Building and Managing a Successful Offshore Team Using Scrum

Chicago Quality Assurance Association

Revision: 1.1

24 March 2009

David Olson, Patricia Rotman, Traci Yakimisky

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Building and Managing a Successful Offshore Team Using Scrum

Welcome & Introductions

Building Technologies

Agenda

❑ Who are we?

❑ What is scrum?

❑ What did we do?

❑ What made it work?

❑ What difference does culture make?

❑ What challenges do we face?

❑ How does this compare to others in the industry?

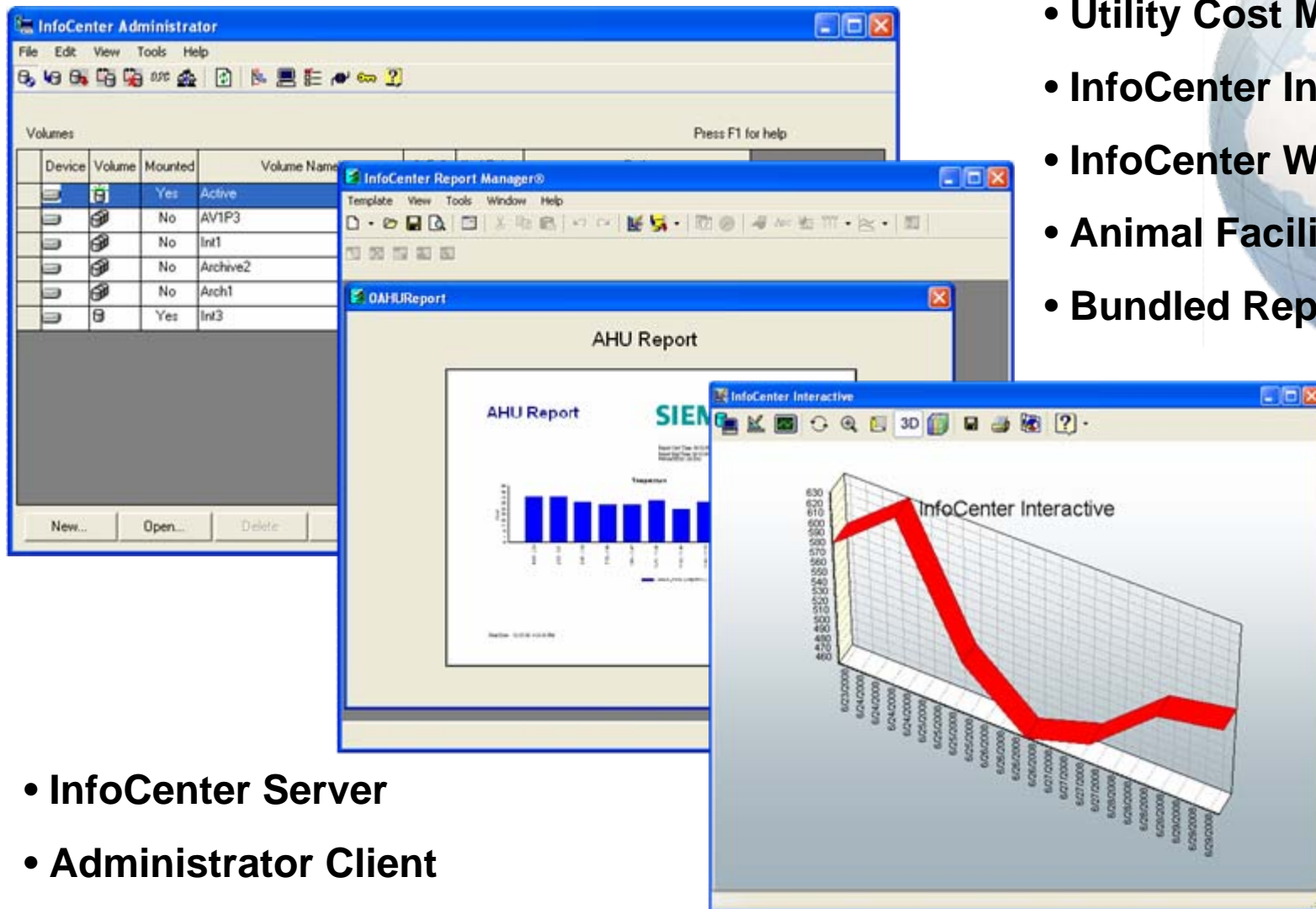❑ How do our offshore teams feel about Scrum?

❑ Resources

❑ Questions

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Who are we?

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Project Context – The InfoCenter Suite

- **Utility Cost Manager**

- **InfoCenter Interactive**

- **InfoCenter Web Client**

- **Animal Facility Report**

- **Bundled Reports Add-ins**

- **InfoCenter Server**

- **Administrator Client**

- **Report Manager Client**

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Project Context – InfoCenter Characteristics

❑ First release in 1998

❑ Visual Basic 6, SQL Server, C++, ASP

❑ Approximately 25% of customers are Pharmaceutical

❑ First FDA 21CFR Part11 compliant product of its kind

❑ First product in SBT to be CMM3 compliant

❑ Successful at Waterfall

Project Context – The InfoCenter Team

- Multi-Cultural, cross-discipline, co-located team
- Average time on InfoCenter product = 5 years
- Average level of software product development experience = 15 years
- We put the "FUN" in dysFUNctional

Key

- Project Mgr
- SW Eng
- Test Eng
- Tech Com
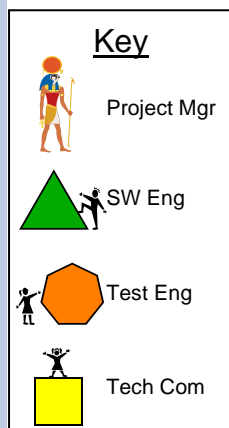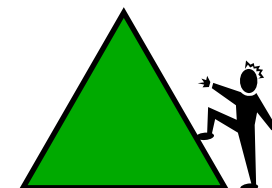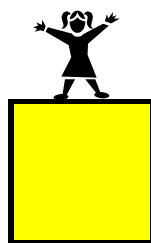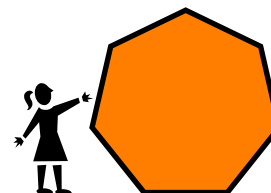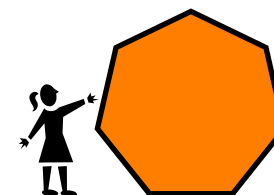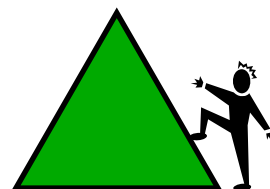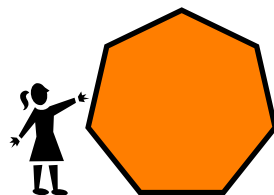
InfoCenter 1.6 Pilot for Offshoring

❑ **Why choose InfoCenter as the Pilot Program?**

– Experienced stable team

– Successful at waterfall

– Piloted other programs successfully (CMM level 3)

– Lower risk product

- Lower volume
- Feature vs. date driven
- Not integrated with hardware
- Not tied to any other product release

