Piloting the Scaled Agile Framework (SAFe) in a Top 10 U.S. Energy Firm

Abstract

The Scaled Agile Framework (SAFe) is beginning to enter its golden age in the late 2010s (or early majority on Everett Rogers' Diffusion of Innovations Model). SAFe was conceived circa 2006 as an "Agile Program Management" paradigm for coordinating the work of multiple agile teams. That is, SAFe was originally designed as a basic technique for scaling or aggregating the work of small agile project teams using Scrum to larger-scoped "programs" or groups of multiple projects building complex mission-critical IT application systems. SAFe's basic goal was to enable the application of Scrum to larger programs requiring dozens of teams and hundreds of people without sacrificing agile values such as individuals and interactions, working software, customer collaboration, and responding to change.

SAFe recognized that larger programs required lightweight roadmaps, visions, plans, management, coordination, architecture, alignment, governance, standardization, infrastructure, tooling, testing, and even deployment. However, SAFe also recognized that informal and improvisational conversations, collaboration, teamwork, trust, visualization, transparency, ceremonies, artifacts, mastery, and rapid continuous improvement cycles were keys to program success. Conversely, SAFe acknowledged that crushing small agile teams with heavyweight traditional process and document-driven lifecycles would simply continue promulgating the historically high program failure rates associated with complex programs and projects. Today, SAFe has grown up into a full-fledged, multi-level reference model to apply lean and agile thinking principles to large and complex enterprises, portfolios, systems of systems, and, of course, programs aggregating dozens of Kanban and Scrum teams.

This is the story of a Top 10 U.S. energy firm that boldly applied lean and agile methods to all of its small, medium, and large programs, thus, selecting SAFe to coordinate the work of its customer-facing IT application portfolio. Although there were no competing traditional practices, as are present in many large organizations, old habits die hard, the energy sector tends to be risk adverse, there is a tendency to overanalyze and over-plan, and there was still some lingering traditionalism. Furthermore, agile teams were still coming up to speed on using Scrum and stabilizing, there was pressure to waste no time modernizing its IT application portfolio quickly, and inserting SAFe ceremonies into its tight seams was challenging. Of course, the answer was to ease up a bit, apply more lean thinking principles like limiting work in process (WIP), and widen the margins in delivery deadlines in order to apply SAFe ceremonies for coordinating the work of dozens of teams so they could Sprint together with ease.

One positive outcome of its planning culture was the insight to establish a solid SAFe foundation, such as training agile teams, applying Scrum to complex UX artifacts, maturing Scrum teams, synchronizing Sprints, institutionalizing common application lifecycle management tools, applying Scrum of Scrums, and socializing SAFe practices well in-advance. Once the level of SAFe anticipation and readiness was high, one final push was necessary to jumpstart SAFe by a small lean and agile coaching team with the combined experience to pilot SAFe Program Increment (PI) planning quickly and painlessly. It takes a village to get SAFe going in a large portfolio with so many complex interdependencies and everyone from executives, directors, functional and program managers, administrators, and the Scrum teams themselves had to give it one final heave to get the SAFe boulder rolling.

Although there were many critical success factors necessary to jumpstart SAFe, one in particular was the presence of highly-motivated leaders, self-starters, and developers within the Scrum teams themselves, who walked into SAFe PI planning with little prior SAFe experience, intuitively executed its practices with expert ease, and completed the pilot in only 8 hours. In fact, the Scrum teams were so mature, skilled, and highly motivated, they performed a draft PI plan review after only 3 hours, although none had never used SAFe before. This abbreviated, one-day PI planning event constituted the successful SAFe pilot of a Top 10 global energy firm, a corporate goal established by its highest-level executives, leaving everyone begging to apply SAFe to its entire IT application portfolio.

Introduction

Once again, although ranked between Top 5 and 10, depending upon where one looks, this firm was the single largest generator and provider of energy in North America. A business unit consisting of about 200 workers, insourced and outsourced domestically and internationally, was charged with designing, delivering, operating, and maintaining its customer-facing IT services. These were largely Internet applications customers could access by personal computers, smart phones, and other mobile devices. The goal of these IT applications was to enable energy customers to browse its selection of products and services, select and register for one or more of these, monitor their usage, troubleshoot any service interruptions, discontinue service, or obtain any assistance they might need. Ultimately, this energy firm wanted customers to do all of this through interaction with IT services vs. human beings.

First, the IT department needed catch up with new rapidly evolving, emerging, and changing information technologies. Then, they needed to create, validate, deliver, operate, and maintain a portfolio or ecosystem of IT products and services. Finally, they needed to identify, adopt, institutionalize, stabilize, master, and continuously improve modern IT management paradigms such as lean, agile, user experience, and DevOps thinking principles, practices, and tools. An IT strategic plan was formed to promulgate modern IT management principles and practices and a global IT management consultancy was retained to develop and execute tactical implementation plans, as well as build the IT products and services themselves. That is, the IT consultancy performed portfolio, program, and project management, as well as designing, implementing, testing, operating, and maintaining the IT applications.

