



Remote Work & Remote Collaboration

Scalable Software Engineering
WS 2022/23

Enterprise Platform and Integration Concepts

I

want to,
can, or
have to,

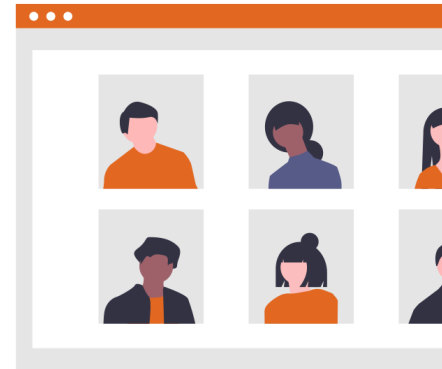
work from where I live

Motivation



Remote Work / Global Software Development

- 81% of Agile survey respondents' organizations used **distributed Agile teams** (i.e. not co-located)
- 71% of respondents featured multiple Agile co-located teams collaborating across geographic boundaries



“ The current worldwide health crisis may prove to be an inflection point that leads to an additional increase in distributed teams as a “new normal” ”
— 14th Annual State of Agile Report

Motivation



Reasons for remote / Global Software Development

- **Work-Life balance**, flexibility of work
- **Costs** / reallocation of funds (better laptops instead of office space?!)
- Implement "**Follow the Sun**" development
 - Core idea: reduce time to market by always having a team work on the product
 - Hand off work at end of work day to next site several time zones away
- (Safer during a **global pandemic**)



Background: Collaboration Patterns

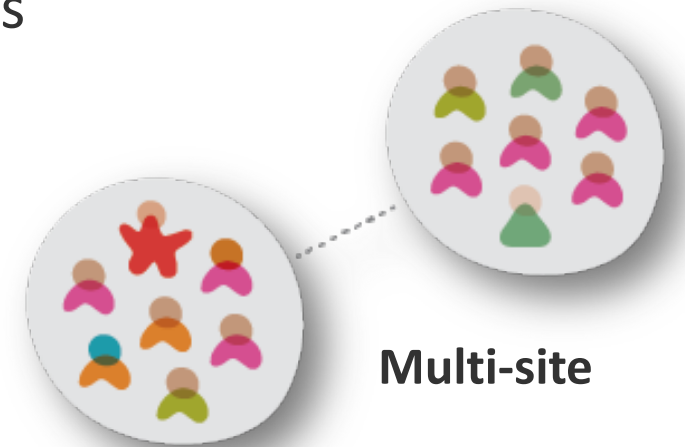


- **Single-site team:** Everyone in the same physical location
 - Collaborate without arranging anything
 - Easily see what everyone else is up to, shared space?



Single site

- **Multi-site:** 2+ groups at separate locations within a larger team
 - Perhaps formal sub-team boundaries and responsibilities
 - E.g. dev team split between Germany and India

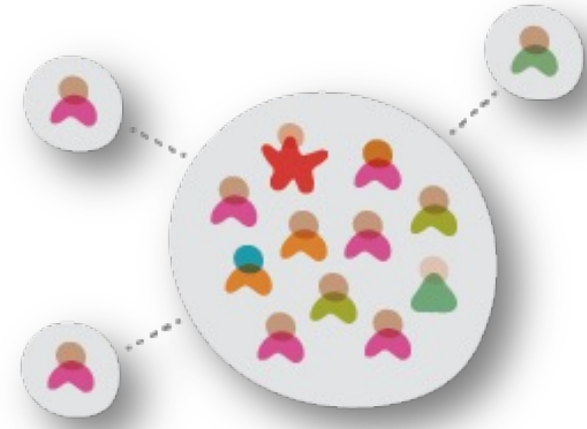


Multi-site

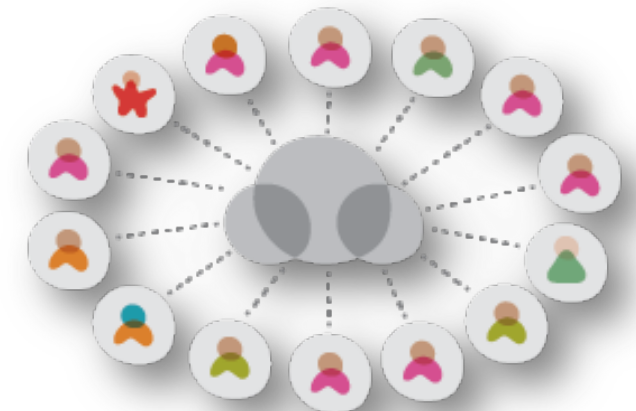
Background: Collaboration Patterns



- **Satellite workers:** Most of team co-located, few working remotely
 - Model e.g. for contractors
 - Consider whether satellites can work autonomously
- **Remote-first:** Everyone in separate locations (usually from home)
 - All collaboration is remote, full commitment
 - Most open-source projects
 - Important central hub



