LOG!VILLE

WHITEPAPER

UNLOCK THE BENEFITS OF WAREHOUSE AUTOMATION

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INTRODUCTION

In today's dynamic logistics landscape, automation has emerged as a key priority for warehouse professionals, offering immense potential to revolutionize warehouse operations. However, as more companies embrace automation, questions and challenges arise regarding the optimal implementation of these technologies to maximize their benefits.

To address these concerns, Log!Ville, the innovation center for logistics, organized a dedicated thematic tour focusing on automation innovation, where Log!Ville showcased the latest advancements in automation technology and facilitated roundtable discussions to delve into the most pressing topics surrounding automation implementation. Over 1,000 unique companies from diverse industries gathered at Log!Ville's experience center to engage with these discussions.

As a culmination of the event, a live debate featuring over 100 industry professionals was held to synthesize the key learnings from the field. The day started with a welcoming by Liesbeth Geysels, Managing Director of Log!Ville, who then gave the floor to Kurt Van Donink, Vice-President Logistics EMEA at Nike ELC and Vice-Chairman of VIL. He discussed the roles of employes and automation in the supply chain, as well as the role of Nike EMEA as partner of Log!Ville. Finally, the live debate featured Stefan Rusu (Director Warehousing, Automation & Production Logistics at Deloitte), Werner De Swaef (Sales Director Benelux at KNAPP), Benjamin Van Ransbeeck (Continuous Improvement Manager at Distrilog) and Pieter Van Gool (Warehouse Director Belgium at Procter & Gamble).

This paper presents the key takeaways from the debate, providing insights into the successful implementation of automation strategies in warehouse operations.

GUIDING PRINCIPLES FOR AUTOMATION

Automation is not a destination but an ongoing expedition to enhance warehouse efficiency. This journey necessitates companies to be at the forefront of innovation. Only by taking bold steps, they can shape the future of automation and innovation.

However, to embark on this journey, companies require a set of guiding principles to ensure sustainable automation implementation and experimentation.

At Nike Logistics EMEA, says Kurt Van Donink, three driving principles shape their automation decisions:

1 **Simplicity**
   All processes must be straightforward, enabling clear evaluation of their impact.

2 **Flexibility**
   Scalable automations that seamlessly integrate across the warehouse are crucial to adapt to market demand fluctuations. Nike's 30% online sales necessitate the ability to handle peaks, valleys, and the unpredictable nature of D2C orders.

3 **Scalability**
   Automations must be adaptable to upscaling or downscaling, mirroring market dynamics.

In his talk, Kurt Van Donink, Vice-President Logistics EMEA at Nike, explains how the company recognizes that not all solutions will be a match. Nike therefore employs a model of agile, lean, and continuous experimentation on a smaller scale in the warehouse. Only validated solutions that align with their principles of simplicity, flexibility, and scalability are adopted on a broader scale in the warehouse. This way, the warehouse is always in continous experimentation and innovation mode.

This example shows that automation is never a singular implementation with a finish line. Automation is a continuous journey of learning and adapting. What works in one setting may not be effective elsewhere, and what worked yesterday may not be optimal tomorrow. By embracing flexibility, companies can become industry leaders, poised for success regardless of future challenges.

In addition to physical automation, digital processes play a vital role. Warehouse Director Belgium at P&G explains how the company continuously updates both their physical warehouse automation and digital workflows to meet market demands. By aligning digital processes with physical automation, they gain valuable insights to refine and optimize their systems.

In conclusion, automation is a continuous journey of adaptation and innovation, requiring a commitment to simplicity, flexibility, and scalability. By embracing these principles and aligning physical and digital processes, companies can unlock the full potential of automation and become industry frontrunners.

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Automation is never a single implementation, but a journey without a finish line.

WHAT TO CONSIDER WHEN AUTOMATING

As mentioned earlier, not all automation solutions are a perfect fit for every situation. The relevance of an automation solution lies in its alignment with your specific needs and circumstances. This checklist will guide your organization in determining the appropriate solution and avoiding potential pitfalls:
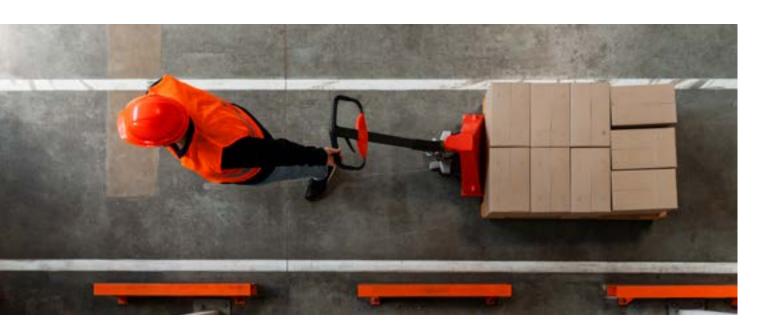
Dimensions

- Scale: Determine the desired scale of your automation. What is your average throughput that the automation needs to handle? Will your automation be primarily focused on handling average workloads or exceptional peaks throughout the year?

- Scope: Carefully evaluate which processes should be automated and which should not. Identify processes that can benefit significantly from automation while ensuring that automation is not implemented in areas where it may not be cost-effective or appropriate.

Flexibility

- Optimization: Maximize the return on your investment by selecting an automation solution that is flexible and adaptable. Avoid solutions that are overly specific to a single process or workflow, as this can limit the flexibility to integrate with other processes or adapt to future changes.

- Future-proofing: Consider your long-term growth plans and how the automation can support these aspirations. Ensure the solution is scalable to accommodate future increases in throughput or process changes without requiring substantial reinvestment.

