



TEACHING INNOVATIVE
WAYS OF WORKING
IN THE DIGITAL ERA

Kanban Method in a Value Stream Organization

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BOSCH

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General Context

Challenge: A Security Systems production factory from Bosch wants to learn how to do things differently. After a transformation on the structural level of the company, this company needed to find an alignment between everyone in order to be successful. There is a sense of urgency in revolutionizing this workplace in order to get the most of this transformation. As with this, they expect to increase the awareness of the “Agile mindset”, provide more capacity, knowledge, and skills to its teams on agile practices and develop cross-functional teams working with shared processes.

Context: In 2020, Bosch internally identified the traditional structure/hierarchy as a constraint. Therefore, they worked on a plan towards a new organization model with 3 Value Streams that comprise the production of video surveillance, fire detection, and communication systems, each one composed by a Value Stream Manager, a team with production, logistics, and industrialization, and Process Owners overlooking continuous improvement. A new way of working was needed to get everyone aligned with each Value Stream’s objectives and the organization’s objectives.

Solution: Enterprise Agility

Results:

- + 90% of people recognize an improvement in visibility and focus of the team, and a more clear decision making
- + The team feels more engaged with the current work in hands, as also commitment to work improved around 20%
- + Daily meetings helped improve cohesion, team spirit, and alignment, as communication improved with more clarity in every moment

Let's Get Down to Flow - Starting with the Security's Value Stream

To start this initiative, during the first 3 days, we engaged with all Value Streams and +50 people on-site to observe and understand what/how they deliver and identify main challenges, constraints, blockers that hold them back from evolving and achieving goals in this new structure. As we found, Bosch Security Systems OvrP had already started with a major structure change, as described in Figure 1, in order to create cross-functional teams based on specific lines of products. This context was new for all the teams. The ineffective old ways of communication, decision-making were still present, as several team members were questioning what to do and how to do it.

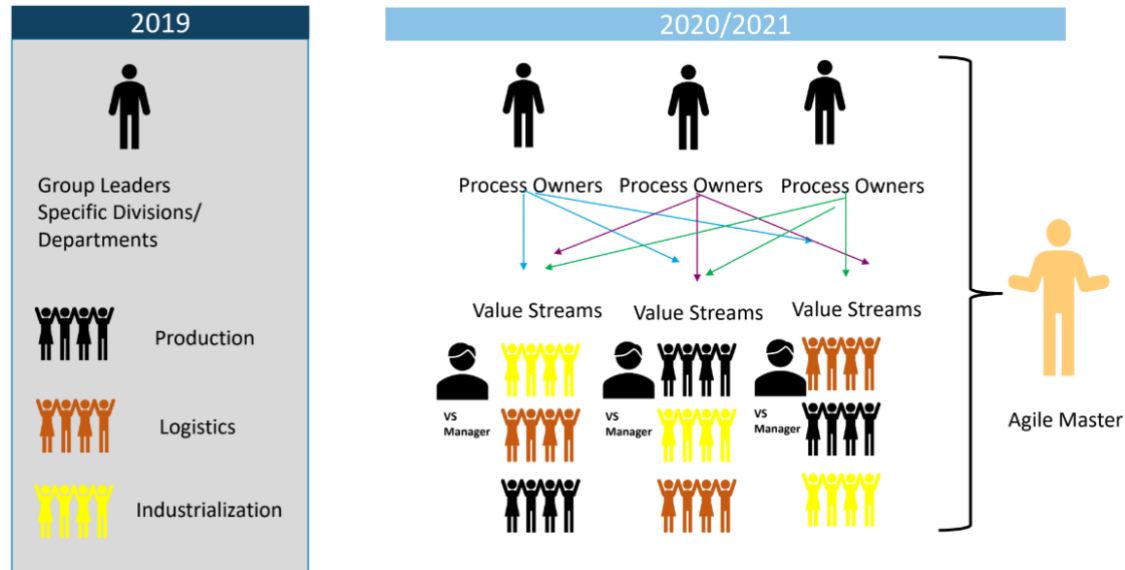


Figure 1: Value Stream Organization's structure

During the performed interviews and System Thinking workshops, the collected findings & patterns have given us evidence about the actual state of how the Value Stream's teams communicate, collaborate to deliver value to the organization. There were small differences between each Value