At the heart of its IT strategic plan lay the adoption, institutionalization, and implementation of agile methods as its fundamental project management technique. More specifically, Scrum was chosen as the basic building block of its rapid IT modernization effort. This included the hiring and appointment of experienced people to fulfill Scrum roles such as Product Owners, Scrummasters, and Development Team Members. Scrum teams, of course, were responsible for Product Backlog Grooming, Sprint Planning, Sprints, Daily Standups, Sprint Reviews, and Retrospectives. IT personnel were globally distributed across North America and the world. Agile portfolio, program, and project managers were also hired to drive the teams forward as quickly as possible to implement IT applications in a hurry.
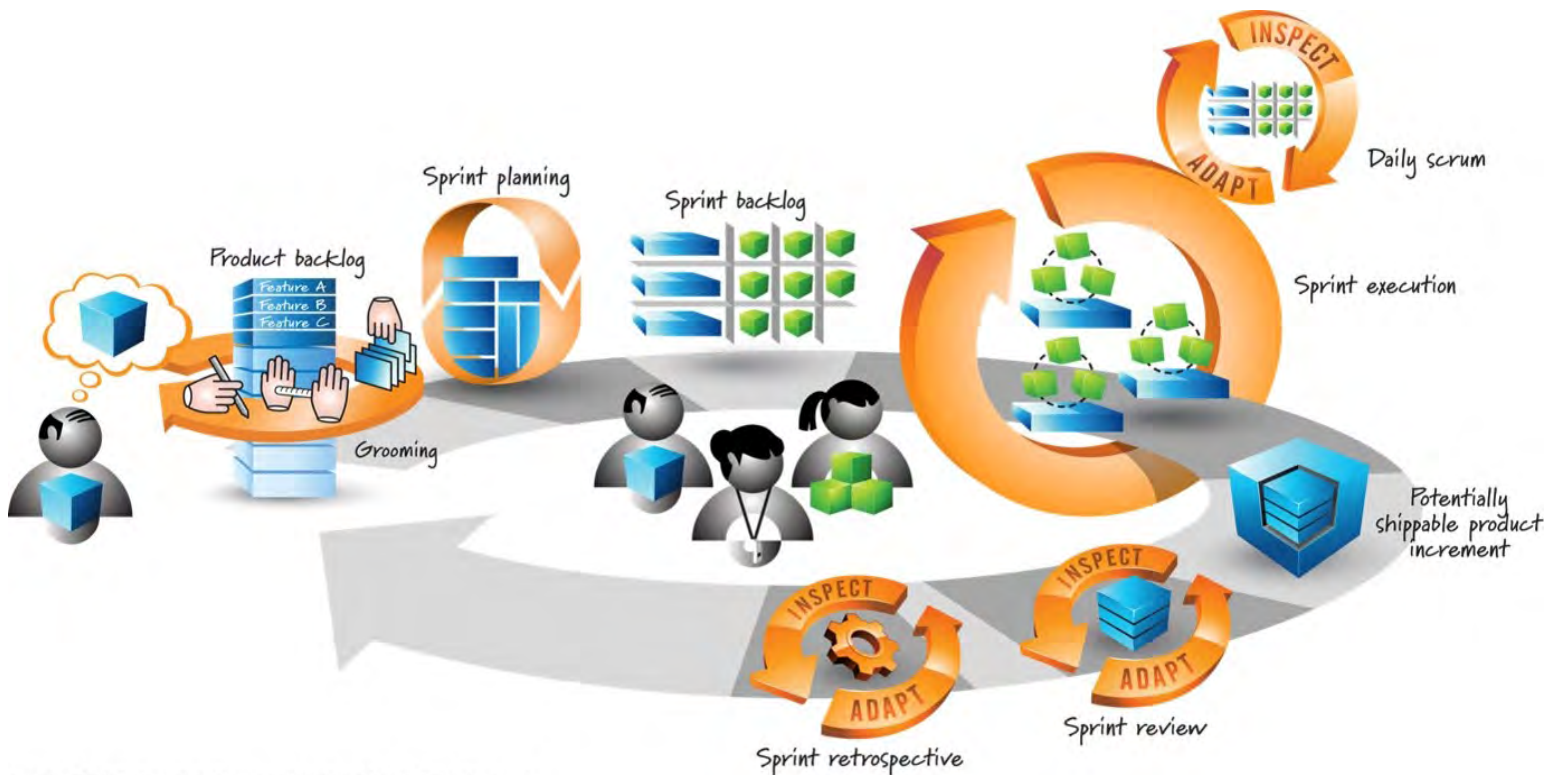
A small team of Agile coaches was also retained to oversee the efficient implementation and operation of Scrum teams, provide just-in-time on-the-job training and consulting if necessary, and implement stopgap measures to quickly resolve any Scrum issues in real-time. The Agile coaches had the insight to quickly realize that more sophisticated lean and agile principles, practices, and tools were necessary to efficiently coordinate, operate, and improve portfolios, solutions, and programs consisting of many Scrum teams. To this end, the Agile coaches selected the Scaled Agile Framework (SAFe) as the reference model to coordinate the entire portfolio of Scrum teams. Since Scrum was at the heart of its IT management modernization initiative, the Agile Coaches wanted to maintain the basic essence and purity of the Scrum practices without introducing wasteful governance and coordination overhead.

A working integrated product team (WIPT) was instituted to carefully plan the implementation and rollout of SAFe ceremonies, while simultaneously institutionalizing Scrum as well. There was no shortage of issues as IT executives, directors, and other senior managers immediately filled Product Backlogs to capacity with high-priority corporate initiatives in the form of Epic MVPs. Global Scrum teams worked 24x7 to empty Product Backlogs only to see them fill up again in real-time, round-the-clock go-live dates and milestones were placed on corporate calendars, and QA teams labored to validate dozens of highly interdependent IT products and services. In other words, the harder the WIPT tried to get SAFe off the ground, the harder it became to do so as project managers drove Scrum teams faster and faster.

Even the Agile coaches were temporarily distracted from SAFe implementation goals to help project managers unblock daily impediments in order to form well-oiled Scrum teams. Many impediments had to do with decomposing traditional artifacts into granular user stories, planning detailed releases and sprints, applying basic ceremonies, developing vs. documenting more, integrating in manual testing practices, and providing transparent reporting for budgeting purposes. Because, SAFe was a top-level corporate IT strategic goal, the Agile coaches augmented their ranks with more SAFe coaches to help get SAFe off-the-ground. With everyone pushing SAFe as hard as they could from the top-down, middle-out, and bottom-up, basic SAFe Program Increment (PI) Planning ceremonies were finally piloted on one-fourth of its IT workforce within one year of forming Scrum teams across the IT portfolio.

Let's pause to briefly reflect upon the state of Agile implementation in this energy firm's customer-facing IT portfolio as it was when additional Agile coaches were retained to help get SAFe off-the-ground. Remember, the operation of the IT portfolio was essentially outsourced to a global IT management consultancy with perhaps the most advanced Agile adoption roadmap of its kind to date in the entire world. That is, the energy firm's IT portfolio was in expert hands, which was driving Scrum utilization forward full-bore. Much of the tactical implementation roadmap consisted of retaining, placing, and coaching itinerant Scrum experts from across North America and across the globe as well. Nearly the entire IT delivery team came with lean, agile, UX, Scrum, and DevOps training, experience, and certifications from the world's top information technology consulting firms and even dot com giants.

What Was Working Well?	What Wasn't Working So Well?
• Corporate agile playbook	• Historical traditional thinking culture
• Non-existent or competing traditional playbook	• Still transitioning from traditional to agile thinking
• Executive support for Scrum, SAFe, DevOps, UX	• Struggling to level highly unbalanced workflow
• Product-focused value streams	• Disproportionately large investment in UX
• Formal front-end UX discovery process	• Product Backlogs jammed with large use cases
• Big investment in customer facing web services	• Large use cases not decomposed to user stories
• Widespread Scrum practices for IT and non-IT	• Large user stories required multiple Scrum Sprints
• Scrum ceremonies baking in quickly	• Large hard-driving project management teams
• Common application lifecycle management tools	• More Product Owners and QA than developers
• Middle manager support for Scrum ceremonies	• Multi-matrixed, overallocated Scrum teams
• Emerging commitment to TDD, CI, CD, DevOps	• Long, laborious, manual, multi-phase QA testing
• Combined PMO, AMO, and IT delivery teams	• Highly regulated, risk-adverse corporate culture
• Top-down, middle-out, bottom-up SAFe push	• Just learning to crawl, walk, run with Scrum/ALM
• AMO highly respected for Agile expert power	• Large, slow, and brittle application infrastructure
• AMO team had prior SAFe experience	• Slow to get TDD, CI, CD, and DevOps going
• Further investment in additional SAFe coaches	• Hadn't discovered autonomous microservices yet
• SAFe implementation was near-term objective	• Very traditionally minded project managers
• Active SAFe Working Integrated Product Team	• Using Product Backlogs as traditional schedules
• Investment in widespread Scrum training	• Allocating/utilizing Scrum teams at 100% capacity
• Fast rollout of basic SAFe PI planning training	• Distributed, part-time, jet-setting global workforce
• Modern collaborative workspaces, focus rooms	• Presence of culture, ethnic, and gender clashes
• Collegial, social, and cooperative culture	• Application of split-second story point physics

What one can clearly see on the left column—What was working well?—is the presence of a foundation and high-state of change readiness for SAFe implementation success, which was highly-unique! That is, these critical success factors are haphazard, inconsistent, or completely missing in large traditional organizations, which attempt to apply new organizational lean-agile reference models such as SAFe. Even more importantly, as explained earlier, SAFe itself has evolved into a complex multi-level reference model for team (crawl), program (walk), large solution (run), and portfolio (fly) management. In other words, not only do large historically traditional organizations lack many of the critical success factors, they want to leap from worst to first and crawl, walk, run, and fly simultaneously on day one!

