RegSafe© manifesto - an agile management control methodology for regulatory - driven programs

Dirk Beerbaum[1]

[1]The Taunus Institute of Applied Research (i.Gr.), beerbaumdirk@gmail.com, Frankfurt School of Finance & Management, dbeerbaum@fs.de

"I've spent two decades working in banks, delivering successful technology projects, and the time's come to raise my hand and say what desperately needs to be said: The Agile methodology and banks do not mix." Ranjan Kamath (Kamath, 2019)

ABSTRACT: We investigate existing methodologies for running large scale agile regulatory-driven programs for globally distributed corporations: Scaled Agile Framework (SAFe©), Large-scale Scrum (LeSS) and Disciplined Agile Delivery (DAD). Based on the specific requirements of regulatory-driven programs, high-complexity, equally business value, high level of audit engagement, dispersed customer need, principal-agent conflict caused information asymmetries, we conclude that the existing three methodologies SAFe©, LeSS and DAD do not fully adhere to the business needs for regulatory-driven programs for globally distributed corporations. Based on the identified gaps the methodology is refined and enhanced. This leads to the creation of RegSafe©, the agile management control methodology to scale agile regulatory-driven programs for globally distributed corporations. RegSafe© is based on the agile framework and bundles in a mixed-method approach management control system, stakeholder and behavioral economics underpinnings. The regulatory tsunami caused by the Global Financial Crisis in the Financial Sector and increasing regulatory intervention and less laissez-faire incorporating ad-hoc deliveries, large scale framework metric changes, mandatory global distributed system changes lead to multiple complex large-scale programs. Service industry such as Banks spend more than 60% on their change management program for regulatory compliance. The RegSafe© framework aims at providing a tool for global alignment of such large scale regulatory-driven programs, to enhance efficiency, maximise output, enable continuous delivery and control costs by applying hybrid agile and waterfall-driven planning leading to comprehensive management control system. It has implications for practitioners and researchers on the transformation of agile organizations and program managers of regulatory-driven programs.

KEYWORDS: Agile software development, Agile organizations, agile methodology, waterfall approach, Scrum, regulatory-driven programs, Management Control System, Regulation Compliance

RESEARCH FINDINGS/ INSIGHTS: This paper is a manifesto for RegSafe© and provides a step-by step explanatory research.

METHODLOGY: RegSafe© is a framework, which refines existing methodologies and incorporates management research theory.

1. Introduction

Digitization is transforming how we communicate and assure financial information (Beerbaum and Puaschunder, 2019). A prominent concept in this context is “agility” or Agile Methodology. Agile principles of organization and work, including autonomous self-organized, collaborative forms and team-based methods are spilling over from agile software engineering and smaller companies including start-ups to companies in other fields and of other size with tremendous impact. With new forms of organization and work with human centric purpose roles and responsibilities of individuals change, as agile implies a new mindset (Leybourn, 2013, Oestereich and Schröder, 2017).

However, the agile approach is not uniquely regarded as the “killer” solution: “I've spent two decades working in banks, delivering successful technology projects, and the time's come to raise my hand and say what desperately needs to be said: the Agile methodology and banks do not mix”(Kamath, 2019). This is not a popular opinion (Cobb, 2011), especially with the new generation of technology professionals incorporating agile software development techniques (Javdani Gandomani, 2016), but it's something that needs to be confronted and openly discussed. Most banks are pretending to jump onto the Agile trend and it could result into a big mistake, if pros and cons are not considered (Livermore, 2008). The portfolio of change management programs in banks consist very often of regulatory-driven programs, which result from new laws, regulation, accounting principles, rules and mandatory guidelines (Anagnostopoulos and Kabeega, 2019).

So, what make regulatory-driven programs special and what are the challenges the implementation of the agile methodology is associated with? At the root of the issue it cannot

be denied that banks are highly-regulated and hierarchical type of organizations, where stakeholder such as traders have no real interest in participating in daily meetings to discuss the progress of a technology project. This at first does not correspond to the way Agile works. Agile is a set of principles that allow to move forward without explicitly defining requirements nailed down (Wysocki, 2011). Daily meetings between the scrum masters, developers and the product owner allow the product to develop through a process of iteration and incremental changes. In theory, this leads to a sprint per sprint incremental better product. The development does not take place within major release but as part of smaller sprints. Usually the example which is given is that you start out with a Flintstones car and end up with a Ferrari.

