Global – Yet Agile –
Software Development

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Jutta Eckstein

(Mis)Conceptions about Globalization...
Global Development

- Several development sites involved
  - Typically spread over several countries
- Often larger projects
  - Development by several teams
- A team can be dispersed across several sites
- Different companies can be involved
- The customer can be far away

(Mis)Conceptions about Agility...
The Agile Value System

Agile development is defined by the value system:

- Individuals and interactions over processes and tools
- Working software over comprehensive documentation
- Customer collaboration over contract negotiation
- Responding to change over following a plan

That is, while there is value in the items on the right, we value the items on the left more.

Source: http://agilemanifesto.org

Agile Principles

- Value system is based on the following principles:
  - Early and continuous delivery of valuable software
  - Welcome changing requirements
  - Deliver working software frequently
  - Business people and developers work together
  - Trust motivated individuals
  - Face-to-face conversation
  - Working software is the primary measure of progress
  - Promote sustainable development
  - Technical excellence and good design
  - Simplicity is essential
  - Self-organizing teams
  - Team reflection and adjustment
Building Teams

- **Avoid the typical structure**
  - According activities and know-how
    - Analysis in Germany, UI in India, middleware in Ireland...
    - Enforcement of incompatible interfaces
    - Achievement of business value only at the end of the project
  - **Instead structure along features**
    - For ensuring the business value and the customer's advantage
    - Features shouldn't be split across teams
      - The feature provides a joint goal and thus enforces team spirit

Feature Team

- **Comprehends all necessary roles**
  - Domain expert, tester, ...
- **Comprehends all required know-how**
  - UI, database, ...
- **Some people might only be required for a limited time**
- **Depending on technology and size**
  - One architect per feature team
  - Or 1-x architects support several feature teams
  - **But: For ensuring simplicity there is always one chief architect!**
Dispersed Teams

- **First choice is often to have subteams collocated**
  - But: required know-how is often not collocated
  - Communication across subteams is harder
- **Dispersed subteams are not the worst choice**
  - Cross subteam communication is enabled by colocation
    - Eases conceptual integrity
  - Inner team communication is enforced by common goal

Synchronization

- **Frequent Synchronization is a must**
  - To have a common understanding
  - To deal with roles
  - To deal with changes and problems
  - To get feedback
- **Daily Scrum / Stand-Up meeting:**
  - Update on:
    - What have I done since the last daily scrum?
    - What will I do till the next daily scrum?
    - What's in my way?
- **Synchronize daily across subteams**
  - Scrum of Scrums
Dispersed Synchronization

- **Different communication channels**
  - Colocated people meet in person
  - Sites are connected via phone
    - Watch out for a good mic and speaker
- **Different language**
- **Different times**
  - Make it comfortable occasionally for everyone
- **Record impediments**
  - On accessible prominent place
  - Ensure follow-up

Commutation and Trust

- **A team needs**
  - Common vision, rules, values
  - Mutual respect and trust
- **Thus a dispersed (sub)team needs to:**
  - Meet face-to-face from time to time
    - Depending on distance between sites
      - More and longer at the beginning
      - Less frequent after a while
    - Couple of days every week
    - Regular for iteration review and planning
Cultural Differences

- "Foreign workers" and other face-to-face options create understanding
- Watch out for things that are more difficult at one site than at another site
  - Common difficulties
    - Realistic planning
    - Taking up responsibility
    - Stating problems
    - Giving honest feedback

Keep the Sites in Touch

- Ensure communication
  - Management/communication by flying around
  - Communication facilitator
- Regular joint celebration of bigger deliveries
- Pictures on the wiki
  - From each review and planning meeting
  - From each team member with contact information
- Embassy at each site
Ambassador

- **Establish an embassy at each foreign site to:**
  - Gain mutual respect
  - Ensure common culture
  - Keep communication flow between the sites
- **For avoiding burn out have a pool of ambassadors**
  - Ambassador schedule
    - Iterations are a good start
    - Contact information

Development Cycles

- **No need to prolong cycles**
  - To steer in the right direction you need frequent feedback
  - Short cycles to reduce all risks
- **Two-week iterations have been proven**
  - Good balance between organizational overhead and risk reduction
  - Ensure delivery at the end of the iteration
- **Same heartbeat across all sites**
  - Holidays can require some adaptation
Integration and Build

- **Before spreading over several sites**
  - Ensure integration and build works at one site
  - The later you are addressing these problems the more difficult they get
- **Don’t underestimate the complexity and required effort**
  - Ensure you have full-time people being responsible
  - Assign 10% of your development effort

Release Iteration

- **If a release iteration (sprint) is required for a bigger delivery**
  - Each team who delivers to the release sends a representative (in person) to the integration site
Iteration Review and Planning

- Each subteam individually plans the iteration
  - Guided by the coach and customer (product owner)
  - Outcomes are visible and accessible at prominent place

- For dispersed teams:
  - Get together in person from time to time
    - E.g. for every other review and planning meeting
  - Use different communication media
    - Phone, webcam, NetMeeting (or the like), video conferencing, ...
  - Ensure review and planning is in the mid of the week

Iteration Tracking

- Plans should be located at prominent place
  - Easy to access
  - Make progress visible
  - Read- and writeable by everyone

- Example tools
  - Trac (http://trac.edgewall.org)
  - XPlanner (http://xplanner.org)
  - PPTS (http://ses-ppts.sourceforge.net)
Retrospectives

• aka: Project experience workshops
  • At the end of a project
  • Regularly after every iteration
• Continuous learning
  • Learn from failure
  • Recognize and extract best practices
  • Prepare for next iteration
• Staged retrospectives
  • Come together from time to time
  • Use virtual facilities

Common Development Culture

• State (and evolve) guidelines, rules and patterns, e.g.
  • Make How-to's available on the wiki
    • It's everyone's responsibility to update those
  • Evolve patterns from retrospective and reviews
  • Ensure everyone knows required skills
  • Ensure common culture by mentors
• Inspect and improve development culture
  • Regularly team representatives are getting together
    • personally or virtually
  • Review the state-of-the-art
  • Learn from each other
Ensuring the business value

• **Customer / product owner**
  • Decides on highest business value
    • Prioritizes the features according the customer’s understanding
  • Steers the iteration
  • Provides feedback on delivery
    • Acceptance or rejection
  • Obtains feedback from the teams
    • Amount of features that can be delivered in an iteration
    • Unfinished tasks that need to be re-prioritized

• **Represents customer perspective**
  • Good and intense communication channel

Supporting feature teams

• **One product owner might not be enough**
  • Team of product owners with one chief product owner
  • One product owner might steer 2-3 feature teams
  • Might require travel effort
Dealing with Change

• Change in features and in priorities
  • Most often this can be addressed with iterations
    • Maybe iteration length has to be shortened to increase responsiveness
  • Sometimes team structure might have to change
    • Ensure the new feature team can jell
    • Face-to-face meeting in the beginning

Summary

• Communication is even more important
• Frequent synchronization ensures the common goal
• Traveling is unavoidable
• Frequent feedback is obtainable via short iterations
• Feature teams and product owner(s) ensure the business value
Many Thanks!

Contact information:

Jutta Eckstein

je@it-communication.com
www.it-communication.com