In this case, the energy firm set rather tightly scoped and highly reasonable expectations by initially crawling with Scrum for the first year, although clearly stumbling forward from time-to-time. Then, rather than leaping to the flying stage with portfolio management, including value stream mapping and large solution management (for implementing complex systems of systems), they instead chose to focus on SAFe's goldilocks zone, sweet spot, or center of percussion. That is, they chose to implement the most basic ceremony in the multi-level SAFe model—Program Increment (PI) planning. With basic Scrum practices under their belt and Sprinting together in cadence, implementing basic PI planning practices was the most logical way forward. Although, there were still many systemic challenges to overcome, this emboldened and encouraged the new SAFe coaches that PI planning was a highly feasible baby step.

Approach
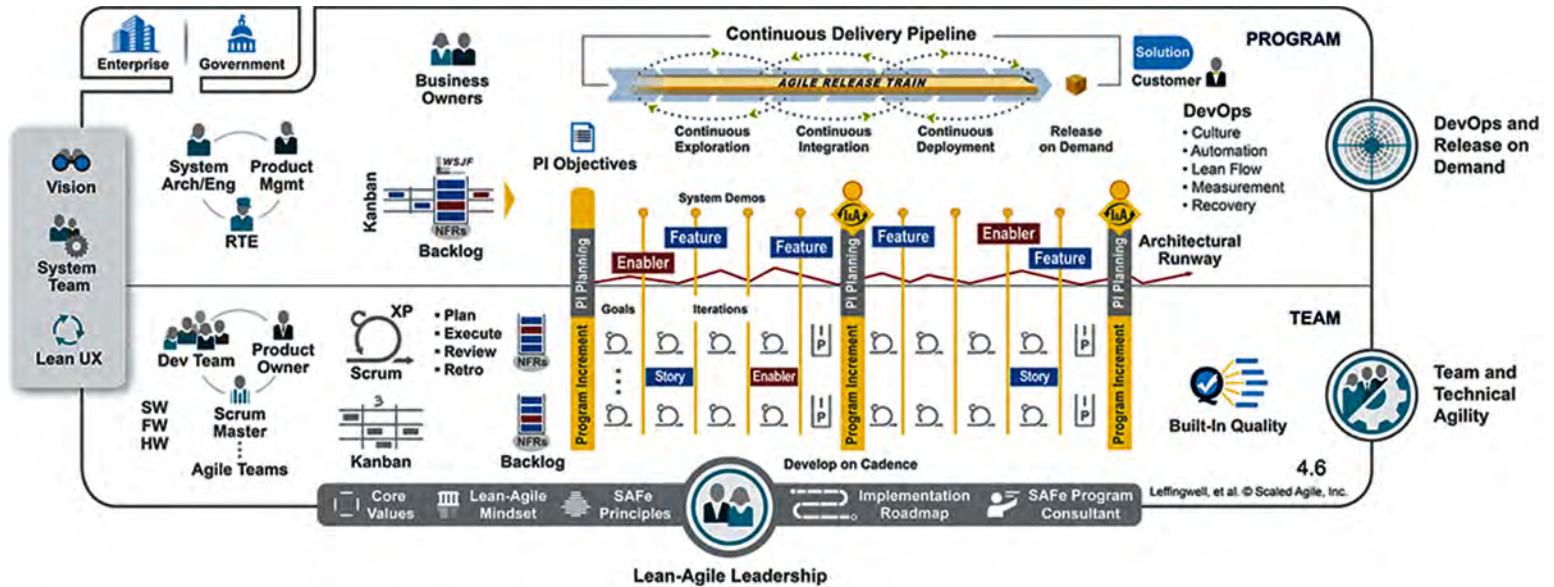
The first order of business was to assess the current state of SAFe readiness (i.e., what measures had been taken to prepare for SAFe PI planning?). At this point, existing Agile coaches developed well thought out SAFe implementation plans, but the daily challenges of stabilizing Scrum and delivering value-adding IT products and services always seemed to get in the way. The second order of business was to scale things back and propose a smaller, near-term SAFe pilot, rather than nuking the entire IT portfolio with SAFe PI planning all at once. That too had been considered in the recent past, but now it was time to strip that plan down to its essential elements. The third order of business was to propose an abbreviated one-day SAFe PI planning ceremony to get the ball rolling, since most teams were operating at 100% capacity and didn't have two full days to spare. Now, we just needed to select a date.

Once dates, pilot teams, and a one-day format had been socialized with the SAFe WIPT and generally agreed upon, it was now time to begin preparations in earnest. Although many IT personnel had basic Scrum training, were Certified Scrummasters (CSMs), and even SAFe certified, we needed to ensure teams understood basic SAFe PI practices quickly. We promptly developed a SAFe PI planning orientation deck, scheduled training sessions, and exposed everyone in the pilot group to basic SAFe PI concepts. We reviewed our state-of-SAFe readiness with the senior IT managers, which tightened up our pilot groups some more to deconflict with near-term go-live dates, to which the SAFe coaches agreed. We scheduled a date, time, venue, and accommodations, assembled supplies, gathered preparatory materials, secured attendees, and garnered the support of executive, director, senior manager, project manager, and developer personnel. Throughout this process several external SAFe coaches were frequently consulted for advice, mentoring, and tactical advice for moving forward.

Time	Activity	Attendees	Agenda
9:00 ▸ 10:00	Kickoff	BO, PO, Architects, Tools, SSM	▸ Vision & Business Goals ▸ Planned Features & Milestones ▸ Agile Ceremonies, Architecture, Tools, & PI Activities
10:00 ▸ 12:00	Team Breakout #1	Teams 1, 2 & 3	▸ Draft Velocity & Capacity ▸ Draft User Stories & Dependencies ▸ Draft PI Objectives & Risks
12:00 ▸ 1:00	Lunch	Everyone	▸ Eat lunch
1:00 ▸ 3:00	Team Breakout #2	Teams 1, 2 & 3	▸ Final User Stories & Dependencies ▸ Final PI Objectives & Business Value ▸ Final Risks & Impediments
3:00 ▸ 4:00	Plan Review	Everyone	▸ Team Velocity & Capacity ▸ Team PI Objectives & Business Value ▸ Team PI Risks & Impediments
4:00 ▸ 4:30	Risk Review	Teams 1, 2 & 3	▸ Present All Program Risks ▸ ROAM Risks - Resolved, Owned, Assigned, Mitigated ▸ Disposition All Program Risk
4:30 ▸ 5:00	Confidence Vote	Teams 1, 2 & 3	▸ Fist of Five
5:00 ▸	Adjourn!	Everyone	▸ Adjourn for the Day

ONE-DAY PROGRAM INCREMENT (PI) PLANNING FORMAT

1. Kickoff (*One Hour*)

The SAFe Scrummaster assembles the team in one of the open seating areas and kicks off the SAFe Program Increment (PI) Planning event by stating the purpose, presenting the agenda, and introducing Business Owners, Product Managers, and Key System Architects. Business Owners briefly describe the product vision for the next quarter, Product Managers describe the Top 10 Features, and System Architects describe any design considerations, development best practices, and recommended tools.

