CMPE 285 - Software Engineering Processes
Lab 11: Reengineering

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Background

Continue in our lab series. The first version of GeoFood is shipped to the app store in Sept, and it is a big hit with the iphone users. The android version is still in development due to technical challenges. With millions of downloads, the engineering team has grown to 100 engineers working on different versions of products. And the original group members are now all promoted to development managers.

Questions

Your boss, the VP of engineering, has asked all the development managers (you guys) to come up with proposals for reengineering to improve on the current development processes and methods of development and deployment. As a team, write a proposal on how you will perform the reengineering and improvement of various things within the company. Here is a list of current pain points:

- First version of GeoFood is 3 months late.
- First version of GeoFood can only support one platform (iPhone) instead of various mobile platforms as originally planned.
- Engineering team is low in morale.
- Some UI requirements that come to GeoFood are too late and cannot be implemented in the first version.
- The development team is always yelling at the QA team.
- There are too many meetings in general.
- Some developers complain about not learning new things such as new open source packages, build methods, etc.
- Only one person knows how to build and deploy the product to the app store.

Solution:

- **First version of GeoFood is 3 months late.**

Solution: We make a detailed analysis regarding why it is late and what is the root cause of this issue. We take necessary steps to avoid delay the next time.

- **First version of GeoFood can only support one platform (iPhone) instead of various mobile platforms as originally planned.**

  Solution: We find out the reason why this has happened. If it's because of lack of time, then we conduct an analysis as indicated in the previous step. If it is because of a technical problem in a particular platform, then we find out what went wrong and what corrective steps we can take.

  We take the help of subject matter experts who have previously released applications on other platforms.

- **Engineering team is low in morale.**

  Solution: We can first address the elephant in the room (the major problem that is causing the low morale, is it low productivity or is it not achieving targets, etc). Once we have identified the cause of the problem, we can work on the issue. Some of the ways are mentioned below:
    1. Set measurable goals and check on progress
    2. Make honesty a requirement of your culture.
    3. Prioritize team productivity over individual productivity.
    4. Communicate clear expectations to team members.
    5. Clearly define and explicitly state everyone's role on the team.

- **Some UI requirements that come to GeoFood are too late and cannot be implemented in the first version.**

  Solution: We can leave some of the UI features for the first version, and publish the application without them, maybe don't include those features on the first version of the application. Or another solution is to just create a workable UI without having anything fancy for the first version.

- **The development team is always yelling at the QA team.**

  Solution: Both the teams are given an explanation regarding their role in detail. Even though there is a QA team, the development team has to take responsibility for their code. The job of the QA team is to merely check the developed code. Both the teams are equally responsible for a bug.

- **There are too many meetings in general.**

    Solution: Every meeting should have an agenda before being conducted. This ensures that we don't have a meeting for the sake of it, and there is a feasible objective before the meeting.

- **Some developers complain about not learning new things such as new open-source packages, build methods, etc.**

    Solution: Developers should be made aware of the fact that the company's needs always come first. They might be in situations where they are forced to work on something that they don't like. It's the manager's responsibility to ensure that a developer gets to work on a diverse set of frameworks.
    The manager will try his best to ensure that the developer gets the maximum exposure but if there is a situation that demands the developer to work only on a specific framework, then the developer has to adjust to this.

- **Only one person knows how to build and deploy the product to the app store.**

    Solution: Team should be cross functional; knowledge should not be limited to one or two people in the team. Cross functional training can help teams with end-to-end responsibility for a process.

- **Apart from the above-mentioned steps, given below are common reengineering steps:**

    Solution:
    1. Refocus company values on customer needs.
    2. Redesign core processes, often using information technology to enable improvements.
    3. Reorganize a business into cross-functional teams with end-to-end responsibility for a process.
    4. Rethink basic organizational and people issues.
    5. Improve business processes across the organization.The existing process is thoroughly analyzed and measured.