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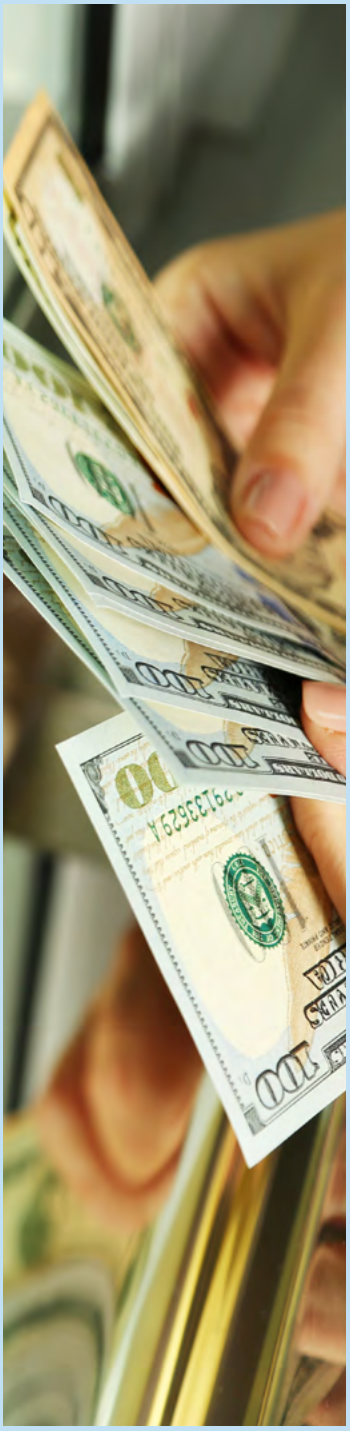

AGILE IMPLEMENTATION IN THE REGULATORY COMPLIANCE DOMAIN

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Introduction

Regulatory compliance in the Anti-money Laundering (AML) domain has been an ever-evolving affair. Over the past decade, there has been sustained increase in the regulatory scrutiny of financial institutions' (FIs') AML practices. Also, many FIs – including the larger ones - have been subjected to burgeoning levels of AML related penalties by the regulators. Indeed, the once held belief that big FIs are infallible has proven to be a myth!

FIs have therefore come to the realization that in order to survive in today's stringent, dynamic and hypercompetitive environment, they need to swiftly and continually keep pace with the ever changing regulatory and market developments.

Today's tech-savvy money launderers are extremely meticulous in their operations. They frequently come up with novel methods such as micro-structuring and cuckoo smurfing to launder money. In order to continually adapt to the changing behavior of these money launderers and the evolving money laundering landscape, FIs' AML systems are required to become more and more nimble and flexible. The systems not only need to effectively counter the money laundering cases, they also need to keep the false positives to bare minimum.

Such raised system expectations have undoubtedly put immense pressure on FIs IT development/enhancement capabilities – changes need to be implemented in a very short period of time and with zero defect. In order achieve this, FIs' IT teams no longer can continue with their traditional Waterfall system development/enhancement approaches. Instead, they need to adopt Agile methodology.

Agile methodology: An overview

Agile methodology thrives on iterative changes to the systems. It entails an incremental approach - wherein a minimum viable product is worked upon; and which lays the further pathway to subsequent deliveries. Agile approach is akin to driving a car at night. The drivers have the headlights on to guide them on a dark road. The headlights can show the path only few meters ahead at a time. However, as the driver covers those meters, further path ahead is revealed. With continual repetition of this process, the driver is able to cover hundreds of miles. Agile approach, similarly, can help the team in anticipating the risks earlier and thereby predict the specifications of a compliance program more precisely. Refer exhibit 1 for a comparative view of Agile versus Waterfall approaches.

