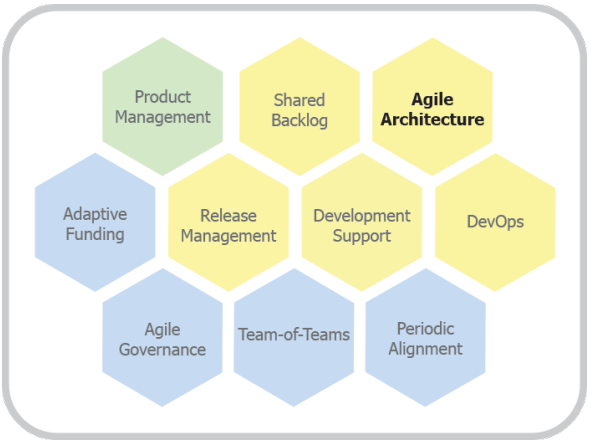
IVAR JACOBSON INTERNATIONAL

Agile Architecture Essentials

Part of the IJI Agile at Scale Practice Pack



Agile at Scale practices provide a starter kit that describes key common aspects of scaled agile development. Each practice contains cards that provide succinct advice on how to adopt and apply the practice

Practice Overview

Guide the evolution of a solution approach that adapts to changing needs and challenges.

Activities – the things we do

- **Evolve Architecture Roadmap:** Map out how the Software System will need to evolve over time and continuously refine this thinking based on best current information.
- **Drive an Architecture Spike:** An Architecture Enhancement is evaluated by testing it out.
- **Prepare Architecture:** Implement an Architecture Enhancement to enable a Software System to respond to current or future needs.
- **Evolve Architecture:** The team and the stakeholders continuously think about, debate, question and evolve the architecture approach based on learning.

Work Products – the things that we work with

- **Architecture Roadmap:** Communicates the planned enhancement of the architecture over time to support key release and other milestones in the evolution of a Software System.
- **Architecture Enhancement:** An independently buildable and testable extension to the architecture to support foreseeable needs / requirements.

Patterns - supporting practice guidance

- **Skinny System:** Being agile means frequent demonstration and release of functionality and responding to feedback and learning. A good architecture approach is to have an executing, deployable system that does close-to-nothing (aka "Hello World") as soon as possible, and then extend this working Skinny System one Architecture Enhancement at a time, one Backlog Item at a time and one test at a time.
- **Just-In-Time Architecture:** Agile architecture specifically does not mean never thinking ahead beyond the current needs and targeted release. It does mean keeping the current structure and approach as simple and cost effective as possible to achieve the next release goals, and then upgrade as needed to support future releases. This improves overall ROI and increases learning based on experience.
- **Architecture Ownership:** Who takes responsibility for the success of the technical solution? There are two possible answers: everyone collectively, or a specific dedicated individual architect or architecture team. For big, leading-edge or otherwise high-risk technical endeavors, dedicated Architecture Owners may well be needed to guide the evolution of the right technical solution, but they should work collaboratively with teams to reinforce collective responsibility.

Creating winning teams.

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Resources - referenced external sources of information and content

- This practice description uses the OMG Essence standard, with key concepts like Activities, Work Products, Alphas and Patterns being defined by this standard (http://www.omg.org/spec/Essence/).
- **Architecture Spike:** This concept is part of Extreme Programming (XP) – see for example http://www.extremeprogramming.org/introduction.html.
- **Architecture Enhancement:** These are similar to Architecture Elements in the Incremental Funding Methodology described by Mark Denne and Jane Cleland-Huang in their book *Software by Numbers* [Prentice Hall 2004], and also to Architectural Epics as described in Dean Leffingwell's *Agile Software Requirements* [Addison-Wesley 2011].
- **Skinny System:** This is the name given to an early version of the system that establishes an architectural baseline by Ivar Jacobson and Pan Wei Ng in their book *Aspect-Oriented Software Development with Use Cases* [Addison-Wesley 2004].
- **Architecture Ownership:** See for example the Architecture Owner section on P.76-78 of Scott Ambler's book *Disciplined Agile Delivery* [IBM Press 2012].

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