

## Software Engineering Project: Assessment 4

### Gandhi-Inc. - Project Blind Eye

#### *Team Management and Structure*

Our team has used a meritocratic management style[1], as opposed to the more traditional autocratic style. In a meritocracy, a person is given a leadership position because they are the best person for the job [1]. Therefore, we have each managed the area for which we are most capable. For example, team members who have had experience working with risk assessments would be in charge of the risk assessment portion of the work. Meritocracy is a fairly new style of management, which is only used by a few businesses, however those who use it have found good success with it (e.g Red Hat Inc.[2]) as it allows people who would not normally have a voice in decisions, to be able to contribute their ideas.

We feel that this management style has worked well for us: team members are not spending longer than is necessary to familiarise oneself with a particular area as when another colleague has expertise in that area they will take charge. We have not changed the management style as we have found it to be very effective for use with a small team like the one in SEPR.

While our management style worked well for us, we achieve a low score in the Capability Maturity Model (CMM) [5]. This is because the CMM is aimed at larger organisations with more formal procedures than us, and we feel that a more informal approach gives us the flexibility to adapt to any challenges we may face.

We have used a flat organisational structure as opposed to the more traditional hierarchical structure used by larger and older organisations. A flat organisational structure allows more effective communication of ideas between team members. According to Ghiselli and Johnson[3]; a flat organisational structure allows many of the needs for self realisation to be met, this is useful for our SEPR team as we have used a lot of independent work, consistent with Agile development. One could argue that “scrum master” used in agile development could be considered an autocratic manager, meaning we would not have a flat structure; however, we would argue that they are more of a coach than a manager [4].

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#### *Software Engineering methods:*

Based on the advice given to us at the start of the project, we adopted a development process similar to agile. In the first assessment, we held regular (semi-weekly), short meetings, this allowed us to set out the goals which we wanted to achieve in the next few days. These were similar to the daily stand up meetings used in agile, however, because we are at university not working for an organisation where our sole job is to develop this application, the time between meetings was longer to allow for our various other commitments. As the project went on, the time between meetings has increased, this is due to numerous reasons including, but not limited to:

- We are able to work on larger segments of work independently without group intervention.
- Having “meetings” on google hangouts; ie team members would discuss what work needed to be done.
- Other commitments, such as work for other subjects.

The incremental approach to development, which is a staple in agile, was used. This method was used due to the nature of the project, where each assessment required incremental improvements on the previous one and so there were no changes throughout the project.

#### *Software engineering tools:*

Git and Github were used for version control and backup of our project, the choice to use Git was purely because multiple team members had previous experience with Git, but nobody had ever used other software, such as CVS. Github is the largest repository hosting company and extremely reliable, based on our knowledge and experience the choice was obvious to use Github.

Our team has used google drive for all of our documentation and as a collaboration tool. All team members were familiar with the platform and Google offers a high level of availability (99.9%[6]). The University of York also has set up Google accounts for all the students facilitating the collaboration process. These factors, in addition to being free to use, are why we ended up using Google drive.

During the SEPR project, communication between team members is crucial; even more so than a standard project. This is because for 5 weeks over christmas and 4 weeks over easter, the team were not based in York and had to keep the project advancing. At the onset of the project, we reviewed many different communication methods for keeping in touch: Facebook messenger; SMS messaging; and Slack were all assessed, however, we decided that Google Hangouts provided the best mix of push-notifications, previous experience and availability for our team.

After the first assignment, we reassessed Slack messenger as it also provided the ability to send code snippets. However, after deliberation, we decided to stay with google hangouts as the benefits for switching to this new platform did not outweigh the slowdown of workflow that would occur from a new platform.

In the third assessment, we started using Travis:CI. Travis:CI is a continuous integration testing system used to run builds and run tests. Travis is integrated with Github and so every time a push is made to master on github, Travis will build and test the commit. [7]

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## References

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