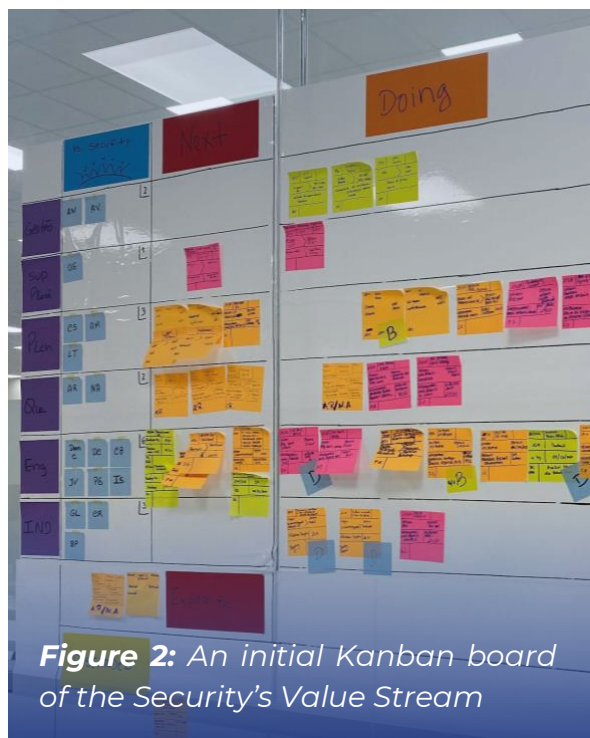
Stream's findings, but the main concerns were quite evident and spread across all 50 members. The patterns found were the following:

- + The teams don't have visualization about the work and priorities. The daily discussions would go around problems, and not around the work or the main objectives to achieve;
- + The teams lacked clarity around the prioritization and their capacity, and therefore Value Stream Managers were focused on micro-manage all activities;
- + There was a high workload and multi-tasking between team members;
- + There wasn't a clear definition and understanding of roles and responsibilities with this structure change;

"It's all done to get out of the way as quickly as possible. Decisions do not consider the impact on the day-to-day work of operational teams. We usually reach the end of the day and see that nothing that was planned was done. The day was spent 'putting out fires' because planning is not done correctly"

Value Stream team member

Naturally, the solution had to focus on alignment inside each Value Stream and in the future between different Value Streams that are interdependent services. Educating the teams with the Kanban Method helped address the several challenges mentioned in a pragmatic, actionable, evidence-based way. It starts with what you do now and pursues evolutionary change while respecting current roles, responsibilities, and job titles, and encouraging leadership at all levels. This allows organizations to evolve business and processes gradually, define and use relevant metrics to measure progress, and significantly reduce the risks associated with unpredictability when delivering.



Starting with the first team, the Security's Value Stream team had 15 elements working in the Production of existing products and the Industrialization of multiple new products, as also, Continuous Improvement activities that are intrinsic to a Lean environment. First of all, the team had to visualize work, its flow, and risks in order to build a visual model that reflects how they work. After this first step, it was clear that work in progress was quite dispersed in different swimlanes of activities as depicted in Figure 2.

