
Applying TSP to Distributed Teams

TSP Symposium 2008 – Phoenix, AZ

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Agenda

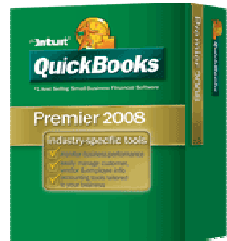
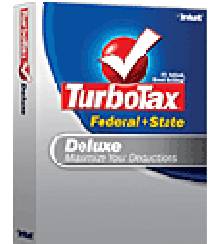
- An Intuit Overview
- Our Journey with TSP
- Commitment to Distributed Development
- Challenges & Best Practices
 - Applying TSP to Distributed Teams
- Summary

An Intuit Overview

Who we are ...

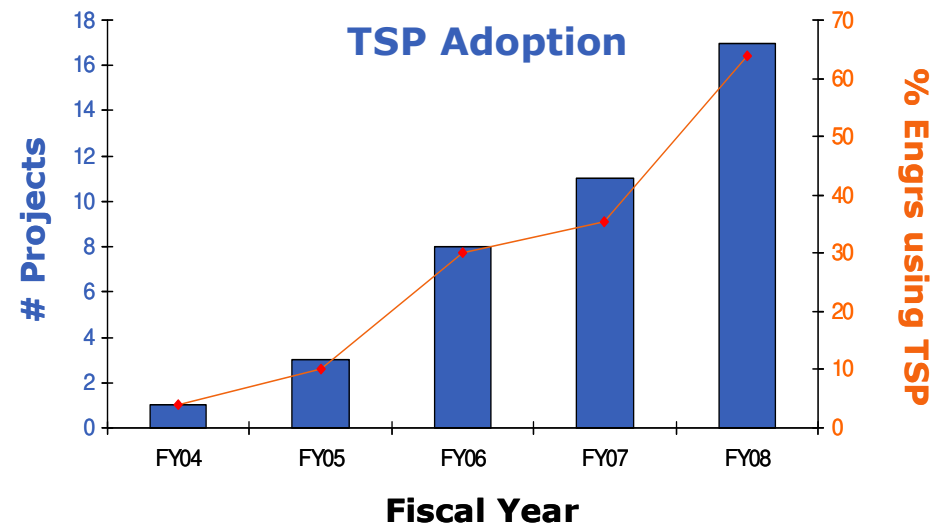
A leading provider of business and financial management solutions

- Founded in 1983 (in our 25th year now)
- Global company with ~8000 employees
- 46 offices worldwide
- FY08 annual revenue of \$3.1B
- Among Fortune TM 100 Best Companies to Work for
- Fortune TM Most Admired Software company 4 years in a row



Our Journey with TSP

- We've been using TSP since 2004
- Executed ~40 Projects to date
- 13 internal coaches onboard + external full time coaches
- Management has confidence in teams using TSP and provide necessary support for successful adoption
- Team members and managers see great results with TSP and are excited to expand the use in their PD groups
- Significant trend emerging on blending TSP with Agile
- Mindset shift from managing with gut feel to managing with data
- Many best practices from TSP are getting institutionalized into the general software engineering & management process
 - Emphasis on early defect removal via reviews and inspections, Launch-like events at project start and weekly team meetings to name a few



Commitment to Distributed Development

- Large opportunity to solve important global consumer and small business problems by employing global talent
- Major product development centers in Canada, India, UK & USA
- Investments in high-tech infrastructure to make global development seamless
 - Hi-Def Video conferencing, web cams for team members as needed, server hardware, network equipment
- Development teams in India have seen continued success and are motivated to use TSP in many of their projects



How Different Were The Distributed Teams?

| Characteristics | Type1 | Type 2 | Type 3 | Type4 |
|---|-------|--------|--------|-------|
| Partial team located offsite (One Location) | Y | | | Y |
| Partial team located offsite (Multiple Locations) | | Y | | |
| Partial Team located onsite | Y | Y | | Y |
| Coach Located onsite | Y | Y | | |
| Coach located offsite | | | Y | Y |
| Team collocated | | | Y | |

- Most distributed projects had identified distinct pieces of work with some dependencies, but **not** working on the same modules or components