InfoCenter Offshore Pilot – Goals

❑ **Company Goals**

– Flexibility with Resources

– Improve Time to Market
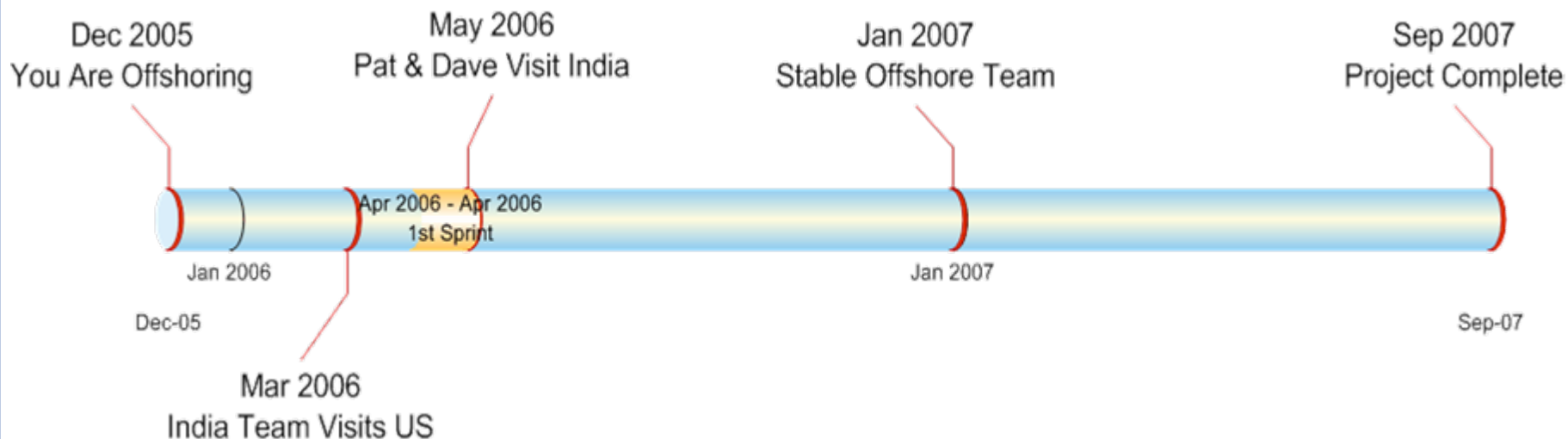
– Save Money

❑ **Team Goals**

– Build a Team in India

– Successfully utilize offshore resources

– Ship on time with high quality

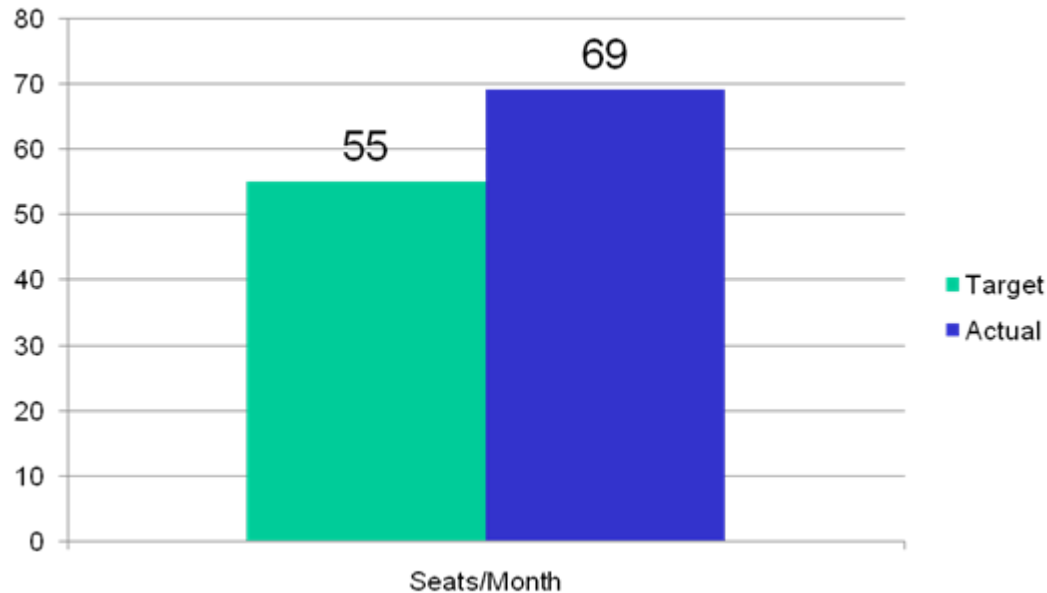– Long Term: Turn over the maintenance of the product to the offshore team

Offshore Pilot – Time Line

- ❑ Dec 2005: Got the word
- ❑ Mar 2006: Team (both members) come to the US
- ❑ Apr 2006: First Development Iteration
- ❑ May 2006: We visit India
- ❑ Jan 2007: Stable team in India
  - – Discipline Leads in place
  - – Working together for couple of iterations
- ❑ Sep 2007: Project Complete

Dec 2005
You Are Offshoring

May 2006
Pat & Dave Visit India

Jan 2007
Stable Offshore Team

Sep 2007
Project Complete

Apr 2006 - Apr 2006
1st Sprint

Jan 2006

Jan 2007

Dec-05

Sep-07

Mar 2006
India Team Visits US

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InfoCenter Offshore Pilot Project – Product Results

Financial Targets

Customer Satisfaction

What is Scrum?

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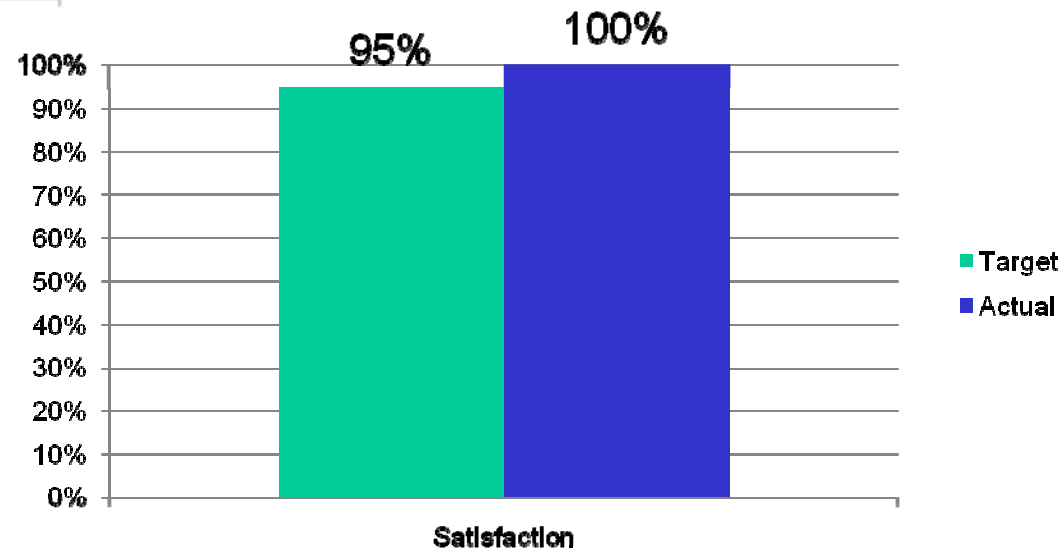
What is Scrum?

