# How a Hardware Product Development Company Bridges the Gap Between a Portfolio of R&D Projects and Engineering Operations?

by Kanbanize


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### Industry

Industrial automation; Manufacturer of access automation systems.

### Size

500 employees

Kanbanize users: 100

### Location

Globally (20 branches; over 530 distributors around the world)

**Headquarters:** Schio, Italy

### Specializing in

Producing gate automation systems, automatic doors, and barriers including other hardware devices for access security.

# How a Hardware Product Development Company Bridges the Gap Between a Portfolio of R&D Projects and Engineering Operations?

*"With Kanbanize we have the full project portfolio, we add all activities and services done by the people and everything is linked together. It's a complete environment where everyone knows what to do, why they have to do it, and where it comes from."*

## Introduction

Bft S.p.A is an Italian company specialized in producing gate automation systems, automatic doors, and barriers including other hardware devices for access security. Its business spreads across two main units focusing on access automation for both ***Residential & Industrial***, and ***Commercial & Urban*** solutions.

Bft S.p.A was born with the mission to build advanced solutions, with unique and exclusive features and at the same time simple, usable, close to people. New generation technologies designed to improve everyone's lives: those of installers and users.

To live up to this mission and to be able to better meet the challenges of the market in a fast-changing environment, the company joined the Somfy group in 2004 (Somfy is a world leader in the automatic control of openings and closures in homes and buildings fully integrated in a complete smart-home environment).

Bft S.p.A has always been focused on continuous progress to develop products that are one step ahead on the market. Beyond engineering excellence, this requires agility in project management to ensure the right business priorities are executed, and emerging issues are handled in a timely manner. This led the company to search for an appropriate management approach and eventually embark on an ongoing Lean/Agile journey.

## Initial Challenges

The R&D group, within Bft S.p.A, works on hardware development projects lasting 1 to 2 years, depending on the type of project and degree of innovation. It has around 30 running projects, spread across cross-functional teams (mechanical, firmware, software development, operations, etc). Since hardware product development is characterized by significant tooling investments with high lead times and progressively increasing change costs, waterfall approach is usually the standard in the field. That's why, to manage their complex projects, Bft S.p.A standardized a traditional Stage-Gate process which they used to apply via a Gantt Chart multi-project tool.

Back to 2015, the company started experiencing the limitations of using Gantt charts and Excel sheets for project management purposes. While their existing tools allowed them to plan a roadmap of projects, the connection to those projects' execution across the teams was missing. This was causing difficulties in communicating the most important business priorities and resulted in lack of transparency about what needed to be done and when.

As the project portfolio of Bft S.p.A kept growing, another challenge that they faced was the complexity to manage dependencies. The lack of transparency and connection between the portfolio and the task level created little to no understanding of the numerous project relationships between the teams. As a result, there wasn't a clear structure in the sequence of activities which increased the risk of slowing down the workflow between project phases and ultimately delaying product delivery.

Apart from the above challenges, the traditional approach also created problems in terms of team morale. Strictly scheduling activities and milestones on Gantt Charts without providing fine granularity on the lower-level work details, contributed to high levels of organizational stress. That's because teams didn't fully understand where work was coming from and what exactly was required of them. This top-down approach made engineers feel they didn't fully own their work which decreased their productivity levels.

Despite the company's engineering excellence, the project management drawbacks held them from unleashing their full potential for continuously developing innovative access automation systems. Soon enough, the company's management realized they needed a more mature management model. This is what inspired their first steps into the direction of embracing Lean/Agile ways of working.

## First Steps on the Lean/Agile and Kanban Journey

Bft's main objective was to empower teams and let them work in an effective and efficient way. That's why they started introducing some Lean practices such as visual management, multi-functional teams, decentralized planning, continuous improvement, etc. The goal was to create an environment where information is "radiated" (instead of locked up in Excel sheets) and people have higher ownership of what they do.


