



CASE STUDY

Industrializing Additive Manufacturing for Critical Parts

Structuring of Flows and Complete Traceability With TEEXMA

Project Duration

2025-2026

Partner

Bassetti Group

Application Fields

Production of spare parts and critical components

Technology

Artificial Intelligence

OBJECTIVES

To structure, trace, and industrialize additive manufacturing at the organizational level.

BACKGROUND

As pressure continues to grow regarding the availability of equipment and the management of spare parts, one major energy infrastructure operator has undertaken a strategic shift toward additive manufacturing.

The objective: To produce complex parts on demand, reduce supply lead times, and secure operations.

The move from one-off initiatives to structured industrial production creates significant challenges, however, particularly in terms of data management, reproducibility, and traceability. Here, the ability to qualify parts while ensuring compliance and capitalizing on knowledge becomes a key factor for success.

THE CHALLENGES

Several operational barriers hindered the industrialization of additive manufacturing:

1. *No structured flows for manufacturing requests*

No formal channel had been put in place to receive, prioritize, and track printing requests between departments, which limited the visibility of ongoing requests.

2. *Dispersed technical data (materials, parameters, histories)*

Scattered technical data sheets, validated printing parameters, and production histories made reproducibility dependent on individual memory.

3. *Lack of continuity between design, production, and quality control*

Fragmented information flows between manufacturing cycle stages hindered the complete traceability of a part's history – an essential requirement for qualification.

4. *Difficulty capitalizing on skills and feedback*

Validated configurations, feedback, and design rules had not been centralized, leading to repetitive iterations and preventable delays.

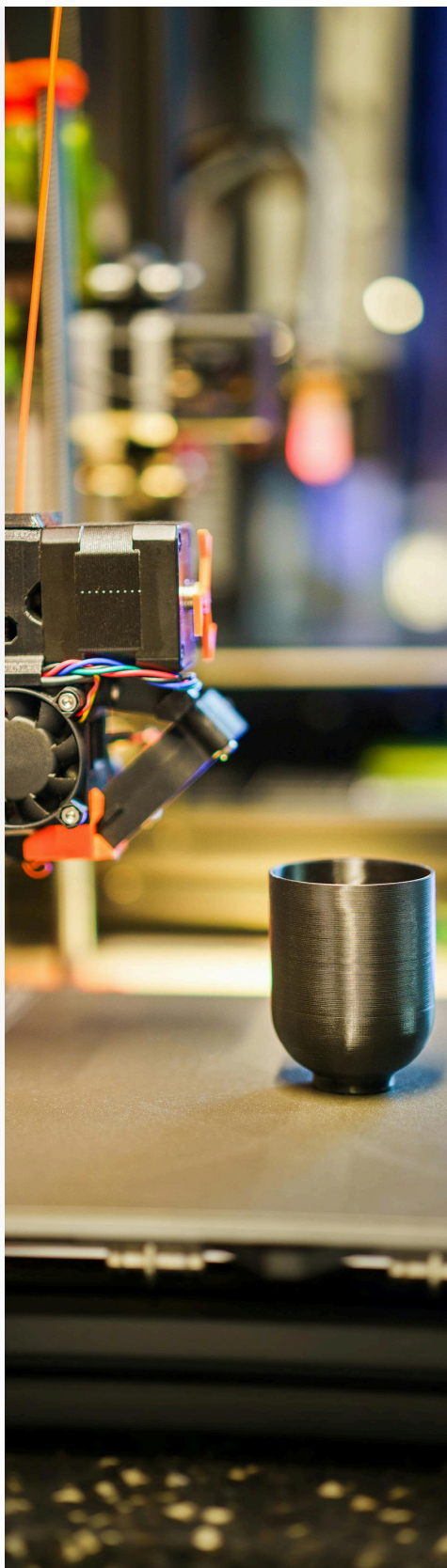
Consequences: Extended lead times, production variability, and slower operational maturity in additive manufacturing.



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THE SOLUTION

To address these challenges, the organization launched TEEXMA for Additive Manufacturing, a centralized data and process management platform.

The approach involved the creation of a Digital Warehouse that could structure the entire manufacturing cycle:

- The centralization of technical data (CAD, parameters, materials)
- The structuring of requests and production flows
- The implementation of complete traceability, from raw materials to finished parts
- The interconnection of equipment and the automation of data collection
- The capitalization of knowledge (validated configurations, feedback)

This solution was quickly put in place and adapted to internal processes that lacked any specific development, which facilitated its adoption from the outset.

THE RESULTS

The creation of TEEXMA led to a progressive and structured transformation of additive manufacturing operations.

Among the main results that were observed:

- Reduced processing times for manufacturing requests
- Significant improvements in parts compliance and traceability
- Fewer time losses involving data searches and validation
- Accelerated production and decision-making cycles
- Improved reproducibility of critical parts

For example, data centralization significantly reduced the time required to trace the complete history of a given part – a step that had previously been critical for qualification.

The teams also reported improved collaboration between departments and faster maturity growth regarding additive manufacturing practices.

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OPERATIONAL BENEFITS

The structuring of data and processes generated lasting gains beyond the immediate results:

- Improved reliability and quality regarding manufactured parts
- Fewer information management errors
- Optimized production processes
- Improved capability when qualifying critical parts
- Faster transition toward industrialized additive manufacturing

SCOPE AND APPLICATIONS

The challenges encountered throughout this project were in line with those faced by several industries seeking to industrialize additive manufacturing:

- Energy
- Aerospace & Defence
- Heavy Industry
- Automotive
- Industrial Maintenance

The approach provides the ability to move from exploratory additive manufacturing to controlled, traceable, and scalable production based on well-structured data and process management.



CONTACT

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