❑ A set of practices and principles

❑ An Agile project management framework

❑ Transparency / Visibility

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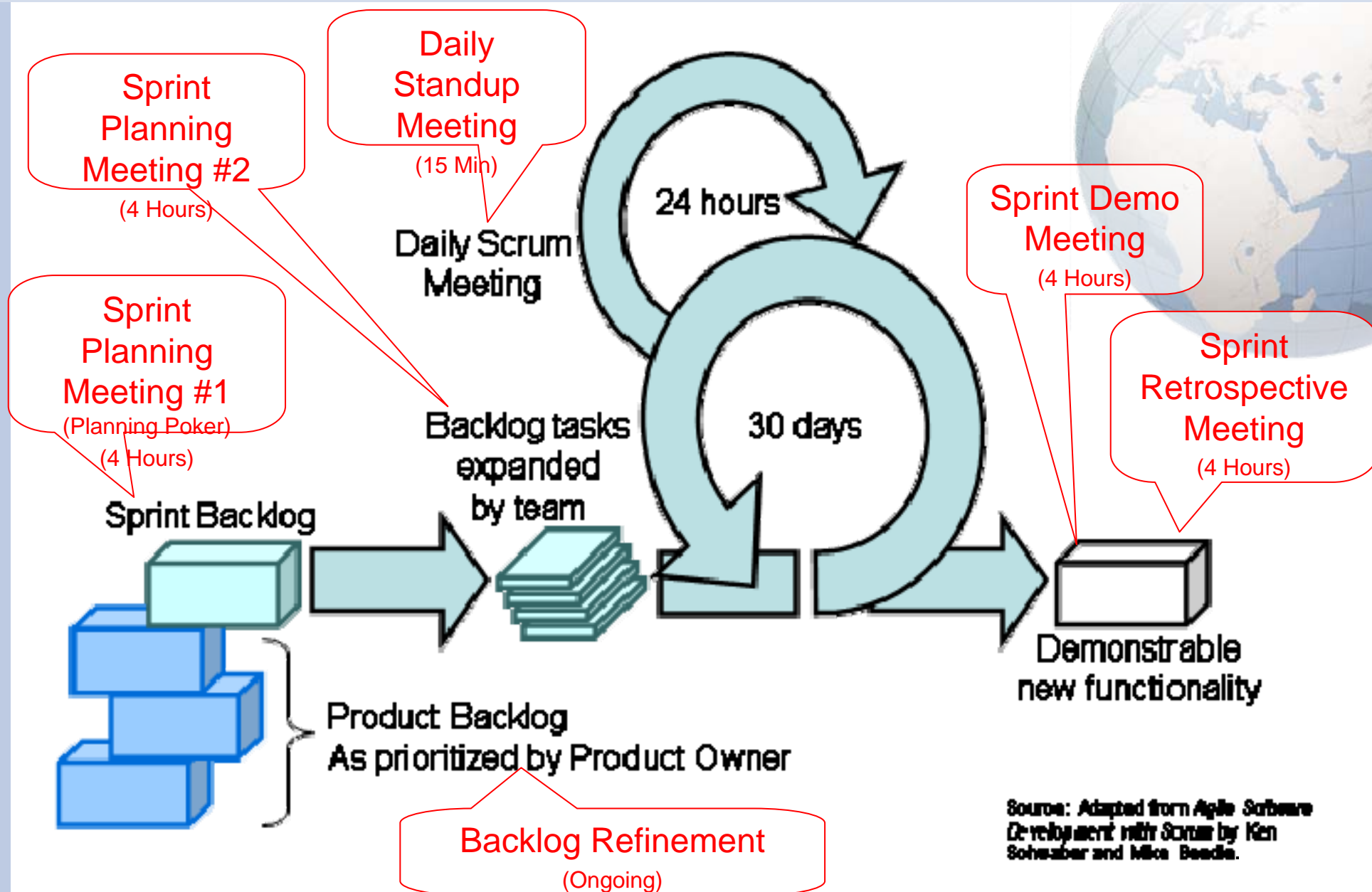Information)

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Scrum Principles

- ❑ Working software every iteration
- ❑ Delivering the "right" product
- ❑ Rooted in "The Toyota Way" principles
- ❑ A holistic (vs. sequential) approach to product development
- ❑ Simple but Hard

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Scrum Practices

Sprint Planning Meeting #2
(4 Hours)

Daily Standup Meeting
(15 Min)

Sprint Planning Meeting #1
(Planning Poker)
(4 Hours)

Sprint Demo Meeting
(4 Hours)

Sprint Retrospective Meeting
(4 Hours)

24 hours

Daily Scrum Meeting

30 days

Sprint Backlog

Backlog tasks expanded by team

Demonstrable new functionality

Product Backlog
As prioritized by Product Owner

Backlog Refinement
(Ongoing)

Source: Adapted from Agile Software Development with Scrum by Ken Schwaber and Mike Beedle.

What Did We Do?

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Offshore & Scrum Pilot

❑ Why Combine Scrum with the Offshore Pilot?
- Short iterations
- Small chunks of work
- Visibility - Ability to closely track the progress
- Frequent retrospective and feedback
- Clear roles and responsibilities

❑ Aha! moment

❑ Some didn't think this was a good idea!
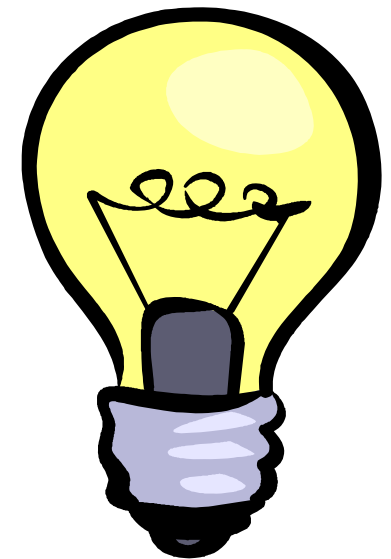
Offshore & Scrum Pilot

❑ Initial Steps

❑ Iterative Steps

❑ Introspective Steps

Offshore & Scrum Pilot – Initial Steps

❑ Risk Identification and Mitigation

❑ Research Offshoring (some positive, some negative)

❑ Cultural Awareness Training

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Offshore & Scrum Pilot – Initial Steps (cont'd)

- ❑ Product Backlog Refinement
- ❑ Offshore team leads did first sprint with us in the U.S.
- ❑ Detailed Product Training
- ❑ Built a cross-functional team in India
- ❑ Sprint planning calendar

Offshore & Scrum Pilot – Initial Steps (cont'd)

- Went to India!
- Trained India team in Scrum
- Face to Face Sprint planning first two sprints
- More Product Training

Offshore & Scrum Pilot – Initial Steps (cont'd)

- ❑ Decided to hold Onshore and Offshore teams to same standards
- ❑ Decided to treat Offshore team as a partner vs. consultant
- ❑ Team Bios on SharePoint

Role: Lead Developer - SISL
Title: Consultant

My small family consists of my Father, Mother, Wife and two daughters (Shifa- 6yrs & Jiya-2 years).

Apart from having good time with family and friends, my interests are listening Indian Classical Music, Books and Travelling. In sports I love Cricket, Tennis and Chess.

Favorite quote: "*Intellectuals solve problems; geniuses prevent them.*" ~ Albert Einstein

Role: Technical Lead for InfoCenter 1.6

I have worked for this company for 13 years (part of that time as a consultant) and have been on the InfoCenter team for 7 years.

I have a husband (Barry) and 2 sons (Serik - age 10 and Sam - age 4). We adopted our children from Kazakhstan in 2003 and 2004. Outside of work and family (in all my free time) my interests are skiing, hiking, biking, yoga, swimming, art, music, dance, dining with friends, and cooking.

Favorite quote: "Leap, and the net will apear."

