

Implementation of Kanban Method at Mechrom Industry

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ABSTRACT

Quality is at the top of most agendas, and improving quality is probably the most important task that any institution faces. Using the Kanban method became an effective tool to support running a production system as a whole, and an excellent way to promote improvement. Taking into account the need for quality and the time it takes to deliver the project, such software can help to sort the tasks according to priorities and project progress. Using Kanban digital like Trello can expose both your creativity and organizational qualities in a smart campaign. The aim of this study is to improve the working processes of the entire team and to optimize the existing operations.

1. Introduction

Most of Campagnolo customers are professional cyclists, and their expectations for bicycles are very high, so Campagnolo and Mechrom Industry in Romania are constantly adapting to market demands. Including the wheels, brakes or transmission components, Campagnolo always starts with the premise that each product it projects is primarily a safety device before being delivered as a performance tool. In order to produce components and wheels that are the best in terms of performance, durability and functionality, much has to be invested in both development and testing. Each product, either component or wheel, is designed within Mechrom, then developed and tested inside the mother company, Campagnolo.

As soon as Mechrom Industry produces necessary components, they are sent to Campagnolo, and they are tested in the company's testing departments, which are dedicated departments to support all the developmental stages of the company. This department is equipped with state-of-the-art technologies, some of which have been developed internally to meet the company's technological needs.

Because Campagnolo bikes are designed for professional cyclists, and the needs and expectations are high, the Mechrom Industry is always up to date with customers' needs and is constantly trying to adapt Campagnolo bikes to meet expectations.

In this case, the same Campagnolo engineers developing new products, develop everything that is needed to test the performance, durability and quality of the products.

Due to the desire for continuous improvement, Campagnolo constantly pursues the customers' behavior, new preferences and therefore new products are repeatedly subjected to testing cycles to precisely ensure that the same qualities identified during the design and developmental stages are maintained throughout the processing and the production phases at an industrial level.

In accordance with the declared policy, the overall objectives of the OHSM system are:

- Preventing and minimizing the risks of accidents and occupational illnesses as well as reducing their consequences;
- Permanent adaptation of productive activity to the human factor;
- Ensuring the improvement of personnel and ensuring the conditions for continuous improvement of the level of professional training;
- Ensuring the improvement of the managerial capacity by adapting the requirements of the legislation in force and through improving the information and communication system;

- Ensuring the necessary organizational framework and adequate resources for investment so that it can ensure a steady increase in the quality of OSH activities;
- Implementation and maintenance of a management system for health and safety in the labor market compliance with the requirements of the reference standard.

Based on the overall objectives, the departments, involved in these activities that may have an impact on OHSs, set specific measurable targets.

2. Society and company values

In over eighty years of innovation, quality and sporting success, Campagnolo is a premium brand that preserves its reputation throughout the world. Our long history, which has greatly contributed to the birth and development of modern cycling, is inspired by the innovative spirit, and has become an integral part of our DNA society.

A continuous search for performance and maximum quality, combined with the inherent Italian taste for style and shape, makes the Campagnolo world and its products stand out in all its aspects. Service and customer care emphasize the continued pursuit of excellence, guaranteeing every customer to find an unrivalled ally in Campagnolo's passion for cycling.

Starting with the 1930s, from the first system that allows quick wheel assembly and dismounting, to the first wheel gear and the pre-assembled front wheels, to the new electronic clusters and new carbon wheels, we have defined our passion for the new.

The company has always stayed on this road in this long-running industrial success story: it has always continued to offer something more evolved, performing, and highest quality.

Over the years and throughout generations, this way of thinking and creation has become a kind of natural footprint for their mark, for society and for those working with them.

In the post-modern society of cycling and triathlon, with a long tradition in the Western world, Campagnolo produces components, groups and wheels through two production units located in Romania. Campagnolo products are distinguished with the high technology, innovation and processes used in every stage, from conception, development, and production to testing.

In the 1950s, Campagnolo was the first to introduce the concept of the complete group, then the first company to think of the race bike racing train as a single element, composed of components that need to work together in a perfect symbiosis.

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Today, Campagnolo is present in Romania, in the commune of Maracineni, Argeş county, through Mechrom Industry, known as Mechrom 1, having industrial experience of over 12 years. The second Campagnolo factory in Romania, also known as Mechrom 2, is located in Curtisoara commune in Old County. Mechrom 2, the new Campagnolo production unit, inaugurated in early 2018, includes plenty of new and revolutionary technologies in the field of environmentalism and energy efficiency.