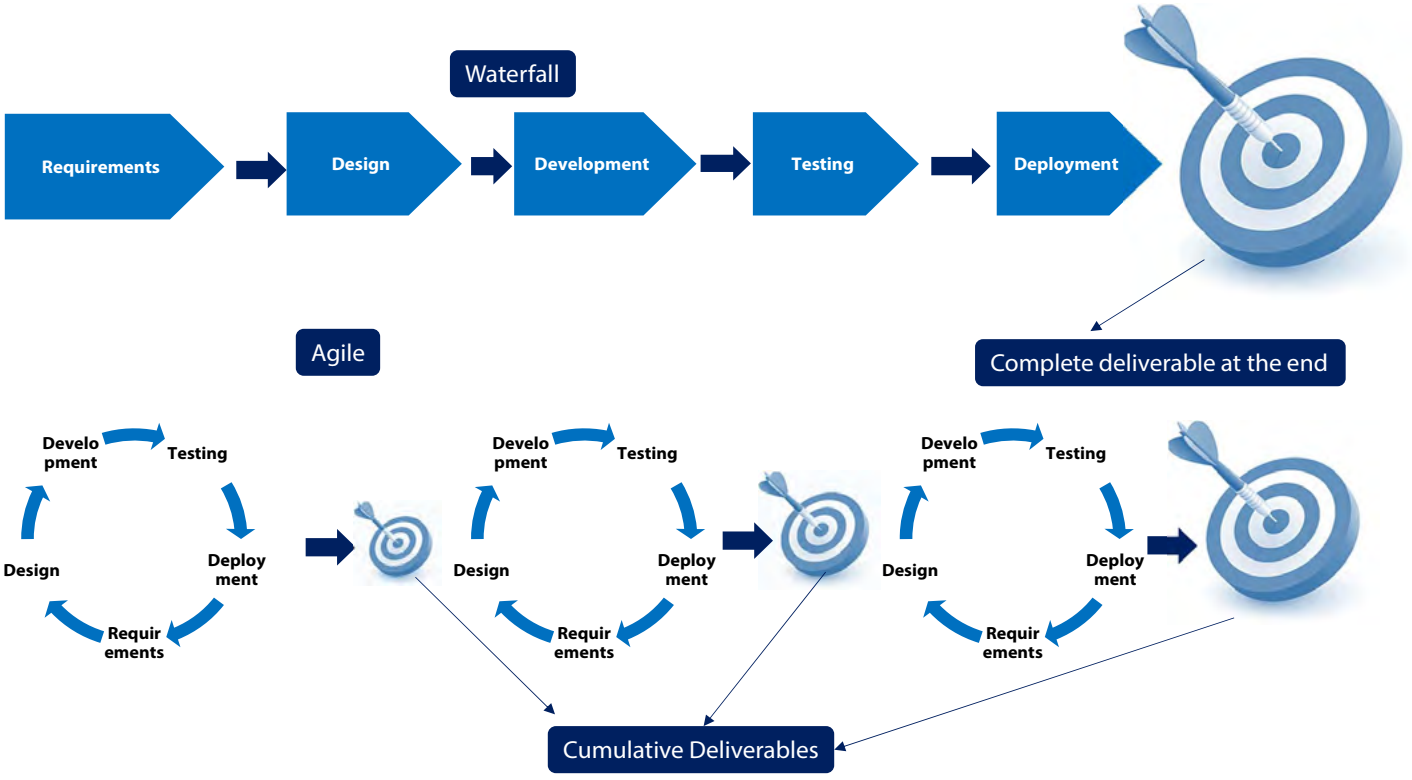

Exhibit 1: Agile versus Waterfall approaches

Key attributes of Agile methodology

It has been observed - especially in case of compliance projects - that the inability to retrospect, analyze and adapt the ongoing project delivery leads to the introduction of costly defects or deviations. Significant investment of time, money and resources are needed to address these defects or deviations at a later stage.

- **Planning:** In the traditional Waterfall approach, the delivery once initially planned, is followed till the end. It doesn't provide scope for adaptive planning. In such an approach, teams plan the work rather than working on the plan in the later stages. Agile approach on the other hand involves continuous and adaptive planning. In this approach, initial planning could be a little vague and myopic - as in real world, scenario become clearer in due course as the development proceeds. Teams using the Agile approach, work on plan and are adaptive to the evolving changes.

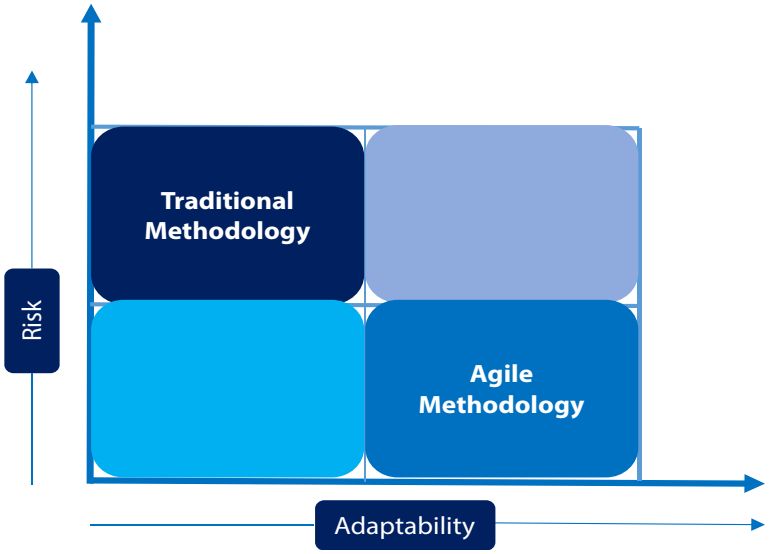

Exhibit 2: Risk and adaptability dimension of traditional and Agile methodologies

