

DIGITAL DATA COLLECTION AND VISUAL PROGRESS PRESENTATION OF BM BUILDING INDUSTRIES ANALOGUE PRODUCTION PROCESSES

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1. Why use data?

Most production companies have over the last half-decade been a part of a new industrial revolution called “Industry 4.0”. Where some companies have embraced automation and the big data opportunities that have followed with it. For some companies, the adoption of digitalization and from there the collection and use of data has been easier than for others. Larger and more advanced enterprises have already adopted digitalization and automation to a large degree, but for smaller and less advanced companies is not as straightforward.

For a company as BM Building Industries to use data for data analysis and production overview by data visualization, the data must be created since it does not exist. Contrary to automated productions where the data has been collected by sophisticated equipment and only must be extracted, for a company like BM Building Industries the data must be created. It is this creation of the data which will be undertaken through this article.

2. Data visualization

Data visualization refers to the visual representation and display of data. The importance of data visualization comes as it helps the human mind to process and understand data. How clearly the data is communicated to the recipient, depends on showing the right data and the right amount of it, the use of shapes and colors.

The use of data visualization in industry can be used to support faster decision-making, and furthermore, base the decisions on data. It will enable a real-time overview of the production, to be used by personnel, but also give the rest of the company an overview of where the production is at, thereby establishing easy and faster communication between departments. The data visualization will showcase trends and abnormalities like bottlenecks.

