Benefits and Challenges of Agile in a Distributed Environment

January 2008

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General Manager
Luxoft Canada
About Luxoft

- Founded in 2000 in Moscow, Russia
- $100M+ est. revenues for 2007
- > 2300 people
- Focus on Complex projects
- 7 delivery centers globally
  (Russia, Ukraine, USA, Canada)

Luxoft’s Commitment to Distributed Agile

- Proven track record of successful distributed Agile projects
- Experienced Scrum Masters and XP Coaches
- Nearshore delivery center in Vancouver, Canada
- Proven communication channels, infrastructure, tools and processes
- Contributions to open-source – FITpro for Eclipse
- Active participation in Agile communities in North America and Russia

“The success with Agile starts with really great people and that means the engineers and others in Luxoft,”

Bill Wood,
VP of Engineering, Ping Identity Corp.
**Benefits of Agile**

**Comic Strip:**

1. **We need three more programmers.**
2. **Use agile programming methods.**
3. **Agile programming doesn't just mean doing more work with fewer people.**
4. **Find me some words that do mean that and ask again.**

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Business Drivers

- **Agile**
  - Shorter time to market
  - Rapidly changing business requirements
  - Improvements in productivity of development teams

- **Project Assistance**
  - Access to larger pool of scarce technical resources
  - Cost savings
  - Ability to scale rapidly

“At scale, all agile development is distributed development. … even the largest or most distributed teams can achieve the faster time to market, higher productivity, and higher team morale that the agile methods provide.”

Dean Leffingwell

“Scaling Software Agility, best practices for large enterprises”
Challenges of Distributed Development

- Lack of visibility on project status
- Delay in feedback cycle
- Loss of business and technical contexts
- Lack of common infrastructure
- Decrease in communication bandwidth
- Higher documentation overhead
- Lack of trust
Distributed Development Challenges

- Requirements
- Implementation
- Verification
- Release

In house
Delayed feedback
Outsourced
Decreased Visibility
Communication
Benefits of distributed Agile

**Practices**

- Product demo at the end of iteration
- Customer is Part of the team
- Executable Requirements
- Continuous integration
- Short Iterations
- Test Driven Development

**Benefits**

- Increased Visibility
- Business Context
- Feedback
- Faster time to market
- Responsiveness to change
- Overall quality and efficiency
How Agile Should You Be?

There are many factors to consider when selecting the best development process for your outsourcing project.
The Agile development process is a set of practices and tools that can be applied together or individually.

- The Agility of your development process is flexible and will evolve over time.

There is no need to look at using an Agile vs. a Plan-driven approach as an either/or choice. You can select which Agile practices to apply to your project.
Putting it all together

Plan-driven

Agile

Changes in Requirements

Team Expertise

Complexity

Team Size

Cultural Flexibility

Regulations
Modifying Agile practices for distributed environment

While some Agile techniques can be applied in the same way as in non-distributed environments, others may require modification

- Information sharing
- Level of documentation
- Coordination between multiple teams
- Communication channels
- Status tracking & reporting
- Frequency of meeting
“The basic challenge of distributed Agile development is how to transfer complex knowledge about projects and processes that is held in the heads of a group of people in one location into the heads of groups of people in another location”

Matthew Simons

“Distributed Agile Development and the death of distance”
Development Infrastructure

- Source control systems that supports multisite synchronization
- Centralized Repository for Agile Project Management
- Shared test infrastructure
- Document management
- Backlog management
- Continues build and integration
Information sharing within a single location
Information sharing with a distributed team

<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
<th>Assigned To</th>
<th>Priority</th>
<th>% Complete</th>
<th>LOE (0)</th>
<th>Sprint</th>
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</thead>
<tbody>
<tr>
<td>Post 123: Delete portfolio</td>
<td>Bennett, Diane</td>
<td>Normal</td>
<td>10%</td>
<td>3 admin - no loose ends</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post 205: Delete LMS Person User in Portfolio</td>
<td>Kamran, Vimal</td>
<td>Normal</td>
<td>3 admin - no loose ends</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Post 249: Daily access LMS user in User ID with portfolio</td>
<td>Kamran, Vimal</td>
<td>Normal</td>
<td>1 admin - no loose ends</td>
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<td></td>
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<tr>
<td>Post 220: LMS Institution &amp; Portfolios</td>
<td>Madhuri, Surya</td>
<td>Normal</td>
<td>2 admin - no loose ends</td>
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<td></td>
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<tr>
<td>Fix previous sprint's errors</td>
<td>Nicole</td>
<td>Normal</td>
<td>admin - no loose ends</td>
<td></td>
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<tr>
<td>Test Comm Documentation</td>
<td>Bailey, Janet</td>
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<td>admin - no loose ends</td>
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<tr>
<td>QA Test Plan</td>
<td>Lynn, Alexander</td>
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<td>admin - no loose ends</td>
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<tr>
<td>Post 205: Licensing/Update Enrollment auto/Service to check enrollment access for POWN</td>
<td>Madhuri, Surya</td>
<td>Normal</td>
<td>4 admin - no loose ends</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Post 249: Provide sample custom login page</td>
<td>Brown, Tom</td>
<td>Normal</td>
<td>10%</td>
<td>2 admin - no loose ends</td>
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<td></td>
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</table>