*Physical Mechanical Board*

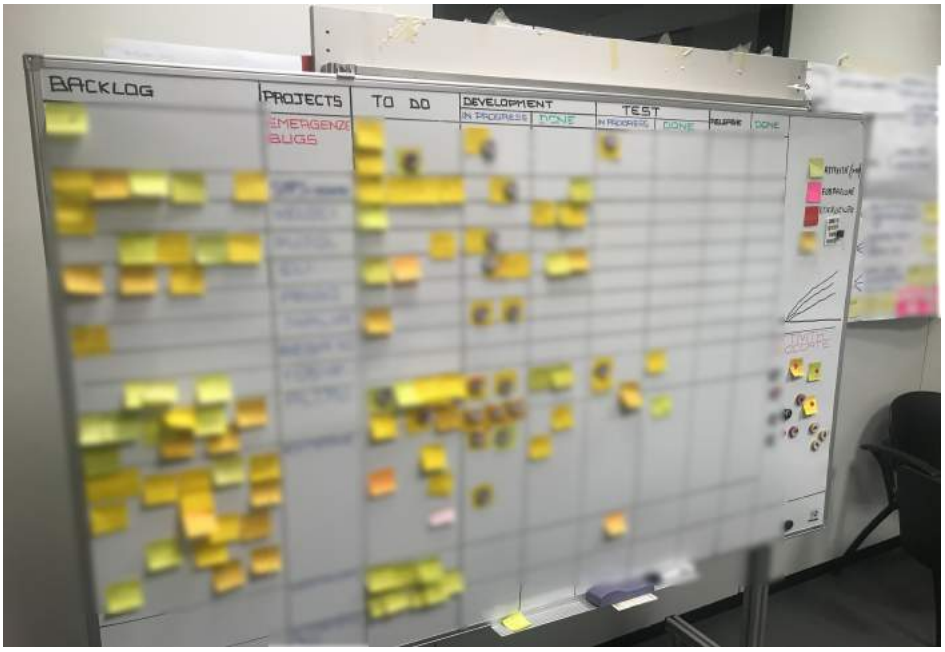
### Introduction of Physical Boards & Lean/Agile practices

To make this possible, Bft started implementing physical whiteboards with "post-it tasks" for product development.
After undertaking Lean/Agile training, they created a Project room covered with Project Boards, visualizing activities on sticky notes for every project's cross-functional teams. A Project Portfolio Board showing the specific workflow was also created.

In turn, the two engineering teams (Electronics and Mechanics) had their own physical whiteboards to visualize their specific work items and manage common services.

For example, the mechanical team decided to implement cycles and organized their physical board around managing work in a fixed time period of a week. In the image illustrated on the left of the document, the board's left side contains the engineering work that needs to be done in the current week. Meanwhile, engineers used the right side to create rough plans of the requested work in the following weeks.

The Electronical team, on the other hand, introduced a more flow-based and Kanban-related approach. They built a physical board with distinguishable steps (ex. Development, Testing), started marking who owns a specific work item with avatars, and integrated pull principles. They also introduced other visualization practices such as defining different classes of services on their board (standard, expedite/emergency) as well as using stickers to visualize their blocked activities.




*Physical Electronical Board*

When talking about blockers, a specific Lean/Agile practice that worked well for Bft was the integration of a “facilitator” among engineering teams. The goal was to have a person with deep knowledge of the process who would attend team’s meetings and help them solve problems. Instead of introducing a new role, the R&D group came to an agreement that technical and service department managers would be a perfect fit for that responsibility. As a result, engineers gained a straight-forward way to escalate process impediments to the right person.

## Limitations of Physical Boards & The Need to Scale Lean/Agile

After the implementation of the physical boards, engineers "unlocked" the visibility of their work assignments from the Excel spreadsheets. However, that was far from enough and Bft soon realized their limitations.

First of all, the connection between everyday operations, middle management level, and project portfolio was still missing. The physical Project Portfolio board was good enough for visualizing the state of the projects in the Stage-Gate process and the main characteristics of each of them but it was missing many essential details such as a clear hierarchy of work. Planning and execution were still done in two separate places (Gantt charts and physical boards) which made engineers unaware of "the bigger picture" and how their work impacts the high-level portfolio.

Furthermore, Bft's product development projects consisting of numerous relationships between teams and the physical boards were limited to managing the work on a single project or a specialist area. This made it impossible to visualize the dependencies between the different projects in the portfolio. Combined with the company's goal to extend the Kanban practices across multiple business areas, Bft realized the need for a digital work management solution.

