

Devro Tracking production for Business Benefits

Devro (Scotland) Ltd produces sausage casings with annual production levels that can only be described in astronomical terms. With high reputation and technical expertise, Devro sought to update its obsolete data acquisition system and obtain significant business benefits through process insight, quality and avoidance of error. Devro chose Wonderware Manufacturing Execution Module software and other Wonderware products to achieve these aims.

“Manufacturing Execution Module and the other Wonderware modules gave us a running start, we had a lot of work to do, but the tools selected did the job.”

Devro is a global company with two manufacturing locations in Scotland, at Moodiesburn and Bellshill. The plants are large and in overview have raw material processing that feeds to shaping and extruding machines that are followed by automatic box wrapping and packaging machines.

Astronomic production levels

Sausage casing manufacture at Devro is a volume business with in the region of 1,000,000 Km of casing produced per year. Many variations are manufactured that

casings requires constant attention to quality, this includes the specification of the casing itself with parameters such as wall thickness, diameter, tensile strength, elasticity and humidity. A casing must not burst when being filled and the casing has to have the required appearance, and packing and shelf life. Another major concern for quality is that of moving a batch through the production process. As the process is undertaken the casing is concertinaed onto a mandrel for packing, allowing an extremely long casing length to be conveniently placed in a box, each box must have the correct product and that product must be made from the correct ingredient and have undergone the correct processing. Each box has its own unique identity within a uniquely identified trade pack, and in turn as part of a pallet load.

In defining what was needed as part of their renewal programme Devro had to find a solution that would satisfy their own and their many customers' quality standards and take into account new products, new machines and new processes. Devro knew that workflow, tracking and machine utilisation had each to be addressed and they also added KPI's for line efficiency reports, internal reject targets, labelling and measured product length production of casing. This had to be achieved in an environment of stringent hygiene, ISO 9000 quality standards and new regulations such as EU 178-2002.

Devro needed a solution that could deal with the size and scope of their business and also integrate into their existing business processes.

Methodology

As is often the case in such projects the initial problem was simply “how do you start?”



Operator interface

have their own technical specifications that have to be rigorously adhered to from a demanding market. Volume manufacture of

Devro explored several alternatives, these mainly being characterised as “SQL + Visual basic”, the problem was that this would have produced a highly bespoke solution that would inevitably produce support and on-going development issues. As part of this process Devro investigated solutions that had a higher order of application readiness, in particular they investigated Wonderware’s Manufacturing Execution Module product from SolutionsPT. It was demonstrated that the inherent characteristics of this solution were deployable against Devro’s known requirements. The other components of Wonderware’s solution such as the real-time database Wonderware Historian and the web portal Information Portal were further reasons that this solution came to the foreground.

This was a critical investment decision for Devro and in discussion with SolutionsPT it was decided to undertake a significant pilot project. This pilot would show that Manufacturing Execution Module was up to the job and also develop experience of deploying the product. The pilot project team comprised Devro staff lead by John Watkins, MIS Team Leader, and by

Chris Jackson, Senior Application Consultant from SolutionsPT.

A functional design specification for the pilot was agreed and the team went to work.

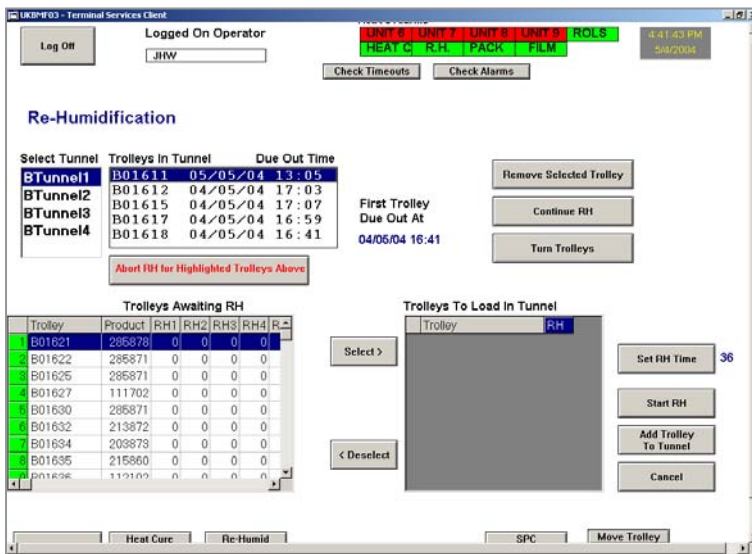
The requirements at Devro were multifaceted, but one of the core concepts was delivered by the Manufacturing Execution Module product. This was not to passively track what was happening but to agree the production processes that were required, step by step, and place them at the heart of Manufacturing Execution Module so that automated and manual tasks could be done optimally and without error. This set of rules was accurately flowcharted by Manufacturing Execution Module, tested and implemented. In this way production was to be achieved in an orderly, fail-safe and controlled way.

