Collaborative Discussion 1

Lehtinen et al researched the causes of failure of software development, and concluded that there was no single cause of failure, rather a culmination of a multitude of factors leading to failure. They sought to analyse the root cause of the failure, and grouped them into 4 groups: people, tasks, methods and environment. Interestingly, many of these groups overlap with one another, further enforcing the notion of multiple causes of failure (Lehtinen *et al.*, 2014).

In my research, I discovered that the 3 most common reasons for project failure are:

- People: Inadequate skillset is one of the reasons for failure, where either there is a lack of project management skills from those in charge or the developers are not capable of delivering the expectations (Pankratz and Basten, 2013). In addition, the “people” group overlaps with the “methods” group, specifically relating to the project team and associated interactions. Poor social skills lead to poor communication and outcomes.

- Tasks: Poor understanding and communication of requirements from customers to the sales team to developers, as well as poor project definition may lead to failure (Stretton, 2018).

- Methods: The size of the project team has also been identified as a possible cause of failure, with smaller teams of up to 10 people being attributed to a better outcome due to improved communication (Kaur and Sengupta, 2013; Rajkumar, 2013).

A notable example of such project failure is the Airbus A380 project. The A380 was initially supposed to be delivered by 2006, but was only completed and delivered 18 months later with significant cost overruns estimated to be billions of Dollars. The reason for the failure was that Airbus absorbed other smaller companies, and allowed them to remain semi-autonomous, assuming that as they were successful before the merger, they would remain so. Different teams were assigned different aspects of manufacturing, with CAD/CAM used to build individual components. However the different teams utilized different versions of software, resulting in the components not fitting together when manufactured. This is a classic example of lack of communication, inadequate project management skills and too large a team resulting in failure (Dörfler and Baumann, 2014).

Another such example is that of the European Ariane 5 rocket, which crashed 40 seconds after take of, resulting in a loss of $500 million. The cause was attributed to a software bug in the inertial reference system (ISR). During the post crash investigation, it was discovered that many components and software was reused from the 10 year old previous rocket- Ariane 4, with some newer components also used. These components were not compatible with each other, which should have been discovered during the testing stages. This is an example of inadequate skills by the project team, who should have discovered the errors and averted the crash (Jazequel and Meyer, 1997; Fahmy, 2020).

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