

# DISTRIBUTED AGILE DEVELOPMENT



Joke: Best coding? Best demos? Most slides? Nope... Prettiest pictures!!

Our experience is with geographically distributed agile teams but much of it applies to...

- Any distributed team
- Teams with teleworkers
- Teams on different floors within the same building

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About the picture: Aral Sea in Kazakhstan and Uzbekistan



Increase team efficiency  
Software development is about communication  
Drive down risk (reduce failure rates by 20%)

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About the picture: Hubble mission control

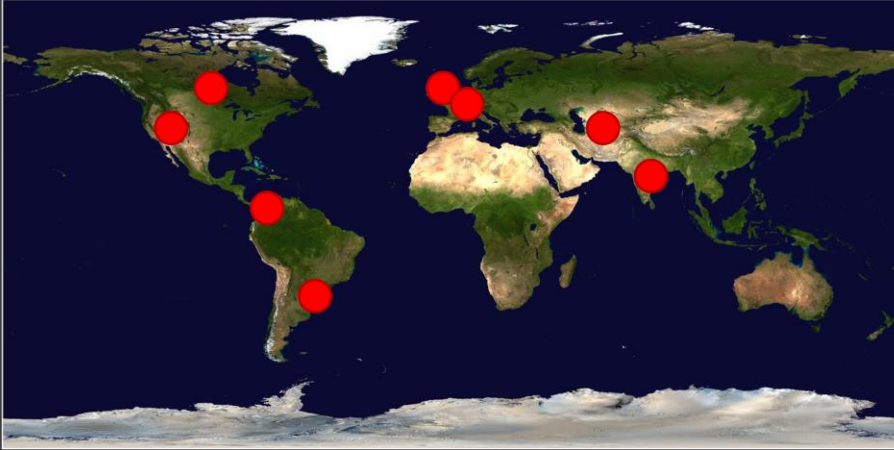


57% of agile teams are distributed (VersionOne survey)

- Global Markets
- Global Talent
- Reduce Costs?

There's a tradeoff you get these things at the potential expense of performance and productivity

## PATTERNS & PRACTICES GLOBALLY



For a team of 60 or so people we seem to be everywhere! Most (but not all) of the Microsoft FTEs work in Redmond but we have many consultants/contractors who work in many other places.

p&p have been doing distributed agile development for about 5 years

Most teams are distributed to some degree

- Get the most talented people
- Control costs

p&p is not typical of *all* teams at Microsoft



A story... During the Agile 2008 distributed agile workshop I spent several hours listening to people talking about their distributed teams...

Distributed teams sound like dysfunctional teams!

Time zone differences make this worse!

If you focus on the practices then this makes things worse!

Teams rely on

- Person to person communication
- A set of mutually supporting practices

Everything is harder...

- Coaching
- Learning about the problem domain, architecture or design
- Story cards and pair programming are both examples... These need to

be modified in the light of distribution

Distribution may start to effect the way your product looks!

- Conway's Law





How do you rise to the occasion and help your distributed team be the best it can be?

You have to work on minimizing the problems that distribution causes.

This requires commitment.. By the team and management  
Additional practices and tools



Agile is a bunch of overlapping practices that rely on communication in one way or another.

Remove one and it weakens the other.

Example... Pair programming. Hard with two developers in different (non-overlapping) time zones.

Do pair programming when you can, supplement it with code reviews (1:1 & team).

Example... Story cards are really placeholders for conversations.

**The goal...** minimize the difference between people in the same room and people elsewhere.

Tools...

- Conference phones
- Web cams, if bandwidth allows
- Hands free headsets
- Projectors

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About the picture: The VLA radio telescope



At pivotal points during the project...