Satellite workers



Remote-first

Background: Remoteness & Agile

Agile Manifesto Principles

- People collaborate better with direct interactions

“

The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.

”

Agile Manifesto also states: *Individuals and Interactions over Process and Tools*, so adapt to what works for you!

- Relationships within teams are the **glue of collaboration**
- Co-located communication is richer than online communications
- Keep this in mind when selecting tools and collaboration processes
 - E.g. actively use cameras, especially in 1:1 conversations



Challenges & Benefits of Remote Work

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Challenges of Remote

Possible issues of team setups

- Multi-site teams form "**us-vs-them attitude**"
 - *Contact visits*: short cross team visits, build relationships
 - *Ambassadors*: Spend prolonged time at a different site
- Dividing the work into silos
 - Remember **Conway's Law**
 - Each team should get to create direct business value
- **Detached Satellites**
 - Most communication will happen within co-located team
 - Satellite workers may lose connection
 - Temporary measure?



"If you have 4 groups working on a compiler, you'll get a 4-pass compiler."
— Eric S. Raymond

Challenges of Remote



Possible organizational issues

- Impersonal **onboarding** (uncertainty, trust, responsiveness)
- **Mentoring** (junior) staff
 - Hard to mentor people remotely, avoid juniors being satellite workers
 - Ensure each site has mentors to guide teams
- **Indirect management**
 - No direct insight into people's work, **you need to trust**
 - Infer what's happening based on the results
- Harder to build **shared company/team culture**
 - Best collaboration practices have to be **discovered**
 - Finding & building them requires exposure to others and their ways of work



Sources:

<https://martinfowler.com/articles/remote-or-co-located.html>

<https://www.jamesshore.com/v2/blog/2019/three-challenges-of-distributed-teams>

Challenges of Remote

Consequences of remote teams

■ Security

- Private and work computer might now be the same
- Can a company make sure that data is safe in homes?

■ Culture mismatches in geographically distributed team

- Diverse (work) cultures & social norms
- Culturally accepted ways of communicating
- Expectation management

■ No shared space

- No physical coordination artifacts, no chance encounters
- Total reliance on digital project management tools



Consider regular
Water Cooler Chats /
"der Flurfunk"

Challenges of Remote: Covid-19 Learnings



Consequences of permanent remote work

■ Home Office is not a real office

- Lacking work equipment (esp. new employees)
- Missing interactions (e.g., social interaction is part of our daily life)

■ Neglected and shorter breaks

- 8h working day or until the task is done?
- Danger of social isolation

■ Back-to-back meetings and permanent online concentration

- Zoom fatigue
- Work & meetings & relaxation all on the same screen



Work-Life-Balance

Attend meetings wherever you want

Easier to handle private things

No spontaneous interruption

...

Is Productivity Going **Up** or **Down**?

More coordination and handovers

Work around the clock

Whom to ask?

How to judge your contribution?

Calendar full of meetings

...

In a recent study of WFH [Bloom15], productivity increased, but promotion rates conditional on performance fell.

Remote Benefits For Management

Remote means anyone can work anywhere, but also...

