The Transition from Kanban to Scrum and Risk Prevention in Big Telco Corporation

Dragan Stankovski[a]
University of Telecommunication and Posts, Sofia, Bulgaria

Keywords: Agile, Scrum, Project Management, Risk Assessment, Kanban, SAFe, Risk Management.

Abstract: One of the biggest challenges to driving and managing projects in a big telco corporation is to define the right approach and moment of switching from Kanban to Scrum modelling and way of working. Unfortunately, in the real world, this slim line by some rules basically is ignored or established at a very late stage. There is no clear definition and exact power to be pointed out and used while projects are running. The aim of this paper is to give basic rules and advanced directions to find them including the right moment establishment without any impacts on the work and the project itself. A clear definition of this approach will ensure a smooth transition in full transparency in the already established agile culture and project execution.

1 INTRODUCTION

Nowadays the most important part of running a successful telecommunication corporation in the world is to have the exact equation of success. Most of the big players in the telecommunication market are trying to apply the agile approach and be one of the first and faster telcos and launching new offers and attractive packages for the end customers. The high efficiency of working with agile in the right perception is not always easy to be implemented across big corporations such as telecommunication companies. The telecommunication market is very challenging and full of continuous and rapid changes that need to fit all requests from the end customers including such that sometimes look like not necessary to be implemented for the global market (Titova, 2018). When all telcos are doing this digitalization or transformation from the regular way of working to the agile style, they have a huge challenge selecting the right approach and exact methodology in order to fit not only the employees in the company but also the market which is so a bit caprice. In this journey, most of them slightly choose the wrong turn and unfortunately, the end goals and results are not as expected. While we're leaving in a world full of information and easy access to everything over the internet, sometimes this advantage actually became a disadvantage and misleading to finding the right approach and way of working. The aim of this paper is to provide the right path and define the criteria for choosing the right agile approach combining the company the size and the product that was developed. In the next chapters, special attention will be dedicated to the risks and prevention in order to establish the right approach and perfectly fit for telco companies.

2 AGILE CULTURE

Like all changes when the big telecommunication companies start with a transformation, the challenges are always starting with pushback questions like why we need the transformation. In most cases, the confirmation itself is always improving the flexibility to find discover and manage the customer experience in this dynamic time also with the transformation in most of the cases the organizational barriers including service are bypassed and the team is working in value streams to complete on time I'm at work, develop and deploy without technical depts and ship on time the offers available to the market. All of these criteria are related to improved quality and flexibility to be a successful and aggressive market. The second challenge is why we need to go agile. Compared to

[a] https://orcid.org/0000-0002-0558-2236

Stankovski, D.
The Transition from Kanban to Scrum and Risk Prevention in Big Telco Corporation.
DOI: 10.5220/0012048600003485
In *Proceedings of the 8th International Conference on Complexity, Future Information Systems and Risk (COMPLEXIS 2023)*, pages 102-108
ISBN: 978-989-758-644-6; ISSN: 2184-5034

the standard waterfall the market is very dynamic and long-term projects are not resolutions to be on top. Except deliver faster the agile approach and Culture is putting the customer and the end customer experience at the core of developing the products and products, creating more transparency, melting the barriers into the teams, and making the work more enjoyable and fun. The biggest thing that should be under one here is to make a clear definition and distinguish what exactly is agile. In most resources and papers agile is mentioned as a methodology or method but the actual declare definition is that agile is simply a mindset that is described by the 12 principles from the agile manifesto (Fowler, 2001).

2.1 Values and Focus of Agile over the Traditional Ways of Working

When we talk about values there is always a way of improvement for individuals and interactions, the way of developing the software, the collaboration with the customer, and maybe most important the speed and response to changes are very often in this market of telecommunication. Challenging those values there is always a place to be improved and how to make things better with the implementation of Agile. So while there is value in the topics mentioned above, agility is focused to improve the process and tolls, which are one of the best parts in the establishment and execution of the projects. Also, the contract is always negotiable due to the duration and changes, so it can be modified to fit the current market needs. Special focus is dedicated to the follow the established schedule and plan and doing the comprehensive documents that will require a more visual then readable view.