- The beginning... requirements, release planning, design, metaphor
- Key points... releases, customer visits
- The end... retrospective, ship party

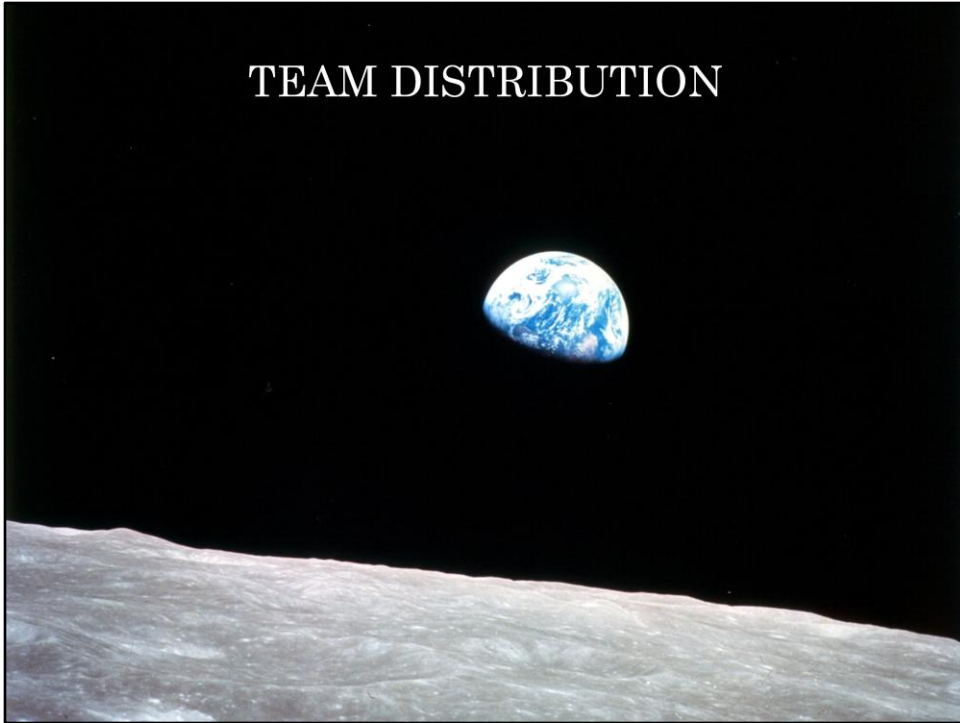
Really all about building *trust* and inter-personal relationships

So make sure it includes some social aspects!

- Time for hanging out over coffee
- Team lunch
- Rock band party



## TEAM DISTRIBUTION



Time zones just make things harder

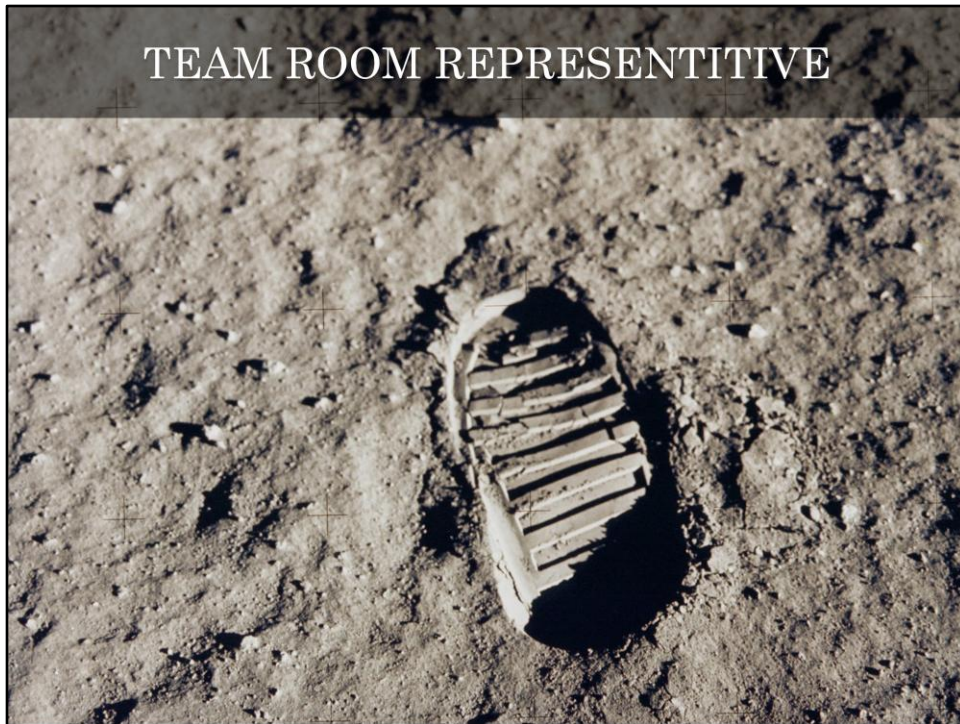
- Make the best use of overlapping time
- Use a team room representative (more on that in a moment)