Continuous Innovation of Campagnolo Technologies follows solutions that have led to the miniaturization of electronic components, the introduction of power units into frames and the optimization of changes in both accuracy and speed. Named EPS, Electronic Power Systems, all these systems are proudly produced in the Mechrom 1 units in Maracineni. However, this is not all. Campagnolo is also the first cycling world which introduced the concept of "fully assembled wheel". In the late eighties, Shamal was the first "ready-to-use" wheel on the market, proudly produced in the Mechrom 2 units in Curtisoara.

Today, Campagnolo offers the cycling fans around the world wheels for road bikes in carbon, aluminium and even in aluminium-carbon. Solutions that meet all the users' requirements, ranging from low-profile climbers to high-profile wheels, are designed to optimize aerodynamic penetration and thus to provide maximum benefits under all conditions of use not only at high speed but also in racing or triathlon.

The Campagnolo range is also complemented by mid-range wheels, an excellent training solution or mixed stage if the bike setting requires maximum versatility.

The structure of the OHSM system documentation and procedures are responsible for its elaboration so that accidents are prevented, and incidents and professional illnesses are avoided in its application.

In this regard:

- The standard requirements that are applicable at the company level have been identified;
- The activities that require documented processes and procedures have been identified;
- It is ensured that all departments prepare detailed working instructions on the activities which involve risks for the health and safety of the employees;
- An OSH manual has been developed to record company policy, organization of related functions of OHS and the main processes for occupational health and safety management;

3. Implementation of the Kanban method

Kanban is a scheduling system for lean manufacturing and just-in-time manufacturing (JIT). Taiichi Ohno, an industrial engineer at Toyota, developed Kanban to improve manufacturing efficiency. Kanban is one method to achieve JIT. The system takes its name from the cards that track production within a factory. For many in the automotive sector, Kanban is known as the "Toyota nameplate system" and as such the term is not used by some other automakers.

Kanban become an effective tool to support running a production system as a whole, and an excellent way to promote improvement. Problem areas are highlighted by measuring lead time and cycle time of the entire process and the process steps. One of the main benefits of the Kanban system is to set an upper limit to work in process inventory in order to avoid overcapacity.

A goal of the Kanban system is to limit the buildup of excess inventory at any point in production. Limits on the number of items waiting at supply points are established and then reduced as inefficiencies are identified and removed. Whenever a limit is exceeded, this points to an inefficiency that should be addressed.

Currently, Kanban is not only used in the production of physical goods. The method is generally used in project management to view the workflow and to identify the potential obstacles in the development of a project. However, Kanban is equally effective in other areas or even used to organize personal activities. Forty years have passed since Kanban's invention and many have changed since then, the technology has evolved, and today we live in an era of digitization. So, what if we replace paper and glue with pixels? First, let's see what benefits come with the implementation of the Kanban system in marketing projects.

4. Implementation of the Kanban method

The Kanban system is currently used in the business environment for several reasons:

- It helps you visualize the entire activity of a project in a visual way.
- You can identify and remove any obstacles during the course of the project.
- It enhances team spirit by improving the employee's collaboration and the project success rate.
- It increases the speed of workflow through the transparency of the entire process.

Using this system, you can accurately distribute tasks among your team members and identify unnecessary activities that may be temporarily ignored. Additionally, this method can solve your productivity, concentration, and the time division problems.

In essence, the Kanban method consists in creating tables divided into three columns ("To Do", "In Progress", "Finished"). Job optimization can be done through a table where tasks can be moved from one stage of the project to another until they are finished.

Kanban's primary goal is to eliminate losses by streamlining workflows and to present the activities in a visual way to help identify the potential hazards that can delay the completion of the project.

5. Informational system

An information system can be defined as the ensemble of elements involved in the process of collecting, transmitting, processing information, and giving it the central role in the system. Within the informational system, one can find: the information, the information documents, the personnel, the means of communication, the processing systems (usually, automatic) of the information, etc.

Among the possible activities under this system can be listed: the acquisition of information from the basic system, the completion of documents and their transfer between different compartments, the centralization of data, etc. In the broadest sense, an information system refers to the various interactions between people, processes, data and technologies; thus, the term refers not only to the ICT aspects that an organization uses, but also to how people interact with technology to support business processes.

The information system is an ensemble of information flows and circuits organized in a unitary design. In any area of economic or social activity, there is an informational flow on which any activity is carried out. At the level of an economic agent, the information system provides the link between the decisional and the operational system (management system and execution system); thus, the functioning of the information system implies the following activities: - entering the data on the operational system - processing the data in order to provide useful information in the decision-making process - obtaining the requested information, then making decisions that will be transmitted to the operational system - control and follow-up of decision-making.