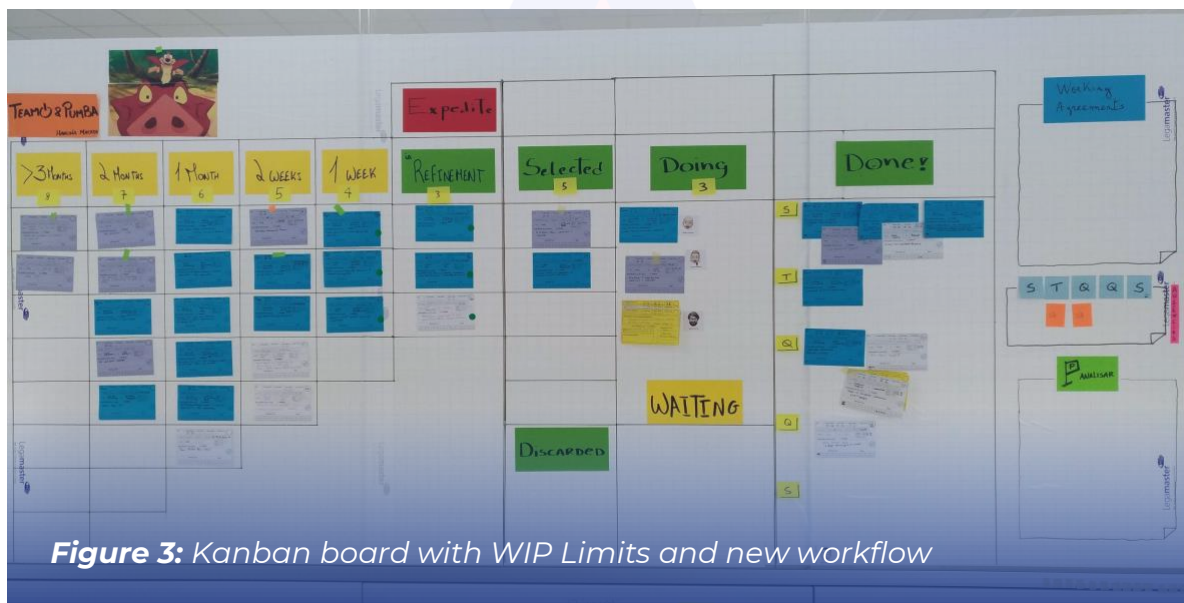
With this initial visualization and the first days of Team Kanban Meetings, we discovered with relationships and interactions in place that, in reality, there were 2 teams inside the 1 group of 15 people. One team focused on a set of products and respective production, and another team focused on another set, while the Value Stream Manager and the Process Owners were overlooking all work and deliveries.

Hence, each team had their own Team Kanban board where they could:

- + Track dependencies and blocks;
- + Pull work for one or more team members;
- + Add start date, end date, work time when reaching "Done" to calculate lead time and waiting time;
- + Get an overview of the work to come and respective priorities.

Experimenting and Improving

Currently, with the visualization and higher focus on customer's needs and expectations, our expectation was that everyone had to be aware of the current Work In Progress (WIP) and had to grow as a team to improve delivery predictability while reducing any sort of waste by using "Stop starting, start finishing".



Therefore, the WIP Limits were introduced with a new Kanban Board design discussed by the team that would outline:

1. Planning of future work
2. Refinement of the work to come
3. Replenishment for the week
4. Work in Progress
5. Waiting (dependencies, blocks) work
6. Discarded work
7. Done work

The constraints of WIP Limits were new for all members and hard to respect during the first weeks of work. The team was used to an environment of conflicting priorities and unplanned work. And by consequence the status quo had to be changed, in small steps, starting with limiting the focus.