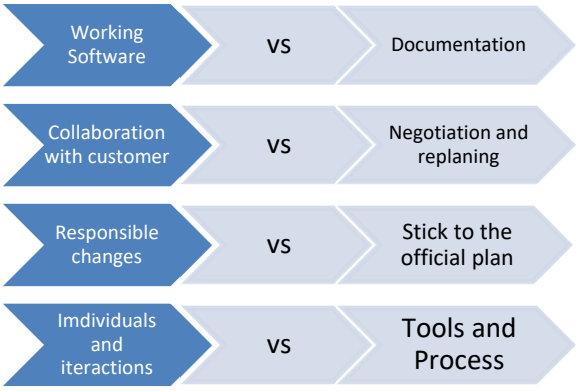

Figure 1: Reasons to move and work in Agile.

2.2 Think and Implement Agile

It was already pointed out that Agile is not a methodology or model, but it is a mindset that changes teams to focus more on what is important and right instead of who should be right. From the very beginning of Agile implementation there is base thinking as a base and focus on the values that need to be completely accepted by all telecommunication companies as organizations like Accountability, Innovation, Trust, Courage, and maybe in the very first place Transparency. Counting and aligning those directions there is always a place to set up the proper mindset at all levels of the organization, execution,

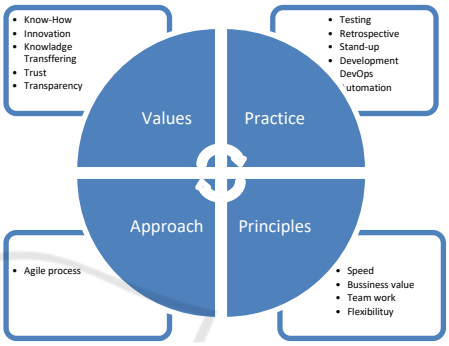

Figure 2: Values and Practices over the Principles.

operational or managing in order to set up the proper goals (Jennifer, 2016), make the propriety collaboration, introduce the synergy in the teamwork, make it simple as is possible, be flexible and much more. More granular explanations and ideas are presented in fig. 2

2.3 The Power and Clear Line Between Project and Product

In order to get real value while planning and executing projects, there is one main issue that prevents us from reaching our goals in most telcos and the big corporation is referring to the **Complexity due to the size and amount of the scope combined with the short term of execution.** Most worthwhile things that bring value require non-linear, complex implementations that have not been done in the organization before and with this transformation, there is always a place for the pushback. In **the traditional mindset "predict and plan"** – the complexity is acknowledged, and we are trying to predict upfront as much as possible. This approach implies:

- The future in most cases is predictable – Projects should have covered planning upfront.
- Change needs some time and cannot happen overnight – Set scope early on and tightly control.
- We should focus to know as much as possible in advance.

Usually, a lot of work goes into building the infrastructure, front end, back end, documentation, training, etc before the product goes live. But what if we need to change something?

The alternative approach to complexity is an **"inspect and adapt" mindset:**

1. We cannot accurately predict the future – We need to be ready to plan as we go
2. Change is to be expected – Decide and adapt as we learn on the road
3. We cannot know everything in advance – We should rely on the empirical process.

This is the trigger and start point of the implementation and moving of Scrum because instead of building the complete solution we release it in increments.

Table 1: Differences between Project and Products.

Projects	Products
Fixed dates and timeboxes	Until product is ready to GO
Teams are established specifically for project	Long term and cross-functional teams
Focus only to internal	Focused to external
Value delivered at end of project	Continues value and delivering and improving
Fixed scope	Flexible scope
Waterfall	Agile
Lead by a Project Manager/	Lead by a Product Manager or Product Owner
Solutions and system focused	Customer focused
Learning often lost	Learning remain in the team

Increment one will contain just enough done work from the front end, back end, testing, and architecture work to start serving the customer even if not all planned functionality is implemented, also known as MVP or minimum valuable product can be implemented and bring value to the customer while the rest of the puzzle is still in development.

One of the major issues, while transitions and transformations are happening in the telecommunication companies, is the lack of understanding and making differences between project and product, this and using Kanban or Scrum is also not clear when it's come to the moment of decision. Table 1 are presented the differences and main touchpoints when there is a need to have such separation because in agile the focus is always related to the customer, and this is why the most proper is to say that we are delivering products and not projects.