2. Team Breakout #1 (*Two Hours*)

Individual teams consisting of Product Managers, Product Owners, Scrummasters, Developers, QA personnel, and Key Suppliers assemble in individual breakout rooms. The Scrum teams review the Top 10 Features for their teams, identify goals for each Sprint, discuss capacity, review product backlogs of user stories, create new stories if necessary, and allocate stories to Sprints (with the focus on the first three Sprints). Program Increment (PI) objectives are identified, along with dependencies, risks, issues, personnel allocation, business and technical priorities, etc. A preliminary PI Plan review may be held with the entire Agile Release Train (ART) if preliminary PI Objectives, Dependencies, and Risks have been drafted.

3. Lunch (*One Hour*)

The SAFe Scrummaster orders lunch a few days before the PI event, reserves a small conference room for this purpose, receives the order, and distributes a verbal or electronic communication to the entire Agile Release Train (ART) when lunch is ready. ART members come to the location of the lunch if they so choose when they're ready, eat if they'd like, and engage in other activities such as read business and personal email and make personal phone calls and texts as necessary. Oftentimes, key conversations concerning features, user stories, sprints, capacity, allocation, dependencies, and risks continue to occur during this period. This is a good time for ART members to ask for advice and clarifications from the SAFe Scrummaster and receive key pointers for properly identifying, decomposing, and organizing ceremonies and artifacts.

4. Team Breakout #2 (*Two Hours*)

Promptly after lunch, individual teams reassemble in their breakout rooms so they can focus on finalizing user stories, allocating them to the six sprints with a focus on the first three, and agreeing on the overall scope of the Program Increment (PI) plan with respect to the individual features based on prior velocity, architectural runway, and team capacity for the next quarter. PI objectives are finalized, dependencies and risks are finalized, and the plan is internally agreed upon by the team. Product managers, product owners, and individual team members begin assembling the Program Board, milestones, features, and dependencies, and attach strings between all features and dependencies among all teams in the common area. The final team breakout may be extended for 30 to 45 minutes to finalize the Program Board, while the rest of the team wraps up their detailed Sprint plans for later insertion into the Agile Application Lifecycle Management (ALM) tool.

5. Plan Review (*One Hour*)

When the Program Board is finalized and ready for presentation, a Product Manager, Product Owner, or Scrummaster presents their Program Increment (PI) objectives to the entire Agile Release Train, walks the ART through their part of the Program Board along with dependencies, and ROAMs their risks designating eat as Responsible, Owned, Assigned, or Mitigated. Each team then performs a Fist of Five Confidence Vote which is averaged and the next team repeats this process until all ART teams have done the same. When each ART team is done, the SAFe Scrummaster summarizes the SAFe Program Increment (PI) planning event, thanks the ART attendees for their efforts, and dismisses everyone for the day. Each team is responsible for transferring and transcribing their Sprint plans into the Agile ALM tool the next day or their earliest opportunity.

6. Risk Review (*30 minutes*)

Each team's Risk Review belonging to the SAFe Program Increment (PI) Planning event and Agile Release Train (ART) is concurrently performed and incorporated into the Final Plan Review on a team-by-team basis instead of hold the Plan Review, Risk Review, and Confidence Vote sequentially which is more efficient and effective.

7. Confidence Vote (*15 minutes*)

Each team's Confidence Vote belonging to the SAFe Program Increment (PI) Planning event and Agile Release Train (ART) is concurrently performed and incorporated into the Final Plan Review on a team-by-team basis instead of hold the Plan Review, Risk Review, and Confidence Vote sequentially which is more efficient and effective.

8. Adjourn

The SAFe Scrummaster photographs the Program Board along with each teams Program Increment (PI) Objectives sheet and ROAM sheets. The Milestones, Features, and Dependencies and transcribed and optionally converted into a large Visio diagram. The original hand-made Program Board itself is left hanging on the wall for the Agile Release Train (ART) to see, which is quite colorful. A Retrospective page is established within Confluence so ART members can identify the strengths and weaknesses of each PI event for later improvement. The PI Objectives, Risks, and Confidence Votes are placed within a PowerPoint briefing along with the Retrospective results and Program Board, which is distributed to the entire ART along with the customer and supplier leadership teams.

Execution

As the day grew nearer—72-hour countdown—Many last-minute adjustments and accommodations needed to be tweaked until the 11th hour! The SAFe coaches rolled in early, rearranged the tables in the venue, set up the audio-visual equipment, pinned up iteration planning boards, and laid out refreshments, distributed markers, post it notes, scissors, string, name badges, and other necessities. A quick run to the local convenience store was made to secure additional extension cords and power strips. These were laid out, taped down, and properly distributed so that all attendees could plug in their power-hungry laptops. Our executive arrived from the corporate headquarters in the Midwest and outlined a riveting business context. From there, product managers laid out Top 10 Features, and the Release Train Engineer (RTE) gave real-time direction to the teams on how to organize breakouts.

It turns out that although two of our larger mission-critical teams were excused from the pilot, we had managed to retain three of the most mature Scrum teams in the entire IT portfolio! Product Owners, Scrummasters, and Scrum Teams immediately kicked into high gear, outlined the PI objectives, identified risks and dependencies, estimated team capacity and loading, and laid out their initial user stories across their iterations directly from their application lifecycle management system. Being mature Scrum teams, Product Owners had already groomed their Product Backlogs in advance. Within one hour they were nearly ready to conduct their Draft PI plan reviews, which they had never done before. As that was being done, the SAFe coaches assembled the portable Program Board in real-time and quickly improvised a Draft PI plan review, which the Scrummasters delivered. Then, we all had lunch!

The teams reassembled, refined their iteration boards, finalized their capacity planning, and adjusted their PI objectives, business value, risk, and dependencies. They stormed the Program Board, laid out their features, identified their dependencies, and prepared for the Final PI plan review. The SAFe coaches improvised again, combined the Final PI plan review with a walkthrough of the Program Board, and ROAMed risks, and tallied the Fist-of-Five confidence votes team-by-team. In spite of the fact that it had been a rather last-minute SAFe PI pilot, teams were already overextended, and it was a very long day, enthusiasm was running high and there was a lot of excitement in the air. At this point, the IT directors erupted into a long serious discussion of risks, inter-dependencies, solutioning, and plans to resolve these issues by expanding SAFe to the entire IT portfolio at the earliest possible date. We performed a quick retrospective, took a group photo, and congratulated everyone for making history at this Top 10 U.S. energy firm by successfully rolling out SAFe PI planning, satisfying a corporate goal.