To help them scale flow and work visualization practices, they started working with the Italian Kanban consultant – **David Bramini, founder of the O-Nami consulting company**. As a result, they achieved a higher level of Kanban maturity and got introduced to Kanbanize, which helps them for project & portfolio management.

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# Accelerating the Adoption of Kanban with Kanbanize

***"With Kanbanize we have the full project portfolio, we add all activities and services done by the people and everything is linked together. It's a complete environment where everyone knows what to do, why they have to do it, and where it comes from."***

-Renzo Renzi, Project and Development Director at Bft S.p.A

Kanban's first principle is "start with what you do now" and the method preaches evolution over revolution. That's why when adopting Kanbanize, Bft started with mapping their existing team processes from the physical boards inside the digital tool. The same thing applies to planning and executing projects through the phase-gate approach. Instead of completely changing the existing model, the Italian manufacturer decided to first visualize it and incrementally improve it.

Still, the company's main objective for adopting Kanbanize was to visualize their growing portfolio of product development projects and connect it to daily team operations. Kanbanize helped them to achieve that through a network of interconnected digital Kanban boards.

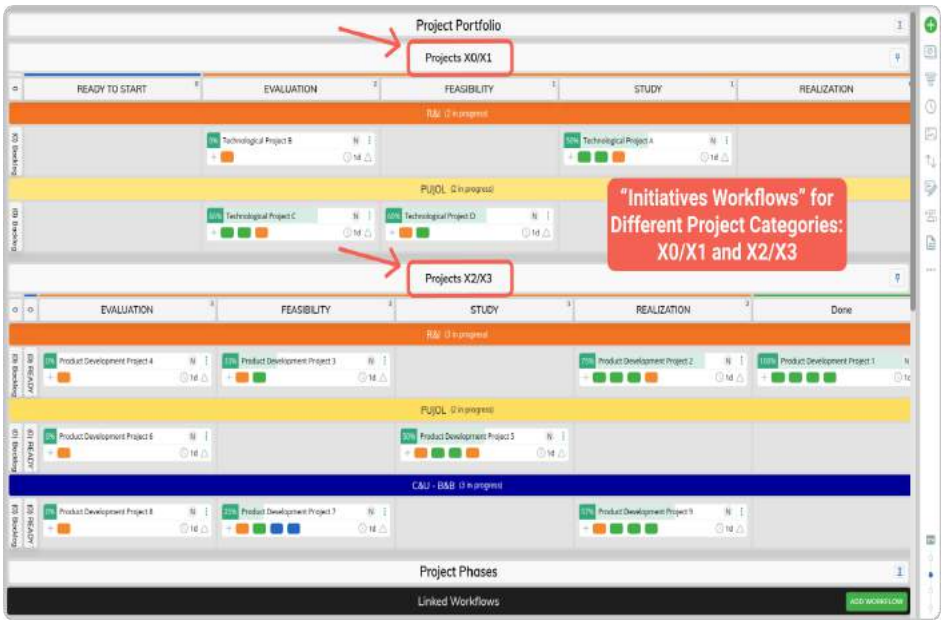
Let's see how that happens in practice.

## Visualizing Project Portfolio on Management Boards

Starting from the R&D portfolio level, Bft applied the **Management boards** in Kanbanize to visualize their network of product development projects.

**What is a Management Board?**
In Kanbanize, users can create Management boards within a Management workspace. The boards represent a central hub where project or portfolio managers can track the execution of multiple projects, products, initiatives, or other big pieces of work across teams.