Offshore & Scrum Pilot – Initial Steps (cont'd)

❑ SharePoint

Offshore & Scrum Pilot

❑ Initial Steps

❑ **Iterative Steps**

❑ Introspective Steps

Offshore & Scrum Pilot – Iterative Steps

- ❑ Backlog Refinement
- ❑ *Prepare for Sprint Planning #1*
- ❑ Sprint Planning #1
- ❑ Sprint Planning #2
- ❑ *Sprint Plan Review*
- ❑ Sprint Execution
- ❑ *Reviews (Designs, Code, Tests, Documentation)*
- ❑ Sprint Demo
- ❑ Sprint Retrospective

Iterative Step - Backlog Refinement

Sprint Planning Meeting #2
(4 Hours)

Daily Standup Meeting
(15 Min)

Sprint Planning Meeting #1
(Planning Poker)
(4 Hours)

Sprint Demo Meeting
(4 Hours)

Sprint Retrospective Meeting
(4 Hours)

24 hours

30 days

Daily Scrum Meeting

Backlog tasks expanded by team

Sprint Backlog

Demonstrable new functionality

Product Backlog
As prioritized by Product Owner

Backlog Refinement
(Ongoing)

Source: Adapted from Agile Software Development with Scrum by Ken Schwaber and Mike Beedle.

Iterative Step – Backlog Refinement

Requirements

Requirement XYZ

Raw thoughts, designs, considerations, workflows, etc.

Onshore Backlog Refinement Team

Person 2
Person 2
Person 2
Person 2

Design Notes

(User Stories XYZ.01, XYZ.02, etc.)

Product Backlog

User Story XYZ.06

When? Done during Onshore Sprint, but outside of Sprint (overhead)

How Long? 1 hour: 1 requirement -> 2-3 user stories. About 8 hours per sprint

At this point original wording of requirement is not important.

Iterative Step - Prepare Sprint Planning Meeting #1

❑ Product Owner re-prioritizes the Product Backlog

❑ Determine "best" high priority work to send offshore

❑ Allow offshore team time to review the user stories before

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Iterative Step - Sprint Planning Meeting #1

Sprint Planning Meeting #2 (4 Hours)

Daily Standup Meeting (15 Min)

Sprint Planning Meeting #1 (Planning Poker) (4 Hours)

Sprint Demo Meeting (4 Hours)

Sprint Retrospective Meeting (4 Hours)

24 hours

30 days

Daily Scrum Meeting

Backlog tasks expanded by team

Sprint Backlog

Product Backlog As prioritized by Product Owner

Backlog Refinement (Ongoing)

Demonstrable new functionality

Source: Adapted from Agile Software Development with Scrum by Ken Schwaber and Mike Beedle.

Iterative Step - Sprint Planning Meeting #1

- ❑ 2-3 hour meeting
- ❑ Review user stories and UI designs
- ❑ Planning Poker online
- ❑ Great time to observe offshore team dynamics

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Iterative Steps – Sprint Planning #2 & Sprint Plan Review

Sprint Planning Meeting #2
(4 Hours)

Daily Standup Meeting
(15 Min)

Sprint Planning Meeting #1
(Planning Poker)
(4 Hours)

Sprint Demo Meeting
(4 Hours)

Sprint Retrospective Meeting
(4 Hours)

Backlog Refinement
(Ongoing)

Daily Scrum Meeting

24 hours

30 days

Backlog tasks expanded by team

Sprint Backlog

Product Backlog
As prioritized by Product Owner

Demonstrable new functionality

Source: Adapted from Agile Software Development with Scrum by Ken Schwaber and Mike Beedle.

Iterative Steps – Sprint Planning #2 & Sprint Plan Review

❑ Face to face once

❑ They do it on their own, make their own sprint Burndown charts

❑ Meet to review Sprint Plan

❑ Offshore team very good at this!