Asymmetric distributions are hard too

- Best avoided
- Team buddy
- Enforce symmetry

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About the picture: This view of the rising Earth greeted the Apollo 8 astronauts as they came from behind the Moon.



Trusted member of offshore team who sits in the team room

- Acts as a buffer
- Represents the remote team

Best mitigation for:

- Large time zone shifts
- Function focused remote teams

p&p teams typically have one team room representative and at least one other person from the remote team in the room

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About the picture: Buzz Aldrin's boot print on the moon.



It's easy to abandon key practices if there's nobody there to keep you on the straight and narrow.

Coaches are *not* practice cops

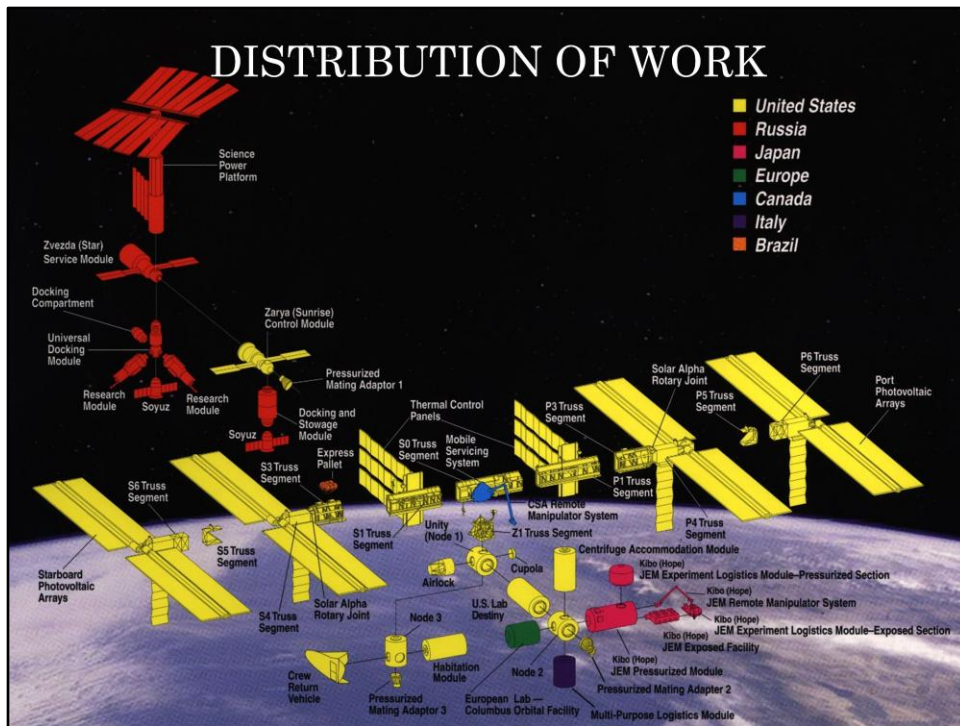
- Remind team of underlying principles
- Help them adapt and modify

Have someone who knows they're the coach!

