15 Scaled Agile Framework

THE SCALED AGILE FRAMEWORK (SAFe), developed by Dean Leffingwell, is "an interactive knowledge base for implementing Agile practices at enterprise scale."[1] Figure 15.1 shows a high-level overview of the Scaled Agile Framework.

SAFe is composed of three major levels[2]:

1. *Portfolio Layer*—The Portfolio Layer is the highest and most strategic layer in the Scaled Agile Framework where programs are aligned to the company's business strategy and investment intent.
2. *Program Layer*—The Scaled Agile Framework recognizes the need to align and integrate the efforts of multiple teams that are engaged in large, complex enterprise-level development efforts to create larger value to serve the needs of the enterprise and its stakeholders.
3. *Team Layer*—The Team Layer forms the foundation of the Scaled Agile Framework and is where the fundamental design, build test activities are performed to fulfill the development requirements for each major area of business.

A high-level summary of each of the levels in the Scaled Agile Framework is described in more detail in the following sections. Please refer to the SAFe website for more details on this framework: http://scaledAgileframework.com/

[1]Dean Leffingwell, "Scaled Agile Framework," http://scaledAgileframework.com/.
[2]Ibid.

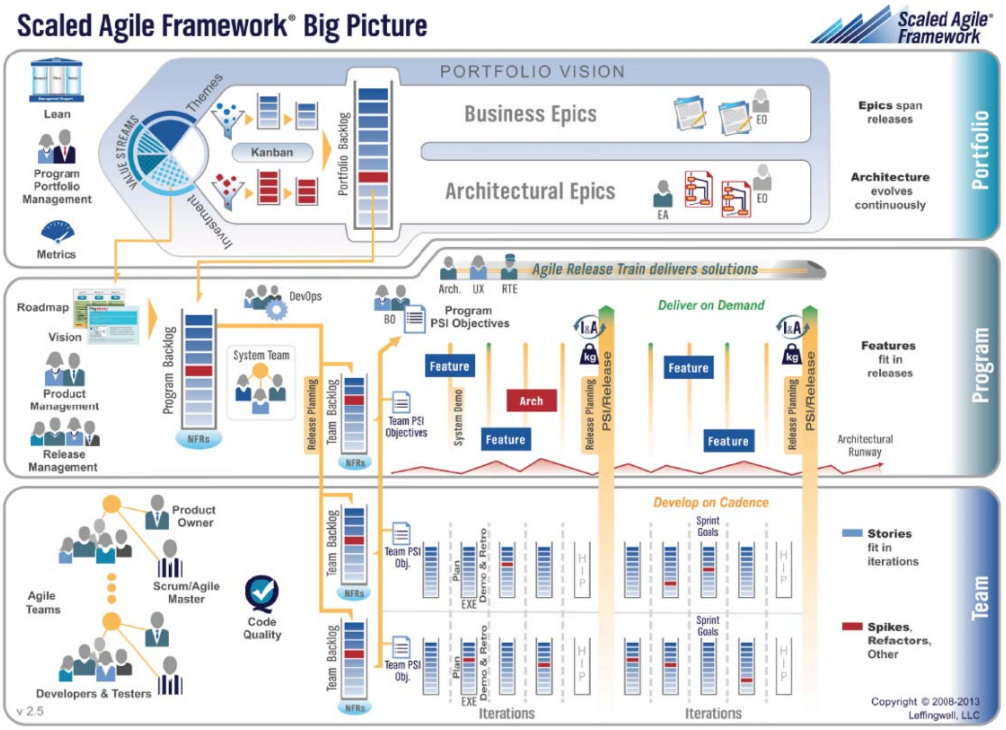

FIGURE 15.1 Scaled Agile Framework

TEAM LEVEL

At a team level, the SAFe uses standard agile principles and practices based on Scrum; however, the SAFe recognizes that implementing an agile development approach at an enterprise level can be much more complex and requires some adaptation:

1. Decisions need to be made about how to best segment and organize the development activities among teams. There are three possible alternatives: feature teams, component teams, or a combination of both.
2. Once those decisions are made, depending on the scope and complexity of the overall program, there is likely to be a need to manage communications and interdependencies across teams to ensure that the activities of all teams are well coordinated and synchronized.
3. Roles can also be more complex. For example, the Scaled Agile Framework recognizes that there may be both a product manager and a product owner involved in a program and distinguishes those roles.

PROGRAM LEVEL

The SAFe recognizes the need to coordinate and integrate the efforts of multiple teams that might be required for large projects and programs, and that is the major purpose of the program level. However, the SAFe does not recognize the traditional metaphor of a project. Instead of a traditional project management structure at the program level, the SAFe uses a more adaptive approach at that level. The major elements of the program level are summarized in Table 15.1.

PORTFOLIO LEVEL

The portfolio level is where the enterprise business strategy gets mapped into investment themes to implement that strategy. The portfolio level employs a number of key constructs, as shown in Table 15.2[3]

[3]"Portfolio Level Abstract," Scaled Agile Framework, updated June 30, 2014, http://scaledAgileframework.com/portfolio-level/.

TABLE 15.1 The SAFe Program Level

Program Level Construct	Description
Vision	The SAFe uses an agile approach for planning the program-level vision. The product management function is responsible for creating the vision, converting that vision into prioritized features in the program backlog, and planning the roadmap of feature delivery. The SAFe recognizes that in a product-oriented company, which is focused on products for external sale, this role would typically be filled by a real product manager. In an internal IT organization, this role would typically be filled by a business analyst. **The inputs for creating the vision consist of:** ■ Investment theme driven strategy ■ Portfolio epics ■ Customer value stream feedback ■ Architectural ■ Team inputs
Roadmap	The SAFe roadmap is similar to a normal agile roadmap in that it provides a plan for allocating product features for releases over a period of time; however, at the enterprise-level it serves the additional function of establishing alignment across all teams. The roadmap uses a rolling-wave planning approach to define its contents.
Release Management	The SAFe recognizes the critical importance of release management at the enterprise level. Releases are generally focused on delivering specific business objectives and features, and a release engineer or program manager provides coordination.

