



Industry 4.0 in practice

How Sultécnica reduced inventories and leveraged efficiency using TDM Global Line

Byline Vera Natale

Implementing TDM Global Line software for the cutting tools management led to greater data consistency, reducing 19% of inventory and generating greater competitiveness at the Sultécnica plant in Rio Grande do Sul.

Innovation in the industry goes beyond technology. It involves leadership's strategic vision to restructure processes, train people, establish valuable partnerships, and obtain efficient solutions for the sustainability of the business.

In this sense, Sultécnica is an example of determination and success in recognizing the value of tools management, invariably with positive results and above expectations. This story is a success case worth knowing.

The first wave of Tool Management

Sultécnica's strategic positioning of machining precision parts and not remaining among suppliers of commoditized products has distinguished the company since its foundation.

In 2023, the company is celebrating 35 years in the market, including international awards and satisfied customers. Its team of eighty-three people is committed to the company's focus on adding value to the national and international markets in various segments, such as

agricultural, defense, automotive, and hydraulic.

Innovation and excellence are the basis of this philosophy, which includes the choice of loyal and resolute partners willing to cooperate for a win-win relationship and offering the best technology and expertise.

In 2012, convinced of the benefits a tool management system could provide, they decided to implement the software from TDM Systems, a pioneer company in this niche that coincidentally celebrates its 30th anniversary.

Adeptmec is a specialized company in tool management solutions and has been representative of the German company here in Brazil for almost 20 years. Sultécnica chose them to conduct the project.

The plan covered the registration of tool items and assemblies and better inventory control. Besides that, there were other actions, such as process optimization, which all resulted in significant gains that they managed to eliminate an entire work shift — enormous production savings.

However, about ten years later, the initial team that participated in this project was already different, as well as the context

TDM in use

and the challenges. There was a need to update the software to digitize data and processes. The leadership's support was crucial to turn the game around and make the management system the new old ally.

ADEPTMEC

Our partner Adeptmec has been the digitization partner of Sultécnica since 2012 and helped with the implementation of our tool management system.

Second wave of Management and its consequences

When joining the Sultécnica team in 2022 and learning about the situation, industrial manager Rodrigo Menegatto did not hesitate to request authorization from Joarez Brum, founding partner and president of the company, to update the TDM system. For this, they contacted the Adeptmec team, a longtime partner.

They chose to replace the classic TDM system (TDM ClassiX) with the new solution, the TDM Global Line, which brought the desired benefits and much more:

- ✓ **Standardized registration of all 2D and 3D tools facilitates the elaboration of machining processes, including the pre-set**
- ✓ **Precise monitoring of the movement of this tooling in the production flow**
- ✓ **Mapping the use of tools by process, their tool life, and the estimated period for a new purchase**
- ✓ **Tracking of tooling costs transparently and generation of individual reporting**

In just seven months of work, the new management system has already contributed to a 13% reduction in tooling costs.

The benefits of a central database and data transparency

This new way of managing and accessing data is part of the agile Industry 4.0 ecosystem based on vital pillars, such as connectivity, systems integration, and data analysis, which TDM Systems brings in its essence. "The possibility of having the data integrated and shared with other systems and the ease of viewing these data, in real-time, are points that



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The holistic view of the manufacturing process also made it possible to optimize the use of tools, as data consistency generated transparency, instant visibility, and security for all people involved in the process. This approach eliminated, for instance, the waste of tools that operators could still use until the end of their tool life and not discard them early. "Data transparency manages to make this connection capable of providing process stability. In addition, decisions that used to take hours, with the precise system verification of data, can now be made more assertively and take minutes," says Menegatto.

In this way, implementing the TDM Global Line made it possible to see clearly and quickly, in detail, in a single place, the tools consumption and the use of each one in Sultécnica's processes. The gains were expressive:

- ✓ **Reduction of set-up time by approximately 35%**
- ✓ **Average of 70% gain in tool change time, which dropped from ten to just three minutes**
- ✓ **Decrease 15% in the mix of tool items and assemblies in the pre-set area**
- ✓ **19% savings in tool inventory**

Christian Kübel, Global Director of Channels at TDM Systems, had the chance to visit the Sultécnica plant in the first half of 2023 and had a "very positive impression" of the work conducted by the cooperation of both teams.

New solution followed new challenges

Implementing the new management system resulted in more changes from structural and behavioral perspectives. They refurbished, for example, the pre-set area, including a new physical organization, and installed an automated tool storage cabinet that did not exist before.

There are plans to integrate TDM Global Line with the presetter, Modula cabinet, Tecnicon ERP systems, LiveMES, and CAM NX. The change also came with training for the entire pre-set and process engineering teams, which proved very receptive to safely applying the information networked data offers.

However, all these results that the TDM software solution provided brought the need to map even more precisely the data of the tools, especially those used in larger-volume parts destined for export.