Terminal Services

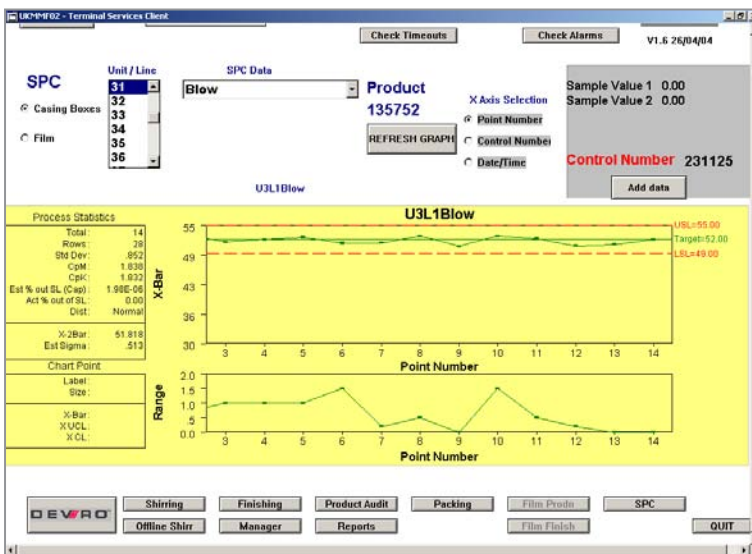
Information for operators is distributed by terminal services to shop-floor workstations (these in fact are diskless “biscuit box” devices that are physically mounted under benches, flat screens and barcode scanners

Final product packaging and labelling





Production operation control



Quality trend displays

the pilot showed that in no way were the particular requirements of Devro's processes compromised; Wonderware delivered an effective set of tools for the job without constraining the design.

The system at the pilot stage proved that the solution was viable for Devro's requirements. The roll-out stage included Quality Control (SPC), MS SQL and InSQL databases, InTouch to provide operator displays and a Report Server that provides information over an intranet and extranet. Production data that contains the schedule and detailed product batch information is downloaded from the company's J.D. Edwards ERP system, this populates the production system with jobs.

Quality

Automatic Quality Control has been achieved in two stages, at one level for process operators (using the same workstations as above), and another for production analysis.

John Watkins has been involved with the project all the way through. He is keen not to understate the complexity and time that it takes to deploy such a system. However, he says that, "Manufacturing Execution Module and the other Wonderware modules gave us a running start, we had a lot of work to do, but the tools selected did the job." He also added, "SolutionsPT gave us very good support, Chris Jackson often providing real-time help from the most unlikely of locations".

Now that the roll-out stage is completed John states that Devro has directly benefited from the investment by tracking the production process. This can be seen in better quality control, improved labour utilisation, increased production and easier regulatory compliance for traceability. Devro can now see how the process is running in real-time; this feature directly contributes to process efficiency as decisions can be made and implemented there and then. This is facilitated by all the data residing on one system with easier access being the main technical benefit.

Extra insight

A notable unplanned benefit that was received is that it has been discovered that the plant was making more product than was believed to be the case when using the obsolete data acquisition system. Although Devro were being paid for this, the KPI on plant efficiency (unit length produced) went up immediately.

Devro managers believe that now that they have overcome and benefited from a learning curve that has placed them further in control of their processes. The Wonderware investment has provided them with a tool to perform whatever analysis they may wish to make in the future, and one that will easily absorb

being connected). The only information on the screen at this level is that which has to be done next, or is in the immediate pipeline. Barcode equipment and label printing is used to correctly track a box, and transport systems, from filling through all other post-processing stages. For example if a trolley of boxes is inadvertently taken by an operator to the wrong place for further operations it will be rejected and re-routed. A simple precaution, but one that avoids human error in the three shift system worked at Devro. Bar-coding and scanning are tightly integrated to the system, ensuring that the correct information is always being used.

Although produced from standard tools,

new products as they are developed. The imaginative deployment of Wonderware's Manufacturing Execution Module and other Wonderware products has delivered a new and effective production environment for the company.

§

Wonderware UK wishes to thank the following company for its valued contribution to this success story...

Devro plc

Devro (Scotland) Ltd., Moodiesburn, Chryston, Scotland, G69 0JE

Tel: 44 1236 872261

www.devro.plc.uk



© 2009 by SolutionsPT Ltd. All rights reserved. No part of this document may be reproduced, stored in or introduced into a retrieval system, or transmitted in any form or by any means (electronic, mechanical, photocopying, recording or otherwise), or for any purpose, without the express written permission of SolutionsPT Ltd.

Invensys, Wonderware, Archestra, InTouch and SCADAAlarm are trademarks of Invensys plc, its subsidiaries and affiliated companies. All other brands and product names may be the trademarks or service marks of their respective owners. Wonderware United Kingdom & Wonderware Ireland are trading names of SolutionsPT, an independent Wonderware software distribution partner. All rights reserved.

Contact SolutionsPT for information about software products for industrial automation.

SolutionsPT

Wonderware United Kingdom and Wonderware Ireland, Unit 1 Oakfield Road, Cheadle Royal Business Park, Cheadle SK8 3GX
+44 (0)161 495 4698

info@wonderware.co.uk

www.wonderware.co.uk