



SEI WEALTH PLATFORM

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**CORPORATE
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FATCA and ISO 20022

**T2S
in 2015**

TCS BaNCS named a Best-in-Class Provider in Three Categories in CEB TowerGroup's report "Core Banking Systems for Large Banks"

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RADICAL VISIBILITY

SEI's shift to Scaled Agile backed by talent from TCS and architecture of TCS BaNCS



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Bob Crudup



Mona Roccia

The SEI Wealth PlatformSM, an outsourcing solution for wealth managers, was launched in 2009 as the result of a multiyear development and system integration effort between TCS and SEI (NASDAQ: SEIC).

The SEI Wealth Platform was built using TCS BaNCS, including mod-

ules for securities processing, corporate actions and compliance. The project commenced in 2004, the first customers were brought onto the platform in 2006, and since then the solution has been continually enhanced to accommodate new functionality, regulations and features.

A QUICK TOUR OF SCALED AGILE FRAMEWORK

Agile is a "lightweight" approach to software development that uses rapid iteration and higher levels of customer collaboration, as opposed to the traditional "heavyweight" waterfall programming methodology that moves sequentially from the initial requirements phase through to design, implementation and testing. After Agile gained popularity with start-ups and smaller enterprises, it was just a matter of time and experience for those techniques to be picked up by enterprise IT.

SEI's implementation of Agile uses a proprietary framework known as Scaled Agile Framework, or SAFeSM (explained in

depth at <http://scaledagileframework.com>). Scaled Agile is a carefully defined process for optimizing the movement of ideas from concept to release. At each step along the way, the process ensures that the appropriate people have their say about what takes priority, what exactly to do next, and whether the work is being done correctly.

Like any IT framework of sufficient complexity, SAFe has its fair share of necessary jargon, and there is an extensive selection of training courses, certifications and consultants to support enterprise implementations.

Broadly speaking, there are three levels in

Scaled Agile: At the top is the "Portfolio" level that sets the vision and manages the high-level portfolio of business and architectural initiatives for the enterprise; in the middle is the "Program" level that keeps the Trains shipping code on time; and at the bottom is the "Team" level that does the hands-on development and testing.

For an overview of the framework without getting into extensive details, it's instructive to walk through the lifespan of an idea. Here are some (but by no means all) of the main questions asked about a new idea under the framework:

“SEI has built an enormously complex core custody system,” says Bob Crudup, Executive Vice President of SEI and Chief Information Officer. “We rolled out multiple releases over six years deploying the core accounting, recordkeeping, trading and tracking logic for all kinds of multicurrency, multinational securities, with a fully functional trade-dated reporting platform and a comprehensive client and advisor wealth management desktop.”

“I’m not aware of anyone else in the world with as complex a platform as the one we’ve built,” adds Crudup. “The SEI Wealth Platform is a core asset for us. The architecture and the core business requirements are well underway.”

The new platform relies upon the underlying system architecture and functionality from TCS BaNCS to handle business requirements including:

- Street-side accounting for all transactions;
- Multi-entity support for banks, trusts, private banks, independent wealth advisors and private client investment managers.;
- Charts of accounts for nostro, internal, suspense, FX positions, charge items and other accounts, highly configurable and following respective U.S. and U.K. accounting rules;
- Maintenance of positions in cash balances and securities, covering brokerage transactions and custodian transactions in the

U.S. and U.K. markets for complex assets including hedge fund holdings, asset-backed securities, mortgage-backed securities and U.K. gilts;

- Trade recording using trade-dated accounting;
- Daily reconciliation extracts for Transaction Lifecycle Management (TLM);
- Corporate actions and income processing integrated with DTCC and GlobeTax in the U.S., and with SWIFT in the U.K.; and
- Settlement matching for U.K. trades in traditional assets, and execution engine for U.K. trades involving open-ended funds, hedge funds and FX transactions.

From a functionality standpoint, the SEI Wealth Platform offers a complete set of capabilities spanning wealth advisory, wealth administration, asset management and end-client communications. In addition, SEI surrounds the vertical, line-of-business functionality of the platform with horizontal wealth services for business management, investment processing and infrastructure. The combination of technology, operational support and business knowledge allows SEI to come up with a compelling value proposition for virtually any wealth services provider in its target markets.

Considering the scope of the SEI Wealth Platform and the breadth and diversity of market opportunities in the U.S. and U.K. markets, the business potential for SEI is very strong.