3 AGILE TRANSFORMATION STAGES AND CHECKPOINTS

In all Telecommunication companies, the agile transformation usually is a huge and massive change that needs to be adopted by the entire organization and implemented in all departments to work and get all benefits that are presented in every written proof for Agile. As mentioned that is complex and should be applied to several phases, which may even be different depending on which level of the organization one is focusing on and of course modified with the terminologies that are close to the telco companies. One of the most common stakes that are always presented while such transformations are in progress is to adopt the old company structure and terminology and replace it in the agile processes, and this usually is deviating the understanding of the joiners or external members. The timeline of the transformation and changes is depending on the level of knowledge of the team members and most important the wheal nest to transform and make their life easier and mainly is combined into 4 phases, figure 3.

The major goal of the assessment is to do the analyses for the operational model and what the telco is doing AS-IS. The next approach is present in a human-readable view with clear points to the weak spots and places where improvements need to be done called TO-BE operational model. After the kick-off, the transitions should be established with the implementation of the suggestions and the transition of teamwork. In the end, the most powerful tool and

feedback of the job done is the stabilization where all continuous improvements will be presented including the missed ones during the Assessment phase.

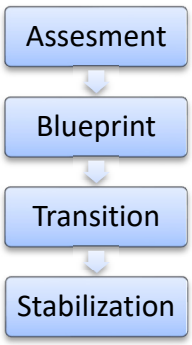

Figure 3: Investigation flow.

3.1 Transformation of Organization

The Telcos and huge organizations usually need to pass full transformation across the entire internal structure, usually, this is a long process, and transformation is executed with different organizational units or departments, tribes who are the main focus. The end goal is to make sure that different organizational units (both, external and internal) will start the transformation at different times so there will be moments for correction and synchronizing the best practices without impacting the development of the products. Also, the units are unique by themselves so the duration of the transformation is always different and the most problematic part is always the cross-team work and communication keeping the cybersecurity requirements and regulation (Bikov, T, 2021). This collaboration is the key to success and the right implementation of Agile (Kanban or Scrum) because the teams can learn and adapt effectively.

Unit or department level of transformation from the high level is following 4 major subsequent stages they are focusing mainly on the needs and stakeholders.

- **Engage:** usually related to commitments and readiness to start with Agile transformation;
- **Prerequisite:** preparation of the thing that needs to be changed and nominating teams that will start first with the implementation of the transformation;
- **Start:** lunching the actual transformation with selected teams in the unit. This process is always related to the execution, monitoring, and real feedback from the teams;
- **Operation:** ongoing feedback and improvements.

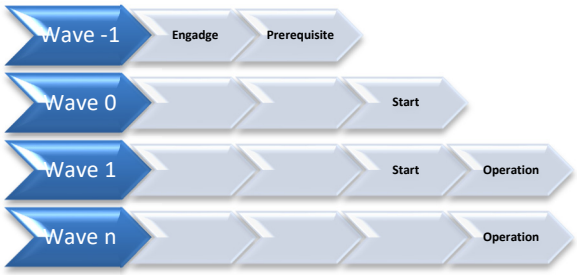

Figure 4: Stages of Departments/Unit transformation.

It's important to note that the transformation and the changes can be significant at multiple levels usually, they are related to structure, internal processes, ownership, delegation, etc. To have better control and keep as much transparency the transformation is recommended to take place in "stages". The stages will give the flexibility to experiment in the beginning while the real approach is written on the stone. Duration and start are different depending on the team's maturity, and capability to identify the risks and dependencies including impediments.

3.2 Team-Level Transformation Stages

Those stages are very easy to be implemented because the biggest part of the transformation is already done in the Unit transformation and the most problematic spots are identified so now is the right moment to be just practiced and see the results.

As presented in fig. usually stages are 4, where most of the time is dedicated to the preparation phase.

On the team level usually, preparation, adoption, and optimization are equal, and part of the unit start and lunch part. And the Operation is ongoing and the same for all projects and transformations. The practice is recommending this transition to be not more than 4 sprints (Stankovski, 2022).

Figure 5: Team level transformation steps.