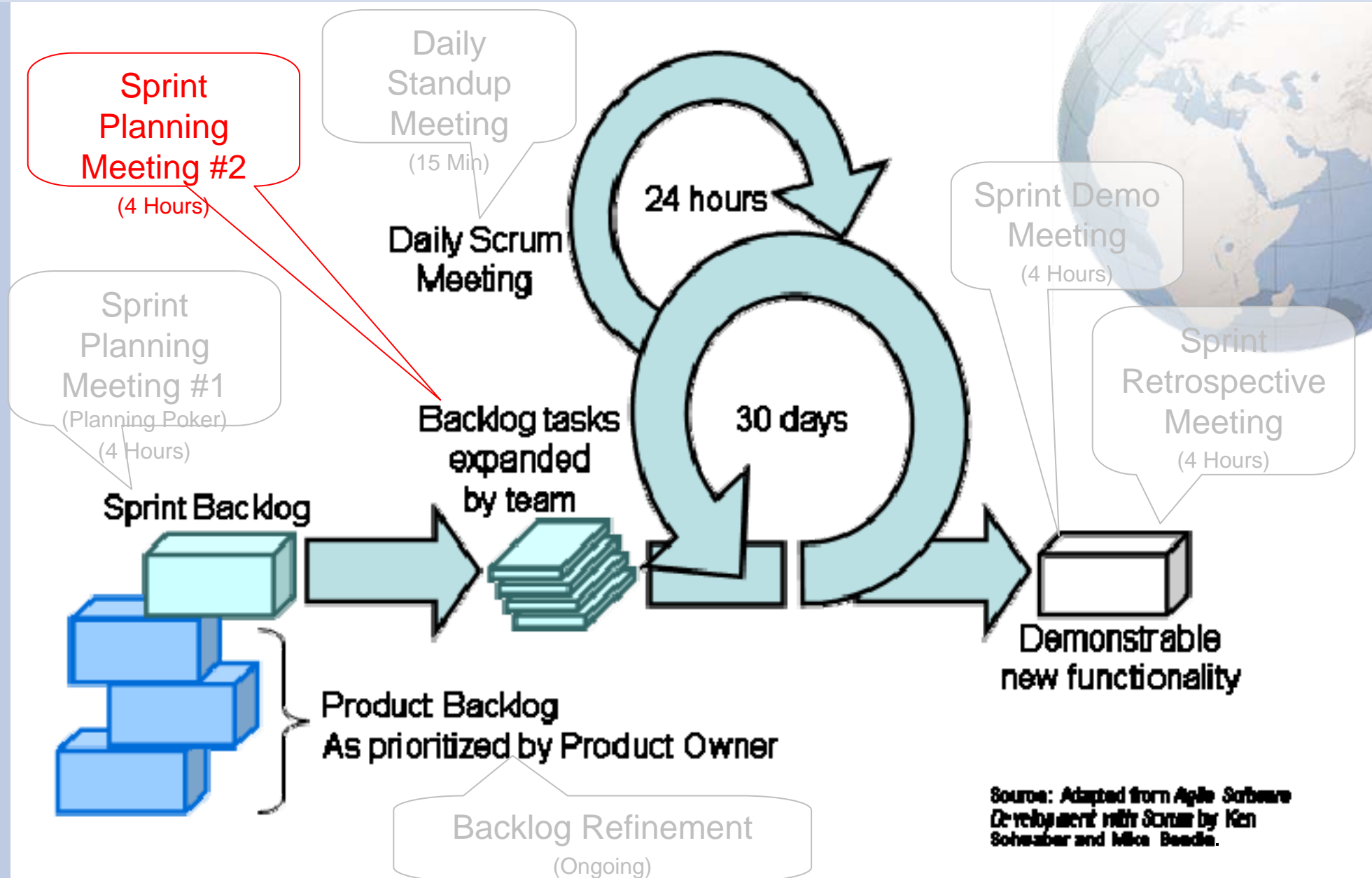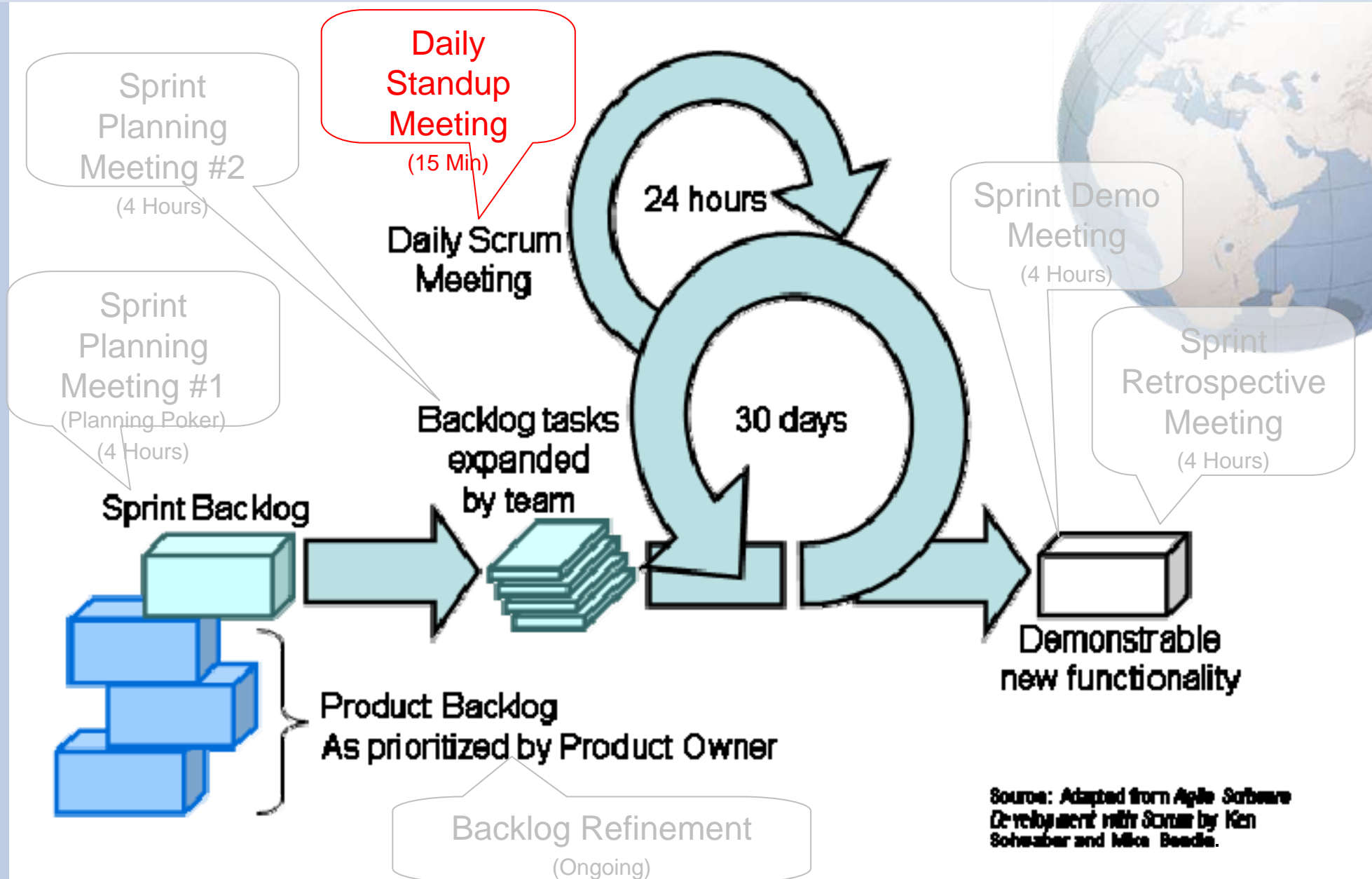|	PF-70.11 Dynamic Data Analysis - Licensing								
PF-70.11.01	Design	8.00				100%	8.00	8.00	0
	Insert Team tasks above this line								
PF-70.11.02	Design Doc	2.00				100%	2.00	2.00	0
PF-70.11.03	Unit Test and Doc	8.00				100%	8.00	8.00	0
PF-70.11.04	UI change and Disable functionality for no licenses.	8.00				100%	8.00	8.00	0
PF-70.11.05	3D animated graph	12.00				100%	12.00	12.00	0
PF-70.11.06	Bug Fixes	10.00				100%	10.00	10.00	0
PF-70.11.17	Understanding Gateway & Debug Environment SetUp	8.00				100%	8.00	8.00	0
PF-70.11.18	Adding InterActive Licenses to Gateway	12.00				100%	12.00	12.00	0
	Insert Development tasks above this line								
PF-70.11.07	Scenario identification	4.00				100%	4.00	4.00	0
PF-70.11.08	Writing Test Cases	7.00				100%	7.00	7.00	0
PF-70.11.09	Incorporating Review comments	2.00				100%	2.00	2.00	0
PF-70.11.10	Executing Test Cases	3.00				100%	3.00	3.00	0
PF-70.11.11	Re-test	5.00				100%	5.00	5.00	0
PF-70.11.12	Ad-hoc Testing	5.00				100%	5.00	5.00	0
	Insert Testing tasks above this line								
PF-70.11.13	Update documentation for II licensing	1.00				100%	1.00	1.00	0
	Insert Writing tasks above this line								
PF-70.11.13	Design Review	5.00				100%	5.00	5.00	0
PF-70.11.14	Test Case Design Review	5.00				100%	5.00	5.00	0
PF-70.11.15	Interactive Code Review	2.00				100%	2.00	2.00	0
PF-70.11.16	Gateway Code Review	2.00				100%	2.00	2.00	0
	Insert Review tasks above this line								
	Moved Dropped Tasks beneath this line								
	Moved Dropped Tasks above this line								
					0	100%			

Iterative Steps – Sprint Execution

Daily Standup Meeting (15 Min)

Sprint Planning Meeting #2 (4 Hours)

Sprint Planning Meeting #1 (Planning Poker) (4 Hours)

Daily Scrum Meeting

24 hours

30 days

Sprint Demo Meeting (4 Hours)

Sprint Retrospective Meeting (4 Hours)

Sprint Backlog

Backlog tasks expanded by team

Demonstrable new functionality

Product Backlog As prioritized by Product Owner

Backlog Refinement (Ongoing)

Source: Adapted from Agile Software Development with Scrum by Ken Schwaber and Mike Beedle.