One of the main criteria to prioritize user stories and send to production train to ensure continuous development is business value (Javdani Gandomani, 2016). Business value determines the level of preference to the client, if a specified feature will be developed. Under scum relative different requirement involving poker scale for business value parameter is determined (Markina-Khusid et al., 2018). Based on agile manifesto value include individuals and interactions over processes and tools, Working software over comprehensive documentation, Customer collaboration over contract negotiation and responding to change over following a plan (Beck et al., 2001).

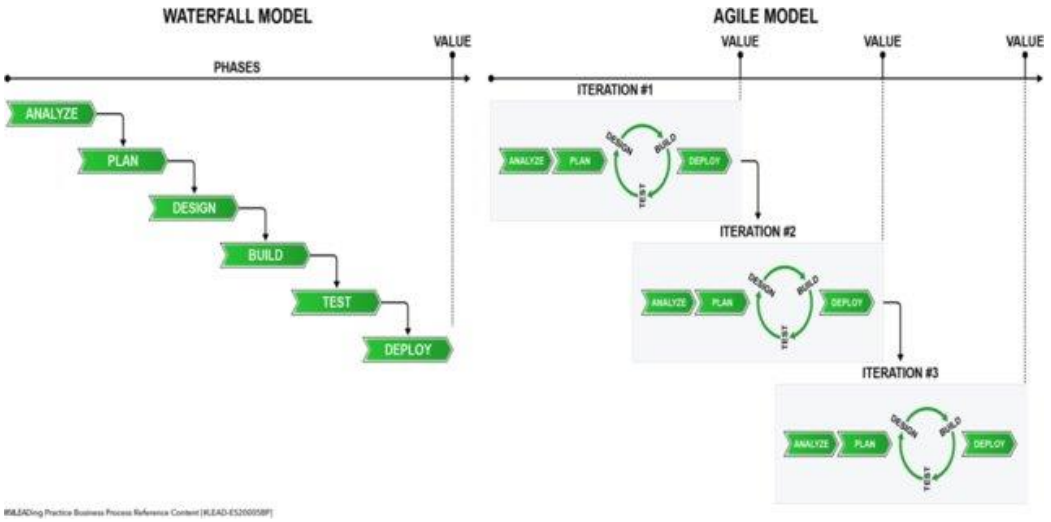
Business value under the concept of agile methodology results from interrelation of three dimensions, what you can be implemented successfully and reach sustainability, what your customers desire and pay a price to acquire (even if they don’t know it yet) and finally what your team is keen to deliver (Heidenberg et al., 2012) .

2. The foundation: Agile versus waterfall approach

There is a trend towards enterprise agility (or business agility), which is confirmed in business practice and in academic research (Taipaleenmäki). Agile has its origin in project management methodology and particularly in software development (Martin, 2002). Agile approach is contrary to the waterfall approach a continuous change approach, which incorporates many small changes also reflecting the client demand. From a scientific method approach, agile would qualify as an inductive approach, while waterfall follows a deductive methodology (Creswell, 2013). Waterfall assumes that once all requirements are clearly stated, the IT-implementation can be executed (Ruël et al., 2010).

The below figure 3 further clarifies the difference between agile and waterfall approach While waterfall approach works in array of plan, design and build phases and only starts to build once design is 100 & clear and final, agile works with iterations of so-called sprints, in which an output-oriented approach leads to many small deployments.

Figure 1: Waterfall versus Agile Model



Von Rosing et al. (2014)

This is only one aspect. A far more important aspect of agility reveals the organizational set-up. Agile organization develops further from a hierarchical approach to project management being more collaborative (Javdani Gandomani, 2016).

In business practice, enterprises aiming at agility implement autonomy and culture of self-responsibility. They seek novel approaches – such as radical transparency and openness, lateral connectivity and trust with cross-functional teams, and prototyping with quick feedback and adaptation loops. Generally speaking, agility is frequently seen as a concept that extends adaptability and flexibility to include speed and scalability.