While many teams assemble temporary Program Boards on whiteboards or use painter's tape on walls, we used prior experience to minimize the loss of this valuable artifact. We assembled a Program Board with extended poster paper, fastened it securely with masking and scotch tape, and fastened features and dependency strings securely as well. This way, we wouldn't have to remove post it notes and strings, lose the context, and destroy one of the most valuable symbols of the SAFe PI planning process itself, the Program Board. We simply removed it from the wall, rolled it up, carried it out, and put it up lock stock and barrel in one of our larger collaboration rooms for all to see. The next day was an IT open house, where we invited executives from various industry partners to tour our state-of-the-art IT collaboration center, visit our IT portfolio teams, learn of our Scrum, SAFe, DevOps, and UX practices and tools, and see our energy firm's first Program Board too! Teams spent the next day loading their features, user stories, dependencies, and risks into our application life cycle management system.
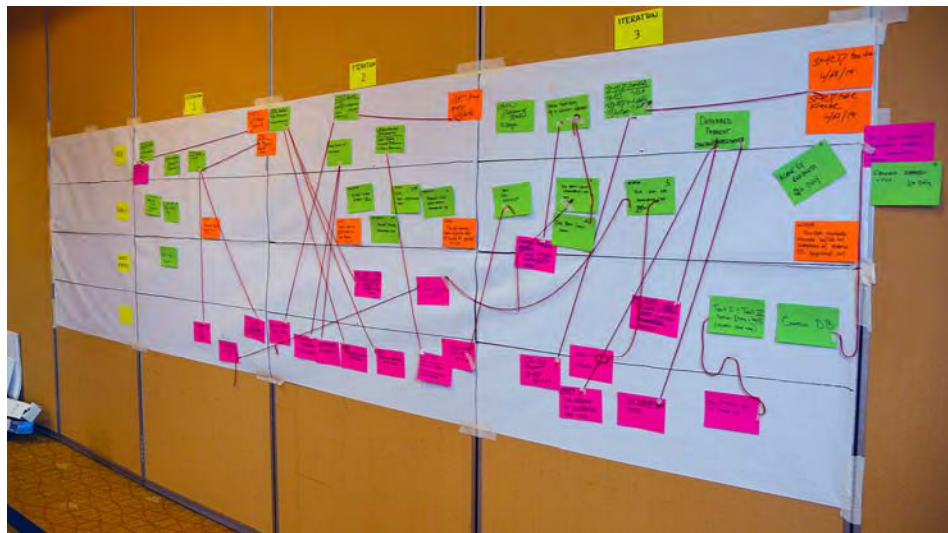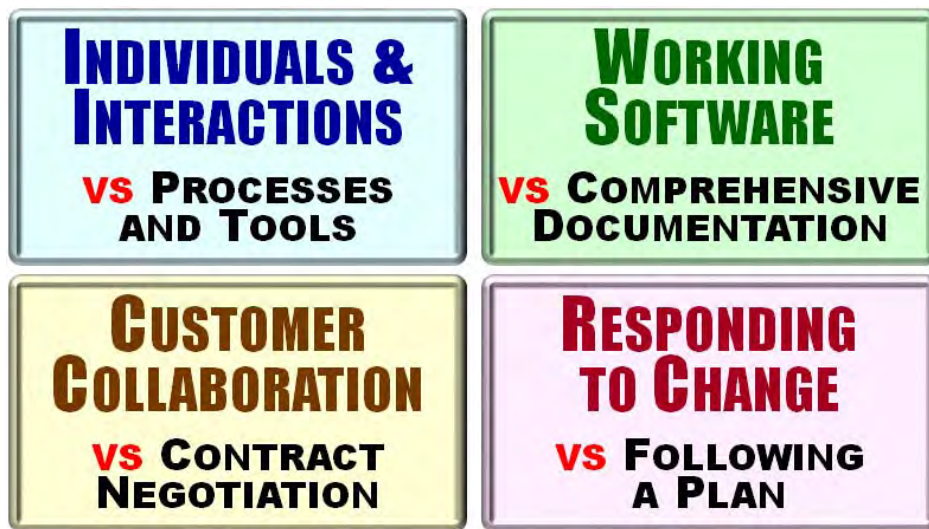
Many people attempt to reduce these large room collaborative events to the sum of their outputs such as Program Boards, PI objectives, features, stories, dependencies, risks, and confident votes. However, the value of SAFe PI planning is not so much in the meager physical artifacts that it produces, but rather the informal, improvisational, and intangible conversation, collaboration, teamwork, visualization, trust, transparency, communication, insight, openness, excitement, enthusiasm, exuberance, fun, enjoyment, relationships, empowerment, and shared ownership. Compared to the business value of creativity, emergence, interaction effects, and deep personal satisfaction, a few PI objectives, features, and user stories pale in comparison. It's hard to put a number on revelation, insight, awareness, epiphany, and enlightenment. Traditional thinking is based on high power-distance, divide-and-conquer, individualism, opacity, disempowerment, division-of-labor, specialization, and reducing complexity to the sum of its physical parts. However, value is not to be found in the individual parts, but rather in the combination, aggregation, and synergy of the parts. Isn't this at the very heart or essence of holism, systems thinking, and complexity theory?

Reflection

Let's reflect on some observations concerning this SAFe PI Pilot with respect to what happened before during and after. Remember, it's not easy to institute organizational change, implement a large new change or ceremony to programs or projects, and especially unique ones like SAFe PI planning. In fact, organizational change, like IT projects themselves, have historically high failure rates ranging from 40% to 70%. Therefore, there was some element of risk is getting SAFe PI planning off the ground. There were some knowns and unknowns before we started. As mentioned earlier, the lead IT consultancy had a world-class agile adoption framework and implementation plan. They executed this agile implementation plan to a tee, but it was difficult to measure the actual agile adoption maturity in advance. Furthermore, new SAFe coaches were added, so it was difficult for the new coaches to adequately assess the situation, or vice versa, for the consultancy to determine how the new SAFe coaches would affect the outcomes.

- **Teamwork**. First of all, as mentioned before, there was a lot of teamwork involved in getting this going. At a very minimum, there were a pair of SAFe coaches that drove this event forward. However, it took teamwork at all levels, not just among the SAFe coaches. There was a SAFe WIPT with 10 to 20 key members ranging from executives to IT directors, project managers, Product Owners, Scrummasters, and other lead developers. The contract leaders also had to get involved at the last moment to successfully implement this event. It literally takes a village to successfully implement large organizational change initiatives like SAFe PI planning, just like making stone soup!
- **Diversity**. In addition to teamwork, the team itself had a variety of unique and widely disparate skills, interests, viewpoints, experiences, and temperaments. Again, this was a highly regulated, risk-adverse corporate culture. It's employees, management consultants, and IT personnel were prone to very thoughtful planning and analysis to account for all possible contingencies, months and years in advance. So, this was a helpful element. Then, again, we also had people who had a "just do it, git-r-done" mentality, who knew that in the end you just have to move forward in spite of the risks. Across the WIPT and contract, we had skills to account for many elements of thought.
- **Agile Values**. Of course, the fundamental building block of this organizational change initiative, the IT product and service delivery team itself, was Agile and Scrum methods. As the Agile Manifesto states, the four most important values are Individuals and interactions, Working software, Customer collaboration, and Responding to change. And, of course, the five basic Scrum ceremonies are Sprint Planning, Sprints, Daily Standups, Sprint Reviews, and Retrospectives. Furthermore, the IT team and SAFe PI planning participants had been living and breathing Agile values and Scrum ceremonies on this specific initiative for at least a year. Therefore, these concepts were baked into their DNA from the get-go (Shu-Ha-RI). We can't underestimate the value of this basic level of competency.