Within an information system, most of the activities can be deployed using computing techniques. The primary data can be processed and then the result can be transferred further to another compartment for processing. The transfer can also be done electronically via a computer network.

The set of elements involved in the whole process of processing and transmitting data by electronic means make up an information system. In a computer system, computers, data transmission systems, hardware and software components, processed data, personnel using the computing technique, theories behind the processing algorithms, etc. can be introduced. Informational system-information system report: the information system includes within it the computer system, the latter being an essential component of the first one.

It should be noted that the information system should not be confused or overlapped completely with the information system. In general, the information system is interposed between the decision-making and the operational system. The IT system is a structured set of procedures and electronic equipment that allow for automatic data processing and obtaining information.

A computer system includes the following components: - the organizational framework of the firm and the data circulated in the information system corresponding to the activities carried out; - human resources (the beneficiaries of the system and the specialized personnel who design / implement it) - methods and techniques of computer systems design - hardware for data storage and processing. - software used to achieve the objectives of the IT system.

6. Kanban digital

The classical method of notes glued to a whiteboard is no longer as effective as before. Information can easily be lost and is not easily accessible by the entire team. These are the reasons for Kanban's online variants with the development of technology. A Kanban digital allows you to filter your data according to the criteria you set. So, you can concentrate on those tasks that are really important for a certain stage of the project. In addition, it can help you organize your work without the clutter and chaos of a classic table. Traditional tables do not allow too much personalization. A virtual workspace can be tailored to your exact needs if you want a certain order of tasks, more bold colors, or even images to help you identify activities faster. In fact, what underlying the Kanban method is the simplicity and ease of use that makes it accessible to any user.

The best-known tool you can use to create a Kanban table is Trello. It is easy to use, and it provides a simple interface that can also be used for personal purposes. Kanban tables can be used irrespective of the industry in which you work. Planning is the key element of any successful campaign. Through a digital app, you can expose both your creativity and organizational qualities in a smart campaign. In the following example, you can see a marketing plan made with Trello:

Such an application can be used collaboratively. Thus, all members of the marketing team will have access to the project and will be able to make improvements to it.

At the same time, online platforms allow you to store files directly into your app. This means not only that you can communicate with your team directly on the project, but also that they will have non-stop access to the project files and dates. A properly designed plan gives you total control over your project.

Also, the complexity of the tables does not stop here, you should know that there are also applications that provide detailed Kanban table templates. In general, the projects, involving a high number of employees or departments, can be more easily monitored through a table with an advanced structure.

As a result, you can create a transparent work environment where all employees are aware of the project's status and everything that's going on with it. Thus, all tasks will be much easier to distribute and track, and their day-to-day monitoring will support careful analysis of the parameters needed to resolve the project.

7. Conclusion

Taking into account the need for quality and the time it takes to deliver the project, such software can help you sort your tasks according to your priority and project progress. The focus of our work is to improve the working processes of the entire team and to optimize the existing operations. At the same time, we will avoid the clutter of responsibilities and tasks in order not to overwork your employees. In a project that uses this organizational system, the entire team is responsible for its smooth running. This process can help the team communicate better and avoid misunderstandings to prevent possible mistakes. A task can be assigned to a single employee or can be fulfilled by several members. We have the option of making the entire team responsible for a particular task to ensure compliance with all the customer's standards.

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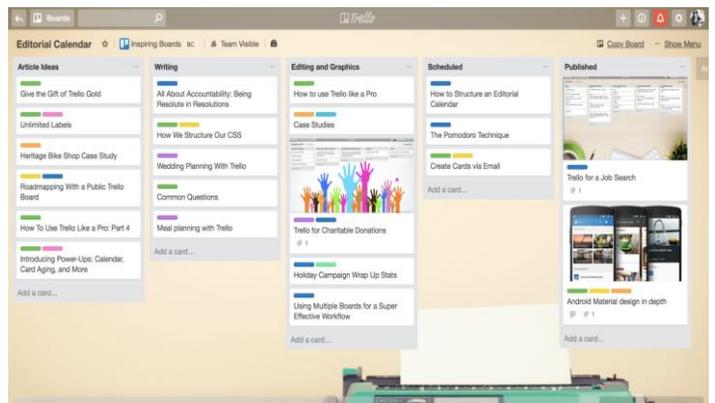
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Source: Internal Documents of Mechtron Industry, Romania

Figure 1. Structure of the OHSM System



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Figure 2. TrelloWorkflow

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