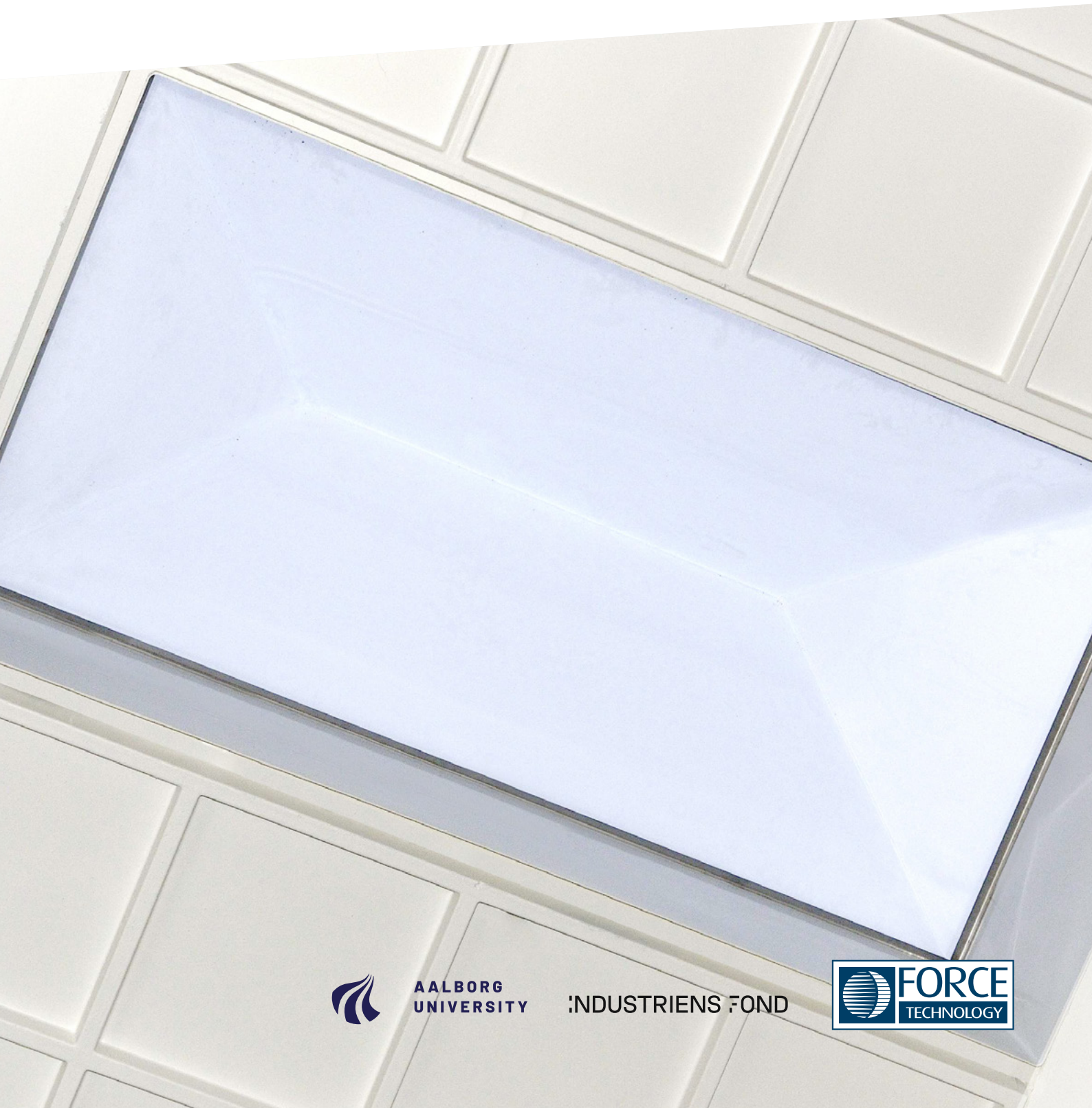
CASE

Digital Factory Acceleration

Unilite A/S: Adopting a product configurator to improve operational efficiency and customer experience

August 2024



AALBORG UNIVERSITY

INDUSTRIENS FOND

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Preface

In the past few years, Danish manufacturers have shown a significant interest in the Industry 4.0 agenda – now part of every innovation strategy – with the ambition of building a competitive advantage by capitalising on it.

Nevertheless, it is clear that small- and medium-sized production companies (SMEs) often need practical support when it comes to identifying digital innovation opportunities and translating them into actual production performance improvement.

