Software Process Infrastructure

Systematic application of software processes and software life cycle models across an organization can provide various benefits to all software work within the organization.

A software process infrastructure can provide process definitions, policies for interpreting and applying the processes, and descriptions of the procedures to be used to implement the processes.

Additionally, a software process infrastructure may provide funding, tools, training, and staff members who have been assigned responsibilities for establishing and maintaining the software process infrastructure.

Software process infrastructure varies, depending on the size and complexity of the organization and the projects undertaken within the organization. Small, simple organizations and projects have small, simple infrastructure needs. Large, complex organizations and projects, by necessity, have larger and more complex software process infrastructures. In the latter case, various organizational units may be established (such as a software engineering process group or a steering committee) to oversee the implementation and improvement of the software processes.

A common misperception is that establishing a software process infrastructure and implementing repeatable software processes will add time and cost to software development and maintenance. There is a cost associated with introducing or improving a software process; however, experience has shown that implementing systematic improvement of software processes tends to result in lower cost through improved efficiency, avoidance of rework, and more reliable and affordable software. Process performance thus influences software product quality.

Software Process Improvement (SPI)

Software Process Improvement (SPI) methodology is defined as a sequence of tasks, tools, and techniques to plan and implement improvement activities to achieve specific goals such as increasing development speed, achieving higher product quality, or reducing costs. SPI mainly consists of 4 cyclic steps as shown in the figure below