

BUILDING A FLEXIBLE FUTURE FOR DIRECT-TO-OBJECT PRINTING

Norwalt Digital details the capabilities of the company and how Hybrid Software Helix's SmartDFE platform has helped to achieve maximum throughput

For decades, Norwalt Automation Group has designed and built high-speed manufacturing systems for global brands. These systems have integrated complex production processes into fully automated production lines.

THE CHALLENGE

When Norwalt Automation Group was contacted by a leading brand needing a solution capable of printing between 300–500 plastic parts per minute, the company rose to the challenge. The request was far beyond the throughput typically associated with many digital direct-to-object (DTO) printing systems. Existing alternatives could only achieve comparable output through multiple machines operating in parallel. Because of this, both investment costs and production complexity were increased. Norwalt believed there was a better way.

THE DIFFERENTIATOR

Unlike many companies entering industrial digital printing, Norwalt approaches the market from an automation background. For this project, the company set out to develop a continuous-motion printing platform. The aim was to produce something capable of delivering the required speeds on a single production line. Rather than relying on stop-start product handling, the system keeps products moving through the production process. As a result, throughput is maximised and a compact footprint is maintained.

However, achieving the mechanical throughput was only part of the equation. The system also needed to handle significant amounts of variable data and changing graphics at production speed. Both of these factors placed equally demanding requirements on the digital workflow. To support those ambitions, Norwalt selected the SmartDFE digital front-end platform from Hybrid Software Helix.

WHY SMARTDFE?

Keith Harman, Executive Director for Business Development at Norwalt explains, "This application differs significantly from systems that print only small amounts of changing information. Customers increasingly require larger quantities of variable data, changing images and unique content to be processed and delivered in real time." He continues by saying, "We already had confidence in



Typical containers printed for leading brands by Norwalt Digital's systems

SmartDFE's industrial capabilities and knew it could comfortably support high-speed production. But the project presented an opportunity to push performance even further." Harman continues, "The questions concerned data transfer, image size and how you manage increasingly complex content at those production rates."

The ability to accurately print the brand's strict colour requirements was also a key factor in choosing SmartDFE. This platform

integrates colour management from Hybrid Software's ColorLogic, providing full support for industry-standard International Colour Consortium (ICC) profiles.

WORKING TOGETHER

Throughout development, Helix worked closely with Norwalt Digital to evaluate performance requirements, test workflows and ensure the platform could evolve alongside the project's objectives.



A Norwalt engineer confirms quality of the sample label on the Norwalt TP-10 print systems



The SmartDFE digital front-end platform from Helix enabled Norwalt Digital to push the boundaries of high-speed variable data direct-to-shape printing

For Harman, one of the most valuable aspects of the relationship has been the balance between a proven standard product and the flexibility to adapt when required. He comments, "The standard SmartDFE platform is excellent, but when we need something outside the box, Helix has been very good at pivoting and adjusting with us." He goes on to say, "The support and reliability have been excellent."

"Norwalt's heritage lies in factory automation"

COMMON PLATFORM – FUTURE GROWTH

Although the current project focuses on high-speed, plastic-container printing, Norwalt's longer-term vision extends beyond a single application. The company is increasingly focused on creating standardised platforms that can support multiple markets and future opportunities, rather than developing one-off custom machines. SmartDFE plays an important role in that strategy.

By providing a common digital workflow, Norwalt can leverage the same core technology across different machine platforms and applications. This reduces

development complexity and creates greater consistency for customers. Harman says, "We're trying to use the standard platform as much as we can." He continues, "We don't want to reinvent any wheels."

An additional advantage is SmartDFE's ability to support a variety of substrates. The system has been developed for plastic containers. However, the same digital infrastructure can support future applications involving metal cans, glass containers and other cylindrical products. That flexibility provides Norwalt with a foundation for future innovation, without requiring entirely new workflow architectures for each application.

INDUSTRIAL MANUFACTURING DESIGN

Another factor behind Norwalt's decision to partner with Helix was SmartDFE's readiness for industrial manufacturing environments. Because Norwalt's heritage lies in factory automation, standards such as Open Platform Communications Unified Architecture (OPC UA) are already deeply embedded within its engineering processes.

Harman explains, "When Helix started talking about OPC UA, it wasn't something new to us." He continues, "We've been working with industrial communication standards for years."

The fact that SmartDFE was already OPC UA-enabled made integration into Norwalt's automation architecture straightforward. It also reinforced its suitability for production environments where printing forms part of a much larger manufacturing workflow.

THE ROLE OF METEOR INKJET

The relationship between Norwalt and Hybrid Software began before SmartDFE was selected for this project. Several years

earlier, Norwalt found itself needing to rapidly develop an in-house print system after an existing supplier failed to meet expectations. Looking for guidance, the company turned to Meteor Inkjet. The company is a leading developer of printhead drive electronics and part of Hybrid Software.

Harman credits the Meteor team with helping Norwalt navigate the digital-print landscape and connect them with the expertise required to move quickly. He says, "They connected us with the right people – including the Helix team – and helped us get access to the technology we needed."

According to Harman, Meteor's responsiveness left a lasting impression.

He says, "They really pivoted to help us, even before we became a customer. "He went on to say, "They helped us get boards quickly and introduced us to the people we needed to speak to." Harman concludes, "If it wasn't for Meteor, we wouldn't have been able to deliver our first major digital-print project."

That experience laid the foundation for the partnership that continues today.

"SmartDFE provides the flexibility to support current demanding production applications"

LOOKING AHEAD

As Norwalt prepares to bring its latest platforms to market, the project demonstrates the value of combining automation expertise with scalable digital workflow technology.

For Norwalt, SmartDFE provides the flexibility to support current demanding production applications. Concurrently, it creates opportunities for future expansion into new substrates and markets. For Hybrid Software Helix, the project highlights how a robust, adaptable digital front end can help machine builders push the boundaries of industrial printing performance.

The immediate goal may be high-speed plastic container decoration, but the platform's broader significance lies in its ability to evolve. By combining Norwalt's expertise in high-speed automation with the flexibility of SmartDFE – supported by the wider Hybrid Software ecosystem – the companies are creating a foundation designed not only for today's applications, but also for tomorrow's opportunities. ■



The RP-48/20 rotary printer for high-speed container printing

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