



 **INDUSTRY**

Whitepaper

Implementing a Digital Manufacturing Platform in Your Factory: a 5-Step Approach

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Introduction

Manufacturers regularly approach us with questions about how they can integrate a digital manufacturing platform in their factories. Implementing a digital manufacturing platform is indeed a complicated process. There is a plethora of things to consider before you end up with a platform that suits your needs, and integrating the platform in a live factory environment carries its own considerations and problems. As it is easy to get lost in details and not see the big picture, implementing a digital manufacturing platform can seem like a daunting task.

This white paper was written with the aim of providing manufacturers with a clear and structured roadmap of the process of implementing a digital manufacturing platform. It consists of five successive steps, starting at a preliminary planning phase and ending up at the point at which the integrated platform can start contributing to a factory's improvement efforts.

These steps weren't born out of thin air; they are based on several years of experience in implementing our own digital manufacturing platform in large-scale manufacturing operations. We are confident that they form the most effective and intuitive path a manufacturer can take toward successfully integrating the platform of their choice.

1. Defining your goals

Digital manufacturing platforms have a wide range of possible functionalities. It is therefore paramount to define which goals you want to attain before you approach a platform provider. At this stage of the implementation process, your goals do not yet have to be defined in a detailed manner; having a general idea about what results you would like to see, is sufficient.

Common goals are:

- Increasing OEE
- Improving labor satisfaction
- Going paperless
- Improving productivity

When you've set up your list of goals, you'll be able to think about which functions you would like the platform to have. If your goal, for example, is to improve labor satisfaction, the platform should be user-friendly and have the ability to integrate workers' tools.

Doing a market scan

At this point, you further define which strategy you will take toward implementing a platform. This necessitates the involvement of people from IT, who are aware of your current IT structure and consequently know what kind of platform best suits your manufacturing operation.

You'll also have to decide if you want to make a platform from scratch, or buy a commercial off-the-shelf (COTS) platform. Although buying a COTS platform has various benefits, there are also some downsides to them you have to consider.

Pros of COTS platforms

- High standard
- Quick implementation
- Flexibility
- Access to the experience of other users

Cons of COTS platforms

- Permanent attachment to a platform and its supplier (vendor lock-in)

Fleshing out the platform's requirements

It is now time to think about how you are going to use the platform in practice, and which workflows you want it to have. It is very much recommended to get a global manufacturing team involved at this point, as it is necessary to compile and compare the use cases of other factories. If it turns out several factories have similar use cases, you'll be able to design the platform's workflows so that they can eventually cover your manufacturing operation on a global scale.