INDIVIDUALS & INTERACTIONS VS PROCESSES AND TOOLS

WORKING SOFTWARE VS COMPREHENSIVE DOCUMENTATION

CUSTOMER COLLABORATION VS CONTRACT NEGOTIATION

RESPONDING TO CHANGE VS FOLLOWING A PLAN

- **Empowerment**. At the heart of the Agile mindset is the concept of self-organization. That is, clearly outlining visions and outcomes and empowering individuals and teams to choose the best course of action or implementation steps to achieve those outcomes. That is, don't micromanage people or tell them how to achieve those outcomes with detailed top-heavy project plans and traditional thinking. Empowerment and especially self-organization were key to our success before, during, and after our SAFe PI planning event. This is especially true in the last week leading up to SAFe PI planning, when contract managers and SAFe coaches took control of the wheel to git-r-done, self-organize, and make many profound last-minute decisions on how to implement and execute the SAFe PI planning event architecture and design. More importantly, Scrum teams took control of the SAFe PI planning ceremonies themselves, freeing up SAFe coaches to make real-time innovations and improvisations during the event and plan how to organize outputs and next steps as the event unfolded.
- **Leadership Support**. None of these elements would have been possible without leadership support at all levels ranging from firm executives, directors, project managers, team leads, Scrum leads, and developers. We can talk about teamwork, diversity, Agile values, and empowerment until we're blue in the face, but in the end, leaders have to drive organizational change forward, get involved, roll up their sleeves, and make-it-happen. SAFe initiatives often die on the vine or are hard to get started without leadership support. Oftentimes, leaders are the long pole in the tent. If leaders don't buy into lean and agile thinking or understand the role of how SAFe supports lean and agile thinking at the organizational, portfolio, large solution, program, and even team level, then SAFe is a non-starter. This might be the single most important element of this SAFe PI pilot and its continuing future. That being said, it's contingent upon the SAFe coaches to continue to communicate the value of SAFe before, during, and after its ceremonies until the teams take over and start driving the car all by themselves, which is the ultimate goal!
- **Emergence/Improvisation**. We can never say enough about the principles of emergence and improvisation. Yes, we do need a diversity of skills involved in high-risk complex organizational change initiatives like SAFe PI planning. Good old-fashioned planning and analysis skills and thinking still apply. However, oftentimes, if the event has broad architectural boundaries in which to operate, then the teams will self-organize in between the seams to innovate, improve, and successfully implement these initiatives, even as the events are implemented and executed in real-time. As Helmuth von Moltke is famed for saying in the late 19th century, "No plan survives first contact with the enemy!" People are highly creative, motivated, and innovative, if you empower them and give them a chance to contribute positively. In several cases, we've seen customers, project managers, and the operational personnel improvise in real time and change the execution of these events as they occur. That was certainly the case during our SAFe PI planning event. Sometimes, it takes multiple SAFe PI planning events to get it right, and, sometimes they digress and move backwards, especially if you overanalyze, micromanage, or eliminate creative human interactions. Although live human interactions can be very helpful, technology isn't always our enemy and we've seen tools like Mural work very well before to get everyone constructively involved, not just the "Highest Paid Person's Opinion" (HiPPOs) or loudest most assertive people. In our case, our first SAFe event was world class!
- **Servant Leadership**. Of course, what can we say about servant leadership, except that it's the secret sauce to success. Humans, especially Western business managers, have always understood the significance of leadership. Oftentimes, our image of a leader is someone who directs, plans, and tells other lower-tier people what to do (micromanages). And, this model has worked out well in many cases throughout history. But it also takes servant leaders to successfully implement high-risk complex organizational change initiatives. That is, if you wanna see something succeed, sometimes one has to roll up their sleeves and get their own hands dirty. That was certainly the case in our SAFe PI event, at all levels. Executives, directors, project managers, SAFe coaches, team leads, and developers had to get involved, especially during real-time execution. Servant leadership is not always glamourous, its hard work, its thankless, its transparent, and sometimes it's not even recognized. Done well, many times, people don't even know servant leaders are lurking in the background gitting-r-done until they're gone, and no one is around to do the heavy lifting, which is often the case, just as Lao Tzu and Mahatma Gandhi suggested. We had servant leaders at all levels of our SAFe initiative, especially among the few SAFe coaches we had available.

PROGRAM INCREMENT (PI) PLANNING NUMBER TWO

True to its intent, the initial SAFe PI planning pilot at this top U.S. energy firm was only scheduled for three two-week iterations and no innovation and planning (IP) iteration. Therefore, this opened the door for another near-term PI planning event quickly on its heels. As alluded to throughout the main case study, it took over a year to get the initial, short three-iteration PI planning pilot event going, dozens of meetings, a ton of pre-planning, and the heroic effort of dozens of people. Scaling up the next PI planning event to a full quarter's worth of five two-week iterations plus an IP iteration seemed like a daunting task at first. Furthermore, the energy firm wanted to include more than three teams in the next PI planning event if possible. However, all of the momentum started by the initial three-iteration PI event went much further than we expected. That is, Newton's First Law of Motion was in full-effect—"An object in motion stays in motion!" Of course, Newton's Laws often referred to heavenly bodies such as planets orbiting the Sun, and PI planning is certainly a planet-sized object when it comes to Newton's Law of Inertia!

Our first major challenge was to find a venue (conference room or set of conference rooms) large enough to host the next PI planning event at the customer's site. Due to scheduling constraints, the first PI planning event was held at a nearby four-star hotel. However, this turned out to be a non-starter, because the energy firm had few large conference rooms, and these were booked solid through the rest of the year. Since, several of the Scrum teams felt they didn't have enough privacy in the large open conference room on the first go-around, we decided to book smaller rooms at the energy firm's main building and host the next PI planning kickoff, PI plan review, and wrap up ceremonies in a large open seating area of the building. There was clearly a difference of opinion going on here—Scrummasters who didn't understand the benefits of big-room planning, senior managers who enjoyed the dynamics of big room planning, and the lack of affordable collocated big rooms. In any case, the SAFe coaches decided to implement the next PI planning event in the limited spaces provided by the energy firm's 17-story building.

The only constraints left to overcome were to socialize a date for the next PI planning event, determine which teams would participate, determine the length of the PI planning horizon (six iterations), align it with the business quarter, and socialize the inclusion of an IP iteration as the sixth period in the PI. As alluded to earlier in the main body of this case study, the energy firm was just getting started with agile methods such as Scrum and were struggling a bit with the transition from traditional to lean and agile thinking. That is, project managers, product owners, and Scrummasters tended to over-allocate individual Scrum team members, strive for full capacity, and look for every opportunity to squeeze in even more out-of-scope user stories as possible. Therefore, the notion that the Scrum teams would allocate an entire iteration for "innovation and planning" seemed somewhat ludicrous to some decision-makers. The SAFe coaches could have contrived some elaborate explanations and business cases for the inclusion of a two-week IP iteration, but instead applied the standard SAFe justifications, which were rapidly accepted.