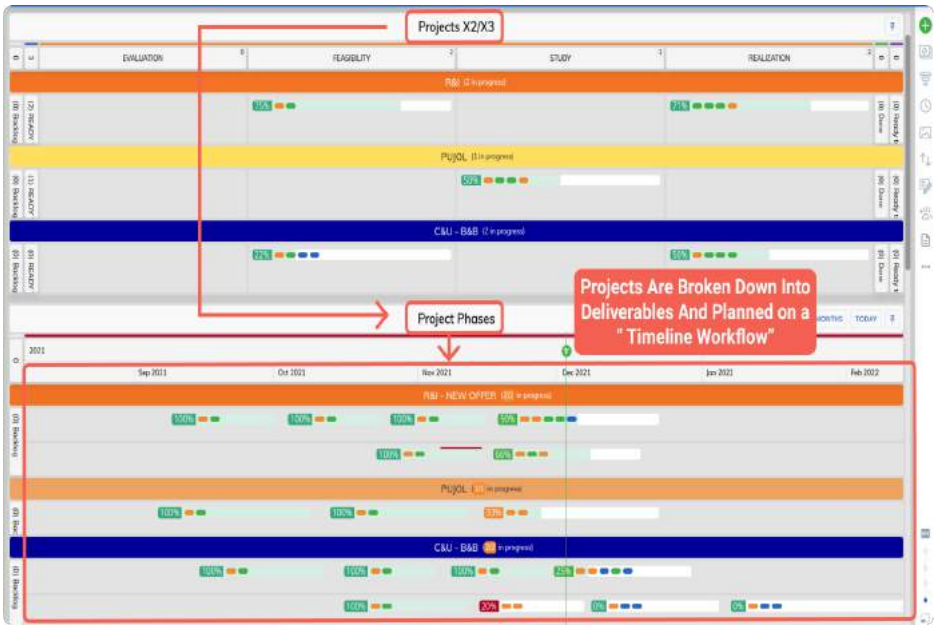
To cover their scenario, the company created an "R&D Projects" board and applied "**Initiatives workflows**" to visualize different project categories.




*Digital R&D Projects Board*

For example, the top workflow "Project Portfolio" is reserved for visualizing the pipeline of high-level projects where the management discusses and prioritizes what should be done. Then, the high-level projects are separated into the following categories: **X0/X1 and X2/X3**. The former is related to building "technological bricks" (architectural elements such as operating systems and databases) while the latter contains product-related projects.

Within each workflow, Bft visualized the current state of the projects (Evaluation, Feasibility, Study, Realization) through Kanban columns. Furthermore, they applied horizontal lanes to separate the portfolio of projects on various business areas (residential and industrial solutions, parking systems, commercial and urban applications, etc).




*Visualizing Project Stages and Business Areas on Digital Kanban Boards*

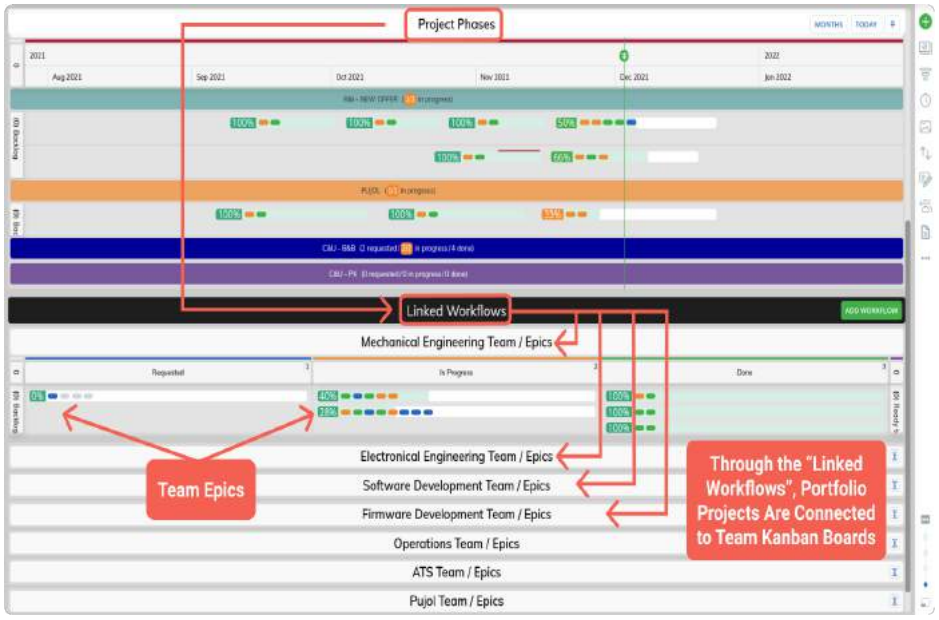
## *Key Results*

Applying the above structure created the R&D portfolio visibility that Bft was looking for. Portfolio managers gained a unified way to quickly see what's currently in development and understand its progress alongside the stages of the hardware product development process. Furthermore, the Management board turned into a central place for discussing relationships between projects which facilitated their flow across the production cycle.

