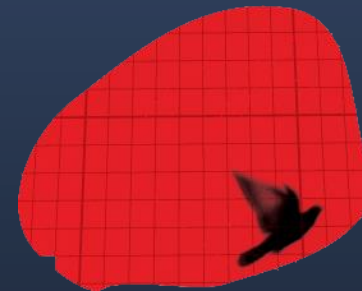


Applied Software Project Management

Introduction



Why do software projects fail?

- People begin programming before they understand the problem
 - ▷ Everyone likes to feel that they're making progress
 - ▷ When the team starts to code as soon as the project begins, they see immediate gains
 - ▷ When problems become more complex (as they always do!), the work gets bogged down
 - ▷ In the best case, a team that begins programming too soon will end up writing good software that solves the wrong problem

Why do software projects fail?

- The team has an unrealistic idea about how much work is involved.
 - ▷ From far away, most complex problems seem simple to solve
 - ▷ Teams can commit to impossible deadlines by being overly optimistic and not thinking through the work
 - ▷ Few people realize the deadline is optimistic until it's blown

Why do software projects fail?

- Defects are injected early but discovered late.
 - ▷ Projects can address the wrong needs
 - ▷ Requirements can specify incorrect behavior
 - ▷ Design, architecture and code can be technically flawed
 - ▷ Test plans can miss functionality
 - ▷ The later these problems are found, the more likely they are to cause the project to fail

Why do software projects fail?

- Programmers have poor habits – and they don't feel accountable for their work.
 - ▷ Programmers don't have good control of their source code
 - ▷ Code written by one person is often difficult for another person to understand
 - ▷ Programmers don't test their code, which makes diagnosing and fixing bugs more expensive
 - ▷ The team does not have a good sense of the overall health of the project.

Why do software projects fail?

- Managers try to test quality into the software.
 - ▷ Everyone assumes that the testers will catch all of the defects that were injected throughout the project.
 - ▷ When testers look for defects, managers tell them they are wasting time.
 - ▷ When testers find defects, programmers are antagonized because they feel that they are being personally criticized.
 - ▷ When testers miss defects, everyone blames them for not being perfect.

How can we make sure that our projects succeed?

- Make sure all decisions are based on openly shared information
 - ▷ It's important to create a culture of transparency, where everyone who needs information knows where to find it and is comfortable looking at it.
 - ▷ All project documents, schedules, estimates, plans and other work products should be shared with the entire team, managers, stakeholders, users and anyone else in the organization who wants them.
 - ▷ Major decisions that are made about the project should be well-supported and explained.

How can we make sure that our projects succeed?

■ Don't second-guess your team members' expertise

- ▷ Managers need to trust team members.
- ▷ Just because a manager has responsibility for a project's success, it doesn't mean that he's more qualified to make decisions than the team members.
- ▷ If you don't have a good reason to veto an idea, don't.

How can we make sure that our projects succeed?

- Introduce software quality from the very beginning of the project
 - ▷ Review everything, test everything.
 - ▷ Use reviews to find defects – but don't expect the review to be perfect.
 - ▷ Use reviews to gain a real commitment from the team.
 - ▷ It's always faster in the long run to hold a review than it is to skip it.

How can we make sure that our projects succeed?

- Don't impose an artificial hierarchy on the project team
 - ▷ All software engineers were created equal.
 - ▷ A manager should not assume that programming is more difficult or technical than design, testing or requirements engineering.
 - ▷ Managers should definitely not assume that the programmer is always right, or the tester is always raising false alarms.

How can we make sure that our projects succeed?

- Remember that the fastest way through the project is to use good engineering practices
 - ▷ Managers and teams often want to cut important tasks – especially estimation, reviews, requirements gathering and testing.
 - ▷ If it were faster to build the software without these practices, we would never use them.
 - ▷ Every one of these practices is about saving time and increasing quality by planning well and finding defects early. Cutting them out will cost time and reduce quality.