Iterative Steps – Sprint Execution

❑ Take a look at the Burndown chart

❑ Scrum of Scrums

❑ Answer functional and technical questions

❑ Remove impediments

SPRINT #13
(SISL) BURNDOWN CHART
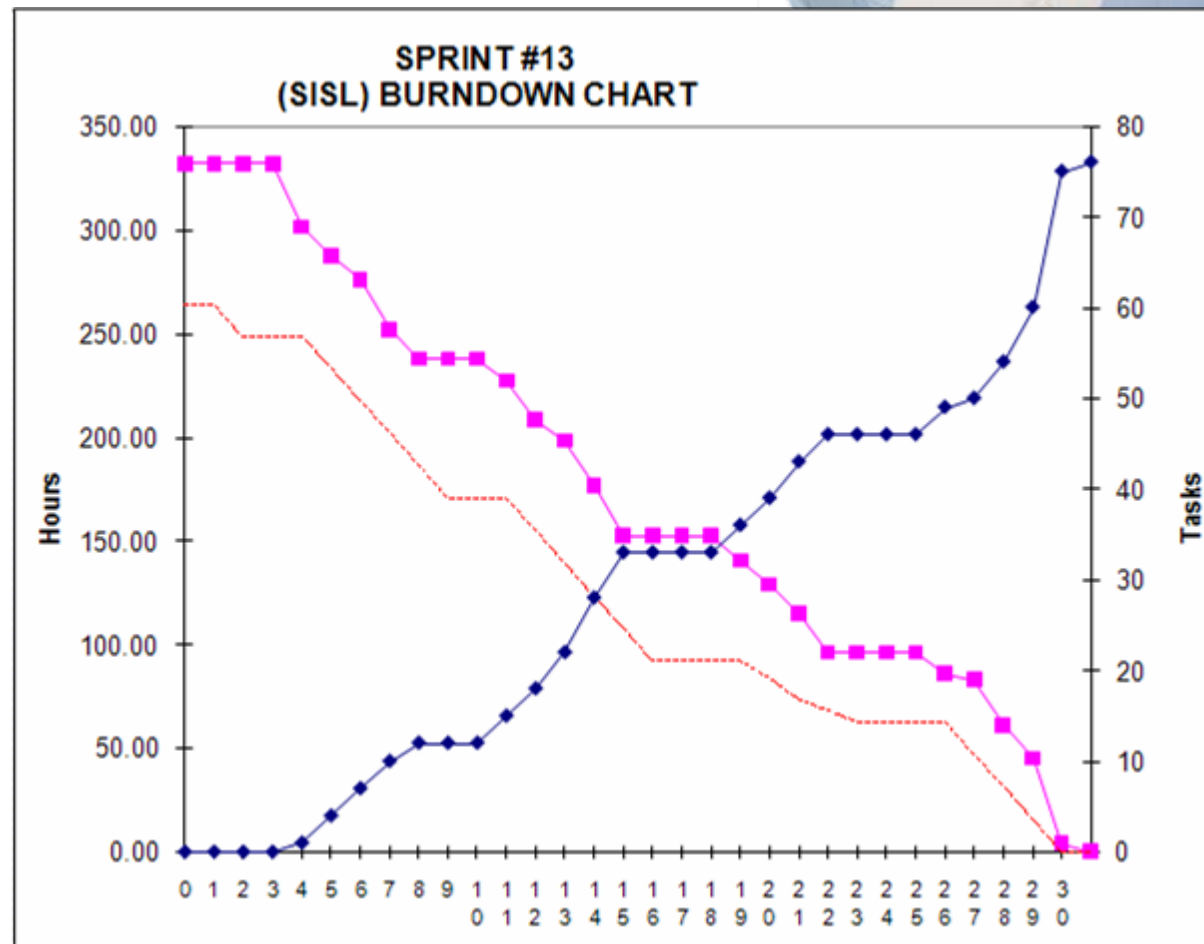
Iterative Steps – Peer Reviews

❑ Reviews (Designs, Code, Tests, Documentation)
  – Do it during the sprint
  – Meeting style is more efficient and effective

❑ A Peer Review is not an Inquisition!

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Scrum Practices

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Product Backlog As prioritized by Product Owner

Backlog Refinement (Ongoing)

Demonstrable new functionality

Source: Adapted from Agile Software Development with Scrum by Ken Schwaber and Mike Beedle.

Iterative Steps – Sprint Demo & Retrospective
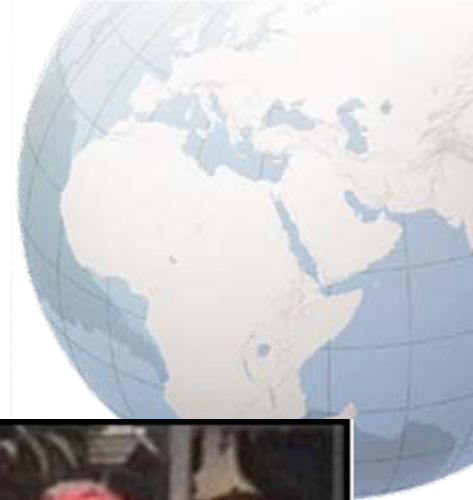
❑ **Product owner needs to be there, so plan ahead**

❑ **Can be difficult due to number of people involved**
- – Offshore team (7)
- – Onshore liaisons (3)
- – Project Manager (1)
- – Product Owner (1)

❑ **Offshore team really good at this! Well planned, well delivered demos**

❑ **Format for Retrospectives**
- – Review artifacts (Sprint Burndown, Defects, What is done checklist)
- – Open ended questions worked best

Offshore & Scrum Pilot

❑ Initial Steps

❑ Iterative Steps

❑ **Introspective Steps**

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Introspective Steps

❑ Brought 3 leads from India and one key developer to the US for a couple of weeks

❑ Conducted multi-day brainstorming session (Open Space) for improvement suggestions for next project

❑ Created a backlog of improvement efforts and started working on them.

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Key Success Factors

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Key Success Factors
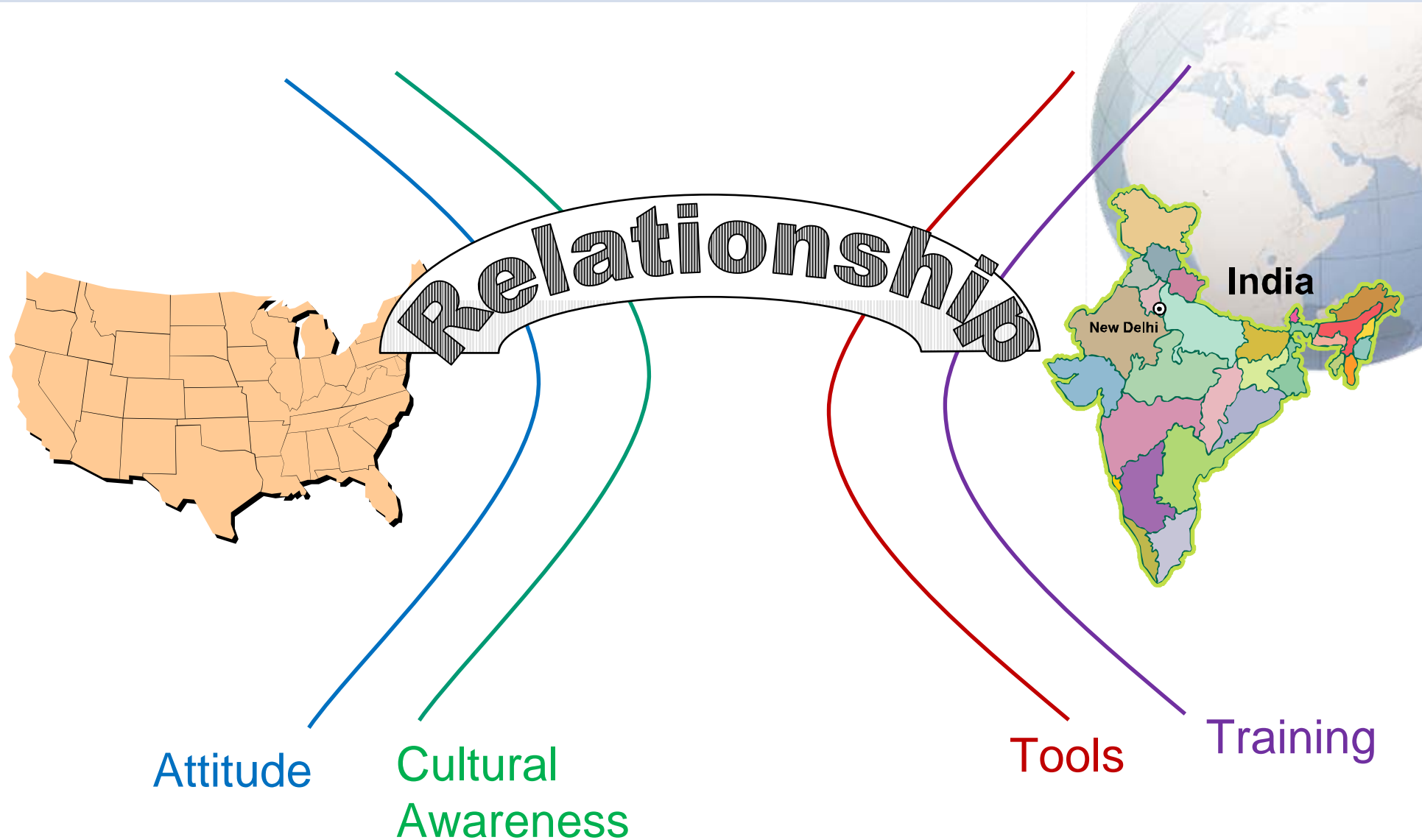
□ Attitude