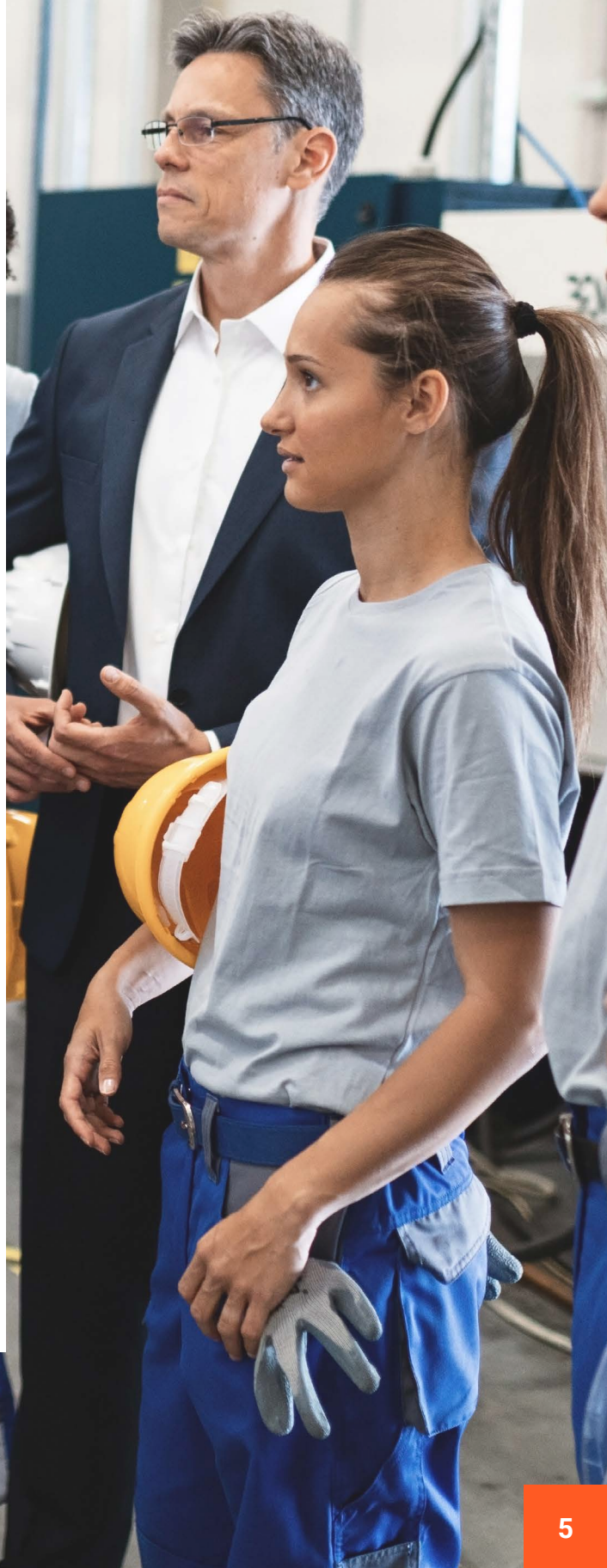
DECISION MAKING CRITERIA


read more

Decision making criteria

Having done all of the above, you'll be able to select and source a platform. To make the process of choosing a platform easier, we've set up a concise list of decision making criteria to be attentive to.

1. *Functionality fit*
Does the platform cover the use cases you compiled?
2. *UX*
Is the platform user-friendly?
3. *Technical fit*
Does the platform fit your IT architecture?
4. *Scaling fit*
Is it easy to implement the platform in other factories?
5. *Price*
Are you going to finance the platform in a single payment, or by subscription model?
6. *Maintenance*
Is it possible to maintain the platform yourself, or do you have to outsource maintenance to the provider?
7. *Implementation*
Is it complicated to implement a platform?
How long will it take, and how many people need to be involved?
8. *Value of Added Services*
Are there any added services a provider offers that could further guarantee the success of the platform?



2. Designing and managing your existing IT landscape



You've now chosen a platform provider or decided to create a platform yourself. In this step, the platform's functionalities and technical aspects are designed.

Functional design

First of all, an outline is made of the configuration the platform will have, and of the processes and workflows it will cover. A platform provider will often do this for you. When making a functional design for a customer, we at 4Industry firstly map the way work is currently done in their factory. Then, we design how work will be done in an improved fashion after the platform is implemented.

Technical design

After the blueprint of the platform's functionalities is ready, the platform can be set up to carry out those functionalities. This entails configuring and applying all of the components it needs to have, and discarding those that are unnecessary. The platform now shifts from something that just exists on paper, to something that can be used in a live factory environment.

Start with mapping out the way work is currently done

3. Successful implementation

The design stage is completed, and the platform can now be used on a small scale. The following factors should be taken into account to ensure everything goes well in this preliminary phase.

Getting the right stakeholders involved

It is crucial that the following people are involved in the implementation process:

- Factory leadership
- Central teams like functional management teams, pillar teams, and global manufacturing teams
- Local factory users, both workers and staff

Leadership are the great motivators: they promote and support the implementation of the platform, and keep everyone enthusiastic about it. They have a vision of what improvements a platform will bring, and they share that vision with everyone involved. Central teams assist in implementing the platform in a standardized way. They ensure that the platform will not be just a localized entity, but something that encompasses a manufacturing operation integrally. Then there are groups of staff and factory floor workers, who give essential feedback as to how the platform can be modified to perform better in practice.

It is critical that the eventual configuration of the platform is not based too much on the opinions of these preliminary user groups. Although feedback should obviously be taken into account, it is important to adhere to the functional and technical design, and not misshape the platform based on individual opinions. Remember: the platform will ideally be used factory-wide, or even globally. It is therefore

critical to not divert too much from the central strategy set up in the previous steps.

Using the platform for the right amount of time

We recommend initially using the platform for 3 to 6 months. In this time, people can get used to working with the new platform, while they at the same time start to understand its benefits.

Clear training and instruction

It is essential that workers fully understand what is expected of them in this trial phase. Operational management should instruct them how to use the platform, and they should be attentive to their feedback. The work users have to do with the platform should not be too simple, as that simplicity will not correspond to the complexity of the fully integrated platform, which may cause them to feel cheated.

Correct governance

There should be a tight, committed partnership between provider and customer. It's the provider's responsibility to correctly inform their customer about the platform. They should furthermore make a customer enthusiastic about implementing it, as the platform's implementation will never succeed if a factory's leadership is not fully committed.