Timing

- Integration: Evaluate the time available to integrate the automation solution seamlessly into your organization's operations. Factor in the complexity of the automation, the need for training and preparation, and the potential for delays or hiccups during implementation.

Data Management

- Data Utilization: Leverage the data generated by the automation to gain valuable insights and optimize its performance. Establish processes for data collection, processing, cleaning, and analysis to extract actionable information.

Access Control

- Cybersecurity: Implement robust access control mechanisms to restrict access to specific parts of the automation based on user roles and permissions. Prioritize cybersecurity measures to safeguard sensitive data and prevent unauthorized access.

Organizational Readiness

- Adaptation: Assess the organizational changes required to fully utilize the automation solution. Evaluate the skills and training needed for employees, identify any new responsibilities that may arise, and establish feedback mechanisms to incorporate valuable input from operators, installers, and technical staff.

By carefully considering these factors and thoroughly evaluating your specific needs, you can make informed decisions about the most appropriate automation solution for your organization. By aligning automation with your current capabilities and future aspirations, you can achieve significant efficiency gains and enhance overall warehouse operations.

THE FUTURE OF AUTOMATION

The future of automation is not the exclusive domain of any single company or provider. Instead, it is crucial that industry leaders, hardware providers, and software providers collaborate to address tomorrow's challenges.

On the technology front, Log!Ville anticipates the trends that emerged in 2023 to persist in the years to come. Specifically, in the hardware domain, the adoption of autonomous mobile robots (AMRs) will continue to accelerate, with companies increasingly integrating these self-driving vehicles into their fleets and processes. Additionally, Log!Ville foresees shuttle technology and AMR technology merging, forming a single flexible system that can be implemented seamlessly throughout the warehouse operation.

On the software front, AI and machine learning will be integrated into warehouse management systems (WMS) to enhance the support provided by hardware. Furthermore, digital twin technology will empower companies to virtually replicate their operations and conduct experiments in their digital warehouse twin before implementing them in the physical realm. Digital twins enable companies to foresee future challenges, identify potential opportunities, and proactively address potential issues before they arise in the physical world.

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Log!Ville expects automation to become a strategic decision that determines the long-term continuity of companies.

Improved data analytics will facilitate the extraction, cleaning, and monitoring of relevant data from warehouse processes. This will transform data into a critical decision-making tool, guiding companies in scaling up or down automated processes based on real-time insights.

Given the complex economic environment, Log!Ville expects investments in automation to require stronger business cases for validation. However, the tight labour market will make these cases easier to justify. As a result, Log!Ville expects automation to become a strategic decision that determines the long-term continuity of companies.
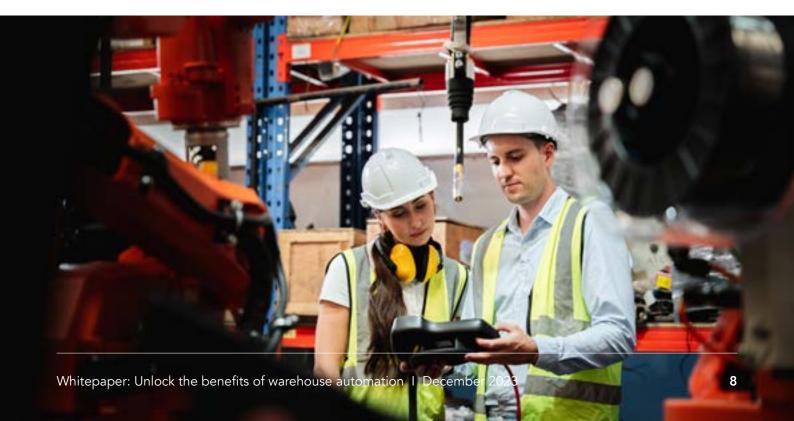
IMPACT ON THE WORKFORCE

It's no secret that automation has drastically changed the organisation of employees in a very short period. Automation has not only altered the roles and responsibilities of workers but also necessitated a shift in their skill sets.

In the past, the responsibility for process leadership primarily resided with hardware-focused employees. However, as software has gained prominence and hardware has become increasingly complex, this responsibility is now shared between internal leads, software providers, and hardware providers. While this diversification brings the necessary expertise to the table, it also introduces complexity, potentially hindering efficiency.

Automation's impact on warehouse operations also extends to the skills required to maintain warehouse productivity. The always-on nature of warehouses necessitates the presence of highly trained technical staff within shift teams to promptly address complex issues. As technical profiles are increasingly hard to attract, this proves to be a challenge for many companies.

Beyond dedicated technical teams, there is a growing need for all warehouse personnel, from pickers and packers to drivers and leaders, to possess a basic understanding of technology. This enables them to resolve minor issues independently and fully comprehend the potential of BI and automation. Here too, companies face the difficulty of finding technically skilled employees in an extremely tight labour market. They are therefore often required to provide technical education themselves to bridge the skill gap.

This transformation highlights that automation does not replace human workers but rather redefines their roles. Automation will not resolve the labour shortage but rather shift the demand towards more technically skilled talent. As automation becomes more prevalent, companies must invest in upskilling their workforce to ensure a seamless transition to this new era of warehouse operations.

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Automation will never replace human workers. Rather, they take on a new role in the bigger story.

CLOSING

Hosting over 1000 companies in 2023 and discussing the possibilities and impact of automation has allowed Log!Ville to build bridges between partners and companies across the industry. This event marked the closing of Log!Ville's theme of automation, but Log!Ville believes automation will become an ever-present part of every warehouse. To support the industry in this transition and push the industry forward, Log!Ville believes that cross-functional collaboration between industry leaders, hardware providers and software providers is key.

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