□ Trust

□ Cultural Awareness

□ Relationships
  – Meet the family
  – Social events
  – Talk about personal things before work things
  – Visit their country
  – Be a good guest
  – Be a good host (We fell very short here on their initial trip)

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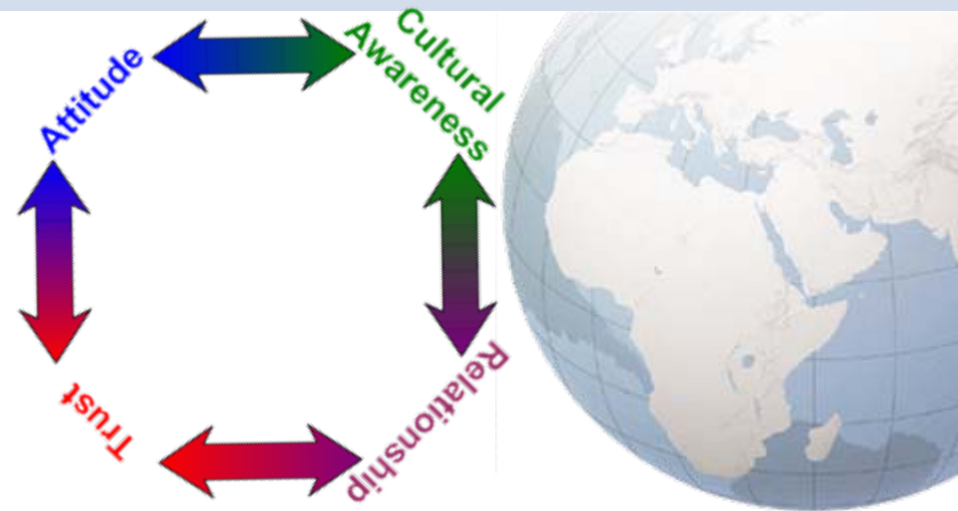
Offshore & Scrum Pilot Project

Relationship

India

New Delhi

Attitude

Cultural Awareness

Tools

Training

Key Success Factors (cont'd)

- ❑ User Stories
  - Well defined User Stories
  - Selection of user stories

- ❑ Roles and Lines of Communication
  - Scrum of Scrums meetings (**single** point of contact per discipline, one for whole project)
  - Offshore Scrum Master
  - Product Owner Proxy (ex.. Sprint Planning #1 Scrum rules say that P.O. should be there)
  - Authority clearly identified, especially when it is delegated

Key Success Factors (cont'd)

❑ Long runway for takeoff

❑ Partner vs. Consultant relationship

❑ Flexibility and patience (work schedules, meeting times, bad connections during meetings, etc.)

❑ Giving and receiving honest feedback in a timely fashion

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Scrum and Culture

❑ **Different aspects of Scrum will be more challenging for different cultures**

  – Pair Programming

  – Taking Own Work

  – Hierarchy of roles

  – Authority

❑ **Observations from our experience**

❑ **Scrum as a culture?**

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Ongoing Challenges

❑ Face to Face meetings

❑ Time zones

❑ Scheduling many sprint review and retrospective meetings with the same set of people involved in each one.

❑ Attitudes of onshore team

❑ Experience levels offshore vs. onshore (Quality of deliverables)

Experience Comparisons by Location & Discipline
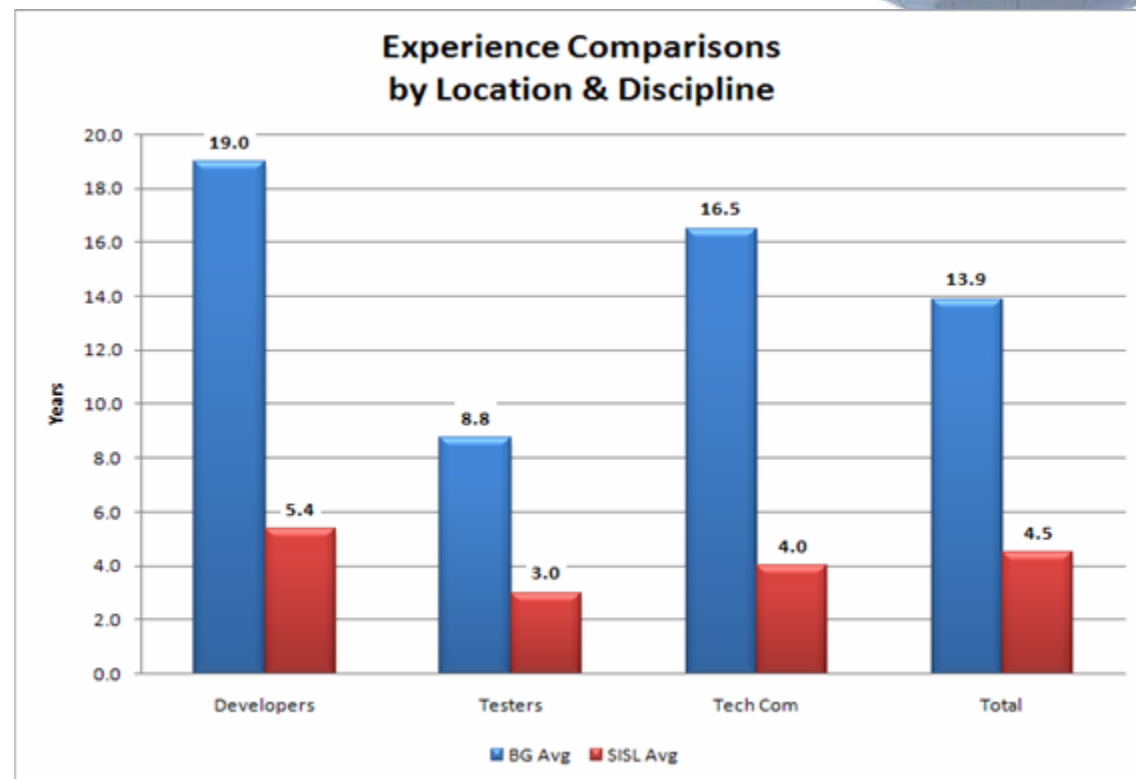
Ongoing Challenges