It is also claimed, that to be an agile organization, the resilience of its employees, i.e. the capacity to recover quickly from difficult but oftentimes necessary changes, needs to be on a sufficient level. Agile organizations are not only capable of change, but they are also nimble, capable of changing quickly and gracefully.

Similarly, as IT has influenced and will be reshaping practically all industries and organizational functions and business processes, it has been and will be reshaping management accounting and the way MA is changing (Taipaleenmäki and Ikäheimo, 2013, Baskerville-Morley, 2005).

An agile enterprise is capable of sensing environmental change and responding readily to both predictable and unpredictable events. On the contrary, the trend towards agility in business operations sets new agility-based requirements for management accounting, which can result in management accounting change (Taipaleenmäki).

3. Main components of Agile Project Management

Agile project management involves usually of a scrum team (if scrum is the followed approach) consisting of five up to 10 team participants working together to deliver the required product increments. The Scrum framework encourages a high level of communication among team members, so that the team can Follow a common goal, adhere the same norms and rules, show respect to each other. The Scrum team includes the roles of the Product Owner, Scrum Master, and the Development team. The Scrum Team share different tasks and responsibilities related to the delivery of the product. Each role is closely inter-related.

One main aspect of agile teams is the concept of empowerment (Malik et al., 2020). The teams become empowered to solve the issues defined by management. The factors supporting empowerment can be summarised to power, information, knowledge and reward. To deliver on their objectives it is crucial that the teams receive all relevant information from management. At the same time the ownership and the power have to be given to the agile team.

A reward system needs to be set-up to compensate the team with their extended ownership and execution power (Tessem, 2014).

Product Owner

The Product Owner is the Team member who knows what the customer wants and the relative business value of those wants. He or she can then translate the customer's wants and values back to the Scrum team. The Product Owner must know the business case for the product and what features the customers' wants. He must be available to consult with the team to make sure they are correctly implementing the product vision. Most importantly, he must have the authority to make all decisions necessary to complete the project, in other words, the Product Owner is responsible for managing the Product Backlog which includes (McGreal and Jocham, 2018):

- Clearly define, order and supervise Product Backlog items
- Manage multiple business initiatives from competing stakeholders
- Define a clear product vision that ensures your product remains focused on the features your customers and end users will actually use
- Communicate effectively with various stakeholder groups to achieve alignment
- Identify the crucial opportunities and avoid wasting time
- Define and validate business value and Increase your credibility as a product expert and become recognized as a person who delivers real business results

The Scrum Master serves the Scrum Team in several ways, including (Schwaber, 2012)

- Coaching the team members in self-management and cross-functionality;
- Helping the Scrum Team focus on creating high-value Increments that meet the Definition of Done;
- Causing the removal of impediments to the Scrum Team's progress; and,
- Ensuring that all Scrum events take place and are positive, productive, and kept within the timebox.

4. Design of Research

Methodology encompasses analysing the methods applied for a set of study for a theoretical and systematic purpose (Franklin, 2012). Research represents the search for knowledge (Kothari, 2004). Assessment of the methods implemented in management research plays an important role. This relates to the fact that the reliability and relevance of research is also strongly impacted by the choice of methods demonstrating to be robust and rigorous (Scandura and Williams, 2000).

The focus of this manifesto is to derive the RegSafe© approach, which is an enhancement to existing scaled agile approaches. The research starts by exploring the existing main three scales agile approaches and assess critically, if all domains are covered by the approach. The methodology is theoretical. By defining objectives of difference domains with regard to its regulatory environment and comparing to the objectives of the three main scaled agile approaches a deductive approach is taken.

The research questions address main essential topics before focusing on agile methodology practical implementation:

1. Identify existing large scale methodologies: Scaled Agile Framework (SAFe©), Large-scale Scrum (LeSS) and Disciplined Agile Delivery (DAD).
2. Conclude on limitations of existing methodologies
3. Derive requirements for regulatory-driven programs
4. Enhance and refine existing methdologies to form RegSafe©

The methodology of this research incorporates the underpinnings of economics as an "application-oriented social economy" (Ulrich, 1984). According to this interpretation, practical action in enterprises is the knowledge perspective for business economics. The aim is to explore useable knowledge for leadership and management that enables the optimal contribution to solving real business cases and issues (Kagelmann, 2013).

