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Assessment And People Risk Management In Software Project

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ABSTRACT
The level of software risk in a project is depending upon how one adapt to it. Since every individual needs a proper training, experience and innovative ideas to avoid the risk. This can be identified, analyzed and represented with the help of people management maturity model approach and axiomatic approach on probability. The people management maturity model defines the following key practice areas of software people: rewriting, selection, performance management, training, compensation, career development, organization and work design along with culture development. The axiomatic approach proposes the risk analysis, identification and assessment with the help of various theorems of probability. These approaches are worn to identify the place where an individual acquires risk, to achieve the best fit between the requirements of the job, skill and experience levels needed to perform software project and to plan for training programs will avoid the deprioritizing of an individual while adapting to a project.

Categories and Subject Descriptors
D.2 [Software Engineering]: D.2.9 [Management] – Software Quality Assurance

General Terms
Software Risks, Software project management, Software quality assurance

Keywords
Software risk questionnaires, people quality check list and software maintenance

1 INTRODUCTION
The software engineering overwhelms the possible risk that come from group brainstorming activities, or from a risk factor chart accumulated from the existing projects. According to Carpers Jones there are top five risk factors that threaten projects in different applications. The risk factors are dependencies, requirement issues, management issues, unavailability, and lack of knowledge. The people management in risk assessment is a companion to the software capability maturity model that guides organization in the creation of a mature software process. Issues associated with people management and structure for software projects are considered later. This assessment and people risk management in software project worn us to provide an error free project with a 'right people for a right job'.

2 CURRENT STATUS OF RISK ASSESSMENT
The risk assessment generally examines a project and identifies the areas of potential risk. Risk identification can be facilitated with the help of a check list of common risk areas of software project or by examining the contents of an organizational database of existing list. The risks associated with team size and experience of the people involved in a project.

Boehm'S Suggestion
Boehm suggests [1] the following questions to assess risks associated with team size and experience.

- Are the best people available?
- Do the people have the right combination of sills? Are enough people available?
- Are staffs committed for the entire duration of the project?
- Will some project staff be working only part time on this project?
- Do staffs have the right expectations about the job at hand?
- Have staffs received the necessary training?
- Will turnover among staff be low enough to allow continuity?
- If the answer to any of these questions is "no", further investigation should be undertaken to assess risk potential.

3 EXPOSURE OF RISK
The Exposure of the risk can only be explained with the help of probability of Risk. The Exposure is given with the formula

RE=P *L where

- RE is the risk exposure.

- P is the risk probability of unsatisfactory outcome for risk event.
- L is the amount of stake (Loss).

4 THE PEOPLE AND RISK ASSESSMENT IN AN ORGANIZATION

Organizations

The cultivation of motivated, highly skilled software people has been discussed since the 1960s. In fact, the "people factor" is so important that the Software Engineering Institute has developed a people management capability maturity model [2](PM-CMM),"to enhance the readiness of software organizations to embark on increasingly complex applications by helping to pull towards us, grow, motivate, deploy and to retain the endowment needed to improve their software development capability".

The people management maturity model [3]defines the following key practice areas for software people: recruiting, selection, performance management, training, compensation, career development, organization and work design and team/culture development. Organizations that achieve high levels of maturity in the people management area have a higher likelihood of implementing effective software engineering practices.

The PM-CMM [2,3] is a escort to the software capability maturity model that guides organization in the formation of a matured software process. Issues associated with people management and structure for software projects are considered later.

Software Risk Evaluation with people Management

The Software Risk Evaluation (SRE) [4]Service is a diagnostic and decision-making tool that enables the identification, analysis, tracking, mitigation, and communication of risks in software-intensive programs. An SRE is used to identify and categorize specific program risks emanating from product, process, management, resources, and constraints. The programs own personnel participate in the identification, analysis, and mitigation of risks facing their own development effort.

An SRE provides a program manager with a mechanism to anticipate and address program risks. The SRE introduces a set of activities that, when initiated, begin the process of managing risk. These activities can be integrated with existing methods and tools to enhance program management practices.

An essential facet of project management is controlling the innate risks of a project. Risks arise from uncertainty surrounding project decisions and outcomes. Most individuals associate the concept of risk with the potential for loss in value, control, functionality, quality, or aptness of completion of a project. However, project outcomes may also result in failure to get the most out of the gain in an opportunity and the uncertainties in decision making leading up to this outcome can also be said to involve an example element of risk. In MSF, a project risk is broadly defined as any event or condition that can have a positive or negative impact on the outcome of a project. This wider concept of tentative risk is utilized by the financial industry where decisions regarding uncertainties may be associated with the potential for gain as well as losses, as opposed to the concept of pure risk used by the insurance industry where the uncertainties are associated with potential future losses only [5].

