SUCCESS STORY

BEAUTI-TONE PAINT

PcVue provides the edge needed to win against larger North American and global competitors.

Home Hardware Stores Limited is Canada's largest independent home improvement retailer. The company is owned by close to 1,100 independent small business operators from every corner of Canada, who operate under one of four banners: Home Hardware, Home Hardware Building Centre, Home Building Centre and Home Furniture.

The company offers over 8,700 exclusively-branded products. Beauti-Tone Paint - produced along with many household products at its plant in Burford, Ontario - is just one well-known Home Hardware private-label success story. These Home Hardware branded products offer customers superior quality with economical pricing.

COMPETITIVE DRIVE

"From a macro perspective, it's all about competitiveness", according to Darrin Noble, Vice President and General Manager of Beauti-Tone Paint and Home Products. *"So many Canadian manufacturers are working on a smaller Canadian scale but we are competing with North American and global manufacturers who are ten, fifty, up to two hundred times our size. These much larger companies are our most direct competitors".*

In order to track progress, the plant is keeping a close eye on both production rates and yield. Darrin explained, "The objective is to do as much as we can in a labor hour while maintaining high quality. It's not just about beefing up the system and pumping more product out".

Streamlining communications so that the information is available more quickly to plant workers is a key factor in how PcVue helped the plant meet that objective. Eliminating the lag between the collection of data and the availability of that information to inform decision making was the first step.

Russell Banks, who is the plant manager, understands the importance of data for managing production and has been the champion of increased data collection. When the plant started collecting more data they found that some assumptions they had from simply viewing the line were incorrect. *"I don't think our impressions are very accurate, as far as what is*

holding us back and what our bottlenecks are", remarked Noble. Knowing where the true bottlenecks are has enabled the plant to focus in the right place.

PcVue's SCADA system is providing the plant with both a real-time and comprehensive view of the filling line which operates across multiple work centers. In the past, the focus of automation and data collection was on specific production equipment. The issue with this approach is that it gave the line workers a limited understanding of how the plant was performing as a whole.


BUSINESS OBJECTIVE

Grow Beauti-Tone market share against much larger competitors

Darrin summarized the situation, *"We are focusing on finding those bottlenecks and opening up those freeways as well as the speed of communications to the floor. That way, we have our people wandering around less and knowing more about what is ahead of them, so they can plan for it".*

The system has also helped improve yield by eliminating some common problems in the handoff of work-in-process from one work center to the next. *"It's helped us improve quality"* noted Russ. *"The system automatically updates the equipment for the order that we're running rather than having the operator do it by hand".* Automation reduces errors in changeover, which happens multiple times a day in their production schedule. Quality checks are also key elements of improved accuracy of the finished goods. For example, printing and scanning barcode labels to confirm the correct lot is at the work center before starting to process it.
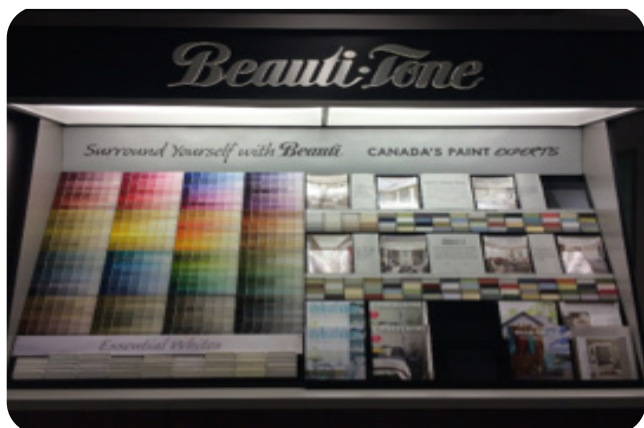
1 - Home Hardware's Beauti-Tone Paint products

Fifteen years ago, Beauti-Tone invested in materials handling automation to better manage the batch process for bulk paint manufacturing. At that time, production automation for the filling line was not a priority. The plant has a very stable and experienced work force with the majority of employees having worked in the plant for ten to fifteen years. They made few obvious mistakes in the production process. Darrin commented, *"Maybe we would have got to control systems sooner if we were making a lot more errors."*

The lack of data made it difficult to measure plant performance. Darrin noted, *"When I started here we were looking at sales every month. Now we do what we should do and look at sales every day."* The plant also looked at average gallons produced per labor hour, but did so on an annual basis.

Today, the plant looks at several additional measures and does so much more frequently. With the new production system on the plant floor, performance metrics are visible to everyone. In addition to visibility of the real-time production rate, they are now looking at performance against plan. Most recently, they have started to drill in further and look at performance to schedule and individual line performance as compared to overall plant performance.

ADOPTING CHANGE

Implementation of the system was done by Centris Technologies of Varennes, Quebec. Centris has experience implementing paint manufacturing control systems and knows that no matter how good the system is, it will fail if there is not buy-in from the operators.

On one hand, some of the older workers at the plant were not really comfortable, even somewhat fearful, that the new technology would make their job more difficult. On the other hand, even those who were comfortable with the technology understood that in order to learn the system, it would require extra work on their part.


2 - Russ Banks demonstrating the front line worker interface of the PcVue production system

To address these issues, Centris put a priority on the design of the human machine interface in order to create a clean, simple, easy to understand layout. Soliciting feedback from the front line operators enabled a deeper understanding and buy-in from them. As an added benefit, familiarity with the purpose and layout of the interface makes training easier.

