

SATURN Session Summary Use of the SEI ATAM® in Practice

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The SEI's Point of View

The purpose of the Architecture Tradeoff Analysis Method is to assess the consequences of architectural decisions in light of quality attribute requirements and business goals.

What are the problems people try to solve using the ATAM?

How is the ATAM used and/or modified to provide answers to those problems?

*Can we support customization of the ATAM
by keeping the predictability of the results?*



Architecture Evaluation Presentations

Challenges and Observations of Applying the SEI ATAM to a Software Testing Automation Solution

Fernando Enobi & Reginaldo Arakaki, Instituto de Pesquisas Tecnológicas de São Paulo

Architecture Curve, New Formatted SEI ATAM Report Shaped in a Single Graph

Haeran Youn, Samsung Electronics

Realizing the Business Value of IT: An Approach for Architecture Evaluation

Opal Perry, Wells Fargo & Company

Inexpensive ATAM-Peer Review Detects and Fixes Architecture Problems Early

Howard Forstrom, ITT Corporation

Applying SEI Architecture Tradeoff Analysis Method (ATAM) as Part of Formal Software Architecture Review

Christopher Byrnes, The MITRE Corporation



Challenges and Observations of Applying the SEI ATAM to a Software Testing Automation Solution

Fernando Enobi & Reginaldo Arakaki, Instituto de Pesquisas Tecnológicas de São Paulo

When applying the ATAM, stopped in phase 1 in the “identify architecture approaches” step.

- Architecture documentation not in a state to allow reasoning about the quality attribute
- No connection to the business goals

Added steps in phase 0 to explicitly deal with getting the documentation ready for ATAM.

- Used “Preview of utility tree” and “preview of architecture approaches”
- Linked scenarios to architecture documentation



Architecture Curve, New Formatted SEI ATAM Report Shaped in a Single Graph

Haeran Youn, Samsung Electronics

Try to remove barrier to introduce quality attribute scenarios of QAW and ATAM.

- Used “scenario pools” to speed up scenario generation process. Stakeholders can “pick” existing scenarios
- Integrated steps to deal with legacy systems during QAW

Added diagram “architecture curve” as a single graph to show the ATAM results.

- Powerful instrument to convey ATAM to managers.



Realizing the Business Value of IT: An Approach for Architecture Evaluation

Opal Perry, Wells Fargo & Company

ATAM applied in a large “system of systems” project.

- Required narrowing down the scope for utility tree generation. Used “Critical Business Processes” as root of utility tree
- Added more details to utility tree, such as thresholds and triggers

Had to invest more into upfront activities.



Inexpensive ATAM-Peer Review Detects and Fixes Architecture Problems Early

Howard Forstrom, ITT Corporation

Integration of ATAM into the peer review process during the architecture design.

- Every peer review has limited scope. ATAM techniques used there quickly with limited effort.
- Instead of trying to find every risk, try to find a few important risks
- Focuses the architecture design team very early to think about quality attributes
- Well suited for spiral/iterative process



Applying SEI ATAM as Part of Formal Software Architecture Review

Christopher Byrnes, The MITRE Corporation

Prepare program office for “Critical Design Review”

- Allowed with limited effort to focus program office on the important issues of the architecture
- Eliminated growth scenarios because for this exercise out of scope



Common Themes

Integration of ATAM techniques and thinking into the architecture design process.

- Peer review a good hook
- Get ready for ATAM

Lightweight ATAM for specific contexts

- Limited scope
- By using ATAM in peer reviews, the ATAM itself can be done faster with less effort

Make ATAM results actionable

- Graphical representation
- Risk analysis





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