PROGRAM PORTFOLIO MANAGEMENT

SAFe defines a lean and agile approach for the traditional program portfolio management function where the strategic management decisions are made to allocate capacity to investment themes to execute the company's business strategy:

> Program Portfolio Management (PPM) represents the highest-level fiduciary (economics) and content authority (what gets built) in the Framework. These responsibilities typically rest with those business unit/marketing/development executives who have the necessary market knowledge, technology awareness, and best understand the internal financial constraints and external market conditions, and who use that knowledge to drive product and solution strategy. Often, they are assisted by a Project/Program Management Office (PMO), which shares responsibility for program execution and governance.[4]

[4]Ibid.

TABLE 15.2 The SAFe Portfolio Level

Portfolio Level Construct	Description
Investment Themes	Investment themes represent key product or service value propositions that provide marketplace differentiation and competitive advantage.
Epics	Epics are large-scale development initiatives that realize the value of investment themes.
Architectural Runway	In the context of the enterprise's portfolio of products and in the face of a series of shorter, incremental releases, architectural runway is the answer to the big question: What technology initiatives need to be underway now so that we can reliably deliver a new class of features in the next year or so?
Portfolio Vision and Backlog	The portfolio vision provides visibility as to how investment themes will be realized via business epics over time. Epics deliver the value implied by the theme, and they are identified, prioritized, estimated, and maintained in the portfolio backlog.
Kanban Systems	The framework applies two slightly different Kanban systems to manage the portfolio backlogs: one Kanban for business epics, and another Kanban for architectural epics.
Portfolio Management Team	The portfolio management team consists of those individuals who have ultimate responsibility for the lines of business.

SAFe identifies a set of seven transformational patterns that are essential to create the right mindset for effectively implementing a Lean-Agile Program Portfolio Management approach:

SAFe considers the domain of concern for this Program Portfolio Management function to be the set of all programs, both agile and others, below the portfolio level. Within that domain, this function has responsibility for three critical areas:

1. Strategy and Investment Funding
2. Program Management
3. Governance

Each of these three areas is summarized in more detail in Table 15.3.[5]

[5]Ibid.

TABLE 15.3 Lean-Agile Portfolio Management Mindset Shifts

From Traditional Approach	To Lean-Agile Approach
Centralized control	Decentralized decision-making
Project control	Demand management, continuous value flow
Detailed project plans	Lightweight, epic-only business cases
Work Breakdown Structure	Agile estimation and planning
Project-based funding and control	Lean-Agile budgeting and self-managing Agile Release Trains
Waterfall milestones	Objective, fact-based measures and milestones

TABLE 15.4 The SAFe Portfolio Program Management

Program Portfolio Mgt Construct	Description
Strategy and Investment Funding	The purpose of strategy and investment funding is to facilitate implementation of the business strategy through programs that develop and maintain the company's value-added products and services. Value Streams are identified, fostered, produced and continuously improved. Investment funding is allocated to ongoing programs and new initiatives in accordance with business strategy and current Strategic Themes. Additional Lean-Practices help the enterprise meet its economic objectives. **Lean-Agile Budgeting**. Each Agile Release Train has its own budget, which is updated twice annually. By allocating the budget authority to the decision makers on the train – albeit under the auspices of the Business Owners – it is no longer necessary to establish a charter for each new initiative. This avoids overhead and project stop-start discontinuities, the train can make fast and local decisions as needed, within the constraints of the allocated budget. Due to their scope; however, Program Epics still require some level of PPM approval. **Demand Management and Continuous Value Flow**. Overloading any system decreases throughput. If demand isn't managed at the portfolio, the invisible killer of "too much WIP' will limit velocity and quality as teams and individuals thrash from initiative to initiative. Bringing visibility to existing program work and understating the agile program velocities helps manage WIP and insure efficient product development flow. This is managed and supported by implementation of Architecture and Kanban systems, and maintenance and visibility of the Portfolio Backlog. **Epics and Lightweight Business Cases**. In order to provide visibility and economic justification for upcoming cross-cutting work, Business or Architectural Epics are defined and analyzed, each supported by a lightweight business case. Developed by Epic Owners, lightweight business cases provide for reasoning, analysis, and prioritization while avoiding over-specificity.

TABLE 15.4 (*Continued*)

Program Portfolio Mgt Construct	Description
Program Management	Program management supports and guides successful program execution. While this responsibility lies primarily with the Agile Release Trains and the Release Train Engineer, the PPM function can help develop, harvest, and apply successful program execution patterns across the portfolio. In many organizations, the RTE's are part of the PMO, where they can share best practices and common program measures and reporting. In other cases, they report to the development organization. **Self-Managing Agile Release Trains**. Traditional project and program chartering and management activities are replaced by Value Stream based, self-managing and self-organizing Agile Release Trains, each of which provides a continuous flow of value to its stakeholders. **Decentralized, Rolling Wave Planning**. Centralized planning is replaced with decentralized, program and team-based rolling-wave planning via the routine, cadence-based Release Planning activity. **Agile Estimating and Planning**. The formerly too-detailed business cases, too-early requirements specificity and too-detailed work break down structures are replaced with Agile estimating and planning, using the currency of Story points, consistently through the Team, Program and Portfolio.
Governance	Governance functions still exist in agile, otherwise there would be no portfolio-level feedback on investment spend, nor program reporting, nor any means to assuredly communicate and validate important security, regulatory, standards, quality, and release requirements.