Status: Completed (2)  
Status: In Progress (3)  
Status: Not Started (0)

Sum = 46.75  
Sum = 14  
Sum = 6

Accomplishments:  
- Admin LMS/RF Integration points doc (Diane)  
- TC Documentation (Janet)  
- Test Cases (Alas)  
- Delete Portfolio (Diane)  
- How many POWN can an "other" portfolio have? (Toni)  
- Portfolio Server level issue (Jan to follow up with Alas)  
- Provide sample custom login page (Tom)

Blocking Issues:  
- Scenario Meeting, Monday, March 21st  
- 20-Mar-06 by Bennett, Diane (X)
High Velocity Push to Market

- 3 Month Trains
- 2 Week Iterations
- Daily Scrums

Product Management:
- Business Analysis Paper
- Feature Need Analysis
- Master Iteration Plan

- Define System
- Plan Train
- Iterate
- Accept
- Releases

Product Owners

Release Roadmap

© 2006 Ping Identity Corporation
Multiple lines of communications

Local team:
- Architect (primary)
- Product Owner
- SQA Manager
- Development Manager
- QA Team
- Dev Team

Remote team:
- Architect (secondary)
- Requirement Analyst
- SQA Manager (secondary)
- QA Team
- SCRUM Master
- Team lead
- Dev Team
### Resourcing Patterns

<table>
<thead>
<tr>
<th>Denver</th>
<th>Moscow</th>
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<tbody>
<tr>
<td>Product Mgmt</td>
<td>Dev-Modules</td>
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<td>System Arch</td>
<td>Quality Secondary</td>
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<tr>
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<td></td>
<td>Dev-System</td>
</tr>
<tr>
<td></td>
<td>Quality Primary</td>
</tr>
</tbody>
</table>

Post Note: With 3 products we use a combination of these approaches.

- Product Mgmt From Denver Docs Always Denver
- Quality Always Split

![Diagram showing Empowerment/Value over Relationship Time](image)
Nearshore or Onshore Presence

- Near shore team that already knows how to work with offshore colleagues
- Real-time collaboration - not restricted by time zone difference or lengthy travel
- Team experienced in latest Agile methodologies and practices
- Advanced IT infrastructure and project management tools fully integrated with overseas offices
Clarifying Requirements with Fit

- Business Analyst will write high level requirements, and then supplement them with Fit tests that provide concrete examples.

**High Level Requirements for an Online Bookstore**

Business Rule 1. A customer gets free shipping if they spend $50 or more, else shipping adds a 10% fee.

Business Rule 2: An employee may ask for a list of all books currently in the system. The list includes the book name, author and price.

Business Rule 3. A customer selects several books. The running total is accumulated and shown to customers.

### Fit Test File

Business Rule 1. A customer gets free shipping if they spend $50 or more, else shipping adds a 10% fee.

<table>
<thead>
<tr>
<th>amount</th>
<th>shippingFees()</th>
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<td>50</td>
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</tr>
<tr>
<td>100</td>
<td>10</td>
</tr>
</tbody>
</table>

Business Rule 2: An employee may ask for a list of all books currently in the system. The list includes the book name, author and price.

<table>
<thead>
<tr>
<th>Bookname</th>
<th>Author</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Rapid Develop</em></td>
<td><em>Steve McConnell</em></td>
<td>100.00</td>
</tr>
<tr>
<td>UNIX in a Nutshell</td>
<td>Tim Robbins</td>
<td>22.00</td>
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</table>

Business Rule 3. A customer selects several books. The running total is accumulated and shown to customers.

<table>
<thead>
<tr>
<th>Action</th>
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<tbody>
<tr>
<td>start</td>
<td>BuyActions</td>
</tr>
<tr>
<td>check</td>
<td>total</td>
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<tr>
<td>enter</td>
<td>bookname</td>
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<tr>
<td>enter</td>
<td>price</td>
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<tr>
<td>Press</td>
<td>buy</td>
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<tr>
<td>Check</td>
<td>total</td>
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<td>price</td>
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<tr>
<td>Press</td>
<td>buy</td>
</tr>
<tr>
<td>Check</td>
<td>total</td>
</tr>
</tbody>
</table>
1. Write high level requirements

2. Clarify requirement with Fit tests

3. Write code

4. Test code with Fit tests
How does Fit work?

FIT Runner

Fixtures (Test code)

System Under Test

HTML, Excel spreadsheet of Fit test tables

HTML, Excel spreadsheet of Fit test tables

HTML Report
FITpro – Luxoft contribution to open-source

Fit Solution that provides:
- Improved productivity & usability of Fit
“... even the largest or most distributed teams can achieve the faster time to market, higher productivity, and higher team morale that the Agile methods provide.”

Dean Leffingwell

“Scaling Software Agility, best practices for large enterprises”
Next event:
Monday January 21st, 6:30 pm at Sierra Systems, 1177 West Pender
Michael Vax (Luxoft) on Benefits and Challenges of Agile in a Distributed Environment
(details here)