Once these decisions had been rapidly made early in the first three-iteration SAFe PI pilot, everything seemed to go rather smoothly, compared to the year-long effort it took to get the initial PI planning pilot going. The SAFe coaches simply scheduled whatever conference rooms were available on any of the 17 floors for individual teams, identified a floor for kickoff and wrapup, identified the list of participants, gathered the top-10 features for the next full six iteration PI period, and ordered lunch. There was still some perturbation whether this would all work, the Scrum teams were still going full-bore trying to complete features and user stories, and, of course, the energy firm was in the midst of its largest set of go-live release dates in its history involving hundreds of people round the clock and world due to use of manual outdated QA and test processes. Once again, the SAFe coaches gathered the PI planning supplies—Poster boards, large post it paper, index cards, post it notes, red string, scotch tape, painter's tape, scissors, name tags, etc., sent out meeting reminders, assembled the kickoff deck, and set everything up.

Although we couldn't include more than the original three teams in the second PI planning event due to the big-bang go-live release event happening at the same time, we attempted to recruit representatives from all of the other functional and non-functional teams to participate. In the end, we had exactly the same number of attendees as we did in the initial SAFe PI planning pilot, which was about 30 to 35 people. The SAFe coaches set up a nice Program Board for six iterations, the kickoff went smoothly, the teams constructed detailed plans for the first three iterations and lighter ones for the last two, ate lunch, and gathered after the second breakout session to populate the Program Board. The final plan review went smoothly, and confidence votes remained high in spite of the perturbation surrounding the rather large number of internal and external dependencies. Although our open seating areas were not conducive to big room planning events, were designed to dampen sound rather than carry it, and the HVAC system was inordinately loud, the energy firm's second PI planning event went remarkably smoothly.

SAFe vs. Scrum Velocity (Normalized)
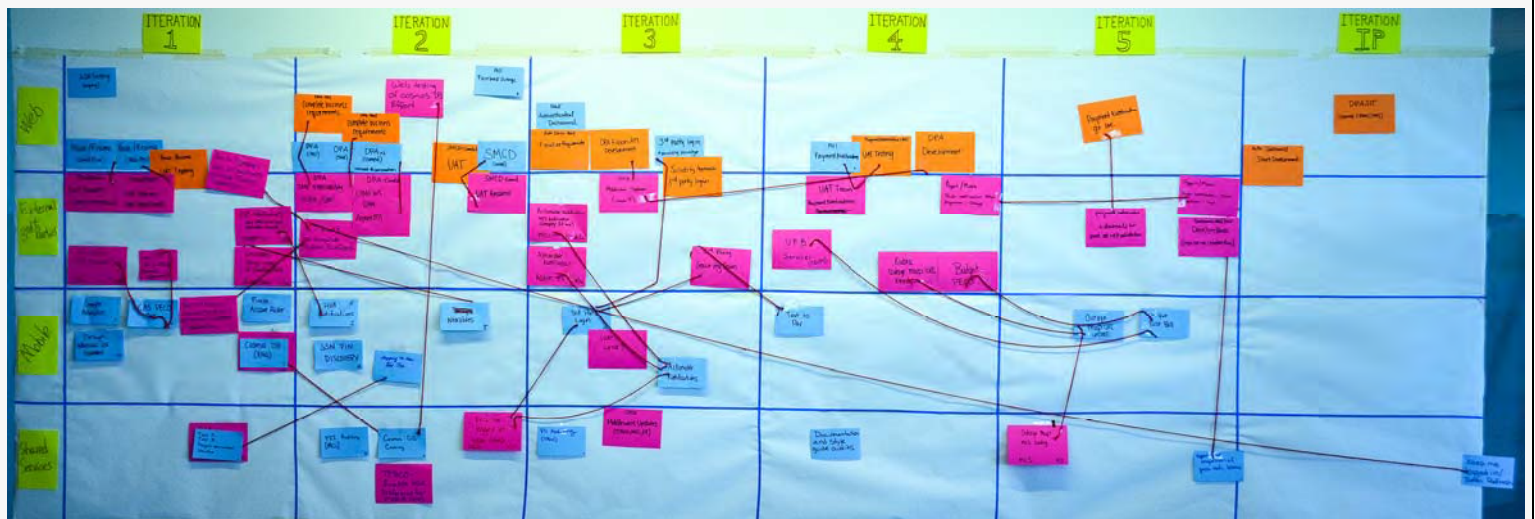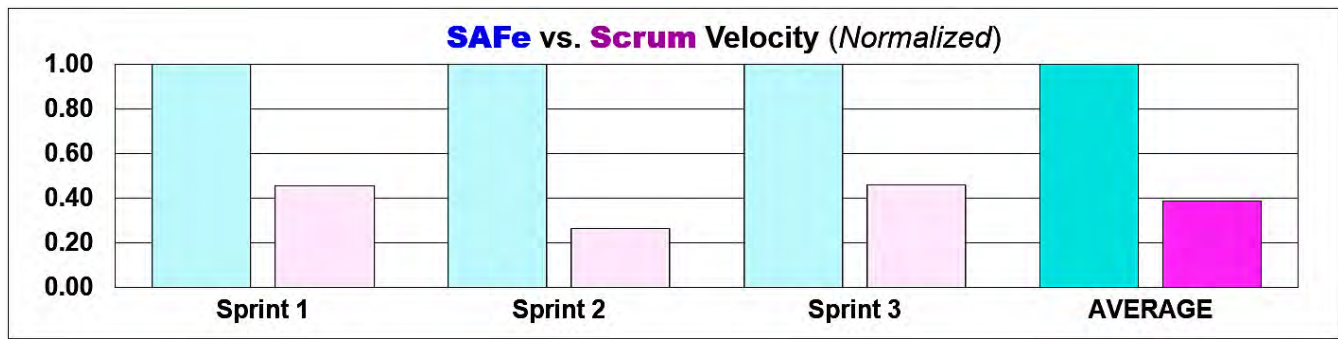
Summary

The top benefits of SAFe PI planning cited by our attendees were collaboration, insight, transparency, empowerment, employee ownership, and dependency management across our complex IT portfolio. Not one of these benefits included PI objectives, features, stories, capacity planning, etc. We achieved our objective of rolling out SAFe PI planning at this Top 10 U.S. energy firm and it relieved and reduced a lot of pressure and burden from the shoulders of the energy firm, consulting firm, coaching staff, and IT delivery staff. The first SAFe PI planning event is always the hardest one, so one of our goals was to eat this frog quickly, get it behind us, satisfy the corporate goal, make history, and move on to our next hurdle. There were so many critical success factors that it's hard to pinpoint the exact one that contributed the most? Some of the major ones were executive leadership support, world class change management practices, good old-fashioned thoughtful planning, highly motivated Scrum teams, and a late surge of keep-it-simple, quick-n-dirty, and git-r-done lean and agile thinking by SAFe coaches!

Oftentimes, it takes two or three licks to get to center of the tootsie roll tootsie pop! That is, it takes several process improvement cycles to optimize the execution of a major new framework. This is certainly true of SAFe PI planning, especially when an organizational change team has little experience with SAFe and is attempting its ceremonies for the first time. However, in this case, the stars seemed to have aligned—The lead SAFe coaches each had direct prior experience with SAFe PI planning in recent history and could head off numerous novice mistakes. That being said, human-intensive ceremonies like SAFe PI planning are a bit unpredictable and can turn out good, mediocre, or bad on any given Sunday. In this case, because of some improvisation, empowerment, and self-organization of managers, SAFe coaches, and the Scrum teams themselves, the outcomes tended to favor a rather good, if not world-class result! Maybe, it was because circumstances allowed for a last-minute emergence, maybe it was because the Scrum teams were top-notch, or maybe all of the factors combined to allow the SAFe coaches to tune and optimize the event in real-time. The next goal was to scale SAFe PI planning up in the near term and double the size of the event. Let's hope the magic can be repeated without overanalyzing or trying to control the outcomes in-advance? And, last, but not least, always remember that process improvement is a never-ending lifelong journey, not a one-stop destination!