PORTFOLIO LEVEL

Is the idea worth considering?

All ideas, from whatever source, start off in a common funnel. If the management team overseeing the entire project portfolio agrees that a given idea is possibly worth doing, it moves from the funnel into the “Portfolio Backlog.” In Agile terminology, an idea that makes it out of the funnel is known as an “Epic.”

Is there a train available?

IT operations are organized by “Agile Release Trains” corresponding to the value streams of the company. Both budgets and development resources are assigned to these trains. If an Epic doesn’t fit well onto an existing train, it’s unlikely to go anywhere.

Can it wait?

If there’s a high cost of delay, the Epic will be assigned a business analyst who explores the solution alternatives. Otherwise, the Epic has to be among the best ideas in the Portfolio Backlog to earn an analyst’s attention.

Does the business case make sense?

If the analyst’s “lightweight” business case earns a thumbs-up from the Program Portfolio Management team, the Epic moves from the Portfolio Backlog to another to-do list, the “Program Backlog,” where it’s broken down into discrete features that can be completed and deployed individually.

THE BOTTLENECK

The next challenge resides in the 'last mile'. Built using the flexible TCS BaNCS architecture, SEI has a comprehensive platform to support its diverse client base of wealth services providers. Now, the company has to manage the process of onboarding new business, client-by-client. SEI works directly with new clients to understand their specific business requirements, integrate existing client systems into the SEI Wealth Platform, provide enhancements as necessary, and wrap the platform technology with the required business processes and requested interfaces. These are all IT-intensive tasks, which can create significant bottlenecks.

SEI's scalability depends upon the speed at which it can configure, customize, integrate and deploy unique combinations of SEI Wealth Platform features, functions and interfaces for new customers.

When the SEI Wealth Platform was initially being built, SEI and TCS worked together using a traditional, time-tested "waterfall" approach to enterprise software development. The waterfall programming methodology cycles sequentially from the initial requirements phase through to design, implementation and testing. By iterating through the waterfall cycle, the two companies developed precisely the solution described through multiple rounds of specifications. "We used the iterative waterfall approach to build out the infrastructure we needed for the platform, and TCS was a

very strong partner in that effort," says Crudup.

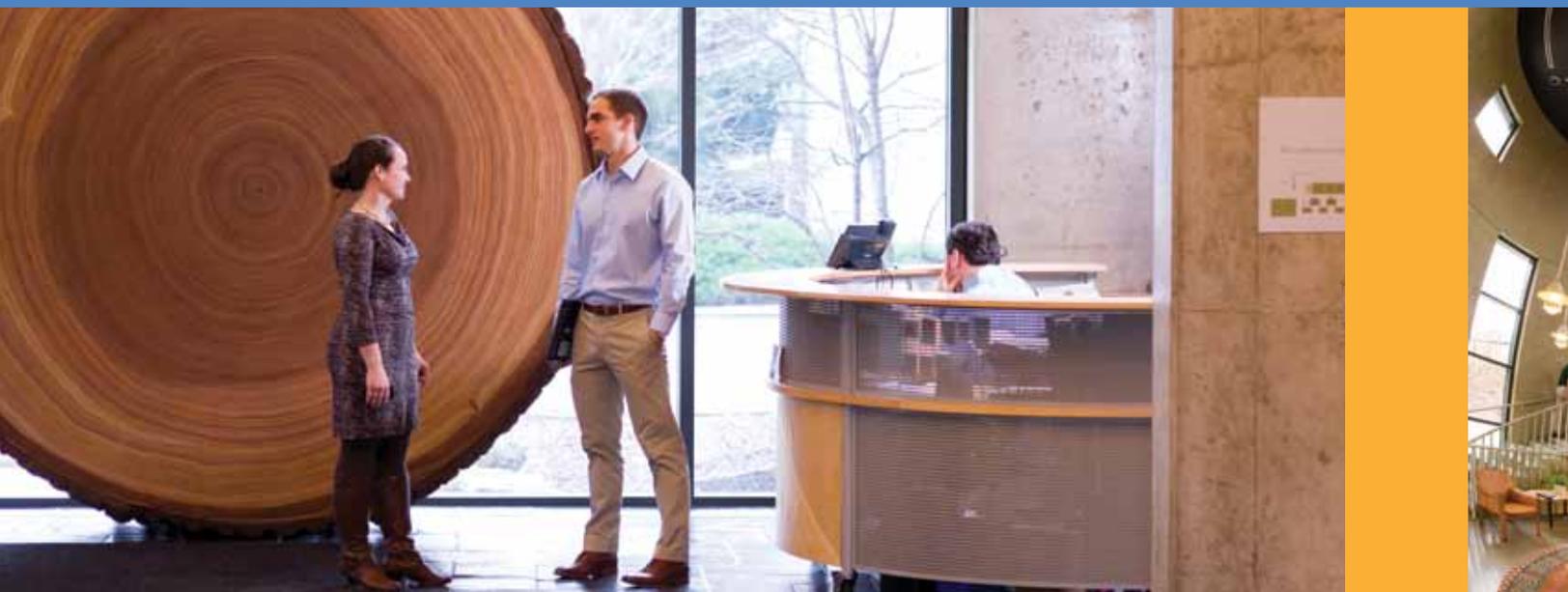
However, the "waterfall" approach that worked for getting to the initial capabilities of the SEI Wealth Platform was never expected or designed to support the scale and speed of the high volume of small relationships that SEI sought for its platform business later on. "Our clients need to be on-boarded faster," says Crudup. "The markets are moving quickly, and our clients need new features faster."