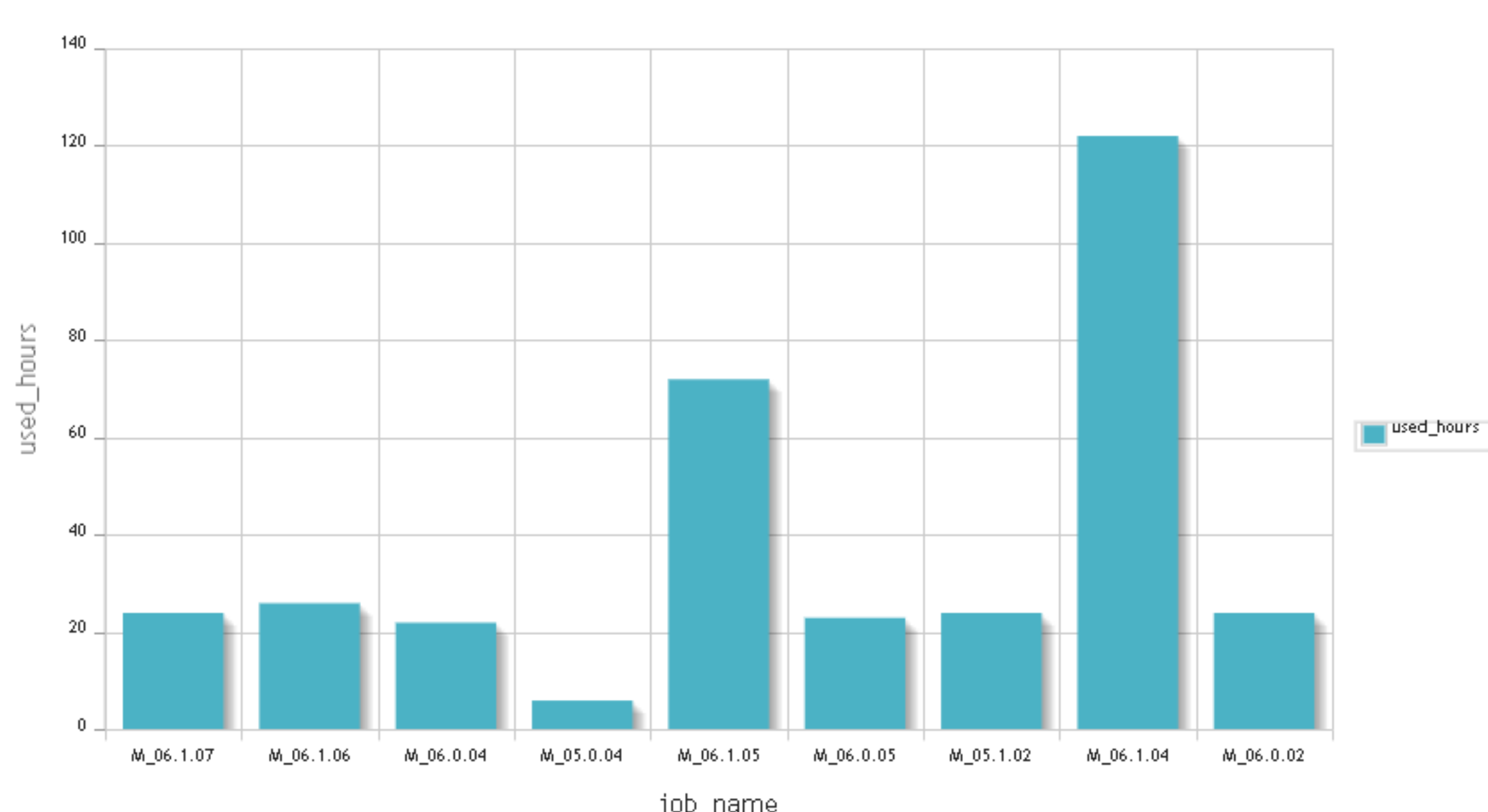


Figure 1 – Visualizing progress of analogue processes

In the case of BM Building Industries A/S, the wanted information was cycle time, process times and production costs. The production costs KPI would improve BM in the sales process for future projects, since a badly estimated production cost, would lead to the wrong pricing of projects. The process time and cycle time are interesting values for the company, since estimated production completion times can be calculated for future projects. This allows BM Building Industries A/S to predict with better precision when a project can be delivered. As seen in Figure 1 the collected data showcases the uses time for an analogue process within the production. Based on this data, assumptions and decisions can be made, and KPIs can be calculated.

3. Data collection

As the data collection is happening through the employees, the successful implementation is highly dependent on the individuals in the production. Therefore, a large emphasis was laid on managing the change and the individuals in the development of the implementation approach. Since the data does not exist currently, it must as mentioned be generated by the workers. This is done through a developed system called Maprova, which allows the workers to enter their status.

The first implementation of Maprova was carried out in a small part of the production facility. The result was a successful implementation where 12 employees ended up with the desire and ability to use the system daily. With an average status registration from the employees of 21 per day, the implementation has deemed a success. The number of status registrations in the system following the implementation is illustrated in the following figure:

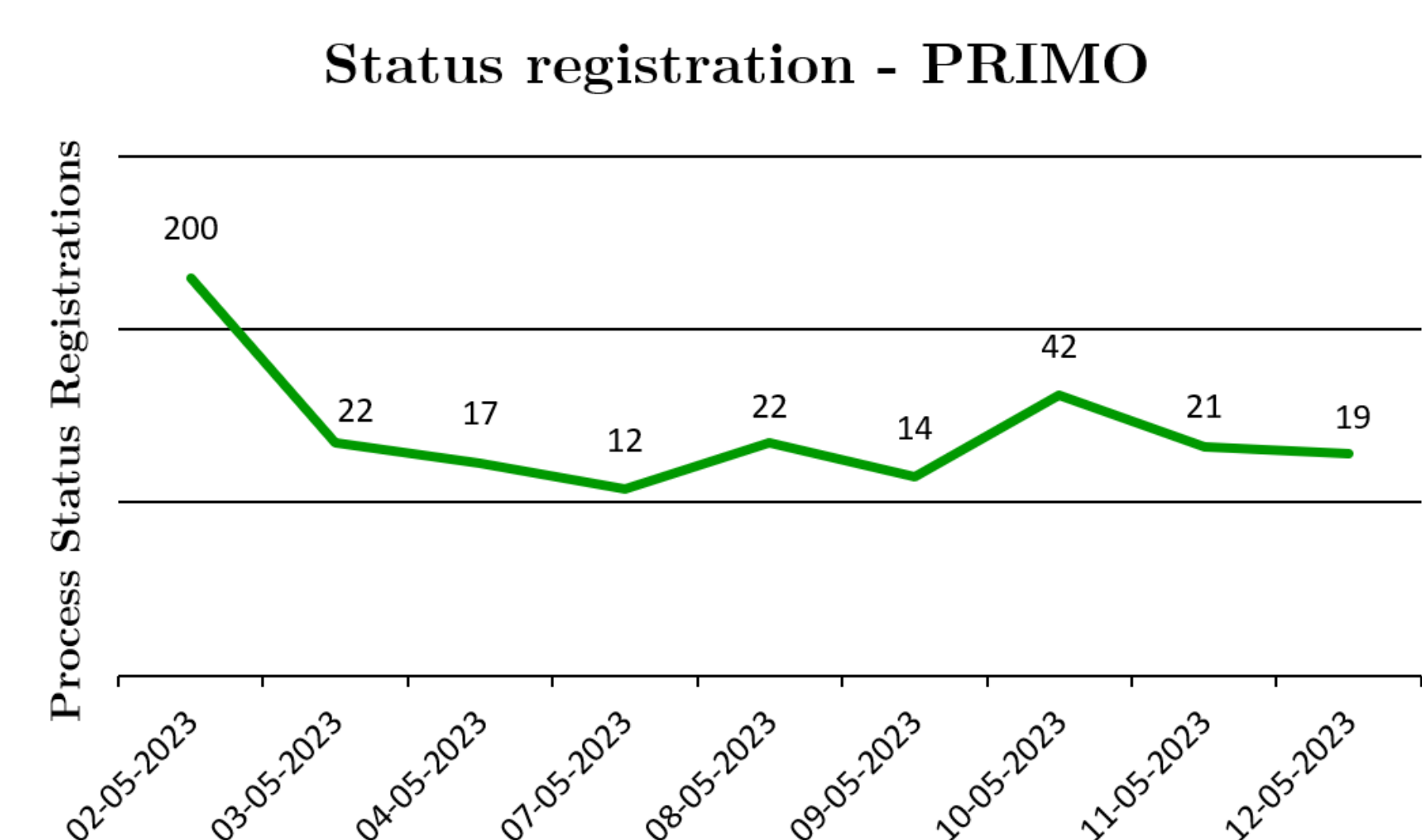


Figure 2 – Status registration at initial implementation

4. Conclusion

A system facilitating the collection and visualization of production data has been developed and successfully implemented in now six production facilities BM Building Industries A/S.