Distributed vs. Collocated Teams

| | Avg. weekly task hours | % defects removed Pre-System Test | % Project Effort in System Test |
|--------------------------|---------------------------------|--|--|
| Collocated Teams | 15.10 | 92.43 | 5.69 |
| Distributed Teams | 12.85 | 89.75 | 6.25 |

Analysis of TSP use by Distributed and Collocated teams. © Intuit

- Various factors impact team performance:
 - Time zones, team dynamics, culture, operating mechanisms, tools and infrastructure
- Communication & coordination between distributed teams is a huge contributor especially to lower weekly task hours

Challenges & Best Practices

- There are many aspects of a project/team that are impacted due to the distributed nature of the work. We share some of our experiences from these perspectives:
 - TSP Team Member
 - TSP Team Leader
 - TSP Coach
- Factors that influenced our projects:
 - Communication (has biggest influence on distributed teams success)
 - Culture
 - Time zones
 - Rules of engagement
 - Tools and infrastructure

Published Research on Globally Distributed teams

- **Challenges**

- Ambiguity
 - leads to assumptions -> problems -> increased time for resolution
- One study revealed that a typical change request takes 2.4 times longer to resolve in distributed teams vs. colocated teams
- Request->response communication takes a very long time

- **Best Practices**

- Establish operating conventions (“rules of engagement”) of how teams should work, so everyone understands
 - the plan, their role in the plan and how they affect others in the plan
- Balance flexibility and rigidity of processes
- Make off-shore members part of central team in early stages of the project

Communication Effectiveness Model

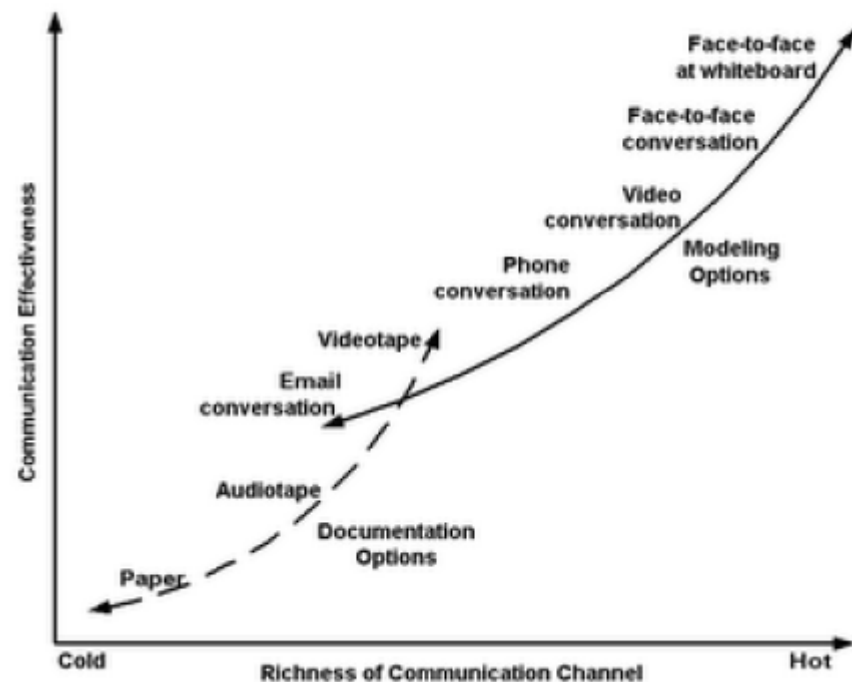
Strive to follow the most effective communication technique that applies to your situation

Ex: Working together in same room or building

Use: Face-Face and Whiteboard

Ex: Working together in different locations

Use: Video or phone conversation



Original Diagram Copyright 2002 Alistair Cockburn, Modified Version Scott Ambler 2002