Provide the team with training so everyone knows what to expect.

- @ p&p this is a wiki and books.

Hold retrospectives!



This is NOT how you should think about building a software product!

Users care about end to end stories not individual components

Conway's Law will tempt you to...

- Assign work by location
- Specialize sub-teams accordingly

Actually you should do the opposite

- Assign stories to the team
- Work to remove significant specialization

## BUILD THE TEAM OVER TIME



NASA didn't throw away the people and learning from the early space programs and start over with Apollo

- Teams take time to form
- Learn practices and working styles
- Learn the problem domain

Don't do this with your teams

- Build them round a core team
- Product additional artifacts (like a wiki) to ramp up new people

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About the picture: This is Gemini 7 taken from Gemini 6. NASA didn't just get up one day and say "let's put a man on the moon"... That took a politician!





Tools for agility, already discussed in the keynote and panel.

The reason agile teams use things like sticky notes is because they're easy to adapt and don't constrain you.

When you provide tools that support distribution make sure they don't constrain you. Don't replace something simple with something overly complex!

Example... The WSSF:ME removed almost all the workflow from our VSTS template.

p&p uses...

SharePoint wikis

VSTS

Scrum for Team System by Conchango

LiveMeeting

SharedView

Conference phones

Instant Messenger

Hands free headsets

Projectors



So what are the conclusions!

- You can be successful as we have been
- It requires (significant) effort
- Travelling
- Providing the right tools
- Coaching teams
- Thinking about what you're doing and why – principles not practices

**It's all about allowing the principles to guide your experiences rather than blindly following a set of practices that were designed for a team working in the same room**

Check out the white paper, it's on the conference disk drive  
Come and talk to me, I'd love to hear about your experiences

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About the picture: First picture of Earth taken from the surface of another planet, Mars.

## DO'S AND DON'TS

<u>Do</u>	maximize communication bandwidth
<u>Don't</u>	continually reorganize your teams
<u>Do</u>	plan to travel
<u>Don't</u>	distribute your work by components
<u>Do</u>	provide tools to augment existing practices
<u>Don't</u>	let remote team members get forgotten
<u>Do</u>	evolve the team's practices
<u>Don't</u>	forget retrospectives
<u>Do</u>	focus on coaching

Here's a list of do's and don't from the paper. It's twenty pages so this is really just a flavor for some of what's inside.

## MORE DISTRIBUTION NOT LESS



This problem isn't going to go away so we had better start to figure out how to do it better!

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About the picture: Humankind's best attempt at distribution. In 2005 Voyager 1 left the solar system after a 28 years of travel.



## RESOURCES

Full slide deck available here (soon):

<http://www.ademiller.com/tech/talks>

Download the white paper & video here:

<http://msdn.microsoft.com/practices>

Microsoft patterns & practices

<http://msdn.microsoft.com/practices>

Ade Miller's blog

<http://www.ademiller.com/tech>

Stock photos in this presentation

<http://www.nasaimages.org>

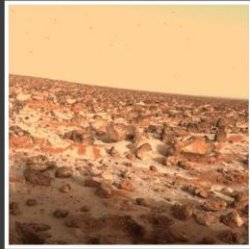
The slide deck for this presentation along with speaker notes can be downloaded

The white paper PDF will be on the disk drive

If you haven't seen the p&p team rooms then I can arrange something

Ade blogs a lot about many of the things discussed here!





## QUESTIONS?

What else do you want to know?

I'm done!

I am *not able* to answer the following:

Is there life on Mars?

Is the Standard Model of particle physics correct?

How old is the Universe?

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You can find out more about the questions, but not the answers, here:

<http://mars.jpl.nasa.gov/science/life/index.html>

<http://www.bnl.gov/bnlweb/pubaf/pr/2001/bnlpr020801.htm>

<http://starchild.gsfc.nasa.gov/docs/StarChild/questions/question28.html>