BM Building Industries A/S have voiced that they are very pleased with the system, the functions it provided and the values it has given and has the potential of giving in the future. It is expected that the system will be implemented company-wide within the next month.

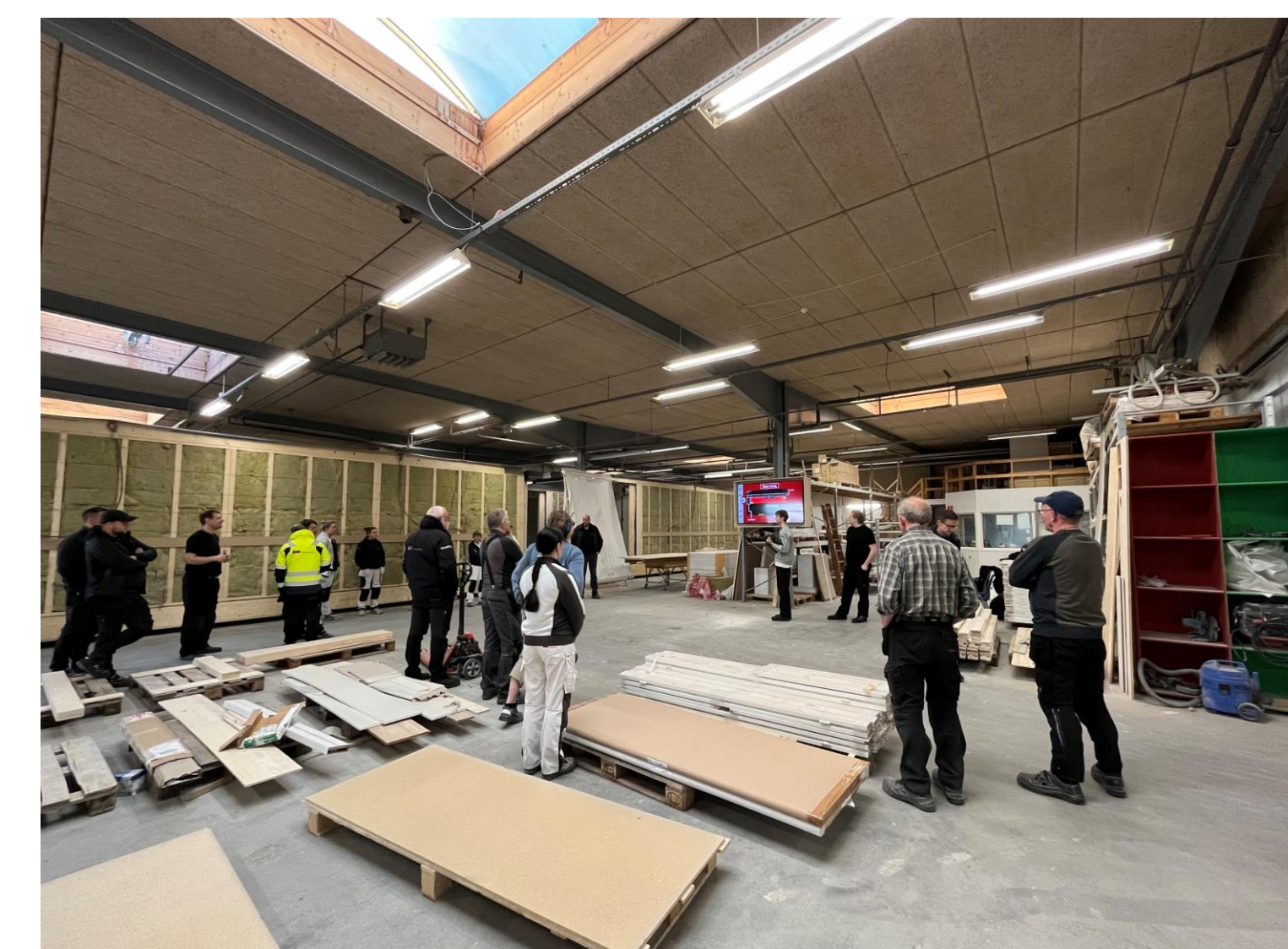


Figure 3 - Implementation at BM Building Industries A/S

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