- **Estimation:** Time is an extremely critical factor in the compliance world. Little delays in the implementation of regulatory requirements across an FI's systems and processes can lead to massive penalties.

  The 'relative estimation' attribute of Agile methodology provides better and more precise estimation of deliveries - as compared to the Waterfall approach. In waterfall approach, the estimation happens in one go – based upon the high-level and superficial analysis. However, in Agile approach, each iteration/work package is analyzed in relative terms. This provides a much better and precise estimation. Moreover, the retrospective approach at the end of each iteration enhances the accuracy for estimating future iterations.

- **Requirement Gathering:** Regulatory requirements are generally quite subjective and open to interpretations. The intricacies involved at the micro level to comprehend the regulatory guidelines and to convert them into business requirements is onerous. In traditional approaches, this task is generally done by the business analysts or system analysts. For other domains, this approach may be fine. However, in compliance space such an approach could be detrimental. This

is because, business or system analysts' view could be limited to the specific IT system. They may lack the required industry-level regulatory understanding.

Effective implementation of regulatory compliance related IT projects require ongoing inputs from many subject matter experts (SMEs) having the required industry-level understanding and the knowhow of specific compliance requirements. This need can be met with the Agile methodology. SMEs and industry experts can be included into the Agile teams, as and when needed, and their inputs gathered on the go.

- **Documentation:** Proper documentation provides the blueprint for any project implementation. Unfortunately, in traditional approaches, from the project inception stage, teams get bogged down to thoroughly documenting the requirements and, subsequently, the design; without having the complete picture before them. Later, if the requirement changes, the scope changes, and the team needs to reanalyze the documents and make massive updates to bring them up-to-date. This not only elongates the phase duration and causes delay in the subsequent SDLC phases, but also leads to significant implementation delays.

Agile methodology on the other hand supports just-in-time documentation. In Agile approach, high level user stories in the product backlogs provide team the direction to move forward. Further detailed documented is done when the particular segment is worked upon. This provides better flexibility to team than the traditional methodology.

- **Implementation:** In compliance domain, timely implementation of project is extremely crucial. Iterative approach implicit within the Agile methodology can address the myriad timeline related issues that is prevalent in the traditional approaches. Agile approach provides for continuous learning and feedback mechanism. This can help catch defects or deviations in early stages. In Agile, each iteration works on minimum viable product (MVP) - keeping an eye on the actual product delivery. This makes the involved parties more focused, better engaged and confident.

  Compliance systems work on feeds that come from different source systems. These feeds cater to the data requirements for customers, accounts, transactions, watchlists etc. Robust data extraction, load and transformation is crucial for the effective running of compliance systems. Any changes in compliance systems can impact myriad other systems across channels of the system.

  The biggest risk in the traditional approaches is that any defect in the implementation phase of the feeds can transcend to other feeds. By adopting Agile methodology, FIs can take a feed based approach. In this, work could be started with one or few feeds depending upon the feasibility and current understanding of the requirements. Defects could accordingly be prevented from transmitting to other feeds. Agile approach enables early detection of defects and the prompt responses to them. Also, owing to the experience gained through implementation of incremental feeds, the teams become more mindful of the implementation of subsequent feeds.

