# PSM – Software Architecture Measurement Framework

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| INFORMATION NEEDS | PSM Measurement Categories | MEASURABLE CONCEPTS | QUESTIONS ADDRESSED | PROSPECTIVE MEASURES |
|  | Resource and Cost | Market share  | Has SDAC influence in our market Share?Is possible to identify growing in our market share?  | % Product market share% Revenue market share |
|  |  | Financial Performance |  | Improvement of Development CostImprovement of Quality Cost  |
| ROI |  | IT Investment efficiency |  | IT BudgetIT infrastructure cost Distribution |
|  | Schedule and progress | Time to Market |  | Time to deliver new productTime to deliver new releaseTime to deliver changesTime to deliver problem resolution |
|  | Technology Effectiveness | Technical debt |  | Effort of Technical debtDistribution of Technical DebtType of Technical Debt  |
|  |  | Systematic Reuse |  | # of Architectural patterns created# of Reference Architecture createdLevel of reuseSunk cost of reuse |
|  |  |  |  |  |
|  | Resource and Cost | Organizational Structure |  | Staff levelOrganizational SA roles |
|  |  | Organizational Change Management |  | SA Training and workshopsSA community of PracticeCoaching and mentoring effort |
| Impact of SA in SDLC | Process Performance | Process Structure |  | SA architecture practices incorporated |
|  |  | Process Efficiency |  | ProductivityCycle time |
|  |  | Process Effectiveness |  | Trade off resolvedDefect escapingRework effortLevel of Adherence to SA decisions, standards and best practices |
|  |  | Architectural Knowledge Management |  | Level of use of SA best practicesSA Lesson learned createdEffort Support AK portal # of AK artifacts to maintain  |
|  | Product Size and Stability | SA Estimations |  | SAD effort estimationSAD time estimationSA volume estimation: #quality attributes to consider #scenarios to resolve #technologies to use From scratch vs. reuse |
|  |  |  |  |  |
|  |  |  |  |  |
| Stakeholders concerns and Requirements | Product Quality | Reliability |  |  |
|  |  | Modifiability |  |  |
|  |  | Security |  |  |
|  |  | Performance |  |  |
|  |  | Testability |  |  |
|  |  | And others …”ilitys” |  | For each attribute:#of scenarios to resolve#of scenarios satisfied#of technical decisions taken#of Tradeoffs openPrototyping effortSimulation effort |
|  |  |  |  |  |
| Quality of SA Design | Product Quality | SA Completeness |  | #of Quality attribute satisfied#of view completed vs. #of views defined#of Technical decisions documented#of TBD in views#SA evaluation executed |
|  | SA Integrity |  | #of inconsistencies between views#of no conformities according SAD standards and regulations |
|  | SA Correctness |  | #of tradeoffs open#of sensitive points open#of scenarios resolved per quality attributeDefect detected in prototyping and simulation |
| Resource and Cost | SA Evaluation efficiency |  | SA Evaluation effort#of SA Evaluation per design cycle#of scenarios per quality attribute#of Tradeoffs, sensitive points and risk detected by evaluation sessionCost of evaluation |
| Schedule and progress | Milestone Completion |  | Evaluation dates |
|  |  |  |  |

Notes:

SA: Software Architecture

SAD: Software Architecture Design

SDAC: Software Development Architecture Centric

AK: Architectural Knowledge

SDLC: Software Development Life Cycle