Expert vs. Algorithmic estimation

In any organization, the role of the project manager is very crucial in providing the estimate of the effort, cost and resources required for the project before the project approval. Project management skills are of utmost importance as the project always have budget and time constraints. To make the estimate of the software cost and effort required, two main techniques are followed (Sommerville, 2011). The Experience based technique is based on the project manager's past project experience and domain knowledge. Essentially he analyses the facts and figures to make an informed judgement on the effort requirements (Sommerville, 2011). On the other hand, the algorithmic cost modelling is a formula based approach where the project effort estimate is done based on estimates of product attributes, such as size, and process characteristics, such as experience of staff involved (Sommerville, 2011).

Experience based approach rely on human judgement based on past experience. Initially the deliverables and different software components are identified. These are documented using a spreadsheet individually, and compute the total effort required. Each group member can give their estimate to complete a given work (Sommerville, 2011). Algorithmic Cost model uses a mathematical formula to arrive at the effort (Sommerville, 2011):

Effort = A × Size^B × M, where A is an organisation-dependent constant, B reflects the disproportionate effort for large projects and M is a multiplier reflecting product, process and people attributes. The cost estimate is done based on the code size (Sommerville, 2011).

According to a survey, results show an improvement in management of development process and customer relationships by adopting to agile methods. The survey was made on a small sample of 20 project managers and 50% of the plan based companies had difficult relationship with their customer compared to 10% of agile companies. The selected managers adopted different solutions for delivering software with all the features on time. Some of them started using new development methods such as Extreme Programming (XP) and Scrum thus improving productivity processes and some started focusing on people by improving communication and knowledge transfer such as small size and good communication between customers and developers (Ceschi, M, Sillitti, A., Succi, G., De Panfilis, S.2005).Agile companies prefer to organize their processes in more releases and pay attention to activity planning. To conclude, it was noted that while environment variables (both requirements and technology) affect all the companies, the agile ones can better protect the customer from most of the negative effects (Ceschi, M, Sillitti, A., Succi, G., De Panfilis, S.2005). Unlike plan-driven approaches, the functionality of the increments during software development is not planned in advance but are decided during the development .The decision on what to include in an increment depends on development progress and on the customer's priorities (Sommerville, 2011). Hence the project plan is flexible to accommodate the customer requirement changes helping to maintain better customer relationship.

Planning poker is an experience based approach, where in the estimating combines expert opinion, analogy, and disaggregation into an enjoyable approach to estimating that results in quick but reliable estimates (Mike Cohn, 2010).The goal in Planning Poker estimating is not to derive an estimate that will be perfect for and will not require any scrutiny but to be somewhere well on the left of the effort line, where a valuable estimate can be arrived at cheaply (Mike Cohn, 2010). It allows small groups to discuss their stories and estimates for a few minutes. It has found to be effective with smaller teams than having a single large team. Some key features of planning poker that will help make better estimates are – multiple expert opinions are available during estimation. Secondly the interaction

during this process with help an estimator to justify his/her estimate to the peers. Finally studies have shown that averaging individual estimates leads to better results similar to group discussion. Group discussion is the basis of planning poker and those discussion will lead to averaging the individual estimates (`Mike Cohn, 2010`).

In conclusion, small software engineering groups are better organised informally without a rigid structure. In such cases, agile development is always a better choice due to the information exchange which will lead to better estimate of effort and cost during the project management.

References

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