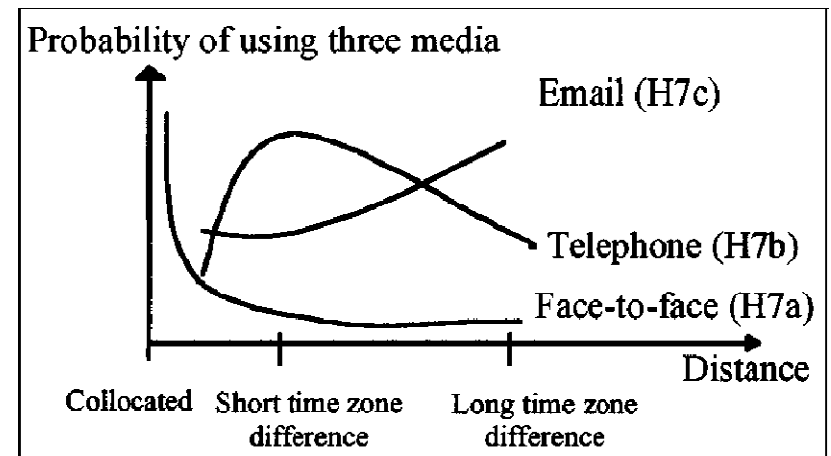
Reproduction from Distributed Software Development –
by Henry Liang

Original chart by Alistair Cockburn & Scott Ambler, 2002

Effects of Distance on Media Choice

Teams generally use a combination of at least two of the media in order to communicate effectively

- The probability of using face-to-face communications rapidly decays with distance.
- The probability of using telephone communication increases, reaches a maximum, and then decays with distance.
- The probability of using e-mail communication increases with distance



Extracted from IEEE Transactions on Engineering Management, Feb 2002

Team Member Experiences - 1

- **Challenges:**

- *“Unable to participate in a TSP launch of my team at a different site”*
- *“We miss the facial interaction and body language during the launch and don’t feel being part of the plan creation when not in the same room”*
- *“Some estimation assumptions made during the launch are not documented and affect what we commit to”*
- Delays in communication slows down task progress
- Not knowing the “Face-behind-the-voice” was difficult to communicate and ask for support
- It takes time to establish trust between members of the team at different locations
- Not having common tools and environment for Dev/QA at different sites of the same project made it difficult for verification & validation steps



Team Member Experiences - 2

- **Best Practices:**

- Working relationship with remote team members prior/during early project phases helped task assignment
- Use Video Conferencing/Webcams for improved communication
- Engineering team worked with Product Management prior to launch - helps raise awareness of features, resolve open questions and get clarity and prioritization on scope
- Management support of flexible working time if team members need to work very early or late in the day was a huge plus
- Having a face-to-face meeting once before or during the project makes the relationship stronger and improves communication between teams



Team Lead Experiences - 1

- **Challenges:**

- Simultaneous launches of dependent teams – not good from a communication / information sharing perspective
- Lack of clear understanding of problems and questions by offsite team members
- Need for over-communication to be involved in the project
- Dealing with the pain of very early or very late meetings with people in other time zones and continents
- Travel is getting expensive - can't have many people fly in just for the TSP launch
- Dependencies with other remote teams slows down things
- Getting hardware infrastructure to work for remote employees in a team based environment was difficult and time consuming

Culture, dependencies, time zones and high communication are major challenges

Team Lead Experiences - 2

- **Best Practices:**

- **Have the launch separately for each location (no overlapping if teams are dependent)**
- At a minimum use video conference facilities (if time zones permit)
- **It helps to have onsite managers trained and experienced in TSP before they work with a distributed TSP Team**
- Having a very supportive PD Leader is a key ingredient for project success
- **Have a point of contact on both sides to help resolve problems, answer questions and follow-up**
- Periodic 1:1 and status updates with counterpart project manager, during project execution

Team Lead Experiences - 3

- **Best Practices (Cont..)**

- **Have the team establish team standards and rules of engagement**
 - One team called it their “10 Commandments”
 - The team members performed self-audits for compliance
- Reward and recognition (irrespective of location) using local custom equivalents
- Find a common working time in the day, if time differences are less than 4 hours
- **Have functionally separate areas of ownership thereby reducing the communication and coordination overheads**

TSP Coach Experiences - 1

- **Challenges:**

- Sometimes TSP data not updated by remote team members (just like any new team)
- EV Calculation gets complicated with tool use on a split team (due to time zone calculation logic of the tool)
- Leadership styles impact weekly meeting mechanisms
 - *No project manager in weekly meetings sometimes*
- Team willingness to adopt the process
 - *Some remote teams are better than others*
- Video conferencing equipment failure – had to depend on voice
 - *Difficult for coaches to facilitate if they are not familiar with the voice (especially during re-launches)*