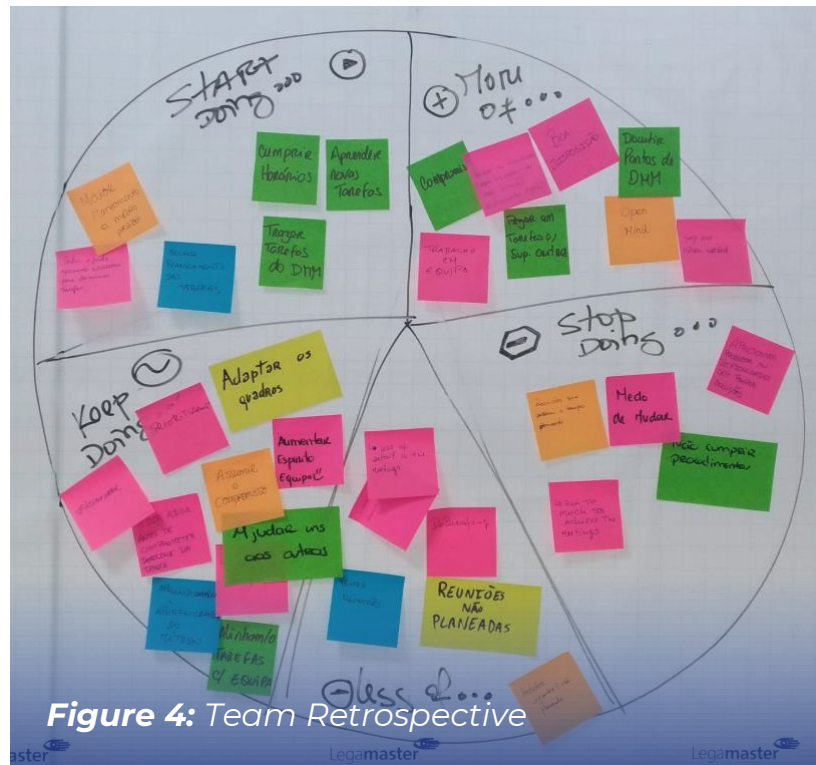


Figure 4: Team Retrospective

Bi-weekly Team Retrospectives were an opportunity to do things differently and better, and to run experiments that could foster learning. Through these moments, the teams were able to:

- + Define basic policies;
- + Discuss dependencies and blocks, analyzing their possible root causes;
- + Create new moments called “Katas” for knowledge-sharing;
- + Define a competency matrix and create a plan of action to reduce existing gaps inside the structure.

Key takeaways – Security's Value Stream

After 2 months of adoption, in terms of the Kanban Maturity Model, both teams from the Security's Value Stream reached an ML1 Team-Focused. During the data collection process, we discovered that the teams were able to improve the predictability of their deliveries. This factor impacted positively any planning actions and the management of stakeholders in Germany. "Classes of Services", namely Expedite and Standard, were introduced to help them grasp the cost of delay, foment discussions around value and thoughtful decision-making.

The teams understood the Kanban General Practices and the Kanban Principles, the results were visible, and the values of collaboration, taking initiative, and transparency were still a work in progress by the members. The challenge is set.

"In the past, there was no visibility of what we were doing inside the Value Stream. It was a daily firefight. Right now, with the improvements that we are developing, we're setting priorities in order to focus on what is most important and know where to go to deliver value to the customer."

Security's Value Stream team member

The Security's Value Stream is an interdependent service in a network of services that tries to meet the needs of their customers. From that array of services, we discovered a new team, called MOE1. This team is a shared service that serves as a support for the Production and Industrialization activities of all 3 Value Streams. Clearly, it was the next step for our mission of bringing alignment inside Bosch Security Systems OvrP.

Value Streams' downstream - Starting of with the shared service

The team MOE1 consisted of Engineers, Testers, Planners, that support each Value Streams in the Production and Industrialization of new products. This team is the bridge between Value Streams and the Operations teams working in the multiple Production lines. Both MOE1 and each Value Stream works together when sampling new products, planning the occupation of Production lines, or solving issues with the current maintenance team.

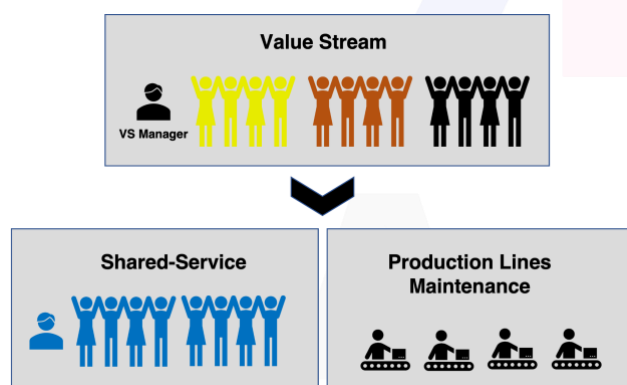


Figure 5: Value Stream and shared service team as a bridge to Production

MOE1, being a dependency of all Value Streams, the variability of delivery and unpredictability of demand was a reality. We initially found a group of 22 people with most of them feeling reasonably stressed. The chip shortage of 2020/2021 also exacerbated several symptoms that the teams and the whole Bosch's factory were subjected to during this part of the initiative.