❑ Domain knowledge

❑ Configuration Management

❑ Availability of Product Owner (Product Owner proxy is a good solution)

❑ Giving honest, direct feedback in a timely fashion

❑ Measuring the right things (quality vs. quantity, "doneness")

❑ Growing leaders (attitude, skills, product knowledge, willingness to travel)

❑ Support time required of onshore team

❑ Infrastructure

Industry Comparisons

❑ **"Agile Offshoring : It's hard work but it works!"**
posted by: Vikas Hazrati on May 11, 2007

"As an advice for the offshoring industry, follow Scrum with the Toyota principles in spirit without diluting their essence. Apply them to your way of working and see the magic unfold. "

http://www.theserverside.com/news/thread.tss?thread_id=45367#232654

❑ **"Using an Agile Software Process with Offshore Development"**
by *Martin Fowler*

"We may never really understand the pros and cons offshore development. Software development is an activity who's output is impossible to measure. As such we'll never have hard numbers to prove one approach better than another. What we will see is growing qualitative feedback on the benefits of agility and offshore development - these qualitative assessments will determine if either, or both, will survive. "

http://martinfowler.com/articles/agileOffshore.html

Industry Comparisons (cont'd)

"Ambassador Model for Effectively Distributed Agile Teams" (by BigVisible reps Giora Morein and George Schlitz at the 2008 Scrum Gathering)
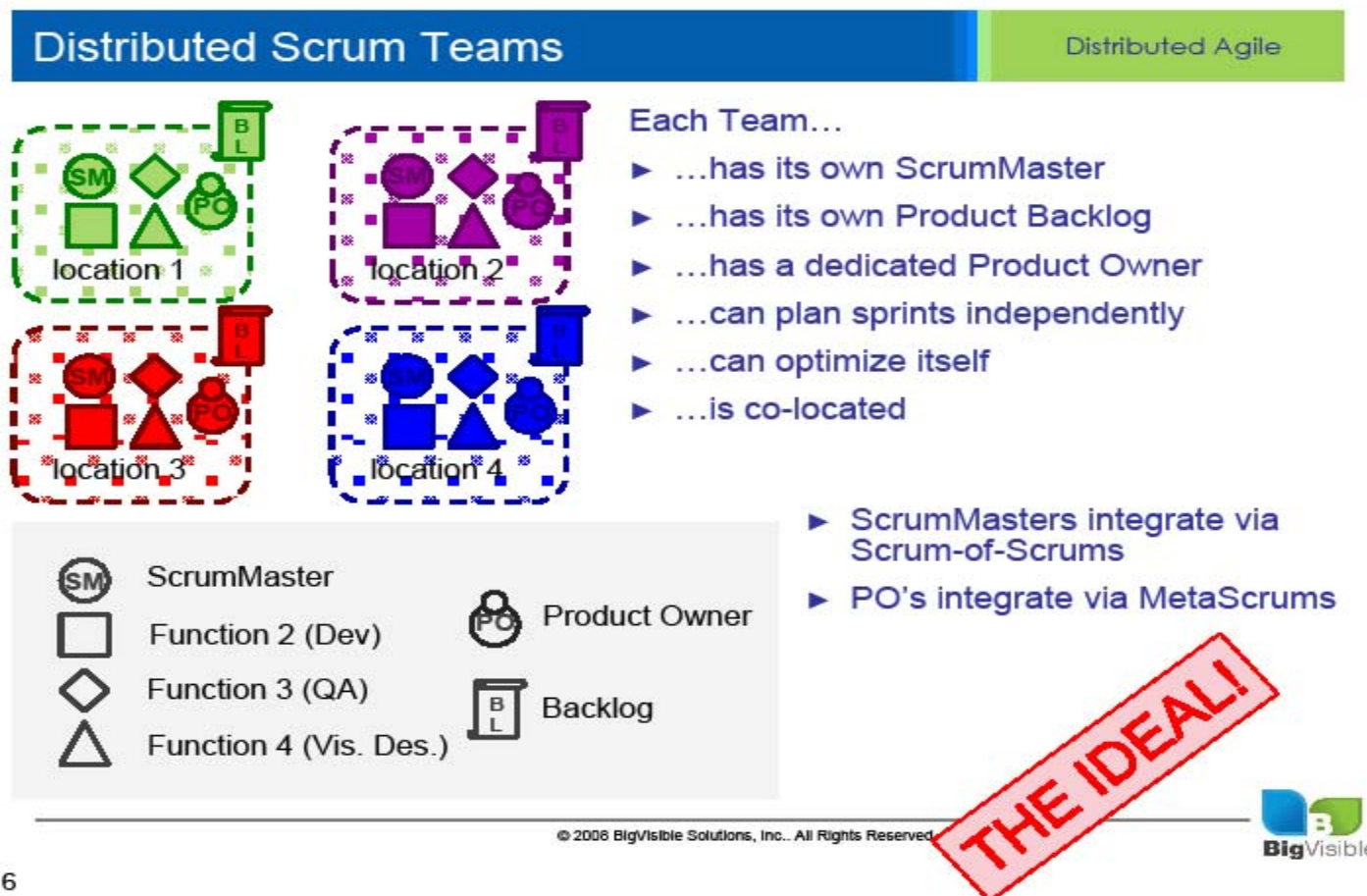
Thoughts From India – Scrum Benefits

- ❑ Scrum is especially beneficial in monitoring and controlling activities in all sites

- ❑ Communication is key – regular Scrum of Scrums meeting provides the means.

- ❑ Regular retrospectives are effective to get immediate and actual feedback

- ❑ Detailed User Stories were a great benefit to offshore teams. This not-so-bookish approach is really amazing!!

- ❑ Teams like the results driven approach

- ❑ Since each sprint needs to be a 'complete' delivery, we surely end up having a product more detailed and of higher quality.

- ❑ Scrum is must when anyone is thinking of Off Shoring!!!

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Thoughts From India – Scrum Challenges

- ❑ Keeping everybody always on toes to perform, deliver and demonstrate

- ❑ People were used getting their work chosen for them. Now in Scrum they are free to choose from Sprint Backlog. The challenge is to pick up the right tasks and coordinate effectively.

- ❑ Handling impediments in a timely fashion

- ❑ Effective daily meetings – reporting to the team vs. manager

- ❑ Stringent deadlines

- ❑ Ability to deliver within stipulated time frame despite obstacles

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Future

- ❑ Constant integration

- ❑ Automated regression testing

- ❑ Ambassador Program

- ❑ Automated and objective measures of code quality

InfoCenter Offshore Pilot – Goals

❑ **Company Goals**

– Flexibility with Resources

– Improve Time to Market

– Save Money

❑ **Team Goals**

– Build a Team in India

– Successfully utilize offshore resources

– Ship on time with high quality

– Long Term: Turn over the maintenance of the product to the offshore team

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Resources

Agile Alliance

www.agilealliance.org

Control Chaos

www.controlchaos.com

Mountain Goat Software

www.mountaingoatsoftware.com

Planning Poker

www.planningpoker.com

Scrum Alliance

www.scrumalliance.org

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Building Technologies