

Software Architecture Review Board (SARB) process developed at Bell Labs uses experts from within the organization and leverages their deep domain expertise in telecommunications and related applications (Maranzano et al. 2005).

Another variation of the questioning approach is the Architecture Trade-off Analysis Method (ATAM) (Clements, Kazman, and Klein 2002), which looks for risks that the architecture will not satisfy quality concerns. ATAM uses scenarios, each describing a particular stakeholder's quality concern for the system. The architects then explain how the architecture supports each of the scenarios.

Active reviews are another type of questioning approach that turns the process on its head, requiring the architects to provide the reviewers with the questions that the architects think are important to answer (Hoffman and Weiss 2000, chap. 17). The reviewers then use the existing architecture documents and descriptions to answer the questions. Finally, searching the Web for “software architecture review checklist” returns dozens of checklists, some very general and some specific to an application domain or technology framework.

Beautiful Architectures

All of the preceding methods help to evaluate whether an architecture is “good enough”—that is, whether it is likely to guide the developer and testers to produce a system that will satisfy the functional and quality concerns of the system's stakeholders. There are many good architectures in systems that we use every day.

But what about architectures that are more than good enough? What if there were a “Software Architecture Hall of Fame”? Which architectures would line the walls of that gallery? The idea is not as far-fetched as you might think—in the field of software product lines, just such a Hall of Fame exists.* The criteria for induction into the Software Product Line Hall of Fame include commercial success, influence on other product line architectures (others have “borrowed, copied, or stolen” from the architecture), and sufficient documentation that others can understand the architecture “without resorting to hearsay.”

What criteria would we add to these for nominees for a more general “Architecture Hall of Fame,” or perhaps a “Gallery of Beautiful Architectures”?

First, we should recognize that this is a gallery of software systems, not art, and our systems are built to be used. So, perhaps we should begin by looking at the Utility of the architecture: it should be used every day by many people.

But before an architecture can be used, it must be built, and so we should look at the Buildability of the architecture. We would look for architectures with a well-defined Uses Structure that would support incremental construction, so that at each iteration of construction we would have a useful, testable system. We would also look for architectures that have

* See http://www.sei.cmu.edu/productlines/plp_hof.html.