4 THE MOMENT OF SWITCHING FROM KANBAN TO SCRUM

In previous chapters, the main focus was to explain the complicated process and the transition when telecommunication companies are moving to agile

working. The practice is showing that the telco itself is searching for information mostly in the internet space or paying external companies to establish internal processes and stages for this transaction. When it came to the company deciding on the external ones as was described in the previous chapter there are you there using analysing methods to find the best brooch and make this transition smooth and most efficient for the company including the employees and the market. Opposite to this approach are randomly written suggestions that are trying to generalize the approach, and, in most cases, they are not fit or they're absolutely not applicable to the telecommunications needs and the companies. There are a lot of examples where the processes are agile, but a gel has a couple of sub-methods like Kanban, SAFe, Scrum, Lean, etc (Wanner, 2019). Each of them is specific and two of them exactly are most used in the implementation and telecommunication companies. Kanban or Scrum is the most common topic under discussion and in most cases wrongly established process of implementation. Some of the companies prefer to work with Kanban but unfortunately, their real need is to work in the scrum, the same goes for vice versa some of the telcos are working in the scrum which is absolutely not necessary because the projects are not requiring such complexity. The final goal is to provide a definition of the right moment when companies as a real need to work in Kanban and when actually they need to switch the scrum when the business starts to grow, and the development of the project and product is more complicated (Torado, 2019).

4.1 Kanban in Telco Corporations

Using Kanban will bring benefits in projects related and especially require visualization of development including continuous brainstorming about design. This automatically is referring that Kanban as an approach is more appropriate when UI is designing or some of the R&D parts are developing (Vasiliauskas, 2019). In other words, if need clear to define when Kanban should be implemented as an approach there is plenty of cases but the most important of them are related to the continuous work understanding alone items or when things are dedicated to the specific work and they're focusing only on the dedicated items in most cases went there tidy related to the research and development including the u x design that needs to be visualized and maybe one of the most important things is when the teams are more or less handling with the operational things managing tickets resolving problem racing defects etc. Referring to the duration of the project execution and development there are no strict lines they're going to put the project itself into the framework but compared to the time when we talk about the size of the teams usually in the practice the recommendation for this approach is work to be done in smaller teams not extending the size of 7 squads or split accordingly to hybrid model of work (Stankovski, 2022).

4.2 Scrum in Telco Corporations

When the scope of the project starts to increase, and the launching of the minimum viable product is the most required frequently to go on the market and then the Kanban approach is not fitting to all those requirements which leads telecommunication companies to switch to more flexible agile work called SCRUM. Here also plenty of cases can be defined when exactly scrum needs to step in and when the transition from Kanban to Scrum needs to be done, but the most important is to underline that when the project is required to achieve some predictability and to release value very fast on the market then the Scrum is a must. Scrum is also used when the teams are committing the something that will be on production after dedicated time called Springs or Project Increments, including the importance when running projects where velocity and the pace of the deliverables should be stabilized to be more productive for a longer time. And maybe one of the most important details is when there is a large number of dependencies between the pieces and they need to be managed among third parties that are requiring synchronization or simply integration.

4.3 Definitions and Risks of Transitions from Kanban to Scrum

All previous chapters describe the benefits and suggestions for which of those 2 approaches need to be used Kanban or Scrum. In real work and practice, there is no clear definition or direction of where is the border and when telecoms need to switch between them. This is one of the reasons for late lesson learning or in the worst case failure of the projects. The final aim of this paper is to set up those frameworks, so there will be a clear vision and expectations when it comes to such a decision. The major condition is to have two of the 3 main criteria presented in Table 2 below:

Table 2: Crosslines to do switching from Kanban to Scrum.

Condition	Kanban	Scrum
Duration of the project	Short Term (<3 months)	Long Term (>3 months)
Size of the teams	<7	7 and above
Integration / work with 3rd parties	Only Internal	>1 vendor / external stakeholders for integration

If 2 conditions are presented then the telecommunication companies should not doubt if they need to move to Scrum. That will give them the all benefits of managing the project and the scope in time, reducing the technical dept and being sure that the minimum valuable products will be on the market.
Talking about risks and not being on time to step in and start with the transition there are a couple of topics that need to be taken into consideration. The first and most important is to understand the key elements of Agility like trust, courage, openness, focus, and respect. This will prevent and eliminate tonnes of issues related to internal struggling between team members, jeopardizing the deliverables and most important the quality of the work. The second important factor is a clear understanding of the roles and responsibilities of the actors and team members inside of the projects and especially during the transition from Kanban to Scrum. The practice is showing that understanding the roles of team members is not a problem with most of them, the telecommunication companies usually straggling with the understanding and definition of the major role of the product owner. To make things much clear the definition of PO (Product Owner) is presented in the next table (O'Connell, 2013):

Table 3: Crosslines to do switching from Kanban to Scrum.