Like the previous first steps with the Security's Value Stream, we started by analyzing the current status with interviews and a Systems Thinking workshop. Some of the challenges were somehow quite similar to the Security's Value Stream:

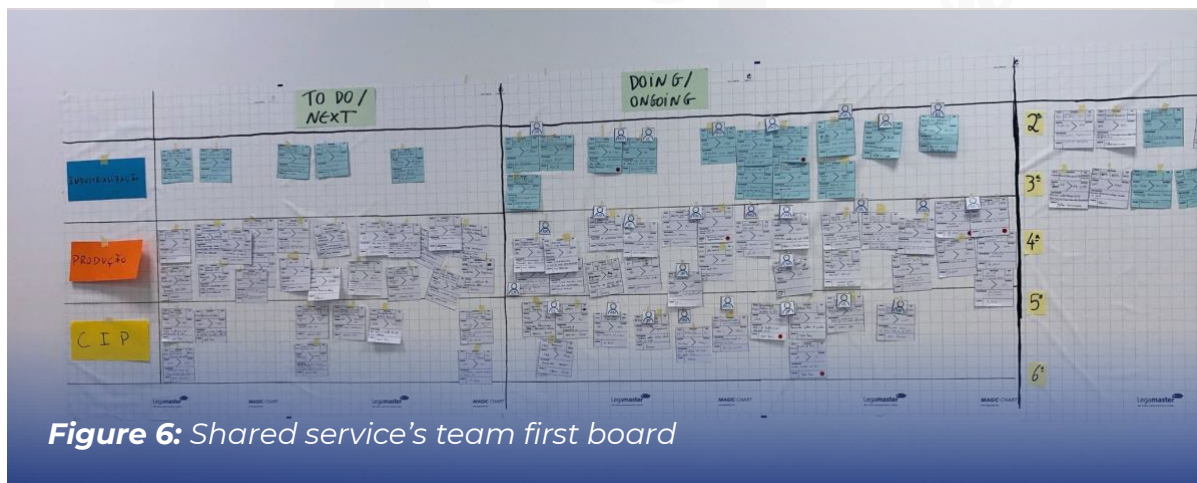
- + High workload, constant multitasking, and interruptions;
- + Conflicting priorities;
- + Lack of visualization, planning, and continuous improvement.

“My day-to-day is mind-blowing, with a lot of requests, with great pressure for decision-making, it's not monotonous, it's sometimes fun, very tiring and there are days when I wouldn't recommend it to almost anyone.”

Shared service's team member

After this initial evaluation of the situation and work with the team, the first board was designed and daily Team Kanban Meetings and Team Retrospectives were adopted as feedback loops. A simple daily Retrospective was fundamental for the team members to understand what changed between the morning's commitment and the real delivery, and search for new ways for improving.

The first days were solely focused on connecting people around a unique visualization of the whole demand, dependencies, blocks, and any other issues that limited the team to deliver.



The following days allowed the team to work on a new version of the board that mapped the different demands. One of them was totally unpredictable: support requests to solve issues with the Production lines that Operators and Maintenance weren't able to resolve.

The Engineers' group started collecting data about the support requests:

- + Equipment
- + Engineer called
- + Source of request
- + If the process was correctly followed by the Operators

After an initial collection, they discovered that 33% of the support requests could have been prevented to reach MOE1's team if the Operators were instructed to follow the agreed process. Hence, a work action from a Team Retrospective was planned to solve this situation and improve the capacity of the shared service.

As other improvements, the team adopted a WIP Limit per person and started weekly Replenishments meetings to plan ahead and force a commitment point with the Value Streams. This process was quite hard to grasp for all the team members. Alignment was not a strong concept in the culture, and the change of priorities between Value Streams and MOE1 was a constant during the initiative. Nevertheless, some learnings were embraced, conversations between teams existed even without any appropriate meeting with that objective in mind. This was the first step to acknowledge the issues that sustained poor predictability and an overwhelmed team.