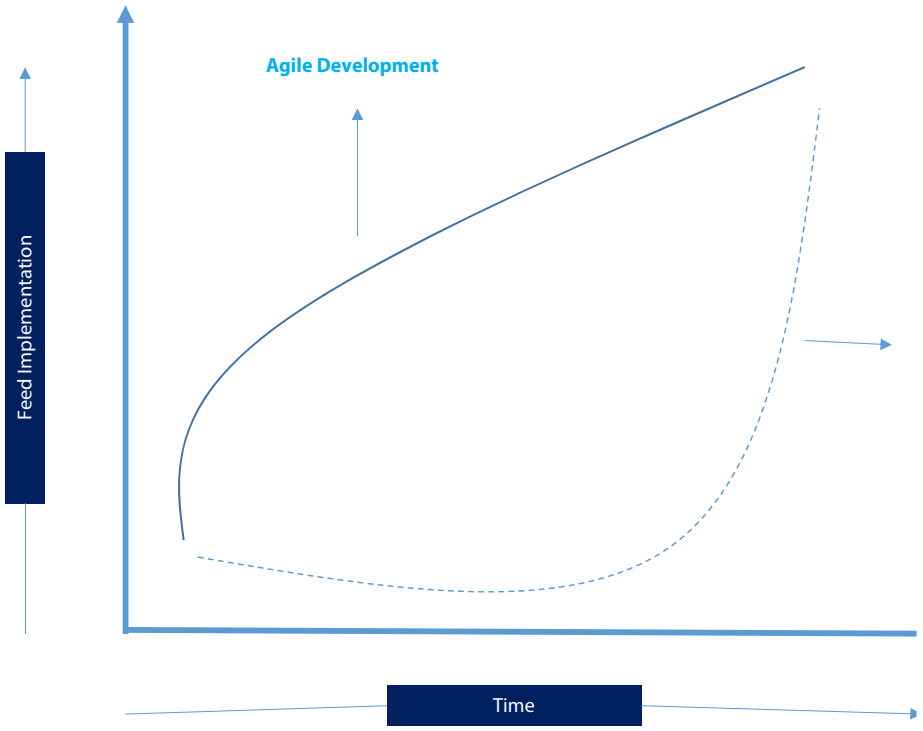

Exhibit 3: Agile provides more output than the traditional approaches

- **Communication:** Compliance domain involves high security protocol – such as those related to communication across FIs' various departments. The firewalls existing across the various departments make communication process complex and time consuming.

  In traditional approaches, many times the development gets stuck due to communication issues on critical information. With Agile approach, FIs can bring multiple teams from various departments under one umbrella. This can help smoothen the communication across departments and expedite the processes.

- **Testing :** A stitch in time saves nine. Continuous testing and improvement is at the heart of Agile approach. On the other hand, this aspect is sorely missing in the traditional Waterfall approach. The continuous testing followed in Agile approach provides teams the opportunity for early identification of remediation defects. In Agile ecosystem, there is lot of innovation happening around the Test Driven Development (TDD) to automate as many tests as possible and provide much more effective and efficient testing.

Agile methodology for AML system enhancements: A case study

At Infosys, we have leveraged Agile methodology in an AML Transaction Monitoring related project for one of our key clients - a leading international financial institution.

Client needs: Client team was facing various issues with their existing traditional approach - multiple hand-offs, monolithic systems, stretched delivery timelines, production outages, to name a few. A key bottleneck was unavailability of the source system SMEs and the sample data. This was making implementation very challenging for client. The delivery timelines however needed to be critically short. Consequently, Infosys team was engaged by the client to help execute the project using Agile methodology.

Scope of the deliverable: The scope of work involved the ingestion of 5-7 feeds into "Oracle Financial Services – Financial Crime & Compliance Management (FCCM)" for AML Transaction Monitoring. The feeds included:

- 2 customer systems
- 2 accounts systems
- 3 transaction systems

People and process: Agile implementation in the project entailed adoption of various Agile principles through the use of scoped releases, development iterations and feedback through regular reflections. These were incorporated with various "value enhancing" techniques across all of the areas - people, process and release approach.

The Agile implementation required a structural shift in the teams from the project-based team construct to the new "integrated" one. The elongated, time-sapping communication among the teams was addressed by integrating the DevOps teams into co-located Pods, and providing them with full autonomy to build and run services. These Pods were aligned to products, application groups or customer journeys.

Structural overview of Pods:

Roles: Each Pod comprised Agile Lead, Technical Lead, Cross-functional DevOps Engineer, Development Engineer, Test Engineer, Solution Architect, Platform Architect, Operations Engineer, Automation Engineer, Technical Product Manager and Technical experts shared across Pods (e.g. Security DBAs, middleware compute etc.)

Structural hierarchy:

- The Head of DevOps was accountable for the delivery of services to the Global Business/Function.
- The Head of Global Business/Function reported to the CIO. The IT Head was responsible for implementing practice frameworks.
- The Technical Product Manager (TPM) was accountable for: i) managing the groups of Pods, and ii) aligning the opportunities for cross-functional trainings to Pod members and nurturing the cross functional DevOps Engineers.
- The DevOps teams were supported by shared software services team to procure infrastructure services on an 'as-a-service' basis.