ALL ABOARD AGILE

Bob Crudup joined SEI in 1987 as a district sales manager. In 1998, Crudup assumed management of SEI's legacy banking services product for the U.S. market. He became EVP of SEI's Global Wealth Services segment in 2001, EVP of SEI in 2007, and CIO in 2012.

Upon taking over the development and operations for the SEI Wealth Platform, Crudup and his colleague Mona Rocchia, a 22-year veteran of SEI, began investigating alternate approaches to IT development. This search led them to the "Agile" methodology, implemented for the enterprise through Scaled Agile Framework, or "SAFe" (see sidebar). SEI realized that this methodology would entail significant changes to the way systems had been developed for decades, by involving internal and external business users to a much greater degree than had been done previously.

In September 2012, the SEI leadership team undertook a week-



long executive leadership workshop on SAFe. On day three, the presenters asked the executives whether they were in or out.

They were in. “We never looked back,” says Crudup.

The new approach to software development would change many things in SEI’s technology function, but one thing remained rock solid – the harmonious decade-long relationship between SEI and TCS as its primary vendor. “We introduced Scaled Agile to our consulting partners at the same time we introduced it to our employees,” says Crudup. “We provided TCS with the same education, the same training and the same information that we did for our employees.”

“With TCS’ involvement, designing and developing code is one of our strongest skill sets,” adds Crudup. “If we get the requirements right, the quality of our design and code is extremely high, and the discipline that we have with Scaled Agile is helping us to conceptualize better requirements.”

TCS’ resources adapted quickly to the changing cadence of work. “TCS, on its own initiative, had already trained their consultants in industry-standard Agile,” notes Mona Rocchia, Program Portfolio Management Lead for the SEI Wealth Platform. “With some extra training, they very quickly understood their roles in the overall framework.”

Just three weeks after SEI’s leadership team committed to transforming its entire IT operations, they had defined their first high-level “Agile Release Train.”

The “Train” concept, in brief: Instead of sending a list of requirements through the waterfall and waiting for a finished product to come back at some undefined point in the future, the train runs according to a set schedule. SEI, following SAFe best practices, ships code five times per year, or about every 10 weeks. Right on schedule, something’s going to ship on the designated dates, and end-users from client organizations can participate directly in the Agile development process. It’s the job of the Agile teams to build discrete units of tested, high-quality code that are ready for the train. Even though different teams work on different projects, they’re all working to the same cadence.

SEI’s first Agile Release Train, dubbed “Polar Express,” focuses on front-office capabilities including Advisor Desktop and Mobile Channels for wealth advisory and end-client services. This focus on channels aligns with the core strategic need of the business to put the platform’s core functionality onto a diverse range of end-user screens through custom client interfaces. “As we move into the market, the user experience really matters,” explains Crudup. “The user experience is where the economic buyers look to transform their business.”

Two other trains quickly followed: “UnstOPSable,” focuses on stability, maturity, scale and optimization for middle-office and back-office services; and “The Iron Horse” supports market entry for supporting U.S. regional and community banks.

PROGRAM LEVEL



Do the features fit the product roadmap and vision?

The Product Vision and Roadmap, managed by a Product Management Team, govern the timing by which features are eligible to be taken off the Program Backlog and handed to a team.

Is there a team available to do the work?