5 RISK PROBABILITIES OF PEOPLE MANAGEMENT LEVELS

Risk probability is a measure of the likelihood that the state of affairs described in the risk consequence portion of the risk statement will actually occur. Using a numerical value for risk probability is desirable for ranking risks. Risk probability must be greater than zero, or the risk does not pose a threat. Likewise, the probability must be less than 100 percent or the risk is a certainty—in other words, it is a known problem. Probabilities are notoriously difficult for individuals to estimate and apply, although industry or enterprise risk databases may be helpful in providing known probability estimates based on samples of large numbers of projects. Most project teams, however, can verbalize their experience, interpret industry reports, and provide a spectrum of natural language terms that map back to numeric probability ranges. This may be as simple as mapping "low-medium-high" to discrete probability values (17%, 50%, 84%) or as complex as mapping different natural language terms, such as "highly unlikely," "improbable," "likely," "almost certainly," and so on. expressing uncertainty against probabilities[1,6,7].

6 RISK ASSESSMENTS IN SDLC LIFE CYCLE

Designing risk in SDLC life cycle

A system design might involve dozens of claims. With limited time and resources , along with the inherent nature of design, a team cannot expect to mitigate all of the risks associated with their project. Consequently, the team must prioritize their claims and, at any given time, focus on the most critical project risks.

The probability[8] value for a claim downside should consider the statistical power of any evaluation the claim has undergone, reflecting a level of confidence that the appraisal yielded correct results.

The probability value should also reflect the degree to which the downside has been mitigated in the design since a mitigated risk is less likely to become a problem.

In support of the science of design, a suite of web-based tools, called LINK-UP , is being developed to guide designers through a usability engineering process for the design of notification systems. LINK-UP facilitates the use, validation, and improvement of the claims analysis method by supporting the actual construction of a claims analysis record during the design process. The system is tied to a design knowledge repository, allowing teams to leverage knowledge from previous design efforts by searching for reusable claims relevant to their current project. Throughout the design process, designers also extend this knowledge repository by updating existing claims and creating new ones.

Two key goals of the LINK-UP system are to promote practical acceptance of the claims analysis method and to facilitate learning through applied project work in undergraduate and graduate HCI courses. However, to achieve industrial and academic acceptance,

link-up must adequately support collaborative design efforts. Computer-aided design tools, like link-up, typically guide the design process and facilitate management [8] of product-related knowledge; however, few tools support users in documenting and reflecting on process-related knowledge. Given the growing complexity of system design, the increased distribution of project teams, and the push to complete projects in less time with fewer resources, collaborative design tools must aid teams in focusing their effort on the key design tasks to achieve project goals.

An effective risk management tool should benefit distributed project teams by helping them to focus their design efforts on key project issues, thereby:

1. Structuring the design process with key steps for multiple design iterations
2. Supporting team coordination by maintaining an external, collective team memory

Structure the design process

LINK-UP guides design teams through the design process, from defining user requirements to performing an analytic or empirical evaluation of an initial design prototype. However, given the results of an evaluation, designers[9] are left to navigate subsequent design iterations on their own. Designers are aware of certain inadequacies in the current design of their system; however, they are given little guidance in terms of how to resolve those issues.

The integration of a risk management model[10] within LINK-UP could give teams the guidance they need during the redesign process. The results of an analytic or empirical evaluation show that a subset of the project claims are performing inadequately. Following an evaluation, LINK-UP could prioritize the claim set, based on a combination of stored data and team input, with higher priority given to those claims that need to be "repaired." Upon examining the prioritized list, teams will immediately know which risks are most critical for the current design iteration and the order in which claims should be addressed to resolve key design issues. Team members can then choose or assign specific claims that they will be responsible for mitigating. Mitigation might involve finding new claims to reuse or creating new claims to mitigate the most critical downsides of the highest priority claims.

The priority list will initially include only product-related claims; however, it could eventually be extended to include process-related claims as well, allowing teams to identify and manage problems with their design process in addition to their design product with minimal overhead. Once process-related claims are created and stored in the reuse library, it will become easier for teams to identify recurring risks in subsequent projects.

7 PROPOSAL

Most of the people were not in aware of assessing the risk occurred in the project for exemplar in deadlock is a difficult error to debug for two reasons,(i) thread time slice (ii) synchronized, java doesn't support the explicit pointer variables , java compiler check the code for security violence and in the bits and pieces every people provide a information that the java is a platform independent language but it is the wrong guidance. Since the java is a platform dependent language, we can justify it by executing the swing component (AWT)[11] which runs only with the extension of .dll file in windows operating system and .so file in sun solaris operation system.consider two people A and B who were specialized in various domains of a same project. Their risk of knowledge on other domains is given by A∩B or B∩A. The overall risk of the project be AUB. The risk assessment of the entire project is triggered with the axiomatic approach on probability through the P(AUB)=P(A)+P(B)-P(A∩B) these concludes that the risk on other domains A∩B is inversely proportional to the overall performance AUB of the project.

8 CONCLUSION:

The risk assessment integrating with SDLC should be an end to end process beginning with analysis and requirement gathering through design and development testing and integration include operations and maintenances, and finally decommissioning to assist in the process, clearly scattered corporate policies, probability axioms along with maturity models expels a guideline for the risk assessment.

The software risk evaluation (SRE) provide us the enhanced feature of risk assessment by aiding the amount of risk occurred and decrease the risk occurred in corporate environment. This SRE will provide various benefits to organizations that integrate it as a part of risk assessment and analysis to maintain and develop the software life cycles.

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