Applying Agile Methodology to regulatory compliance projects in the financial industry: A case study research

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"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 the application of agile methodology to regulatory compliance projects. Regulatory compliance projects normally apply waterfall approach given the regulatory explicit specified requirements. We identify the major advantages and disadvantages. The findings have implications for practictioners in deciding if agile methodology and approach should be followed for regulatory compliance projects. The article concludes that agile methodology strictly applied contain major unique advantages towards waterfall approach, as fostering autonomous problem solving teams.

KEYWORDS: Agile methodology, waterfall approach, Scrum, regulatory compliance projects, project management.

RESEARCH FINDINGS/ INSIGHTS: This research intend to provide a better understanding of agile methodology applied in practice for regulatory compliance projects. The study is based on a case study of a large financial service provider.

METHODLOGY: A single qualitative-method approach is followed, which includes semi-structured interviews.

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).

So, what make banks 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.

2. Agile versus waterfall approach in the banking industry

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. They are ready for an IT-implementation (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 3: Waterfall versus Agile Model
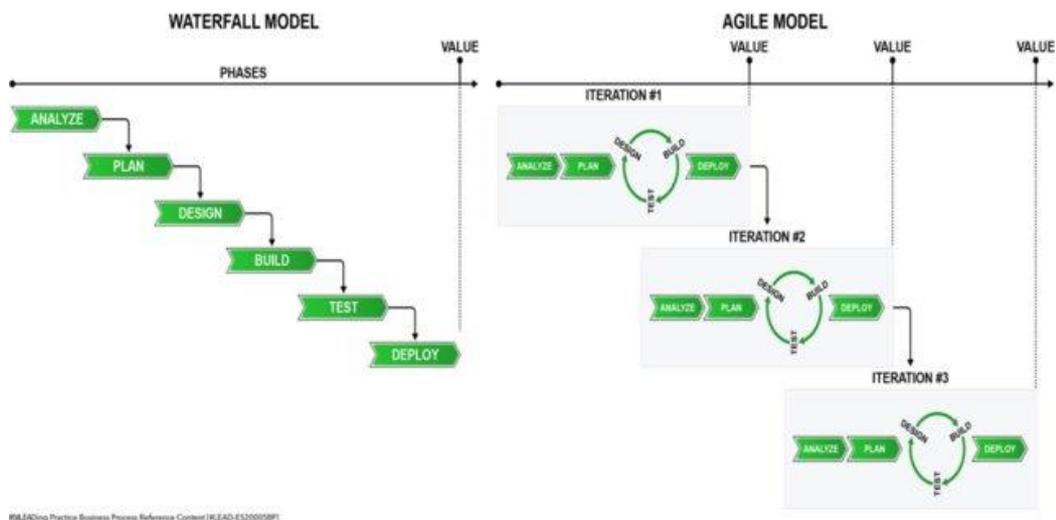
Von Rosing et al. (2014)

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).

What is the impact on accounting? First of all, if companies decide to follow the more progressive agile organizational it has tremendous impact, as accounting is traditionally organized by a hierarchical management model. In addition, accounting or regulatory projects will be increasingly executed under an agile framework. Although agile methodology has clear disadvantages for regulatory projects, not-realization of a 100% solution, incomplete documentation, testing is restricted. It also implies a lot of advantages, as collaborative working conditions enhance flexibility, increase number of deployments and reduce non-output oriented idle time. Overall, the agile methodology will be further improved. Therefore, even for accounting regulatory projects, the advantage will exceed disadvantage, as it is on the way of becoming the state-of-the-art dominant project methodology and organizational set-up.

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3. 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 study is on Agile Methodology, which has its origin in software development within the academic discipline of computer science, however, increasingly spill over to organizational and management research, as the agile methodology incorporates autonomous team-based solutioning.

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

1. Identify main characteristics of agile thinking that deviates from non enterprise agility
2. Identify practical actions associates with agile methodology implementation for regulatory compliance projects.
3. Apply semi-structured interviews to explore underpinning sucess factors

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.

4. 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.

5. Data Collection and Data results

5.1 Qualitative Study

The study was followed by a qualitative 5 survey/ interviews with the five company representatives were accomplished during 2019. As the research project focuses on the 'why' and 'how' of agility enterprise, we particularly rely on semi-structured interviews with actors involved in the agile methodology on a regulatory compliance project. Interviews with 5 direct or indirect participants were conducted between November 2019 and December 2019. The interviewees included project staff product owner, scrum master and developer, who were involved in the project. All interviews were arranged granting anonymity to individual interview partners. The interviews had a duration between 21 and 31 minutes.

Table 1 provides detailed information about the interviews/ surveys.

# Department (at time of project)	Date Duration (min.)
I 1 Product Owner	November 2019 21)
I 2 Scrum Master (Internal)	December 2019 (25)
I 3 Scrum Master (External)	December 2019 (23)
I 4 Developer	December 2019 (28)
I 5 Developer	December 2019 (31)

Table 1 List of surveys/ interviews

In the following Agile Methodology for regulatory compliance projects is abbreviated as AMC.

The following advantages were formulated for AMC by interviewers

- High flexibility when high pressure is exterted on delivery
- High team strengths, as daily interactive sessions improve independance of agile teamCulture of immediate feedback daily retrospective enables early adressing of issues
- Issues are not per se formulated as not conform with agility, but backlog items
- Sucess is celebrated with all team members

Concluding from the results of the qualitative study:

- ACM has superiour advantages versus waterfall approach
- Regulatory compliance projects applying agile methodology result in the following challenges
  - Regulatory compliance projects do not allow beta implementation or non-completed implementation
  - Regulatory requirements are per definition defined and explicit and do not require constant refinements
  - Agile software development require the whole organisation to follow agility
  - Agility is an end-to-end mindset, which does not allow organizational gaps

- o Financial service sector require step-by-step adoption to agility, as hierarchical organization needs evolutionary development to agile organisations, which can not be executed „over night"

5.2 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 put 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 sucessful implementation, Agile software development require the whole organisation to follow agility. This implies that agile software development should be embedded into an agile organization transformation.

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