- **Higher productivity on individual tasks,**

 - less on collaborative ones

- **Available talent pool**

 - The best teams are made up of the best people?
 - Widen talent selection
 - (but the people you really want to hire might already live in tech centers?!)
 - Software development not tied to a place
 - Reluctance to accept location & commuting disadvantages

Median rent for 1 bedroom apartment in SF's Bay Area was \$1,975 (April 2019)



Recommendations for Remote Work



■ Structure your working day

- Meetings just 25/50 minutes, ensure breaks
- Block working and private time

■ Centralize document storage (incl. collaborative editing)

■ Prioritize your communication channels

- Mail (can wait), VIP Mail, instant messaging (short requests), meetings, calls
- Limit notifications (each one is an interruption)

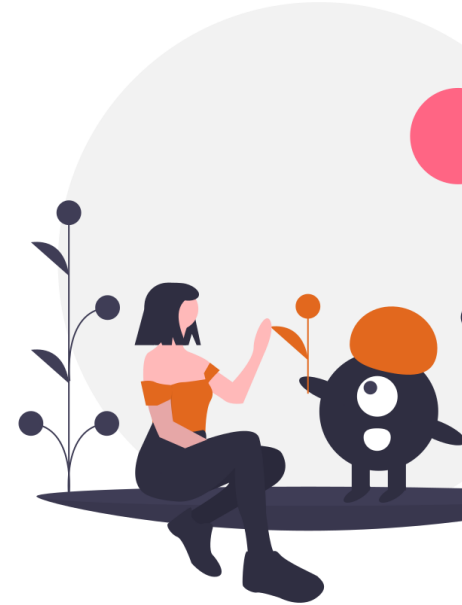


Recommendations for Remote Work



Leading and coaching remote teams

- 1:1s are the most important management method
- Regularly check in with team
- Don't be afraid to overcommunicate
- Request feedback (about employees, yourself, team and company)
- Keep having fun, try *serious* small talk and *active listening*



A small, grey, stylized tiger figurine with large orange eyes and black stripes is sitting on a desk. It is looking towards a computer monitor which is mostly obscured by a dark red semi-transparent overlay. The background is a blurred office setting with a window and a desk.

Tools for Remote Work

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Tools for Remote Work



Remote Working Agreement

- **Team consensus** on collaboration practices
- Write it down, refer back to it regularly
- **Revise it** with new learnings

Example Content

- How to contact & schedule conversations
- How to **indicate availability** (or lack of it)
- How to visualize work
- Shared **core working hours**
- **"No-gos"** for your team



Tools for Remote Work



- **"Use the Simplest Tools"** should apply
 - Consider cost of complex tooling
 - Simple tools: easy to learn, use & share with others
- Ensure **Single Source of Truth** for shared info
- **Share more** than in in-person setting
 - Meeting notes and agendas
 - Processes, concepts and methods



Tools for Remote Work

(Communication) Tools

- Document state of software & **progress of work**
 - e.g. GitHub Wikis, generated diagrams, change logs
 - Update and comment tickets/issues, celebrate commits and deploys
- Keep **others informed**, e.g.
 - Code in shared branches (& tell people about it)
 - Deploys of newest changes
 - Blog-Post-Driven Development
 - Find blog post headline before Sprint start
 - Summarize features, what issues were solved?

Git commit messages are valuable communication!
Consider "Fixed stuff"

Further Reading



- Kroll et al. 2013. *A systematic literature review of best practices and challenges in follow-the-sun software development*. 2013 IEEE 8th International Conference on Global Software Engineering Workshops (ICGSEW).
<https://doi.org/10.1109/ICGSEW.2013.10>
- Fabio Calefato et al. 2020. *A case study on tool support for collaboration in agile development*. In Proceedings of the 15th International Conference on Global Software Engineering (ICGSE '20).
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- Kattiana Constantino et al. 2020. *Understanding collaborative software development: an interview study*. In Proceedings of the 15th International Conference on Global Software Engineering (ICGSE '20).
<https://doi.org/10.1145/3372787.3390442>
- Prasad K. Kabbur et al. 2020. *Prioritizing trust in a globally distributed software engineering team to overcome complexity and make releases a non-event*. In Proceedings of the 15th International Conference on Global Software Engineering (ICGSE '20).
<https://doi.org/10.1145/3372787.3390434>
- [Bloom15] Bloom, Nicholas, et al. *Does working from home work? Evidence from a Chinese experiment*. The Quarterly Journal of Economics 130.1 (2015): 165-218.
<https://doi.org/10.1093/qje/qju032>



Summary



Motivation & Background

- Reasons for remote/global Software Development
- Collaboration patterns
- Remoteness & Agile

(Dis-)Advantages of Remote

- Issues of team setup
- Organizational issues
- Consequences of remote teams
- Permanent remote work
- Benefits for management

Tools for Remote Work

- Remote Working Agreement
- Choosing your tools