Product Owner	
Definition	**Responsible for maximizing the value of the product and the work of the Development Team. How this is done may vary widely across organizations, Development Teams, and individuals**
Responsibilities	• Prepares "**user stories**" and *refines* them with the squad • Maximizes value by **prioritizing** backlog of user stories • Continuously interacts with the customer • Maximizing the value of the product and the work of the Development Team. How this is done may vary widely across organizations, Development Teams, and individuals.
NOT	• Is NOT a Product manager; is NOT responsible for deliveries (but is responsible for value) • Is NOT Project Manager

5 CONCLUSIONS

The thresholds and direction when the telecommunication companies need to switch from Kanban to Scrum are providing a better stage and understanding of the needs and exact moment of this event. This will bring not only value but also put the space to bring the real values and best practices of Agile and especially the smooth transition avoiding risks and jeopardizing the projects. Same as previous when the moment should happen and there will be frequently deliverables on time without compromising the quality of the work, the focus will remain on the customer side with continuous improvements and feedback. This situation and the full transparency will always eliminate the waste of the team's time and work including encouraging and balancing the workforce. In another word the agile keys of the mindset will always be in the first position: Transparency, Empowerment, Collaboration, Interaction, Trust, Responsibility, Accountability, Communication, Adaptability, and Respect (O'Dwyer, O, 2012).

Also one of the conclusions that should be taken is that failures are not options this is given and we need to get the maximum and turn them into advantage so we can learn fast, change the culture of the telecoms and of course find the exact moment of the transition for the other Units/ Department of Teams based on lessons learned and stakes that we should avoid and nor repeat.

ACKNOWLEDGEMENTS

The results presented in this paper are based on the empiric collections and experiments in the real project delivered to different customers in

telecommunication companies over the globe in the period of 4 years between 2018 and 2022. The results are not impacted by the lockdowns during the COVID restrictions based on the previous and after numbers of total deliverables in the dedicated timeframes. The results end suggestions are focused on the Telecommunication companies and their business, implementing in other industries may provide slightly different results.

REFERENCES

Bikov, T., Radev, D., Iliev, T. and Stankovski, D., Threat Hunting as Cyber Security Baseline in the Next-Generation Security Operations Center, 2021, 29th Telecommunications Forum (TELFOR), 2021, pp. 1-4, doi: 10.1109/TELFOR52709.2021.9653361

Fowler, M., Highsmith,, J. (2001). The Agile Manifesto, Software Development, Vol. 9, No. 8, pp. 28-32.

Jennifer, D., Katherine, D. (2016) Effective DevOps, Building A Culture of Collaboration, Affinity, And Tooling At Scale, O'Reilly

O'Connell, T. (2013). The Scrum Product Owner – Customer Collaboration & Prioritizing Requirements, in Proc. ICSEA13

O'Dwyer, O., Konboy, C., Lang, M., (2012). Agile Practices: The Impact on Trust in Software Project Teams, IEEE Software 29(3):71-76, DOI:10.1109/MS.2011.118

Stankovski, D., (2022). The Measurements that matter with hybrid model of estimation, The Journal of CIEES, http://journal.ciees.eu/index.php/ojs/authorDashboard/submission/12

Stankovski, D.; Bikov, T. and Radev, D. (2022). The Hybrid Model of Broken Agile Transformation in Big Telco Corporations. In Proceedings of the 7th International Conference on Complexity, Future Information Systems and Risk, ISBN 978-989-758-565-4, ISSN 2184-5034, pages 65-70.

Titova, E. (2018) The global vs glocal in the cultural journalism, Journal of University in Sofia, "St. Kliment Ohridski", pp. 343 – 354, ISSN 1311-4883

Torado, D. (2019) "The Epic Guide to Agile: More Business Value on a Predictable Schedule with Scrum",, pp. 26-67

Vasiliauskas, V. (2019), Moving from Kanban to Scrum, https://teamhood.com/kanban/moving-from-kanban-to-scrum/

Wanner, R. (2019). How to successfully apply Agile project management and Scum, Proconis, First Edition ISBN: 978-1983653995 V1.0