

Case Design Sheet



1. CASE DESCRIPTION

Implementation of a real time monitoring system of machine performance.

PARTNER
AFIL

LOCATION
Italy, Lombardy

TIME/DURATION
Solution Implemented

2. DIGITAL TRANSFORMATION CHALLENGE

2.1. BUSINESS TRANSFORMATION

Industry: Machinery

Company C is a SME operating in the manufacturing industry, in particular in the design and manufacture of machines and modules for the automatic assembly. The machines integrate mechatronic solutions such as robots, vision systems and mechanical processing. Company C develops tailor – made solutions for several industrial applications.

2.2. CONCEPTUAL TRANSFORMATION

At the starting point the systems used to monitor the performance of the machines were almost non-objective as well as not automatic with issues in terms of operational efficiency. As a result, Company C has decided to introduce a real time monitoring system of machine performance.

2.2. TECHNICAL TRANSFORMATION

Starting from the mentioned gap, Company C has developed a new system able to monitor the machine performance in real time as well as assessing the performance at the level of production indicators such as quality, reliability and efficiency.

The monitoring system has been developed based on the modern web-based technologies and responsive layouts.

3. SOLUTION

In line with the depicted conceptual and technical challenges, Company C has implemented – as a first step – an analysis of the characteristics of the existing solutions in order to interface the signals already detected in the machines and those that were needed to develop the real time monitoring and diagnostic algorithms.

More in the detail, the software and hardware solution consist of 3 components: i) a Communication gateway i.e. a software able to realize the dialogue with the machine allowing the gathering of useful data that are then

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communicated to the Server; ii) A Server Linux with Application Server Django and iii) a Client application, realized through HTML5 technologies and JavaScript support.

4. KEY SKILLS AND COMPETENCES

The implementation of the solution has required a set of skills and competences related to:

- ✓ Software Tools
- ✓ Programming Languages
- ✓ Data Analytics

5. RESULTS

The main achieved result was a system able to allow the remote monitoring of the operating status of the machines through PCs, tablets and smartphones thus allowing a real-time assessment of the machine operating conditions.

6. CONCLUSIONS AND RECOMMENDATIONS

The proposed industrial case has shown how Company C has been able to achieve either operational as well as economic benefits through the implemented solution. The advantages were mainly related to the possibility to provide a timely intervention in case of failures of the machine thus reducing downtime.

7. REFERENCES

8. APPENDICES

No appendix