Economic research as an interdisciplinary branch of science frequently perform surveys on methods, concepts and rules critically and modifies them to some extent. This can only be done in connection with theory-based statements and practical knowledge (Ulrich, 1984). While fundamental research focus on theory-related questions, research problems in applied sciences arise from the practical context. Therefore, theory and practice are closely linked (Ulrich, 1984). This applies particularly to the agile methodology and organizations, as the literature review will demonstrate.

Already Berle and Means in 1932 demanded that different stakeholders within the large public listed corporations need to be considered for the corporate governance framework of the company (Berle and Means, 1932). They draw the conclusion that stakeholders such employees might not adequately be considered by the corporation and ask "in whose interests should the quasi-public corporation be operated?" (Berle and Means, 1932, page 333).

Stakeholder theory assumes that all stakeholders, which participate in the company with legitimate interests have the same universal rights (Donaldson and Preston, 1995). According to Donaldson "All stakeholder relationships are depicted in the same size and shape and are equidistant from the "black box" of the firm in the center. (Donaldson and Preston, 1995, page 68) According to the stakeholder theory managers must formulate and implement processes which satisfy all those groups who have a stake in the business.

Therefore stakeholder include shareholders, employees, customers, suppliers, communities and other groups as long as they have a legitimate interest in the company ((Freeman, 1984). “The stakeholder approach is about groups and individuals who can affect the organization, and is about managerial behavior taken in response to those groups and individuals” (Freeman, 1984, page 48). Managers should learn to understand the needs of their stakeholders and strategically manage them (Jensen, 2001). The stakeholder theory has found its managerial equivalent in the balanced scorecard (Jensen, 2001, page 298). The shareholder primacy alone is not supported by the stakeholder theory; however shareholders can exert specific rights such as voting rights, which stakeholders are not granted. Stakeholder rights are not protected, as legal systems do not involve such stakeholders (Blair and Stout, 1999).

However, stakeholder try to put pressure on the corporations so that their interests are considered. According to Frooman (1999) the stakeholder influence very much depend upon the relationship between the stakeholder and the firm (Frooman, 1999). A high-level of dependence implies that the welfare of the firm is closely tied to the welfare of the stakeholder. In line with the resource dependence theory, after the stakeholder has provided resources to the firm and has power to influence the stakeholder will influence the firm to withhold those re-sources.

Stakeholders are often separated between internal and external stakeholders, while employees, owners, supervisory board members, management board members belong to internal and suppliers, customers, banks, insurance are to be defined as external stakeholders.

Several studies focus on the question, if there is a hierarchy with regard to stakeholder’s importance. Some studies result into the finding that the interests of all stakeholders have intrinsic value and there is no dominant interest (Clarkson et al., 2008); (Donaldson & Preston, 1995).

Other studies clearly state that employees are most important and dominant internal stake-holders, while the customers are most important external stakeholders and conclude that there is a hierarchy with regard to importance of stakeholders (Brönnimann, 2003).

Management control was firstly defined by Robert Anthony in 1965 (Anthony, 1965). He divides the umbrella term of control between strategic planning, management control, and operational control. Robert Anthony defines management control as “the process by which managers assure that resources are obtained and used effectively and efficiently in the accomplishment of the organization's objectives” (Anthony, 1965, p. 17), which entered into the literature as the classic view on management control system (Ferreira and Otley, 2009).

Management control as a package gives the theoretical underpinning for a program governance as part of management control system (Malmi and Brown, 2008). Based on the typology of Malmi and Brown (2008) management control system can be classified around five groups planning, cybernetic, reward and compensation, administrative and cultural controls (Malmi and Brown, 2008). The RegSafe© approach derives a panning methodology for large scale program caused by regulatory-driven changes, so that it can be allocated to the planning group.

5. Related Literature and Hypothesis development

There is a lot of literature available about the Agile Methodology and Scrum (Beck et al., 2001, Schwaber and Beedle, 2002), however the application to regulatory compliance projects in the financial service sector is rare. Therefore, the literature review focus on software development, as this is the area, in which the “agile movement” started before the spill-over to other industries became effective.