### Connecting Projects to Engineering Operations

The true power of the Management boards in Kanbanize lies within the connection of a project (or project portfolio) with its actual execution across teams. Let's see how that works in Bft.

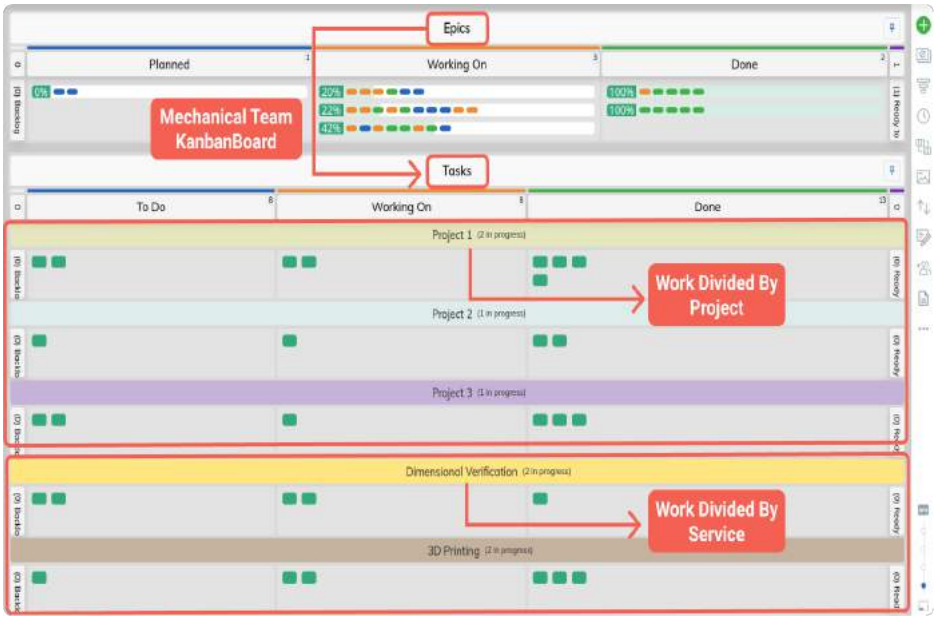
Using the "Linked workflows" feature in Kanbanize, the company's R&D group connected their engineering teams to the central Management board. Those include the Kanban boards of the mechanical, software, firmware, operational teams, and others.




*Breaking Down High-Level Projects into Different States on a Timeline*

Subsequently, every project deliverable from the “Project Phase” timeline workflow is broken down into epics (ex. Mechanical design, Electronical design, Customer Qualification, Certification Tests, etc.) through the **parent-child link relationship** in Kanbanize. Each epic is distributed across the top workflows (Initiatives or Timeline) on the team-level boards where the day-to-day work happens.

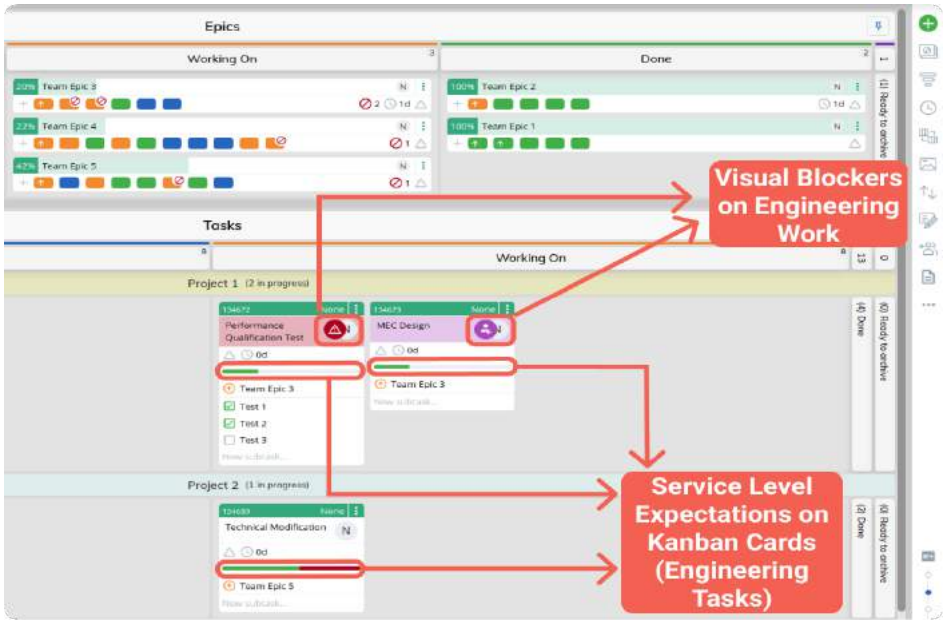
Moving down to the actual Kanban boards, every team organizes collaborative sessions to further break down their epics into the lowest level of work detail: tasks. Again, this is made possible as a result of the parent-child linking structure in Kanbanize. On the digital Kanban boards, every engineer is responsible for its own tasks as they move them throughout the process – from “Requested” to “Done”.




