AUTODESK

The flexible factory

Streamlining factory modeling in manufacturing

- Cut time to market by 25%
- Connect all disciplines across the whole factory lifecycle
- Reduce OPEX by 10-15%

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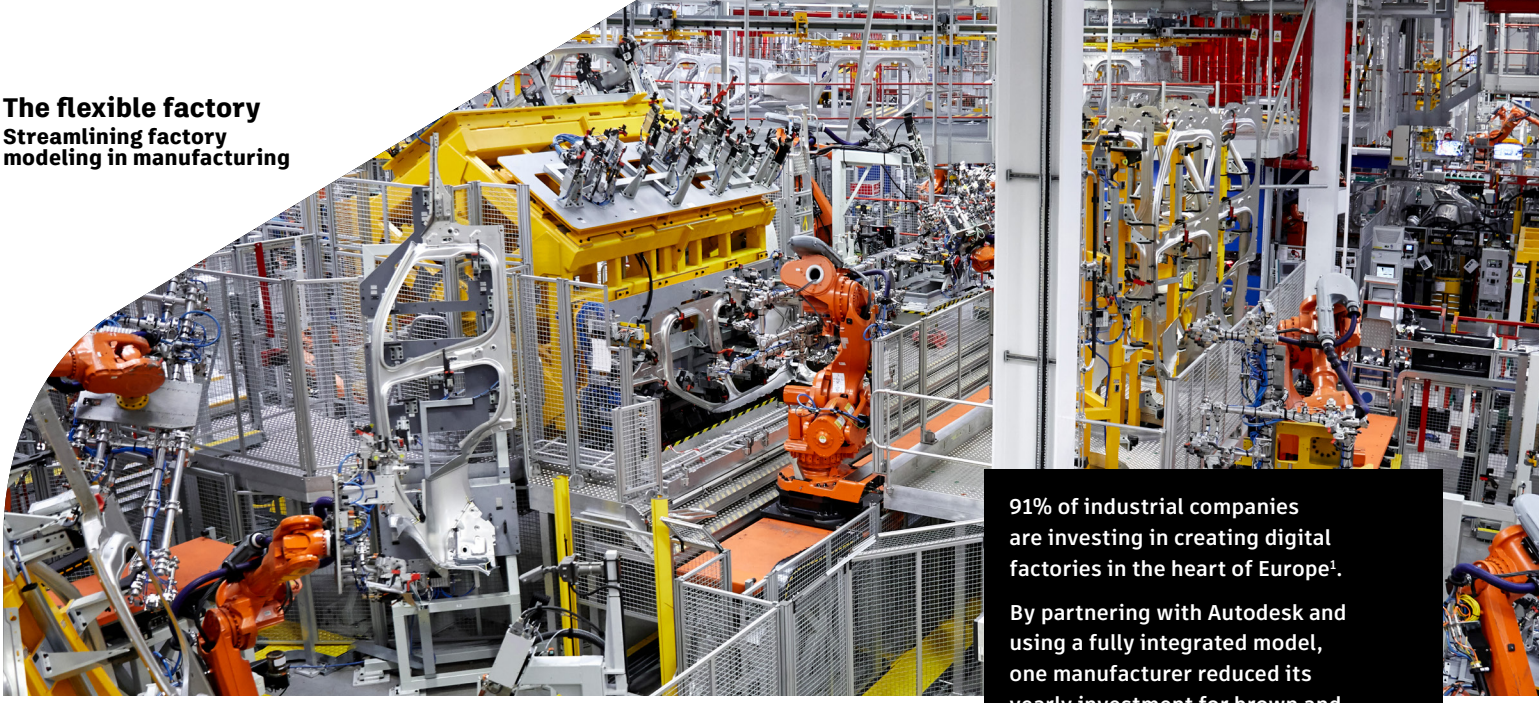

91% of industrial companies are investing in creating digital factories in the heart of Europe[1].

By partnering with Autodesk and using a fully integrated model, one manufacturer reduced its yearly investment for brown and greenfield projects by 15% – a saving of over €300M p.a.

By adopting a 'One Data Model' for the factory lifecycle, electric car manufacturer, e.GO saved up to 35% of overall costs - watch the video.

Forget the product, thanks to rapid advances in technology, consumers almost always want 'the latest'. And it's the manufacturer who can get it to them the earliest that stays competitive in the market. Add to that the growing trend for individualization, and the need to re-engineer your factory has moved from frequent to almost continuous.

As you're all too aware, this involves bringing together multiple disciplines each and every time. External building teams and project coordinators. IT experts and maintenance engineers. Production line planners and product designers. All of whom often work in silos that are connected only at the top of the organization. Many use different software and their own custom processes. Some hold vast amounts of outdated data in complex legacy systems. Together, this makes the process of re-engineering both slow and costly.

Rethinking the factory flaw

There's now a need for a more flexible and agile factory modeling process. One that can break down the silos and allow for the integration of each discipline – from the team that constructs the factory exterior right down to those who design the products made inside. An approach that enables the connection of all project stakeholders, right at the outset, in order to gain far greater coordination across the different phases of a factory's lifecycle.

The key to achieving this is through data, which in turn enables the right decisions at the right time. And that's the thinking and methodology behind Integrated Factory Modeling, or IFM. An open approach that allows the data created in different systems by different disciplines to be stored at a central point and accessible to all.

The result is everything and everyone involved interconnected – everywhere – on any device, all by a single, accurate, real-time data set. It's the convergence of the digital factory with Building Information Modeling (BIM), a methodology that has achieved much success in the built environment by streamlining the entire process from design to operation – even disposal.

IFM as an approach has already proved highly successful. By adopting it, some manufacturers have seen cuts in time and cost to market of up to 25%. A reduction in time to volume of 20%. These same companies have also slashed OPEX by between 10 and 15%.

So long, silos.

Integrated Factory Modeling is a way of enabling the right decisions to be made early through reliable, up-to-date information. Decisions about ideal factory layout all the way through to production strategy and where to produce which product. Decisions that ultimately impact time and cost to market.

So how is all this to be achieved? The first thing is how to break down your own existing organizational silos to be more integrated in your thinking and communication. Adopt a pilot scheme that creates better interaction between the various disciplines: infrastructure, building design, MEP systems, production line planners, product designers and operators.

Appropriately, the methodology of IFM itself has been developed through collaboration and integration. At Autodesk, we have worked in close partnership with the University of Aachen in Germany, industry specialists and experts in factory planning. Together, we now guide companies through the IFM process. Working in a structured way, a typical first step is to bring all the stakeholders to the same table, capture the current situation and benchmark it against a standardized maturity assessment. From there, we can start to define the journey towards an integrated future that works for you.

One manufacturer we partnered with stated that by using a fully integrated model, it had made savings of over €300M p.a. across all green and brownfield projects. That's when IFM changes from a model to business benefits on a grand scale.

Source:

[1]PWC – Digital Factories 2020: Shaping the future of manufacturing