Similar to breakthroughs the term manifesto of agile software development was used in 2001 according to Beck et al. (2001), which involved 17 people, which met November 13, 2001, at The Lodge at Snowbird ski resort in the Wasatch mountains of Utah. Those 17 people were representatives from Extreme Programming, SCRUM, DSDM, Adaptive Software Development, Crystal, FeatureDriven Development, Pragmatic Programming, and others sympathetic to the need for an alternative to documentation driven, heavyweight software development processes. What emerged was the Agile Software Development Manifesto. "We are uncovering better ways of developing software by doing it and helping others do it. Through this work we have come to value: Individuals and interactions over processes and tools Working software over comprehensive documentation Customer collaboration over contract negotiation Responding to change over following a plan That is, while there is value in the items on the right, we value the items on the left more"(Beck et al., 2001, p.1).

Based on Highsmith and Highsmith (2002), the agile software methodology is transferred to agile project management and in general to deliver innovative products to customers under high uncertain conditions. Existing project management is bound to prescriptive, confirmative-to-plan mentality. Agile project management follows continuous innovation and people and process adaptability. Agility is more attitude than simple process. It involves explore instead of plan and production and adapt (self-organizing, self-disciplined teams) versus anticipating.

According to Dybå and Dingsøyr (2008), 36 empirical studies on the application of agile software development were explored. Result is that advantages of agile project management found are that changes are done more easily. Disadvantages are named that team members are less interchangeable. Main success factors identified according to this study are consideration

of human and social factors, particularly a high-level of individual autonomy balanced with a high-level of team autonomy.

Agile approach for regulatory compliance is seen as a critical task in the literature (Mishra and Weistroffer, 2008, Beerbaum, 2019). Delivering regulatory projects absorbs for banks more than 60% of their Change Management budget (Gittfried et al., 2017). Bank executive however assume that applying agile methodology on multiyear and multi-million programs is risky and impractical (Gittfried et al., 2017).

In this regulatory era of legislations such as Sarbanes Oxley Act, demand for conformance to process standards corresponds often has a correlation with the maturity or scale of the business. Therefore, agile methodology offers an alternative for flexibility and meeting increasing complexity requirements or regulatory compliance projects (Gittfried et al., 2017). Large, mature businesses have established protocols and strict guidelines and demand compliance. This may be due to organizational, managerial or regulatory needs. Regulatory compliance projects and the issues associates applying agile is not only in the finance domain (Prorokowski and Prorokowski, 2014, McHugh et al., 2012) known but can be traced back in medicine and environmental compliance (Poth et al., 2020a).

6. Scaled Agile Framework (SAFe©) versus Large-scale Scrum (LeSS) and Disciplined Agile Delivery (DAD)

Scaled Agile Framework (SAFe©)

The Scaled Agile Framework, SAFe (Leffingwell, 2007) follows the concept for adopting agile methodology in combination with lean management principles for large scale enterprises. It was developed as a reaction to the agile manifesto, which assumes that agile methodologies can be only applied efficiently for small teams. Compared to small projects, which are optimal for agile development, larger ones are characterized by the need for additional coordination. SAFe contains the levels of teams, programs, and portfolio, as well as the optional value stream level. At the team level, it adopts Scrum (Schwaber, 2012) with XP engineering practices, but using Kanban is also possible. The focus of SAFe is to develop a large program applying agile methodology with agile teams. At the program level, it defines the concept of an agile release train (ART), which is comparable to Sprints at the team level (Heidenberg et al., 2012). The program level contains additional roles, e.g., system team, product manager, system architect, release train engineer (RTE) and release management team, Program manager defines program backlog and derives the team backlogs for the product owner assigned responsibility. At the portfolio level, planning is done as epics that define large development initiatives (Gustavsson, 2017). The optional value stream level supports the development of large and complex solutions, which require multiple, synchronized ARTs.

