# PSM – Software Architecture Measurement Framework

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| 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 Cost  Improvement of Quality Cost |
| ROI |  | IT Investment efficiency |  | IT Budget  IT infrastructure cost Distribution |
|  | Schedule and progress | Time to Market |  | Time to deliver new product  Time to deliver new release  Time to deliver changes  Time to deliver problem resolution |
|  | Technology Effectiveness | Technical debt |  | Effort of Technical debt  Distribution of Technical Debt  Type of Technical Debt |
|  |  | Systematic Reuse |  | # of Architectural patterns created  # of Reference Architecture created  Level of reuse  Sunk cost of reuse |
|  |  |  |  |  |
|  | Resource and Cost | Organizational Structure |  | Staff level  Organizational SA roles |
|  |  | Organizational Change Management |  | SA Training and workshops  SA community of Practice  Coaching and mentoring effort |
| Impact of SA in SDLC | Process Performance | Process Structure |  | SA architecture practices incorporated |
|  |  | Process Efficiency |  | Productivity  Cycle time |
|  |  | Process Effectiveness |  | Trade off resolved  Defect escaping  Rework effort  Level of Adherence to SA decisions, standards and best practices |
|  |  | Architectural Knowledge Management |  | Level of use of SA best practices  SA Lesson learned created  Effort Support AK portal  # of AK artifacts to maintain |
|  | Product Size and Stability | SA Estimations |  | SAD effort estimation  SAD time estimation  SA 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 open  Prototyping effort  Simulation 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 attribute  Defect 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 session  Cost 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