



SPEAKERS

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DIGITAL TRANSFORMATION AT PIRELLI

What?

Over the past few years, Pirelli focused its strategy on digital transformation, making it the key for the company's future. Using data analysis and smart manufacturing, Pirelli is trying to optimize its processes through the use of algorithms and data.

Focus on smart manufacturing ?
Smart manufacturing could be described as a way to control the resources and production processes within the factories. Data is the central element of these new factories. It could be analyzed to help decision-making.

The use of data in Pirelli addresses several needs. First, it covers real time production by identifying outliers, issues and trends in the manufactures. Then, it allows the development of predictive maintenance systems within the factories deploying models that can forecast product quality. Finally, as evoked before, the data department focuses on how processes and production could be improved. It targets the hazardous elements of the manufactures and tries to identify alternatives that could help reach performance requirements.

The use of data in production lines allows:

- Traceability of the processes and the products and the process and ease the link with value creation
- Predictive logics by using AI models.
- Production optimization
- Continuous Improvements: especially in production efficiency, sustainability and agility. It reduces the time-to-market and reinforces Pirelli's hegemony.

Who?

At the beginning, there were two teams with two different visions:

- BI/ Reporting
- Data science (DP, ML, IA...)

To avoid the conflicts, they decided to unify those 2 departments into a unique division : the data Management

INTRODUCTION

Pirelli is a multinational tyre manufacturer based in Milan in Italy and founded in 1872 by Giovanni Battista Pirelli. It has 19 manufacturing sites all around the world and a network of 14 600 retailers.

Pirelli is focused on the consumer business, producing tyres for cars, motorcycles and bicycles. Basically, 93% of Pirelli's revenues come from cars. However, Pirelli stands out from the crowd by producing premium quality products focusing on customer satisfaction. The idea is to co-design specific tyres for car makers.

Indeed, Pirelli's business model is based on its partnerships with significant car makers such as Mercedes, Alfa Romeo, BMW or Ferrari. Every time one of this company is designing a new car, a specific tyre is imagined for the model for answering the performance needs. These partnerships set the demand and Pirelli's market for 10 years and give, therefore, a competitive advantage over the competitors.

How?

The use of AI and DL have been developed within the company. It has been splitted into three stages. They :

- start with reporting: AI and DL are kind of an evolution of reporting. Every company starts with reporting. Then they analyze the KPI and monitor them. Evolution is to predict and simulate.
- analyze the KPI's
- monitor the KPI's

The data lake is the base to guarantee a single view for reporting and Machine Learning applications. It is a very useful solution to stock the data.

Analyzing the data and the KPIs needs to take in account the value creation as a main priority. It conducts to:

- A bootstrap phase: we understand the problem with stakeholders
- A PoC development in 2 weeks
- A result checking: If something okay was found, the team and the stakeholders, try to challenge the model through iterative development. The idea is to design and reach the final objective with data and stakeholders.

Agile method and its processes (Product Backlog, Sprint planning, sprint backlog, daily scrum, sprint reviews) are used to conduct the iterative development.

Pirelli's team also uses design thinking phases to:

- Challenge
- Make a map and choose a target
- Decide
- Build
- Test.