Remote Work & Remote Collaboration

Scalable Software Engineering
WS 2021/22

Enterprise Platform and Integration Concepts

Image courtesy @econinbricks on Twitter: https://twitter.com/econinbricks/status/1376929597418246150/ (with permission)
I want to, can, or have to, work from where I live.
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?

- **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

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

Source: [https://martinfowler.com/articles/remote-or-co-located.html](https://martinfowler.com/articles/remote-or-co-located.html)
Agile Manifesto Principles

- People collaborate better with direct interactions
- 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

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!
Challenges & Benefits of Remote Work

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Image by crises_crs from flickr: https://www.flickr.com/photos/33774513@N08/49723557892 (CC BY-NC 2.0)
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

Source: https://martinfowler.com/articles/remote-or-co-located.html
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
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
Is Productivity Going **Up** or **Down**?

- Work-Life-Balance
  - Attend meetings wherever you want
  - Easier to handle private things
  - No spontaneous interruption
  - ... 

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 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

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

- **Provide the right hardware**
  - Paperless office
  - Ergonomic desk, monitors, keyboards, wireless earphones
  - Where to keep your backup disk?
  - Stable internet connection (upload is the key!)
  - Don't forget remote work security (stable VPN)
Recommendations for Remote Work

- Take care of your **physical** health
- Take care of your **mental** health
  - Virtual coffees and off-work events with colleagues
  - See if a regular routine helps
- How to lead a remote team
  - 1:1s are the most important management method
  - Check in with your team regularly
  - Don’t be afraid to overcommunicate
  - Request feedback (about employees, yourself, team and company)
  - Keep having fun, try *serious* small talk and *active listening*
Tools for Remote Work

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Image courtesy @EthicsInBricks on Twitter: https://twitter.com/EthicsInBricks/status/1449297720498434048/ (with permission)
Remote Working Agreement

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

Example content

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

Source: https://medium.com/serious-scrum/7-concrete-ways-to-improve-collaboration-in-remote-or-distributed-scrum-teams-7940fbaed52d

Remote Collaboration — Scalable Software Engineering
General types of communication technologies

- **Collaborative modeling tools**: Computer aided software engineering (CASE) tools, collaborate on models in real time with support
- **Collaborative writing tools**: Simultaneously write a document (Office365, Overleaf,...)
- **Discussion tools**: Transmission of messages, e.g. email and chat (Slack, Teams,...)
- **Inclusive modeling tools**: Simple tools such as whiteboards, paper, sticky notes (Mural,...)
- **Virtual meeting tools**: Synchronous (video) communication (Skype, Zoom, Teams,...)
- **Version control and ticketing tools**: Manage and organize versions of project artifacts (Jira, GitHub,...)
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 a classical setting
  □ Meeting notes and clear agendas
  □ Processes, concepts and methods
Tools for Remote Work

Media Richness

- **More context clues**
  - More physical proximity
  - Gestures & facial expressions

- **Ability to answer questions in real time** distinguishes collaboration from documentation options

![Media Richness Diagram](image)

Source: agilemodeling.com/essays/communication.htm
Tools for Remote Work

(Communication) Tools

- Document state of software & progress of work
  - e.g. GitHub Wikis, generated diagrams, change logs
  - Daily/Weekly Standup in Discord, check in with team
  - 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?

Sources: https://martinfowler.com/articles/remote-or-co-located.html,
https://www.allthingsdistributed.com/2006/11/working_backwards.html
Choose (technical) tools that work for you

■ Specialized tasks might need **specialized tools**, e.g.
  □ Design and sketching (https://miro.com)
  □ Running feedback sessions (https://reetro.io/)
  □ Automate project consensus (i.e. code review checks)

Experiment in teams, share what worked!

□ Many new tools & ideas all the time
□ What should be adapted by the entire project?
□ **Discuss!** Others might not share your experiences! (and that's okay)
□ Caveat: change has a cost! **What had the largest value?**
□ Disagree but **commit** (no solo run)!

GitHub Actions can automate a lot!
https://github.com/features/actions
Further Reading

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

Recommendations & Tools
- Leading teams
- Remote Working Agreement
- Communication technologies
- Media Richness Theory
- Choosing your tools