Large-scale Scrum (LeSS)

The Large-scale Scum (LeSS) framework was released in 2008 based on the experiences of Craig Larman and Bas Vodde (Larman et al., 2017). It extends Scrum with scaling rules and guidelines without completely throwing away Scrum's original goals. Unlike traditional Scrum, LeSS specifies organizational changes. Furthermore, it aims to facilitate coordination between multiple Scrum teams by having a Product Owner (PO) responsible for a central backlog and several teams. Under LeSS PO follows the role of a product manager compared to SAFe, as PO coordinates several teams and ensure program is delivered on time. Under LeSS a lot of elements are included from "normal" Scrum. Scrum is an empirical-process-control development framework, under which the product development is taken over by a cross-functional self-managing Team applying an iterative incremental approach (Uludağ et al., 2019). Coordination between teams is done similarly to Scrum where they perform a sprint planning and sprint review. For smaller products, all product members join the same sprint planning and review. For bigger products, a team representative should be sent to the meetings.

Although LeSS aims to solely work on principles. Rules define the foundation of LeSS. Similar to Scrum, the focus lies on the structure of teams, roles principles, it still comprises the following four components: within the team, definition of the requirements of the product, and the development process.

• **Principles:** Principles provide answers on how to apply LeSS in specific enterprise contexts.

• **Guides:** Guides support the adaptation of the rules and a subset of the experiments by providing tips and best practices.

• **Experiments**: LeSS encourages teams to experiment, fail, and learn new concepts.

LeSS is Scrum used by many teams working together on one product (Larman and Vodde, 2016). One Product Owner works with between two to eight Teams, a Scrum Master however for one to three Teams. Crucially, these Teams are feature teams—true cross-functional and cross-component full-stack teams that work together in a shared code environment, each doing everything to create done items (Larman et al., 2017).

Disciplined Agile Delivery (DAD)

The main objective of Disciplined Agile Delivery (DAD) is to support closing gaps by enhancing the Scrum construction lifecycle to address the full delivery lifecycle while adopting practices from other Agile methods including Lean and Kanban(Ambler and Lines, 2020). Therefore, DAD is a hybrid process which extends SCRUM lifecycle with proven strategies from many methods such as Agile Modeling (AM), Extreme Programming (XP), Unified Process (UP), Kanban, Lean. DAD provides a context-sensitive end-to-end approach for agile solution delivery. Every team is unique and faces a unique situation, so they need to tailor their process and team structure accordingly. DAD provides the process mortar required to combine the process bricks, effectively doing the “heavy lifting” to describe how all of these agile strategies fit together. With DAD you can jump-start your agile adoption efforts by starting with a sufficient, light-weight approach that each of the agile Methods.

DAD framework assumes distinct lifecycles, namely Agile/Basic, Advanced/Lean, Continuous Delivery Lifecycle, and Exploratory Lifecycle. It is expected that an organization can employ the lifecycles to suit its needs. The basic lifecycle has three phases named Inception, Construction, and Transition (Alqudah and Razali, 2016).

7. Programs and regulatory environments

Established industry sectors are imposed to more or less regulation. Less regulated sectors solely have to consider basic general requirements like European Union regulation,i.e. the General Data Protection Regulation (GDPR), and/or national requirements such as the German Commercial Code (HGB). In highly regulated sectors it is decisive that products and services have to adhere to complex and extensive standards and regulations. The financial sector, for example, has to fulfill regulations imposed by the EU countries' national supervisory authorities, as well as regulatory bodies European Banking Authority (EBA), European Central Bank (ECB), Minimum Requirements for Risk Management for financial institutions (MaRisk). Many regulations are industry specific like medical, finance or automotive.

However, regulations have some common aspects like quality assurance evidences for verification and validation which demand a more or less stringent traceability and risk management Large scale agile methodologies have its foundation on the facts that in modern times, traditional enterprises are confronted with rapidly changing customer demands, increasing market dynamics, and continuous emergence of technological advancements (Uludag et al., 2019). Customer demands become the centric focus of the business value calculation. However, regulatory-driven programs with the meaning of financial regulators European Central bank (ECB), Security Exchange Commission (SEC) or industrial regulation imposed by government bodies do not share such dynamics. Regulation have to be completely met and regulator do not allow development of features as all requirements have to be mandatorily implemented. Due to that a prioritization based on business value is not possible as all requirement bundles are equally weighted and equally important. The timing of a regulation in the majority of cases implies the situation that the whole regulation is effective as one point in time, which also does not allow to go live via releases over a duration of time, as

