications.

Technology Techniques used on the Project Detail

Detailed benefits of Technology Implemented. The following is the detail of how the above technologies were leveraged. Please Note: this is not a one to one relationship with the items listed on the prior slide

Maven conversions Project Infrastructure Foundations:

1. Mitigation of conflicts in dependency management.
2. Simplification of the SVN tagging in the code repository.
3. Creation of multi modules for the project that can be reused.
4. Now leveraging existing frameworks and code in the maven plug-ins.

Tiles 3 How pagelets were updated:

1. Configured tilesViewResolver instead of JSP view in spring.
2. Use of Tiles simplified the templates for dashboard, createCase and adminDashboard screens.
3. A great deal of the lines of code in jsp is now moved to views.xml.
   I)js and css imports are now defined in a hierarchical way.
   II)Tiles 3 optimized the header, menu, and footer content in every jsp.
4. Now all the jsp files have the lines of code optimized now just having only its own specific content.

Technology Techniques used on the Project Detail

JPA 2 Benefits of greater use of the Java persistence API:

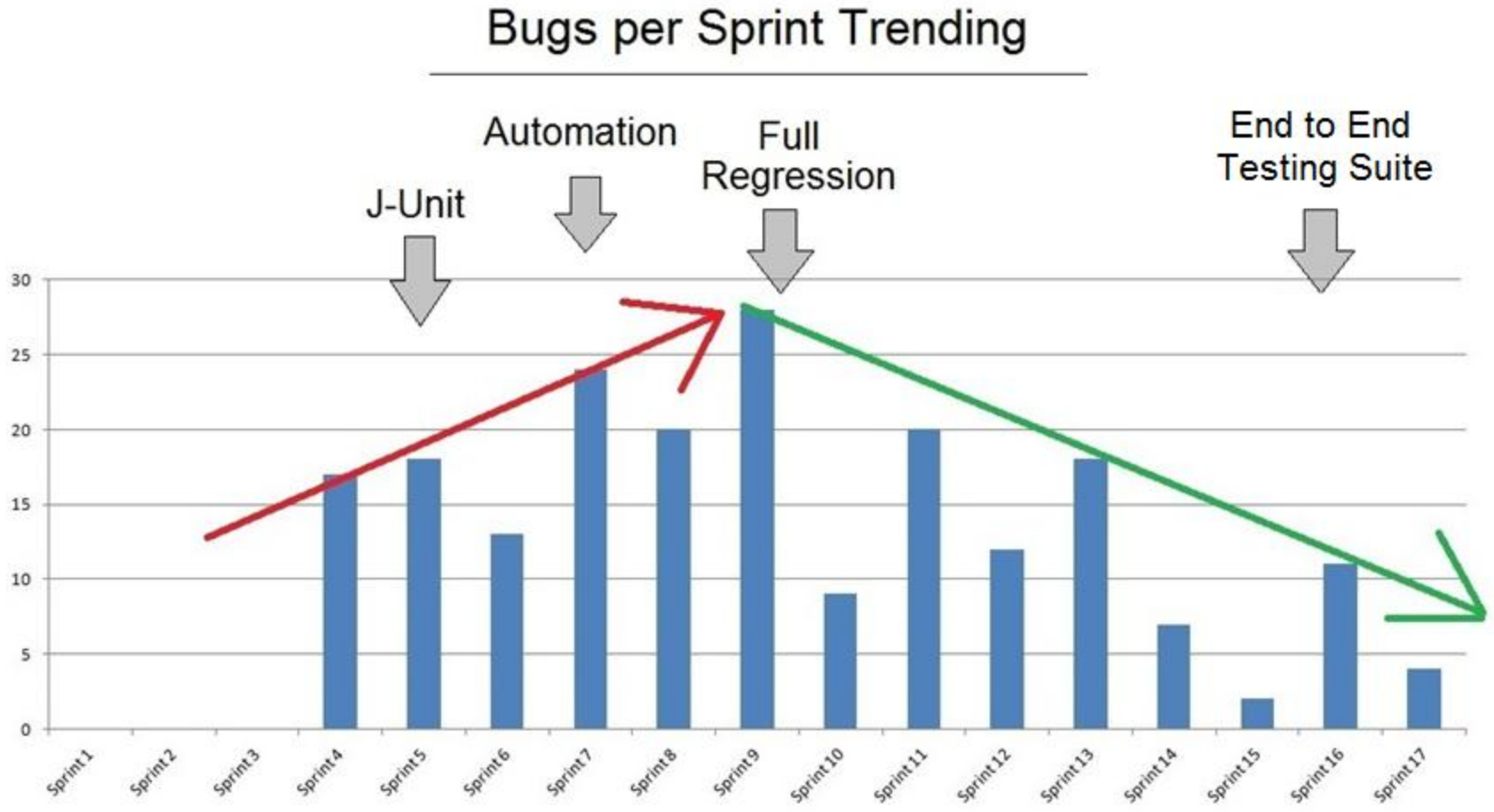
1. JPA2 API has improved persistence over the Hibernate session API.
2. JPA 2 is now part of JAVA EE 6 this is a compatibility benefit.
3. Using the JPA2 EntityManager API, the same Repository layer can be easily switched to other ORM without any changes in Repository.
4. The primary objective of JPA2 features are lot of boiler-plate code is avoided in DAO layer by making use of Predicates which are usable in any criteria query to build the where condition.
5. Make use of Weblogic TransactionManager which provides more features than JpaTransactionManager.

Spring Security POC Java framework proof of concept for authentication and authorization:

1. Spring security for SSO login and logout functionality and hence LoginFilter.java can be avoided.
2. Spring security taglibs provided to render the secured content if the user really has the particular permission.
3. Proof of concept was deployed successfully in DEV.

The Value of automated testing

Trending Correlations to Maturity of Automation



QUESTIONS?

Tom Friend
980-939-3477
www.AgileOnTarget.com
About me: http://www.linkedin.com/pub/thomasfriend