Continuous integration (CI) of the deployment tools into an automated framework was done to reduce the human intervention and hence the adhered shortfalls. The end-to-end story management was carried out through JIRA tool which provided a real-time snapshot of the progress. The tools deployed for source code management, build, unit testing and deployment underwent continuous integration via Jenkins tool. These core tools were integrated with automated shared services such as infrastructure services (VMware), infrastructure applications, Database Applications, Network services and other reusable services.

Release planning: Releases were planned based on the available information at-hand. The readily available information was worked upon to deliver the minimum viable product while the client made the arrangements in parallel to get the needed information for future releases.

The feed based approach helped the team in gaining clarity and proficiency with each incremental delivery. Continuous feedback mechanism helped the team in identifying the shortfalls and bottlenecks in the early stages and hence deliver a quality product cumulatively. The releases and the corresponding benefits achieved are summarized below:

Releases	Feeds covered	Key Incremental benefits
Release 1	2 customer systems & 1 account system	• FCCM installation and configuration issues identified at early stage • Data from data lake was mapped correctly with FCCM Common Data Elements (CDE) • The correctness of Data Interface Specification (DIS) file format was ensured at the initial stage • Laid a roadmap for smooth data ingestion in FCCM • Unearthed all key issues progressively
Release 2	Release 1 + Delta (1 account system & 1 transaction system)	• In addition to the above, helped in focusing on apt data mapping to accomplish the error-free ingestion • Helped in parallel assessment of newly added source system to ensure smooth data flow
Release 3	Release 2 + Delta (2 transaction systems)	• The key learnings from the previous releases were quantified in this release where the team covered the mapping and assessment for the last transaction system • With addition of two source system transaction coverage was reached to 97%

Key Benefits: The Agile methodology allowed team to accomplish what seemed quite impossible under the Waterfall approach. The project went live well within the stipulated timeline. Client was fully equipped with the FCCM monitoring system with 12 FCCM scenarios.

Following are some of the highlights of achievements:

- Successful completion of 5 data validations round (data drops) with all show stoppers, critical and major issue resolutions - where 3 data drops were planned initially.
- Identified and fixed over 20 system issues that were faced in iterations, helping team in making mature cumulative deliveries.
- Implemented 73 change requests without impacting the delivery timelines.
- Reduced FCCM installation & setup time by ~80%.
- Testing automation through TDD helped in saving significant time while enhancing the efficiency.
- FCCM customization was not in scope; however team implemented couple of FCCM CR through customization.

Conclusion

Though Agile methodology could work wonders in the compliance project deliveries, the decision for its implementation also requires a thorough analysis and assessment of the project at the micro level. For example, Agile approach require frequent customer involvement. Hence, their ready availability throughout the duration of the project needs to be ensured. For IT service providers, Agile approach works well with time and material or other non-fixed funding scenarios. It is however more challenging in fixed-price projects.

All relevant factors should be duly considered before an FI adopts Agile methodology in one or more of their compliance related projects. When done right, Agile adoption can bring in significant benefits for the concerned FI.

About the Author

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Amit is responsible for practice management for the Risk & Compliance domain, and is engaged in solution consulting and delivery management for transformational initiatives across various Infosys clients.

He has close to 18 years of experience across the financial services industry and IT consulting. Over the years, he has managed many complex business transformation programs and initiatives for global financial institutions across the banking, capital markets, risk management and regulatory compliance segments. He can be contacted at Amit_Khullar@infosys.com

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Naveen has over 17 years of experience across banking, financial and IT enabled Services. Over the years, he has successfully led and managed large and complex IT transformational programs for key clients within the Banking, Payments, Risk and Compliance space.

Currently, he is leading the Oracle FCCM (Mantas) Practice with primary focus on AML opportunities. He is responsible for building strategic initiatives around the Practice and also manages pre-sales and delivery for various Mantas engagements. He can be contacted at naveen_srivastava02@infosys.com

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Ritesh has rich experience in the IT services and products companies with good knowledge in multiple roles from development to delivery management of large transformation program. In the past, he had worked for one of the renowned banking products and had led different modules for close to a decade. He had also worked on different delivery methodologies like Waterfall, Agile etc.

Presently Ritesh is leading an AML implementation for one of the world's largest banking and financial services organization. He can be contacted at Ritesh_Laturiya@infosys.com

References:

- https://www.scrumalliance.org/
- http://www.scaledagileframework.com/
- http://www.disciplinedagiledelivery.com
- http://www.acams.org/

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