Quality in Software Development

Analyzing the risks related to the development of applications in the entire production cycle helps IT managers to prioritize the most urgent actions

Creating Quality Business Applications on schedule and within the established budget is one of the greatest challenges faced by the companies that conduct this activity internally to meet their own needs. Some begin to rely on Risk Management (RM) to monitor all the production steps and develop flawless solutions, meeting international standard requirements such as the Capability Maturity Model Integration (CMMI) proposed by the Software Engineering Institute (SEI) of Carnegie Mellon university, a seal that transformed India in the largest supplier of outsourced services to the global market.

Gustavo Carvalho, one of the partners of PrimeUp, a company that provides solutions to manage risks of the software production cycle, says that some companies are applying this methodology to align IT to business goals. According to him, many projects die before completion due to the threats that arise along the process, and lack of preparation by the teams to meet the stipulated objectives. "Studies state that only 34% of software projects are successful, without exceeding budget and schedule", he affirms. Other 15% are canceled, and 48% of the product's requirements and functionalities are not delivered.

REASONS FOR FAILURE

Many are the factors that contribute to such failure rates in software development. Among them, exceeding the budget, and failure to meet the stipulated schedule for delivering the application. In many cases, the delay occurs because the teams take longer than expected to fix errors that should have been eliminated in previous steps of the production cycle. There is also the difficulty of professionals to understand the demands of the business areas, appropriate distribution of labor, knowledge of risks, and even the teams' resistance to process changes.

According to Carvalho, with a RM tool such problems could be detected early, because the technology identifies risks in all development processes and generates indicators that allow IT managers to determine what actions should be taken more urgently.

Based on those documents the system evaluates what the teams are actually doing, since sometimes many controls are recorded on paper only. With the reports one can check for the need of professional training, if product development follows the good practices model, what are the most critical areas for the organization, and how to solve the problems.

The results may suggest that the company adopts models such as the international ones proposed by CMMI, ISO 9001-2000 or MPS-Brazil (project to Improve Software Processes) created by the Association to Promote Excellency in Brazilian Software (Softex), supported by the Ministry of Science and Technology, and Inter-American Development Bank (BID). According to PrimeUp, the recommendations try to respect the behavioral characteristics of each company's production environment.

Arndt Staa, professor in the computer science department of the Pontifícia Universidade Católica

do Rio de Janeiro (PUC-RJ), sees that RM applied to software development perfects processes, increases productivity, and reduces application production costs. He adds that by knowing the risks one is subject to, companies reduce the error rates, and the expenses to repair them, with due reflects on profits.

Staa says the RM practice is not exclusive of large corporations. "Working to secure a satisfactory quality level contributes to increase the company’s business, even if prices are higher than competition’s", argues the teacher.

Factors that threaten software development

- Exceeding the budget
- Failing to meet schedules
- Waste of resources
- Rework to correct errors
- Difficulties to enhance project quality Software bugs
- Loss of control on change requests Lack of communication among the interested parties
- The creation of products that meet the customers' needs