Joining Forces: An Agile Experiment in Merging Teams

Kevin Normand
What is a Team?

A group of people with a full set of complementary skills required to complete a task, job, or project.

Team members:

(1) operate with a high degree of interdependence,
(2) share authority and responsibility for self-management,
(3) are accountable for the collective performance, and
(4) work toward a common goal and shared rewards(s).

A team becomes more than just a collection of people when a strong sense of mutual commitment creates synergy, thus generating performance greater than the sum of the performance of its individual members.

BusinessDictionary.com
Why did we risk merging two separate, successful teams into one for the duration of a project?
Who is Fugro?

Fugro N.V. is a global company headquartered in The Netherlands that provides *geotechnical*, *survey*, *subsea*, and *geoscience* services for clients, typically oil and gas, telecommunications cable, and infrastructure companies.

www.fugro.com
Innovation at Fugro

8000 employees worldwide
300+ within Research & Development (Innovation Engineers)

• Innovation teams spread around the globe
• Teams of typically 3-8 people
• Teams formed around specific product or service lines within the business
• Team assignments usually long-term
Underwater mapping

Autonomous Underwater Vehicle (AUV)

Multibeam echo-sounder point cloud

Virtual surface (with pipe model)

Photo mosaic
Positioning

Underwater surveying is challenging due to errors in positioning
Our challenge

Perform wide-area survey with minimal underwater positioning support

1. Automatic feature detection within imagery from survey data
2. Feature-matching to calculate time-sequence of error vectors
3. Bundle adjustment of vectors to generate sequence of position corrections
4. Update survey position data and reprocess survey
Skills required

✓ Geospatial data manipulation (data handling, carving into tiles)
✓ Image filtering, matching, and alignment
✓ Mathematical modeling and smoothing
✓ User Q/C of spatial and temporal data points with image overlays
✓ GIS extensions to support the workflow
Joining Forces
Two teams

“Team Geo” – 6 people

- Backgrounds: Electrical engineering, petroleum engineering, computer science, and geography.
- Skill sets and experience: GIS, mapping, systems control and monitoring, systems integration, data logging

“Team FÊTE” – 3 people

- Backgrounds: Mathematics, computer science, physics, and machine learning.
- Skill sets and experience: machine learning, image processing, engineering and mapping applications development, systems integration.
Two teams

Common Tools & Practices

- Both teams were already running Scrum with two-week sprints
- Both using Jira to manage projects
- Each team had a "lead", or Scrum master
- Neither team had a permanent, dedicated product owner

Common Philosophies

- Everyone on the team is empowered and responsible for the success of the projects
- Everyone helps with coding
- Everyone participates in planning
- Everyone helps with testing
How we merged

Roles

- Team lead
- Product Owner
- Architects

Process

- 1-week Sprints
- Daily stand-ups
- Weekly demos & planning

Knowledge sharing

- Frequent paired programming & mentoring
- Intentional task assignments
- Review assignments
Outcomes
Pre-corrected Survey
Pre-corrected Survey
Post-corrected Survey
Post-corrected Survey
Pre-corrected Survey
Post-corrected Survey
Outcomes

An early retrospective

What makes us soar

• Good team collaboration
• Good support among team members
• Steep learning curves quickly overcome (through pairing / mentoring)
• Knowledge, experience, personalities of fellow teammates
• Short stand-ups
• Well written user stories
• Code review facilitation tool

What pulls us down

• Ongoing support
• Blocked tasks/stories
• Initial project startup pains
• Lack of real test data
• High risk project due to unknowns
Do you agree that merging the teams was a positive experience with regard to knowledge sharing, learning, having expertise required for this project?

✓ **Anthony:** Working in separate teams can result in a “we and them” mentality where communication is strong within a team but perhaps not so much across teams. Merging teams helps **break down these barriers.**

✓ **Rick:** I do agree. Developers can be less outgoing, personality-wise. It is difficult to bother people you don't know well - or if you don't know their skills or expertise. With the merged team, **you know who to ask.** You don't mind bothering.

✓ **Chase:** Yes, I do. I personally had a clear benefit from the **opportunity of working with other people** on this development.

✓ **Ryan:** I strongly agree with this sentiment. The **problem we faced was multifaceted** and we were able to **carve it up and attack in parallel;** leveraging strengths of individual team members. As the project developed, knowledge gained during daily conversations helped to "catch up" the rest of the group to the feature experts.

