

Introduction

In this post I will be aiming to answer the question what are the most common reasons software projects fail using real world examples to back up my decisions.

Common causes of software failures

After reading through the project failures study (Lehtinen, 2014) I believe that most of the common causes of software failures are interconnected making it difficult to ascertain which failure causes should have the most resources allocated to mitigating them as different stakeholders will have different opinions as to which poses the biggest threat to the project. With that being said I believe the three most common causes of software failures are related to project complexity, inadequate testing and project environment.

Inadequate Testing

Inadequate testing can have a significant impact on the success of a project as shown in the Lecturecast Introduction to Software Engineering Project Management in the Common Causes of Project failure video (Buckley, 2024) where they discussed the European Space Agency Ariane 5 rocket disaster where at an altitude of about 3700 meters, the launcher veered off its flight path, broke up and exploded. This was caused by a simple software error that could have easily been avoided if adequate testing was done. This failure resulted in a loss of more than \$370 million. There are many different factors that can result in inadequate testing such as lack of skill/motivation, lack of available time and resources and attitudes towards testing both from developers and management.

Project Complexity

Project complexity is another leading cause of project failures. There are several things that can increase the complexity of a project such as having too many dependencies and having too many features requiring someone to have expert knowledge to use the software as demonstrated in the Lecturecast Introduction to Software Engineering Project Management in the Common Causes of Project failure video (Buckley, 2024) where they discussed the Boeing 737-Max project where Boeing developed a new computer system to be used on planes with a major selling point being that training would not be required. However, after multiple crashes Boeing had to pay to train pilots on how to use the new system.

Project Environment

Project environment issues are another common cause of project failures. Project Environment issues cover a range of issues. The one I am going to single out is communication issues between developers, management and stakeholders. The reason I decided to single this out is because I believe this can have the biggest impact on the success of the project. For example, if there has been a mistake communicating the project requirements between the business analysts and the developers several key features may be missing from the project leading the project stakeholders to determine the project as a failure. The main way to solve this

problem is to ensure an open line of communication between all parties involved in the project.

Conclusion

In conclusion I believe the three most common causes of software failures are related to project complexity, inadequate testing and project environment as such I believe organisations should allocate a significant portion of their resources to mitigate such risks.

References

Lehtinen, T., Mäntylä, M., Vanhanen, J., Itkonen, J. & Lassenius, C. (2014) Perceived causes of software project failures – An analysis of their relationships. *Information and Software Technology* (56)6: 623-643. DOI: <https://doi-org.uniessexlib.idm.oclc.org/10.1016/j.infsof.2014.01.015>

Buckley, O. (2024) Introduction to Software Engineering Project Management. [video] Software Engineering Project Management July 2024. University of Essex Online.