Centris also established a partnership program with a 24 hour/day hotline for the plant. Anyone, whether front line operators or management, is encouraged to call the hotline with questions or concerns. In new technology deployment, a common factor that turns users away from the system, is frustration. It can be frustration from not understanding how the system is intended to be used. It can also arise when things don't work as they are supposed to as the system is brought on-line. The hotline provides a means to address concerns quickly in order to eliminate these sources of frustration, which if not addressed will slow the adoption of the new system.

Michel Kakos, President of Centris Technologies observed, *"Companies who succeed at putting this kind of system in place, do so because everyone on the various teams involved are speaking the same language".* This is an iterative process of developing the system on-line, soliciting feedback from the users, and then tweaking the system until everyone is on the same page. The result is a platform for growth and expansion that can be rolled out to the other lines much more easily.
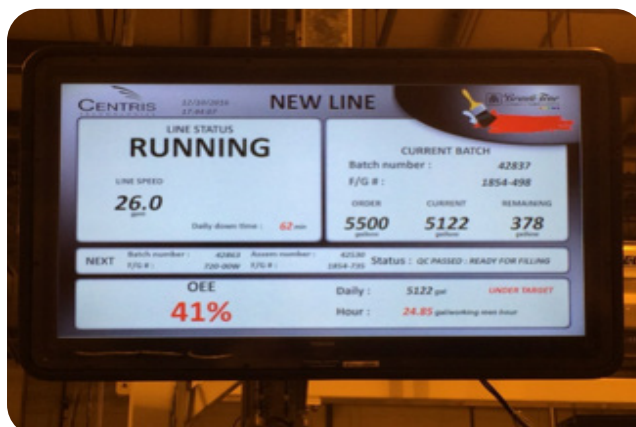
3 - Production system board showing real time metrics for line performance

MEASURING SUCCESS

The first PcVue production system was deployed initially at the end of 2016 with an expectation to complete a second production line in 2017. Beauti-Tone Paints is now producing twice the volume that they were achieving fifteen years ago without an overall increase in the number of employees. With the increase speed of communication and volume of data collection coming from the new plant control system, Beauti-Tone expects significantly more improvements to come.

Success of the project is measured from an improvement in gallons per labor hour and also in other metrics such as corrective actions and rework. Most importantly success for Home Hardware is achievement as the #1 top-of-mind retail paint brand, building on their current position as the market share leader by volume in the Canadian DIY market.
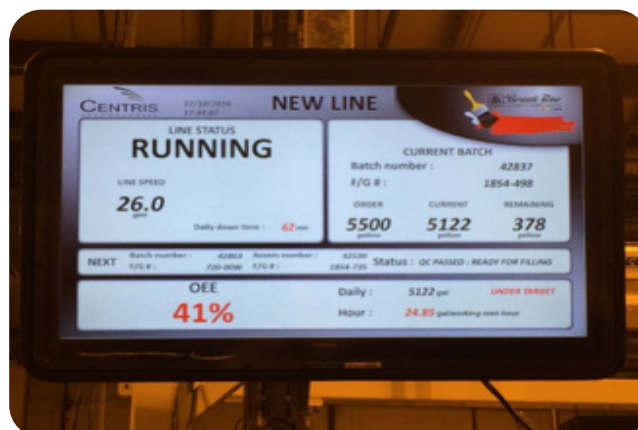
Internally, success is measured by the extent to which the users feel the production system makes them better able to perform effectively. *"We know we have success when we hear the frontline assembly workers telling us that the system is helping them do their job and recommending that we expand it to other lines and areas of the plant"*, according to Darrin.

The PcVue is also intended as a platform for continuous improvement. Plans for enhancements include incorporating training documents and videos so that operators can easily reference standard work instructions. Russ added, *"At the end of the day, the fact that we get more information to more people is a huge benefit to us down the road"*.

3 - Production system board showing real time metrics for line performance

THE PCVUE DIFFERENCE

PcVue was chosen for this project for two specific reasons. First, as an independent global software supplier, PcVue is not attached to any hardware manufacturer or affiliated with any brand of PLC or controller. This makes it a good choice in a typical plant environment with a mixture of hardware in use. Second, PcVue offered the optimum balance of features, complexity and flexibility needed for the project now and supports future expansions.

According to Michel Kakos, *"There are a lot of alternatives on the market. We prefer PcVue because it has the right balance between features and ability to customize. It is a generic platform for developing SCADA and HMI applications. We have worked with very complex and expensive platforms that require extensive training to use and we have worked with very simple platforms which were very difficult to customize. PcVue is the right balance for most customers."*

The project has been recognized by the High Tech News, 2016 Kinetic Process Innovation Award for Advanced HMI/SCADA Software Solutions. In addition to the business objectives and results described above, the integration with the plant Enterprise Resource Planning system to PcVue on this project was one of the elements of the Advanced SCADA that stood out for the judges.

KEYS TO SUCCESS

- Manage up to 20 batches per shift per operator

- Increase the amount of data collection done on the line

- Speed data communications to front line workers

- Automate the changeover process to reduce human error

RESULTS

Increased production rates

Lower production costs

Reduced corrective actions and rework

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