regulation requires a cut-off from at a certain point in time. Application of a regulation depends in general of whether it is retrospectively or prospectively to be applied. Particularly under accounting regulations prospective application is often required as investors require for information useful that prior periods are retrospectively calculated to enable the investors see the impact of the regulation. Retrospective application also to have a smooth transition and avoids a cliff effect. There are two variants for retrospective applications existing:

a) Retrospective application: valuation and reporting e.g. Goodwill
    - All relevant transactions in the past have to be valued and reports as if the regulation was always applicable

    - Reporting requires to disclose depneding upon mainly capital markets disclosures, e.g. Five-years Overview for Companies listedat New York Stock Exchange (NYSE) and regualted bythe Security Exchange Commission (SEC); two years for Profit&Loss related disclosures and one year for balance sheet oriented disaclosures.

b) Retrospective application: Only valuation but not reporting e.g. IFRS 9 Expected Credit Loss Calculation: under this requirement the regulation is applied as if it was laways existing in the past, so implementation depands upon existance of historical data. Reporting is only propectively required.

8. Development of RegSafe ©

RegSafe© framework follows the goal to enable large scale programs to adhere to compliance without limitation and at the same time provide as much autonomy to agile teams as possible by fitting the required specific regulations of the product or service with its organization. In large organizations, specific organizational units have to be aligned with specific compliance requirements (Poth et al., 2020b).

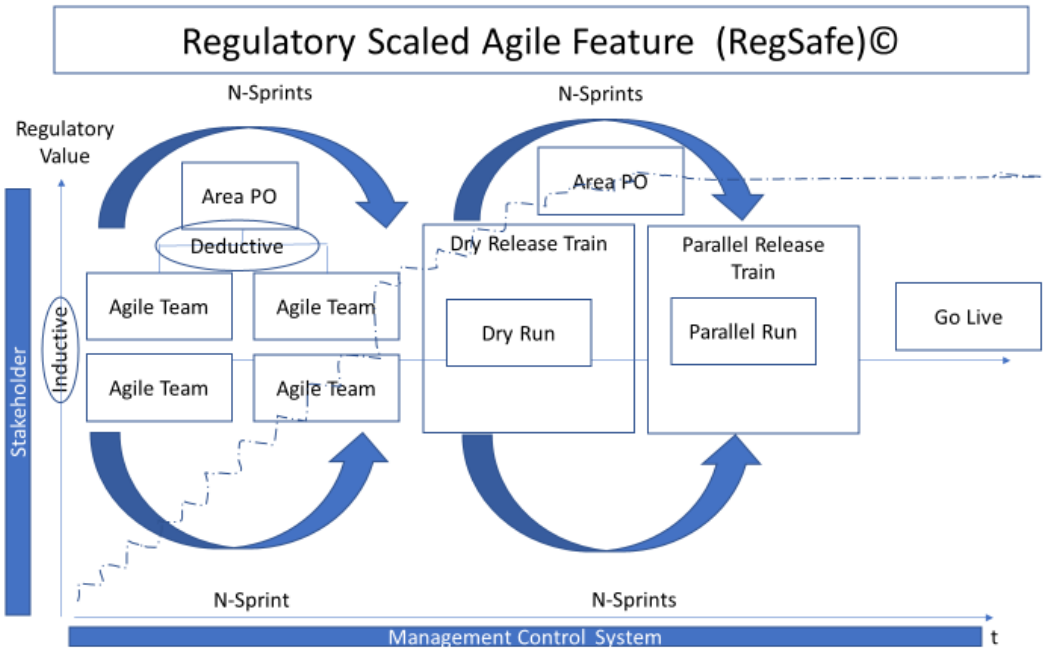
This will enable scaling the approach into different organizations and their units. To give evidence for effectiveness of the framework, we want to meet the following three core requirements (Mkoba, 2020). First, the agile manifesto declares tasks, which are auditable and global organizations impacted as with high complexity (Ee, 2016) and not susceptible for the agile methodology. Scaled agile audit is specifically designed for large organizations (Gustavsson, 2017). As audit plays an essential role in a regulatory-driven program the to be developed framework will include as first goal to get an external confirmation by audits with focus on compliance facilitation (Beerbaum). Second, the delivery of a business value shall not be hampered and remain an essential part of the outcome flow, as this is under scaled audit (Safe, LeSS and DAD) a common principle. Third, the framework combines principles of agile and waterfall under a “best of” approach.