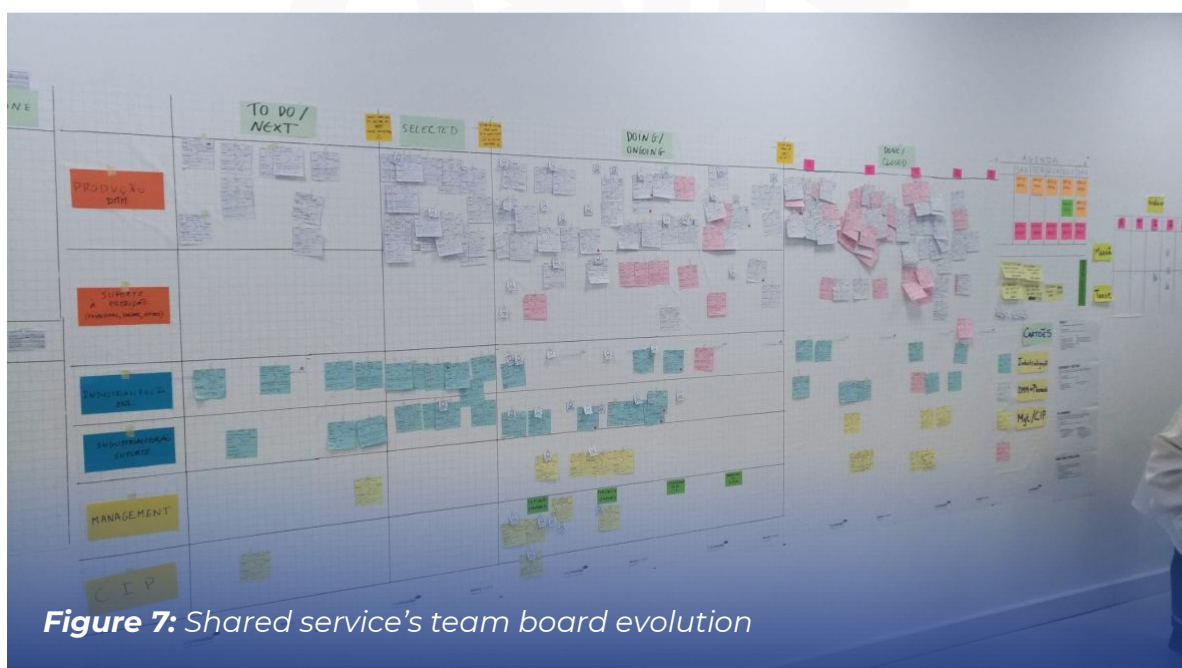
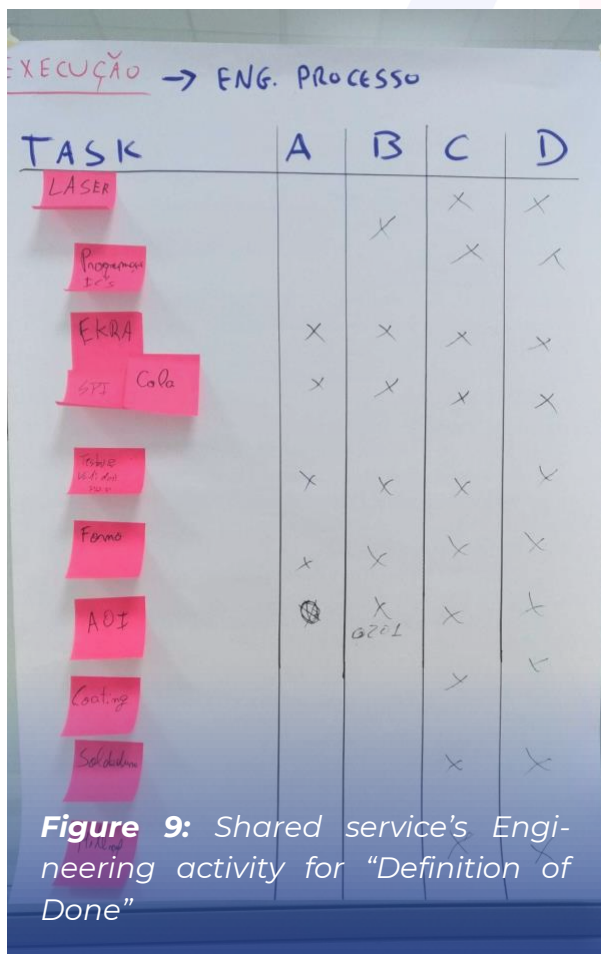
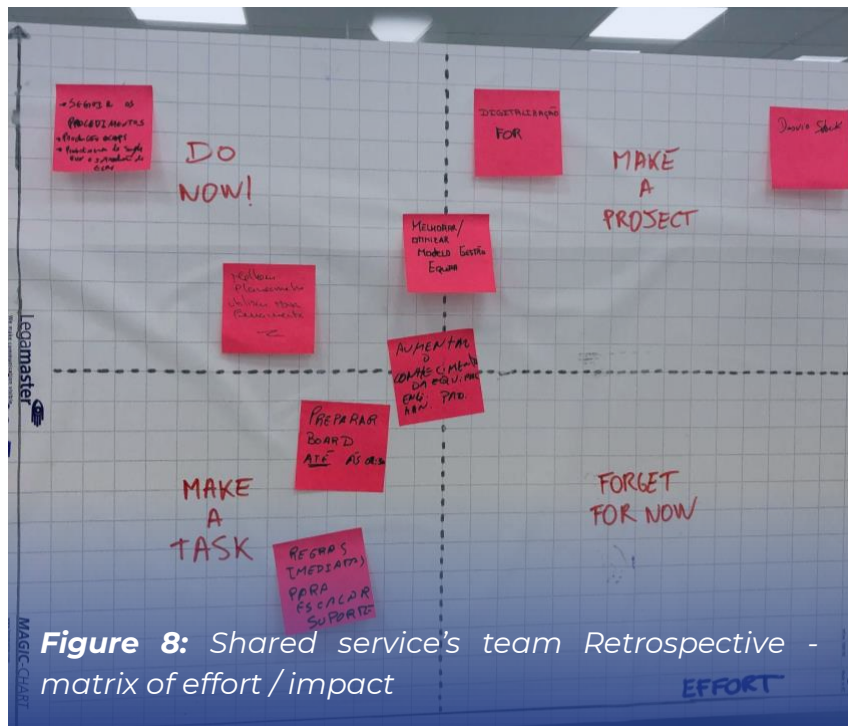


