CONTRIBUTION OF RISK ASSESSMENT TECHNIQUES IN EFFORT ESTIMATION OF SOFTWARE DEVELOPMENT PROCESS

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ABSTRACT

Software effort estimation is a foundation process of software development life cycle. If it is done effectively, then only the software product may get successful. Yet, in IT industrial experience, the vital issue of effort estimation is often underestimated and/or over estimated. However, both the criteria steer to software risks. A software risk is an unaccepted happening with a negative influence on the software project. This paper attempts to point out the contribution of risk exposure analysis in the effort estimation model which will useful for researchers.

KEYWORDS

INTRODUCTION:

Effective software effort estimation is one of the most difficult and important activities in software development. Proper project planning and control is not possible without a sound and reliable estimate. As a whole, the software industry doesn't estimate projects well and doesn't use estimates appropriately. So software industries suffer lot. It is important to focus some effort on improving the situation. Under-estimating a project leads to under-staffing it, under-scoping the quality assurance effort (running the risk of low quality deliverables), and setting too short a schedule (resulting in loss of credibility as deadlines are missed). In software engineering effort is used to denote measure of use of workforce and is defined as total time that takes members of a development team to perform a given task. It is usually expressed in units such as man-day, man-month, man-year. This value is important as it serves as basis for estimating other values relevant for software projects, like cost or total time required to produce a Software product. Risk management has always been a main part of software development process. Risks are crucial factor for the development of software projects. Risks effects lots of projects and made them unsuccessful.

LITERATURE SURVEY:

Risk is described as "the possibility of suffering loss that describes the impact on the project which could be in the form of poor quality of software solution, increased costs, failure, or delayed completion"[1]. Furthermore, all projects share some extent of risk, and the majority of Information Technology (IT) projects have considerable risks [2]. Risk management is divided up into risk assessment and risk control. The risk assessment is divided into three sub levels which are risk identification, risk analysis, and risk prioritization. The second part of risk management, risk control, is also broken down into risk management planning, risk resolution, and risk monitoring [3].

Based on a survey of several experienced project managers, Boehm developed a list of ten most important risks in software project [4].Other methods classify risks into classes according to the project element they affect, such as taxonomy -Based Risk Identification Taxonomy -Based Risk Identification is established by the Software Engineering Institute (SEI), Risk events in three major classes:

Product engineering, development environment, and program constraints. Other researchers classify risks into various dimensions used the multifaceted aspect of software risk. In that way, McFarlan identified three dimensions of software risks that are

project size, technology experience, and project structure[5].Barki and al., based on a data base of 120 projects, classify risks into five dimensions: technological newness, application size, expertise, application complexity and organizational environment [6].

Wallace and al. identify 27 software risks that they classify into six dimensions [7].

After the identification of risk events, the risk assessment process consists in the quantification of the importance of these risk events. It measures and quantifies the degree of importance and criticality of software risk. Various techniques can be used for risk assessment. The majority of methods use both risk impact on the project performance and the probability of occurrence to express the importance of software risk.

DISCUSSION:

Based on the literature survey, it is clearly shown that, risk plays a major role in Software development process. Normally, effort estimation is done at the beginning of software development process. At that time, initial risk assessment can be done to predict the known risk. If the risk assessment is not done in the initial stage, then it will affect the effort estimation. In turn, overall project will become failure. So, the effort estimation, consider the risk factors, while estimating the effort.

Another problem of estimation is, more number of estimation techniques are available. So, the estimators can get confuse to choose the best technique for their project and also all the estimation techniques are not focus the risk factors. It is the responsibility of the estimator, to choose the technique which incorporates the risk factors. if the risk assessment is done properly, then the effort estimation goes right and project become successful within budget and time.

CONCLUSION:

This paper reveals the importance of risk assessment in the effort estimation technique. This paper also pointed out the various issues of the risk assessment technique in the early stage of software development process. This paper can help the researchers to know about the risk methodologies in the software development process.

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