The framework developed here was developed following the design science research approach, demonstrating the framework’s application in a case study in the financial domain. The framework’s general applicability is assured by design thanks to its independence from any specific regulation. Furthermore, it is adoptable by design to different business domain specific demands in large organizations to scale into their units.

The development process requires to follow two dimensions. The first dimension handles the organizational and procedural compliance requirements. Based on the specific requirement of regulatory-driven programs the compliance requirements be fulfilled at least at the latest required point in the product or service life cycle. However, compliance programs require also parallel runs or test runs to demonstrate to audit, that compliance has been met by no limitation. Therefore, to address number one goal, point of last time is defined as starting with the parallel run. Earlier assurance of regulatory requirements is possible and a part of the team's self-organization. The product specific dimension helps teams identify and realize their product specific quality-risk requirements. Within this dimension, the team handles product or service specific quality-risks in a structured and transparent manner to assure an adequate risk management.

To run the whole program and to ensure that each Pos works efficiently an area Product Owner is introduced. The role of the area product owner is to align the different agile pods to each other.

Figure 2: RegSafe ©



To leverage a lean and agile development process, product owner form teams and implement team backlog applying an inductive method. Agile teams apply outcome-specific refinements to, only a minimum predefined framework shall be set while still assuring a systematic handling of the team's refinement work. Product owner will together with scrum master focus on sprints for components, for which interpretation of regulatory requirements is agreed with all stakeholders including auditors.

Those components undergo sprint development, testing and sign-off to assure that the development process does not lose outcome focus. However, once all components are put together testing and sign-off is once again required. As during development from release to release product becomes more advanced and rate of completion increases regression testing has

to be applied to ensure that new components do not lead to unexpected results in combination with already implemented components.

However, each product owner team has to ensure that for an audit, all relevant artifacts and evidences are available to demonstrate a compliant delivery. This requires the planning and reconciliation from the area product owners with the product owners. The area product owner applies the deductive methodology. The program is aligned across the organization by sharing of experiences and a program backlog summarizing the team backlogs. Area product owner applies to leverage continuous improvement and replacement of outdated practices.

The scaled agile development is embedded into a management control system. The program milestones and budget is controlled in a continuous approach. Stakeholders requirements and needs are identified, while the group of stakeholders are broken down into internal and external stakeholders.

9. Conclusions

This research project identified the implications of agile methodology implementation for regulatory compliance projects. The insights gained form the qualitative study will help the international regulatory and professional community to better understand the implications of ACM in the financial service sector.

Main findings can be summarized that survey demonstrates (however more case need to be explored) that ACM has superior advantages versus waterfall approach, although this is often questioned by market participants.

There are certain challenges expressed by interviewers, that regulatory compliance projects do not allow to implement agile methodologies in its “pure theory”, as beta implementation or development or non-completed implementation are not allowed by regulators and can lead to severe audit issues and reputational risks.

While the concept of agility methodology is bounded to design thinking, in which each individual customer is considered in its product offering, leading to a variety of different and heterogenous requirements and backlog, the regulatory compliance requirements is characterized by few customers but per definition rather clearly defined and explicit. The essence of such requirements and inheritant that frequent refinements are not required and necessary. For regulatory compliance agile projects, the risk is high that agile methods are applied without providing real added value considering the different sprint cycles. Sprints and refinement sessions should not be executed without providing added value, only as they are part of the agile and scrum methodology cycle. In the sense of agile methodology not for agile (L’art pour l’art), it should be carefully balanced which cycle and which tools provide added value for regulatory compliance projects.

Given the holistic mind-set character and precondition for successful implementation, RegSafe© implementation require the whole organisation to follow agility.

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