✓ **Carl:** From a manager's standpoint – **a strong yes.** The **two teams walked away with a bond** that will hold beyond the project where they are more likely to seek each other’s advice even on projects they are not working on together.
Did conflict occur, was it anticipated, and how was it managed?

✓ Anthony: I think our two teams worked really well together and integrated quite easily and seamlessly with one another. There were **no inflated egos**, and I think **everyone respected one another**.

✓ Ryan: The main sources of conflict were small but were oriented around **daily work practices** like code style, sharing, etc. Our **adaptation** of internal libraries and practices provided a common path forward.

✓ Chase: Not really a conflict, but our team **had to adapt to the other team's way of working**. This was anticipated to an extent, and we were shown their normal practices.

✓ Eric: No, I think all were able recognize who was the best to follow for any of the given components. From the planning perspective it was difficult at times to reach a decision with a large group, so smaller groups would meet to define some of the task requirements and then those were shared with the team.
Do you believe merging would have worked as well if both teams had the same skill sets and background?

- **Eric**: Yes, because it would allow the development project to be more efficient.
- **Anthony**: Yes, I do believe that there would be value, but perhaps not as much. I do believe there would be a positive outcome since no two teams work the same. There is potential to learn from how another team approaches and solves problems both on an individual and team level.
- **Ryan**: I believe it could be quite tricky in this scenario. Teams take time to build trust and learn how to work together. If the teams naturally complement each other, individuals naturally defer to subject experts to provide the best path forward. If not, I believe that conflict would be more likely in the early stages where many high-stakes project-wide decisions are being made.
- **Chase**: Yes, but less so. Even people with the same skill sets tend to approach problems differently, especially in the beginning stages of thinking. It always helps to be exposed to those different approaches.
An alternative to merging teams would be to reassign staff between teams project by project? Would you prefer this approach to a temporary merge, or not?

- **Rick:** Teams formed around projects would be desirable. This would provide **more opportunities for cross-training and growing your knowledge base.** It would be uncomfortable at first, but would "round you out" more, and provide opportunity to get to know others in the company.

- **Ryan:** This is an interesting idea. It would take some flexibility, but would be a neat way to supplement teams as needed. Also, this concept would be expedited by our company's widely accepted workflow standards (e.g. coding guidelines, lifecycle tools, etc.).

- **Chase:** **No,** I like the idea of the team being **specialized.** However, I could see some cases where it would be beneficial to loan one or two team members to another team for a very small part of a project.

- **Eric:** I think the **fixed teams** are a good way to allow developers to gain **specific domain knowledge.** I see a temporary merge as a way to break monotony, allowing developers to do something a little different.

- **Anthony:** I **would not prefer** this approach. You get **accustomed to how your team operates,** and this allows you to just concentrate on your work. Going from team to team would require you to learn and get used to a new team dynamic for every project.
What we learned about Joining Forces

- Can be very **effective** for meeting an aggressive deadline.
  - Especially a project with multiple facets of prerequisite skills and experience.
- Can be a **refreshing** experience for the teams, resulting in high engagement and creativity.
- Steep **learning curves** can be quickly overcome by working with knowledgeable peers.
- People must be willing to **adapt**.
- **Egos** and strong opinions must give way.
- **Complementary skillsets** are attractive. Similar skillsets may not be.
A winning recipe

Tasty Team Merge

1) Development project with new challenges to solve
2) Teams with complementary skill sets valuable to the project
3) Teams with similar Agile work practices and toolsets
4) Co-located teams
5) Professional, respectful attitudes of team members
6) Predisposed culture of innovation
Recommendations

➢ Identify talents and passions quickly, leveraging them throughout the project.
  
  Try starting with a retrospective such as “Strengths, Weaknesses, Opportunities, Threats” or “The Roles We Play”.

➢ Allow extra time in the first planning meetings to work out differences in practice

➢ Be ready for “role collisions”

➢ Encourage paired programming and/or mentoring

➢ Schedule regular retrospectives

➢ “Run the experiment!”
Acknowledgements

References


Art Credits

- Mini-figure scenes courtesy of Jean Ross and Everett Normand.
- Hot air balloon drawing courtesy of Mary Grace Normand.

The following photos licensed under Creative Commons licenses:

- Cookbook photo is courtesy of castello2esoe.wikispaces.com
- Thank you note photo courtesy of chmow.files.wordpress.com

Reviewers

Carl Sonnier, Dickie Martin
Experience report shepherd, Lise Hvatum
Acknowledgements

Thank You