Unit-I

Process Models: TSP & PSP

Personal and Team Process models

The best software process

– close to the people who work

-The process model is amenable if it meet the needs of the project team

-create a process that best fits your needs & meets the broader needs of the team and the organization -Personal software process (PSP) -Team software process (TSP) -Both require hard work, training, and coordination, but both are achievable

Personal Software Process (PSP)

-Every developer uses some process to build computer software

-The process may be haphazard or ad hoc; may change on a daily basis; may not be efficient; but there exists a process

-To make the process effective, Watts Humphrey [Hum97] suggests to move through framework activities with proper training & instrumentation.

-5 Framework activities: Planning; High-level design; High-level design review; Development; and Postmortem

-PSP emphasizes personal measurement of both the work product that is produced and the resultant quality

Personal Software Process (PSP)

-Planning -Isolates requirements and develops both size and resource estimates; a defect estimate -Metrics are recorded in worksheets -Development tasks are identified, and project schedule is created -High-level design -External specifications for each component to be constructed are developed; Component design -Prototypes are built when uncertainty exists. All issues are recorded and tracked. -Development -The component-level design is refined and reviewed. -Code is generated, reviewed, compiled, and tested. -Metrics are maintained for all important tasks and work results. -Postmortem -Using the measures and metrics collected, effectiveness of the process is determined (statistical analysis)

PSP stresses the need to identify errors early

It is a disciplined, metrics-based approach If it is properly introduced to the software engineers, improvement in software engineering productivity and software quality are significant

Personal Software Process (PSP)

-PSP has not been widely adopted throughout the industry. Because,

-Human nature and organizational inertia

-PSP is intellectually challenging and demands a level of commitment (Hard to obtain always)

-Training is relatively lengthy, and training costs are high

-The required level of measurement is culturally difficult for many software people

-Suitable for High end research

Team Software Process (TSP)

-Watts Humphrey extended the lessons learned from the introduction of PSP and proposed a Team Software Process (TSP)

-The goal of TSP is to build a “self-directed” project team that organizes itself to produce high-quality software Objectives for TSP:

-Build self-directed teams that plan and track their work, establish goals, and own their processes and plans. Pure software teams or integrated product teams (3 to 20 sw-engrs.)

-Show managers how to coach and motivate their teams and how to help them sustain peak performance.

-Accelerate software process improvement by making CMM2,3 up to Level 5 behavior is normal and expected.

-Provide improvement guidance to high-maturity organizations.

Team Software Process (TSP)

–Framework activities

- -Project launch
- -High-level design
- -Implementation
- -Integration and test
- -Postmortem

TSP uses scripts, forms, and standards

– Scripts programming, Quick design helps to do specific process activities and work functions

THANK YOU