Figure 7: Shared service's team board evolution



While the team was experimenting with several changes and adapting their behaviors, we noticed a lack of shared understanding regarding Industrialization's tasks and respective acceptance.

An exercise helped the team members work on several policies that were the foundations for the “Definition of Ready” and “Definition of Done” needed for each phase of the Industrialization of a new product or version. After transforming the result of this exercise into policies, we noticed a major improvement in transparency and communication. That sole action mitigated several risks undertaken in the past when work was delivered without a clear understanding of the acceptance criteria.

Key takeaways – Shared service's team

Also after almost 2 months of adoption, in terms of the Kanban Maturity Model, the shared service's team reached an ML1 Team-Focused. More than visualization, or managing the flow, this team conquered a voice in the middle of 3 demanding Value Streams, several Production lines, and the chip shortage that was a prominent constraint at the time of this writing.

Besides the Kanban Method, we delivered small courses of Communication and Decision-Making for the team members to learn how these factors are related to the Kanban General Practices and Kanban Principles. Compared to the Security's Value Stream, this team still has several actions points to work on due to the nature of their demand and the dimension of the team:

- + Multi-tasking is still present;
- + Personal WIP Limits are sometimes breached;
- + Metrics about the lead time, blocks, support requests should continue to be captured;
- + A formal Operations Review and Delivery Planning should be adopted;

"We can keep improving with the implemented practices: Daily meetings, clear rules agreed between everyone, commitment with the delivery for the customer and with more aligned expectations and team capacity."

Shared service's team member

The challenges continue. The other 2 Value Streams are the next steps for the evolution of this new way of working at Bosch Security Systems. Besides the local optimization of each team that these 2 initiatives allowed, the ensuing objective is to create a Team of Teams that deliver the best security solutions for the market.



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