The Digital Factory Acceleration (DFA) programme - a three-year programme designed and executed by FORCE Technology and Aalborg University and co-financed by Industriens Fond - aims to provide this support. To extend its reach beyond the 21 companies that have the chance to join its projects directly, the Digital Factory Acceleration programme includes a number of articles where we present the key learnings that have emerged.

This article presents an actual case from the programme.

UNILITE

Introduction to the case company

Unilite is a leading provider of skylight and ventilation solutions in the Nordic region. With a strong focus on the construction sector, particularly the professional market, Unilite has established itself as a key player in the industry, emphasising quality, competitive pricing, timely delivery and exceptional customer service.

In recent years, Unilite has experienced significant market growth, gradually capturing a larger market share than its Danish competitors.

To further strengthen its position, Unilite started its digitalisation journey in 2018. The aim was to increase its operational efficiency while improving customer experience, by addressing challenges related to inventory management and product configuration through innovative solutions.

As an order-driven company delivering skylights of various sizes, Unilite faces significant challenges in managing its semi-finished and finished goods inventory.

The company joined the Digital Factory Acceleration programme in late 2023, looking for new digitalisation opportunities to improve its operational efficiency and customers' experience while maintaining the high degree of product customisation that provides the company with a competitive advantage in the market.

PHASE 1: DIGITAL FACTORY MAPPING

Efficiency improvement opportunities

The first phase of the programme – the Digital Factory Mapping – has helped identify efficiency improvement opportunities and quantify the related impact on production efficiency.

The systematic mapping and analysis of the material and information flow across sales, product technical assistance (PTA), production and shipping departments have generated promising results, highlighting three main issues – and quantifying the related efficiency improvement opportunities – leading to the definition of three potential solutions.

Problem 01

Manual interaction between Sales, PTA and customers

There is an extensive and intricate process of gathering and aligning order information between sales, customers and the PTA. This back-and-forth communication rises from the challenge of handling complex order details. Consequently, this increases the time it takes to process orders, increases the risk of errors and holds Unilite accountable in case of inaccuracies.

Proposed solution: Product configurator

A proposed solution suggests integrating a configurator into the company's website to streamline this process. This tool empowers customers to input their specific requirements and preferences, ensuring the accurate delivery of their desired product. Customers can easily access the website's configurator interface instead of relying on phone calls or emails. This enables them to select dimensions, materials, glass type, sound insulation and other specifications. Implementing this solution requires a clear understanding of the product and its production process. It involves:

- Establishing configuration rules to determine how specifications will be valued when assembling components
- Defining dependencies between different choices (e.g., which materials can be used together)
- Creating or selecting a database to store information about configurations, rules and dependencies
- Providing adequate training for employees to use the software and assist customers effectively
- Offering comprehensive documentation to guide customers through the configurator, enabling them to navigate the solution and place orders seamlessly.

Problem 02 Manual purchasing processes

The current manual purchasing process, whether for regular weekly orders or specific requests, involves a manual approach. This requires manual checks of available stock for each item, consolidation of orders and subsequent manual placements. This manual process occasionally leads to errors, resulting in incorrect item supplies that disrupt operations, elongate lead times and consume valuable production hours. Furthermore, this approach risks overburdening employees.

Proposed solution: Automatic ordering points based on Robotic Process Automation

The proposed solution is a setup of automatic ordering points based on the inventory level for standard goods and automation with RPA for order-specific purchasing. Notably, the final ordering step would still require approval from the Purchaser, ensuring oversight and control.

Problem 03 Manual delivery date confirmation

Contacting and engaging customers to validate or modify order delivery dates requires effort. This process incurs manual labour costs and poses a potential delay risk if customers are not prompt in communicating any changes.

Proposed solution: Scheduled pre-delivery communication

A suggestion is sending an email or message to customers precisely one week before the scheduled delivery date to prompt them to confirm or adjust the delivery date, reducing the need for extensive manual follow-ups.

04 The next step

Based on these findings and their related impact, Unilite and FORCE Technology drafted a roadmap and decided to proceed to the next phase - phase 2: Digital Factory Realisation - addressing problem 1 (manual interaction between sales, PTA and customers), and focusing further investigations on the search and evaluation of a product configurator.

PHASE 2: DIGITAL FACTORY REALISATION

Search, evaluation, and selection of a new configurator

Unilite has stated, as general guidelines for narrowing down the search for the new product configurator, the desire for a supplier based in Denmark with relevant references, experience within the building industry and a product configurator with good graphic capabilities.

Responding to this, FORCE Technology started performing a Breadth Search, aiming to find as many solution suppliers as possible within the stated guidelines. The search led to the identification of 9 potential suppliers.