Every ten weeks, each “Agile Team” of developers, builders and testers attends a planning session and commits to work on a “Potentially Shippable Increment,” or PSI. Each PSI consists of an achievable set of features to be completed within the next 10 weeks.

“We brought up three trains in three months,” says Roccia. “At the end, we had all three trains running at the same cadence, all planning at the same time, releasing code at the same time, and planning ahead for the next release at the same time.”

It’s an impressive coordination effort. “We have about 400 to 500 developers, plus 80 to 100 stakeholders, product managers and business owners, and we release code to clients at the same time,” says Roccia.

The result is the ability to shorten the time that an incoming client request can be deployed as tested and client-approved code. “We literally flipped a switch and changed from a waterfall development methodology, delivering two or three versions per year, to a ten-week development cycle using Agile methodology where we’re delivering and launching five versions per year,” says Crudup.

10 WEEKS AT A TIME

The faster development cycle transformed the sales cycle. “We can show a client what we’ve got, put them on the next train, and 10 weeks later deliver code that they highly value for their business,” says Crudup. “During a 10-week cycle, we can dramatically reshape the desktop experience of a financial advisor.”

Instead of bundling a large number of changes into a major version release, the Agile approach offers the benefit of incremental upgrades. Even though significant system changes may take longer than 10 weeks to develop and test, smaller changes can make

it into production in the interim. “It may take us five releases to build the platform out to the level of robustness that the client ultimately needs,” remarks Crudup. “But in the meantime, with every release we deliver valuable improvements.”

The Agile team stays intimately connected to the needs of the business throughout those ten weeks. “One of the most compelling parts of Scaled Agile is getting internal clients, software engineers and industry experts all at the table,” says Crudup.

Each 10-week cycle is divided into two-week “Sprints” for developing, building and testing code. At the end of each of the five sprints, the internal business owners and stakeholders attend a system demo to review what’s been accomplished. “The business owners and stakeholders know their clients intimately,” says Roccia. “They provide useful guidance on what’s working for them and what’s not.”

“Sometimes, they even bring their end clients into the demo,” adds Roccia.

The framework has given SEI the organizational structure required to deliver integration-ready, custom code to a diverse client base. In addition, the framework has let TCS shine in terms of being able to provide top talent with the necessary subject-matter expertise. “One of the biggest challenges in software development is finding the talent and the industry experience that you need to deliver high-quality, high-value code,” says Crudup. “Without our professional consulting partnership with TCS, we wouldn’t have been able to do this.” ■

TEAM LEVEL

Do the user stories make sense?

Once a team has its PSI commitment, the assigned features are further broken down into “Stories.” Each story defines the functionality for a specific user, the business reason for that functionality, and the acceptance tests required. Product owners must sign off that the stories are correctly defined before development commences.



Does it work?

The stories are assigned to a final to-do list, the “Team Backlog,” and the Agile Team works through that list as it sees fit. Every two weeks, product owners sign off on the correct functionality of completed stories and features.



Is now a good time to release?

Approved code is handed off to the Release Management Team, which determines the market impact of deploying a given feature, coordinating with Product Owners to decide exactly which features belong in the next release.



Is the client happy?

That’s the real test – and given that an idea can move from concept to reality in ten weeks, SEI has found that the answer is increasingly, “Yes!”



SEI New ways.
New answers.®

FAST FACTS

- SEI (NASDAQ:SEIC) is a leading global provider of investment processing, fund processing, and investment management business outsourcing solutions that help corporations, financial institutions, financial advisors, and ultra-high-net-worth families create and manage wealth.
- The SEI Wealth Platform is an outsourcing solution for wealth managers encompassing wealth processing services and wealth management programs, combined with business process expertise. With the SEI Wealth Platform, SEI provides wealth management organizations with the infrastructure, operations, and administrative support necessary to capitalize on their strategic objectives in a constantly shifting market.
- The SEI Wealth Platform supports trading and transactions on 107 stock exchanges in 46 countries and 33 currencies, through the use of straight-through processing and a single operating infrastructure environment.



AT A GLANCE

Company: SEI Investments Company (NASDAQ: SEIC)

Headquarters: Oaks, Pennsylvania, USA

Business Challenge: To speed up the pace of software development to support deployments at wealth services providers in the U.S. and U.K.

Solution: Scaled Agile Framework, with TCS providing development, building and testing resources along with the proven functional capabilities of TCS BaNCS delivered through the SEI Wealth Platform.

