Translating Process Changes from One Development Environment to Another

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The goal of this research is to examine how the process improvement results achieved in one organization can be translated and applied to another organization. Numerous case studies of process improvement results have been reported in the literature. These improvements have been achieved at different firms using a variety of development environments for a number of different products. Managers looking to improve their own development operations would like to apply ideas from these studies. However, Project managers question whether the results achieved at one firm can be applied to their own. Even more frequently, project managers are asked to apply data and process improvement concepts originated in another division or on another project within their own company to their project. This may even be a management directive.

However, not all projects are the same. There are many dimensions of a project that can be different from others such as: the application domain, the development environment, the experience level of the project team, etc. These differences across environments can significantly impact the applicability and performance results achieved by the target organization when applying this new process.

Essentially, project managers want to know, "What will the impact be on 'my' development project in 'my' organization?" We present work in-progress being conducted with Northrop Grumman SBMS Melbourne addressing the general research question, "How can the results achieved in one organization be translated to another?"

The preliminary results of this work identify product and process dimensions of comparison between the source and target firms. Based on the differences between the source and target firms and the nature of the process change, an indication of how the results achieved at the source firm will change, is developed. The approach is then coupled with process modeling and a method to predict the impact of process changes on a manager's specific development process.

Translating the results from one development environment to another is not an easy task. We present practical examples of how translating process improvement results might be done and the considerations involved. We discuss how tools may be applied and how the differences between the two environments and their interaction with the process change may be assessed.

Global Software Process Improvement Initiatives

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Dozens of Software Process Improvement Network (SPIN) chapters are currently active around the globe. SPIN is an effort sponsored by the U.S. Department of Defense (DoD) to promote worldwide software process improvement. The DoD is one of the world's largest customers of computer software, with trillion dollar plans for purchases in 1997. Moreover, software is an integral part of the defense systems developed by the DoD, so software quality is a major concern. In order to gauge the impact that such efforts may have on worldwide software process improvement, a survey was sent to national and international SPIN chapters. The survey contained questions on SPIN: objectives, membership, communication, influence, and future challenges. The results suggested that the main challenge of SPIN groups worldwide is to get top management support for software process improvement programs. The results also showed that the SPIN chapters are performing a valuable service in furthering the worldwide software process improvement effort.

In evaluating the impact of SPIN, it is important to note that this is a relatively new concept, with the first SPIN groups starting in the early 1990s. Since SPIN was established by the DoD, domestic chapters have become active more rapidly than international chapters. However, the large number of foreign countries that have started or attempted to start a SPIN chapter suggests that software process improvement is an important topic worldwide. The SPIN groups are increasing awareness and furthering education of software process improvement tools and techniques throughout government and private industry. As the awareness of software process improvement methods increases, the investment into software process improvement programs may also increase.