



Help Your Customers Improve the Quality of Their Products: Offer SEI Products and Services in Architecture-Centric Engineering

When organizations build software-reliant systems, they make architectural decisions that affect all the choices and results that follow. These decisions determine whether systems fulfill their missions, optimally function, and provide required system qualities such as performance, reliability, security, and modifiability.

Architecture serves as the blueprint for both the system and the project developing it, defining the work assignments that must be carried out by design and implementation teams.

Architecture is an artifact for early analysis to make sure that the design approach will yield an acceptable system. Architecture holds the key to post-deployment system understanding, maintenance, and mining efforts. In short, architecture is the conceptual glue that holds every phase of the project together for all its many stakeholders.

The SEI Offers a Complete Architecture Solution

Training

Based on decades of experience architecting software-reliant systems and supported by four widely acclaimed books in the SEI Addison-Wesley Series, the SEI Software Architecture Curriculum equips software professionals with state-of-the-art practices so they can efficiently design software-reliant systems that meet their intended business and quality goals. The SEI offers software architecture courses, in both classroom and online formats, and certificate and certification programs.

People from more than 400 organizations have attended SEI courses, and 1,400 of

them have earned software-architecture-related certificates. The U.S. Army has mandated that its chief software architects take these courses to earn SEI professional architect certificates. That's how important this learning is in providing dependable systems.

Evaluation

Architecture evaluation is a cost-effective way of mitigating the substantial risks associated with system development. The SEI Architecture Tradeoff Analysis Method (ATAM) is a proven means for determining how well a software architecture satisfies requirements for quality attributes such as modifiability, performance, and security, and the risks, sensitivities, and tradeoffs involved in satisfying them.

Coaching

Architecture coaching is a service that the SEI provides to customers who have decided to introduce architecture-centric development to their software organizations. SEI architects work directly with a customer's developers to develop an architecture and introduce architecture practices or to improve an existing architecture and associated practices.

The SEI has decades of experience working directly with organizations to improve their product development practices. The SEI is currently coaching a major commercial project that integrates architecture-centric engineering practices with the Team Software Process (TSP). Combining TSP with architecture-centric development enables organizations to plan, estimate, and track design,

development, and implementation more accurately and to enhance the productivity improvements that TSP affords. The SEI now offers architectural coaching together with the TSP as a service to customers who have decided to introduce architecture-centric development and the TSP to their software organizations.

If You Are an SEI Partner Delivering Process-Improvement Services, Architecture-Centric Engineering Is for You

The CMMI V1.3 update will add material on architecture-related product development. This new material was added because CMMI developers recognized the value of architecture-centric product development.

Architecture-centric engineering helps to ensure that products are predictable, that they satisfy customer needs, and that they are delivered on time and on budget without extensive rework.

If you are already an SEI Partner delivering process-improvement services, now you can help your customers improve their products by offering a suite of proven SEI products and services in architecture-centric engineering.

Teach SEI Courses

The SEI's work in software architecture has resulted in courses to help software architects and other professionals in the field to achieve their organizations' business goals through effective software architectures. By earning an SEI Certification to teach SEI courses in software architecture, you can get the tools you need to help your customers

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communicate design decisions, establish effective work breakdown structures, create software product lines, and ensure the quality of their systems.

Certifications are currently available to teach three courses in the SEI Architecture Curriculum: the SEI's foundational software architecture course, Software Architecture: Principles and Practices; Documenting Software Architectures; and Software Architecture Design and Analysis. These are three of the four required courses in the SEI's popular and prestigious Software Architecture Professional Certificate. The fourth required course, Software Product Lines, is now available online.

Offer SEI Online Courses

The SEI currently offers online versions of three architecture-related courses: Software Architecture Principles and Practices, Migrating Legacy Systems to SOA Environments, and Software Product Lines. As licensees, SEI Partners can offer these courses to their customers on the SEI's behalf.

Online learning is a cost-effective and convenient way for your customers to get the foundational training they need to go forward with their architecture efforts. Under this arrangement, you act as a broker for online courses, which are administered and maintained by the SEI.

Become an SEI-Certified ATAM Leader

SEI-Certified ATAM Leaders conduct SEI-authorized ATAM evaluations on behalf of SEI Partner organizations. An SEI-authorized ATAM evaluation is led by an SEI-Certified ATAM Leader whose team is made up of individuals who have received the SEI ATAM Evaluator

Northrop Grumman has been an early adopter of improved engineering practices and we're the only company in the world with appraisals in all three CMMI constellations (CMMI-DEV, CMMI-ACQ, and CMMI-SVC). This strong process focus means that we're continually looking for ways to improve our engineering capabilities.

Our focus on architecture-centric engineering allows us to train our engineers and program managers in proven techniques that ensure that we have well-defined technical baselines and help us quickly evaluate the effectiveness of early design decisions and the effect of these decisions on solving our customers' most challenging problems.

—Brian Gallagher, director of the
Intelligence Systems Division of Northrop Grumman

certificate. SEI-Certified ATAM Leaders are experts in software architecture evaluation using the ATAM. The SEI offers a five-course sequence and simulation exercise to train qualified software professionals with the technical depth and social techniques needed to lead an SEI-authorized ATAM.

Provide Architecture-Consulting Services

The SEI seeks SEI Partners who can serve as consultants, trained by the SEI, to offer services to third parties in architecture-centric engineering: for example, architecture evaluation (ATAM), architecture evolution, implementation of the new CMMI process areas related to architecture, and architecture development. SEI technical staff members would be available to serve as mentors for you and your staff members in your coaching engagements with third parties.

For General Information About the SEI

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