Customized cost per piece report

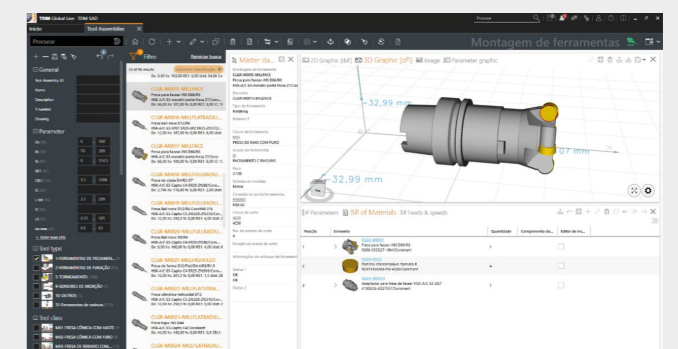
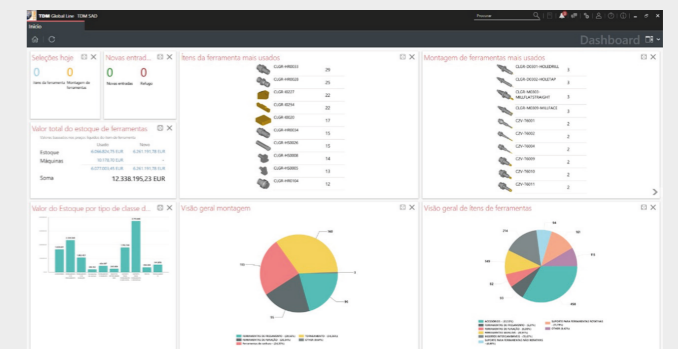
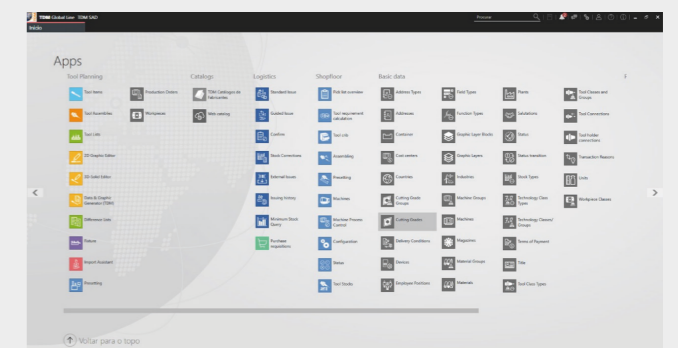
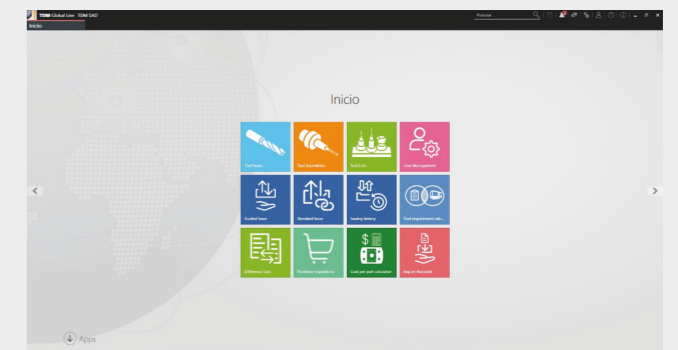
It became evident that the same cutting tool was used, for example, in several processes and, therefore, it was essential to extract more information about which machines and parts were within the planned production cost.

Thus, the need for a personalized and detailed report that could analyze the real cost per part was born. Kübel, from TDM Systems, understands well this need to know the data in detail when it comes to the machining segment: "You need to understand the details of the cutting tool data. It's not so easy to say, yeah, we've got some data here, and we've connected it."

The Adeptmec team embraced the new challenge, locally created the report from scratch, and integrated it into the TDM Global Line to meet the process's particularities in close cooperation with the Sultécnica team. Although challenging, this report added one more positive point to the project and crowned the involvement of both teams in this first stage of adopting the management system.

A continuous learning mindset and innovative spirit

Both teams' union of efforts and skills, such as resilience, dedication, determination, and persistence, motivated Sultécnica to proceed with more changes throughout the plant floor. The following steps encompass all forty-seven machines that currently make up the plant area. It was also evident how the support of Sultécnica's leadership and the



Please see the above prints of screens of the Global Line by TDM Systems with a friendly architecture and interface that facilitates handling.

TDM in use

engagement of the teams had influence on the project's success.

Menegatto has been a Tool Management enthusiast since the beginning of his career. The Adeptmec team considers him the “fuel that stimulated everyone,” even in the most critical moments of this first stage of the management journey. The successful operation of the tool management software only happened because Sultécnica has already consolidated the basic management principles in its culture, such as organization, transparency, collaboration, and the mentality of continuous learning.



Sultécnica team in the new tool pre-set room. From left to right: Rodrigo Menegatto, Volnei Dutra, Joarez Brum and Fabrício Barbosa.



Visit to the Sultécnica plant. From left to right: Tailine Moraes (Adeptmec) is next to Christian Kübel (TDM) and Fabrício (Sultécnica); Pablo de Castro (Adeptmec) is close to Rodrigo Menegatto, who manages the factory.



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Rodrigo Menegatto
Plant Manager at Sultécnica

Pablo de Castro, sales executive director at Adeptmec, thinks of the president of Sultécnica as an innovative businessperson. The reason is that years before, he had already realized the value of management in optimizing processes increasing Sultécnica's competitiveness.

“For me, Joarez is a visionary businessperson, always ahead of his time, always studying, always understanding the potential of the solution and these management changes. He was our ideal ‘sponsor,’ as well as his entire team,” he considers.

“One of the next steps is to introduce new production sequencing to increase set-up gains, obtain even more improvements in processes and machine efficiency,” summarizes Brum.

Finally, adding up the years of existence of the three companies, we have about 90 years of experience and work in the metalworking environment in favor of operational excellence to offer better and innovative solutions to the market. Information transparency and solid partnerships have always been the basis of it.

It’s all about people who are enthusiastic about what they do!