TSP Coach Experiences - 2

- **Best Practices:**

- **Remote team members kept up-to-date on launch progress – coach encouraged team to send daily update to remote members**
- Initiative Manager could become a proxy for Management at launch
- **Remote team members/managers with TSP background is very helpful**
 - Periodic e-mail communication about team status to managers and stakeholders was important
- **Coach participation in weekly team meetings is key to familiarize with remote voices and get them into the rhythm of using TSP**
- 1:1 coaching necessary for new team members to get their data right
- **Ensure everyone on the team is trained including off-site project managers and coordinators involved prior to start of the project**

Summary

Applying TSP in a distributed environment needs thoughtful planning and execution.

- There are many challenges with distributed development and adding TSP in fact amplifies it a bit more
- Support from management at all levels is key to the adoption of TSP more so in a distributed environment
- Knowing the “Face-behind-the-voice” is important; it makes communication and coordination smoother between teams
- Expect to support flexible work timings and some travel to make the project successful
- Having agreements / protocols within team, between teams that are dependent is necessary for success
- Reward and recognition for team members in a project irrespective of their physical location will go a long way in partnering with remote teams

Questions



References

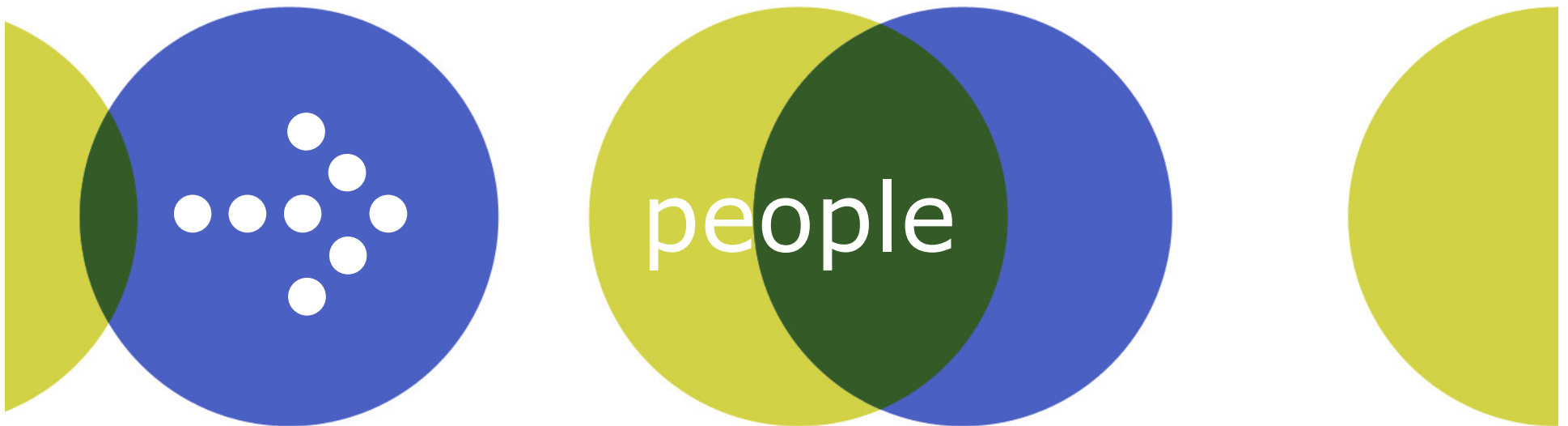
- Distributed Software Development – Henry Liang
- Critical Success Factors for Global Software development
- IEEE Transactions on Engineering Management – Feb 2002
- Globally Distributed Teams – Rational Edge

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Appendix



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Without the inputs, review feedback and support of all these people, this presentation would not have been possible.

Thank You!!

Team Member Best Practices - additional

- Functional leads from the dependent teams participated in the launch - this made launch go smoother and also helped team understand their roles/goals better
- Lessons learned from past projects were very helpful in getting a new project started right
- Regular 1:1's gives the coach and the team members confidence
- Shared collaborative environment /workspaces for documents, deliverables and status tracking makes team members life less chaotic