*Breaking Down Projects and Distributing Them Across Teams*

Even though the digital team boards contain simplistic workflows at the moment, Bft applied horizontal lanes within them, to cluster the numerous work assignments based on the projects they’re related to. Other than that, some teams applied the lanes to also distinguish the different types of work services that they provide (ex. executing laboratory tests, measuring mechanical parts, etc.).

In general, the application of the digital Kanban boards gave much more flexibility to engineers. For example, they’re now able to visualize blockers and quickly escalate them to top-level management. That’s because in Kanbanize, once a work item on the team level gets blocked, the impediment is automatically visualized across the structure of interconnected workflows and boards.




*Visualizing Work Blockers and Service Level Expectations on Team Kanban Boards*

In terms of measuring whether a service or small project work item (usually a task) meets its delivery criteria, Bft found very useful the Service Level Expectations (SLEs) feature inside the platform. Engineers started applying it on the "In Progress" columns of their boards with the goal to track whether their current work delivery times were meeting expectations. In the event they were exceeded, project team engaged in collaborative discussions to make informed decisions.

## *Key Results*

The "Linked workflows" in Kanbanize connected the objectives on the portfolio level to their realization across the teams. Whenever a single task or epic on the team level is finished, that is automatically reflected in the progress of its corresponding project deliverable and high-level project. As a result, engineers became aware of the "big picture" in the R&D group and how every single work activity contributes to the portfolio execution.

The ability to clearly see work across multiple teams from a single management hub, uncovered the dependencies between them. Through the linking structure of epics and tasks in Kanbanize, engineers can now understand the relationships between their work items and clearly discuss during project team meetings things like what deliverable they need to get from another team, so they can start their operations or vice versa. This was helpful not just for identifying the company's internal dependencies but also the external ones which include tracking the work of outside vendors, responsible for specific electronics or mechanical parts.

Moreover, the full visibility on the team level, provided engineers the ownership of their work. Kanban's flow practices were spread across more engineering teams than before which allowed everybody to gain uniformity between processes. Specialists became equipped with the right tools to track their blockers and escalate them to the right people.