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OVERALL FIVE-MONTH RETROSPECTIVE

Good

- *Customer had the vision to create a lean-agile digital transformation initiative.*
- *There was leadership buy-in to lean-agile practices from execs and middle managers.*
- *Progressive, non-traditional nor hybrid lean-agile digital transformation initiative.*
- *Medium 100-person transformation team empowered to perform concept to production activities.*
- *Basic Scrum ceremonies and practices rolled out, standardized, and synchronized quickly and widely.*
- *Standardized lean-agile agile application lifecycle management (ALM) tool deployed widely across the teams.*
- *Young, highly motivated and exceptionally talented workforce willing to work 60 to 80 hours per week to git-r-done.*
- *Customer empowered outsourced delivery team to make governance decisions and self-organize and self-manage day-to-day operations.*
- *Project leads, product owners, and Scrummasters worked overtime to get the ball rolling, keep it rolling, and to make massive releases.*
- *There was a lean-agile task resourced, staffed, empowered, and authorized to roll out, institutionalize, and optimize lean-agile practices.*
- *The lean-agile task order had the vision to introduce product management, value stream mapping, SAFe, and basic Scrum practices.*
- *Lean-agile task order rolled out customer's first two SAFe PI planning events, system demos, and Innovation & Planning (IP) Sprints.*
- *There was excellent teamwork among pairs of people that multiplied the productivity of their efforts such as in rolling out SAFe and Scrum.*

Bad

- *Delivery team consisted of young part-time overworked and overstressed jetsetters.*
- *Customer had laissez-faire corporate culture whose staff was a no show on any given day.*
- *Customer was wed to monolithic manually intensive Testing and Quality Assurance (QA) practices.*
- *Over-reliance on basic manual Scrum roles, ceremonies, and practices as secret sauce to success.*
- *Basic Continuous Integration (CI), Continuous Delivery (CD), and DevOps practices were not applied.*
- *80% of the project resources were tied up in outdated manually intensive bi-annual and quarterly releases.*
- *There was disproportionately large investment in UX frequently producing large volumes of over scoped UX wireframes.*
- *Large, over scoped UX wireframes were equated to user stories that took 3 to 6 two-week iterations to code, test, and release.*
- *Half of the team was outsourced to India to reduce operating cost and increase productivity that was forced to work 60-80 hours per week.*
- *It was difficult to coordinate work between hard-driving U.S. team leads forcing Indian teams to complete over scoped UX wireframes.*
- *Team "Scrum-butts" without Scrummasters, skipping vital daily standups, and using Scrum planning, demos, and retros for status reports.*
- *There was no standardized use of ALM tool, teams were using it badly, and no basic Scrum visuals and graphs had been institutionalized.*
- *Project organized traditionally and hierarchically, and lean-agile thinking was treated as a task on a schedule vs. a way of operating.*
- *Lean-agile task was understaffed, little cooperation/communication between agile coaches, POs, and Scrummasters, and too much WIP.*
- *People spread too thin, under resourced, overallocated, day-to-day operation was like jungle warfare with people head down in foxholes.*
- *PMO was incognito, little transparency in operating picture and day-to-day operations, and people had no social skills (a vital CSF).*
- *There was a ton of ethnic and gender polarization within customer and supplier, little cooperation, and ton of fierce Western individualism.*
- *Little DevOps-digital vision, lean-agile thinking, coherency, belief, buy-in, understanding, and other critical elements for business success.*
- *Customer and supplier had diametrically opposing philosophy of demographic advancement creating large communication barriers.*
- *Agile coaching leads very comfortable doling out criticism, but hyper-sensitive to receiving it, even skipping retrospectives to protect egos.*
- *Customer and delivery team view lean-agile thinking as a person one can hire instead of something everyone does which is very common.*
- *Critical customer middle managers took a wait-and-see attitude with Scrum and SAFe and increased criticism when they started working.*
- *Customer executives halted Scrum and SAFe initiatives to satiate stubborn traditional middle managers who suddenly became vocal.*
- *Customer and delivery team's opaque divide and conquer cultures left stakeholders at all levels of team dissatisfied, frustrated, and angry.*
- *Little overall teamwork across managers, task leads, agile coaches, product owners, and Scrummasters which is the norm for most teams.*

Better

- *Needed greater investment in overall lean-agile thinking in all phases of product delivery lifecycle from cradle to grave.*
- *Needed greater upfront investment in basic lean, agile, Scrum, DevOps, and SAFe training and certification among all personnel.*
- *Needed to setup a basic end-to-end DevOps ecosystem, pipeline, process, and governance model for Epic-MVP microservices experiments.*
- *Needed to rely on an advanced end-to-end digital-DevOps operating model vs. a low-cost manual outsourced workforce using Scrum.*
- *Needed to treat lean-agile thinking as an overall mindset, way of thinking, and program operating model rather than a task or line item.*
- *Customer should invest in hiring and staffing lean-agile thinkers vs. promoting demographic advancement and outsourcing Scrum teams.*
- *Needed investment in culture, way of thinking, and technical practices for creating autonomous microservices vs. monolithic architectures.*
- *Needed investment in Continuous Integration (CI), Continuous Delivery (CD), and DevOps vs. manual outdated Testing & QA teams.*
- *Needed to establish basic Agile Application Lifecycle Management (ALM) configurations and practices for correct Scrum execution.*
- *Needed investment in teaching technocrats the value of emotional intelligence, teamwork, social skills, and basic communications.*
- *Needed greater investment in teaching everyone the power of performing basic team, program, and corporate retrospectives.*
- *Needed greater investment in small full-time, local, and collocated workforce to concentrate on solving a small number of critical MVPs.*
- *Needed to understand SAFe is more than just an Agile program planning model but a complete end-to-end lean-thinking operating model.*
- *Needed to understand that lean-agile thinking is a mindset, culture, and non-traditional paradigm vs. hybrid, bi-modal co-existing process.*
- *Needed to create a end-to-end lean-agile one-piece workflow system based on visualization, limited WIP, flow, feedback, and improvement.*
- *Needed to crack-the-nut of lack of poor teamwork, cooperation, and collaboration of larger groups of managerial and technical personnel.*
- *Needed to replace traditional opaque divide-and-conquer selfish sub-optimization practices with greater trust, transparency, and synergy.*
- *Needed better communication, stakeholder, and change management practices and roles to mitigate the effects of disenfranchised people.*
- *Needed a full-time change management or organizational psychologist to meet with individuals and groups to hear their concerns.*
- *Needed to devise and communicate a full end-to-end lean-agile operating workflow system and clearly communicate it early and often.*
- *Needed to reduce the process and product WIP in order to free people up to communicate, cooperate, share, synergize, and improve.*
- *Needed to create win-win opportunities for individuals and teams at all levels of the organization vs. privileged isolated visionaries.*