At this point, FORCE Technology organised a requirements mapping workshop together with Unilite to systematically map:

- **Technology requirements**, including those functions that would be necessary (or relevant) for the desired product configurator. These have been labelled using the MoSCoW approach, scoring requirements as: must have, should have, could have or would not have. Emerged technology requirements were, for instance, integration with the ERP, bill of material calculation and generation, automatic drawing creation, automatic purchasing, integration with CAD, customisable dimensions, automatic production order generation, pricing, user friendliness, etc.
- **Use case requirements**, including those activities that the configurator should be able to support across the different company areas of interest: PTA, Purchasing, Sales, Production, Shipping, Finance (CFO).

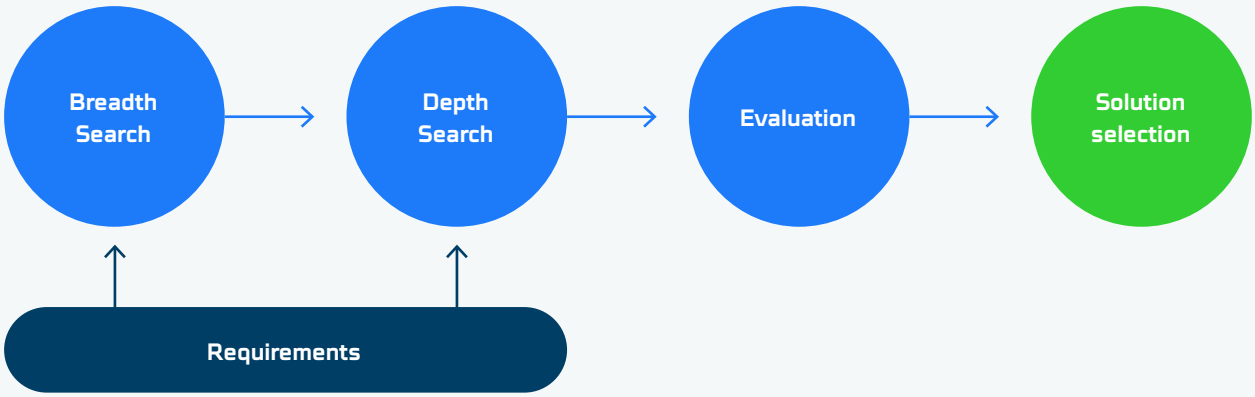
A first screening, comparing the identified potential suppliers with the necessary requirements (i.e. “must”) helped FORCE Technology narrow the relevant pool down to 7 suppliers.

These have been considered for the Depth Search, where FORCE Technology individually reached out to each supplier to discuss the ability of their product configurator to deal with the mapped requirements. This further narrowed the pool down to 3 relevant suppliers.

Three evaluation meetings have then been organised and facilitated by FORCE Technology to give each supplier - individually - a chance to present its product configurator to Unilite.
A debriefing meeting between Unilite and FORCE Technology was then organised to review all the information collected from the three potential suppliers and discuss their respective product configurators, leading to a final solution selection from Unilite.

As FORCE Technology concluded its activities as an independent and impartial technology navigator, the next step will be for Unilite to move forward together with PLM Group, implementing the new product configurator.

The process


Breadth Search
Depth Search
Evaluation
Solution selection
Requirements

About the programme

The Digital Factory Acceleration (DFA) is a three-year programme, aiming at supporting Danish small- and medium-sized production companies (SMEs) in improving their production performance through digital innovation.

The programme consists of two phases:

- the **Digital Factory Mapping phase** - focused on identifying production improvement opportunities, quantifying their potential and formulating an activity plan to capture them
- and the **Digital Factory Realisation phase** - focused on finding technology solutions to implement the activity plan and on coordinating the implementation activities if needed.

The programme is co-financed by Industriens Fond which covers, for all the 21 companies joining it, 60% of the cost of the consultancy hours they receive from FORCE Technology consultants, while Aalborg University is responsible for translating the experience gained from the programme into generalisable knowledge to better understand and support digital innovation in SMEs.

Join the program

If you are interested in joining the program as a small- and medium-sized Danish production company, you can contact:

- **Michele Colli**, Head of Digital Production, mic@forcetechnology.com
- **Jens Ulrich Nielsen**, Chief Consultant, jeun@forcetechnology.com.

Digital Factory Acceleration programme in an event

If you are interested in including the Digital Factory Acceleration programme in an industry event, you can contact:

- **Iryna Møller**, Administration, imo@forcetechnology.com
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