Carefully planning an expansion strategy

It is important to carefully plan out how you want to unroll the platform factory-wide. Our advice is to start with a single production line, and then to slowly increase the amount of production lines the platform is integrated with. The following things should also be taken into consideration:

- Which production lines you start implementing the platform in
- How many production lines the platform should eventually be implemented in
- How long it should take before the platform is fully implemented



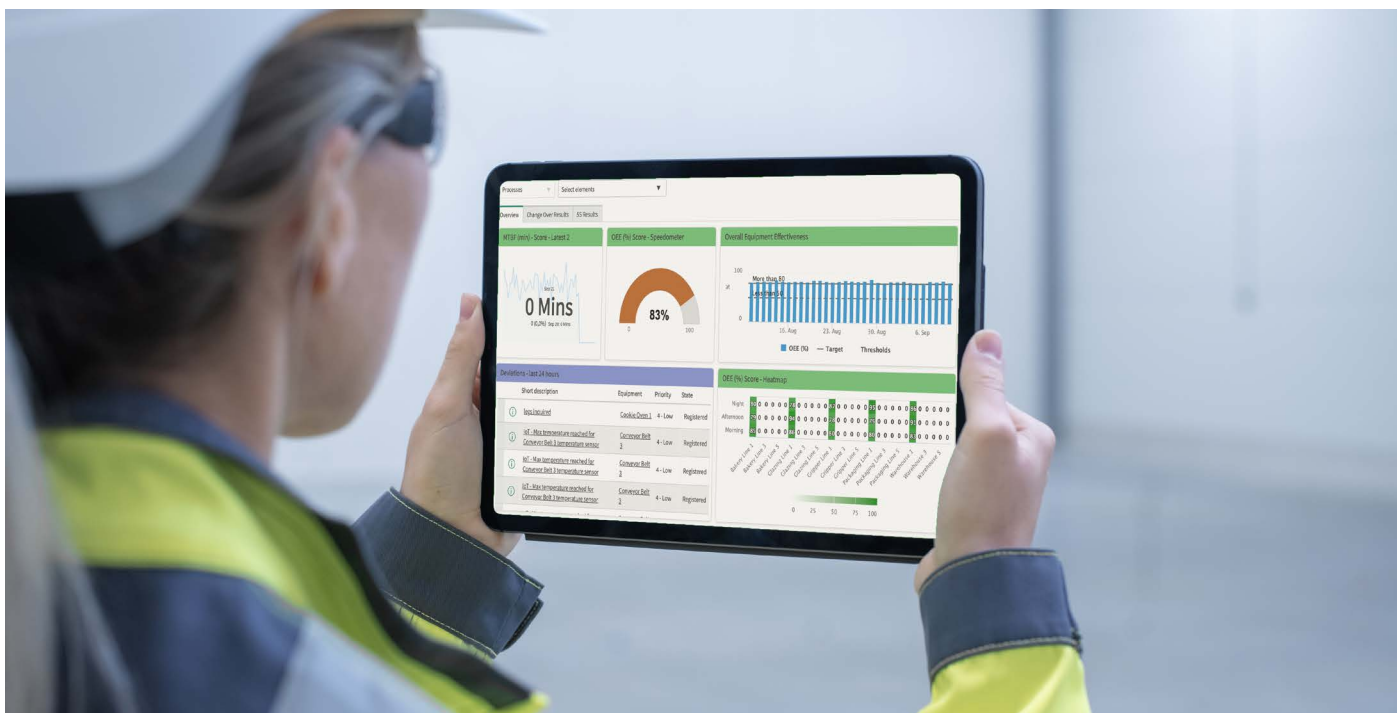
4. Encouraging workers to continue using the platform

The success of a digital manufacturing program is not guaranteed after its implementation. Workers have to be actively stimulated to continue using the platform during its implementation. Gamification can be a great way of maintaining their enthusiasm.

Competition breeds participation: adding a competitive element to the platform can help increase engagement with it. Industry's platform can, for instance, send employees a notification on who did the most deviation reports in a particular week. Workers who rank the highest are rewarded for their efforts with a small prize, such as a voucher for a free dinner.

Using a digital manufacturing platform can be difficult at first. It is therefore essential during this phase that factory leadership and change management actively stimulate workers to keep using the platform. They should make it clear to the workers that the platform is going to make work easier for them, and encourage them to push through, despite the frustrations they might have.





5. Improving performance

When the platform is entirely implemented, managers can start improving its efficiency. This is the stage at which the platform starts contributing to a factory's improvement. It is therefore important to be aware of the ways in which you can optimally reap a platform's benefits.