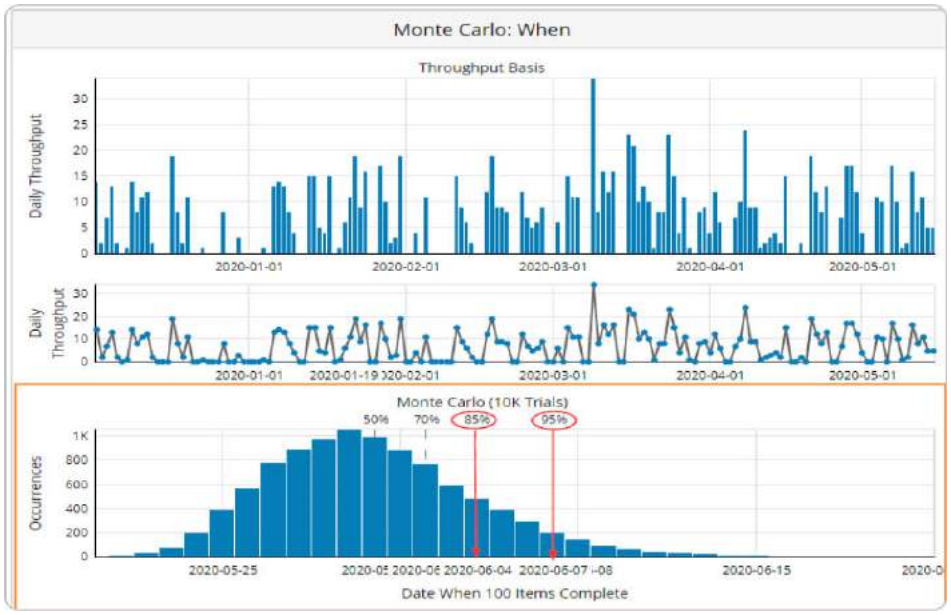
## Next Steps on the Journey and Future Plans with Kanbanize

Talking to the Project & Development Director of Bft **Renzo Renzi**, we found that the company's plans with Kanban and Kanbanize span way beyond portfolio visibility. They're looking to introduce Lean/Agile metrics so they can measure the flow of individual work items as well as entire projects. Their next main objective is to analyze process performance and ultimately reduce lead times.

Luckily, Kanbanize can help them in this area too. The software comes with an extensive built-in Analytics module. As Bft is currently gathering workflow data, they can start using charts for cycle time, throughput, task aging, blocker clustering analysis, etc. to identify improvement opportunities.


*Workflow Analytics in Kanbanize*

Moreover, through the introduction of flow metrics, the company will be looking to make their work processes stable and improve project predictability. The goal is to eventually move from estimating to project forecasting which is a long-term objective and Kanbanize will continue to support them in this endeavor. Due to the progressive collection of historical workflow data, they will be looking to utilize the Monte Carlo simulation and continuous forecasting capabilities in the software to derive probabilities for future project completion.




*Forecasting with Monte Carlo Simulations in Kanbanize*

The variety of business rules in Kanbanize is another area which Bft S.p.A wants to explore with the goal to automate specific engineering processes. Regardless of all the other Kanbanize capabilities, it should be noted that the organization's transformational journey has been a success so far due to the company's sheer commitment to continuous improvement.

After all, this is what Lean/Agile project management is all about.

## Key Takeaways

The adoption of Lean/Agile is neither a one-time endeavor that you can apply and forget about nor a top-down process that you can learn from a book. In fact, it's a never-ending process where the management team must work in a closely coordinated manner and team members must become active players who stimulate continuous evolution.

**That's why Bft's journey continues to this day.**

Still, let's take a look at some of the key results they've accomplished so far:

·Achieved full project & portfolio transparency

·Uncovered complex dependencies between projects, teams, and external partners or vendors

·Standardized engineering processes and built an end-to-end project flow

·Improved team morale and reduced organizational stress

·People quickly adopted the new ways of visualizing and tracking work due to Kanbanize's ease of use.

·Visualized, escalated and removed process impediments in a timely manner

·Started gathering historical workflow data for future improvements

·Achieved fine granularity on the lower-level work items so they can start analyzing process performance and speed up product delivery.

## About O-nami

O-nami supports companies on a path of a gradual evolution of the agility and resilience of their organization so that they can satisfy their customers with products and services designed, implemented, and supplied in a sustainable way. Our commitment is to achieve a real change: no training as an end in itself, but rather a spread of values, principles, and practices that are immediately reflected in new behaviors that generate value. We have a long experience and a concrete knowledge of Lean, Agile, Coaching, and Facilitation.

Our targets are organizations whose business is focused on "knowledge-intensive" activities, in the software industry, product engineering, cutting-edge manufacturing, and services of any kind.

*Find us on:* **https://o-nami.consulting/** O-nami

## About Kanbanize

Kanbanize is the leading Kanban software for agile project and portfolio management. It provides visibility across all projects and portfolios, connects planning with execution, and helps teams deliver faster.

Built upon the idea that all processes evolve, Kanbanize can easily adapt to changes in your organization, regardless of it being a start-up or a fortune 100 enterprise.

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