Success coaching

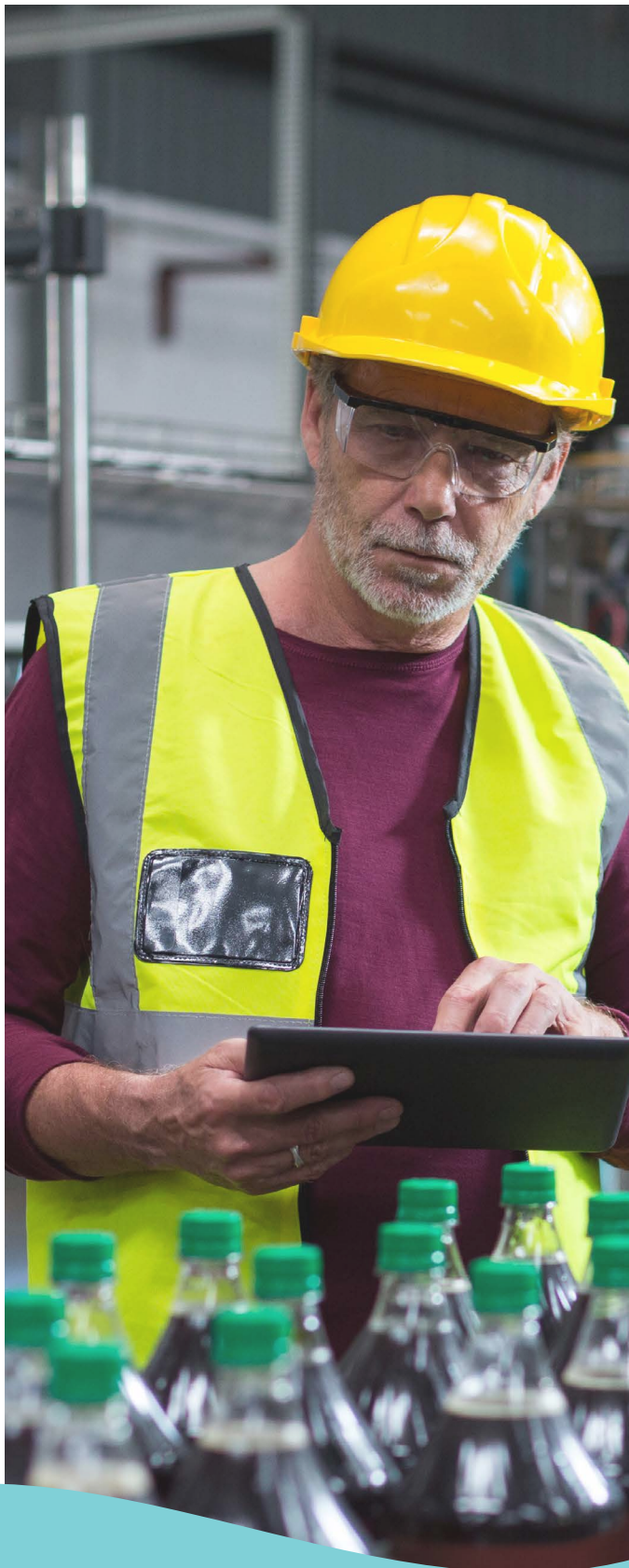
Even if you are using the platform correctly, there might be ways in which you can use it even better. A provider can often coach you on how to get the most out of a platform. Coaching can take the form of a monthly session in which the provider advises the customer on how they could use the platform to optimally achieve their desired process improvements.

**Make the right decisions fast
to fuel rapid performance
improvement**

Measuring improvement

It is useful to make a baseline measurement before implementation, as it will allow you to see the improvements effected by the platform later on. Be sure to set up a list of KPIs you want to measure, as these help you determine how much the platform is contributing to improvement. After running the platform for a period of time, you can start comparing your baseline measurement to your current KPIs.

4Industry's platform contains a manufacturing dashboard that displays KPIs. This allows you to easily compare the performances of different production lines. If you notice that a certain production line spends four minutes on a maintenance task while others spend half that time, a pathway toward improvement is opened. These tiny tweaks and fixes are part of a larger effort toward continuous improvement, and will, over time, help you attain the goals set at the start of the project.



About 4Industry

4Industry is a Connected Worker Platform aimed at increasing Operational Equipment Effectiveness (OEE). The DMOS is mobile enabled, highly customizable and equips organizations with the tools they need to take advantage of all that Industry 4.0 has to offer.

Contact us

If you have questions or would like to know more about 4Industry, send us a message at info@4industry.com, give us a call at +31 (0) 30 76 02 670 or visit www.4industry.com.

