Background

Carvajal Pulp and Paper (formerly Propal) is part of the Carvajal S.A. Group, a privately owned company established in 1904 and headquartered in Cali, Colombia, with over 20,000 employees and annual revenues of over US$ 1.7 billion from seven sectors and operations in 16 countries.

Carvajal Pulp and Paper is a pioneer company having over 50 years of experience in the production of high performance paper for printing and writing manufactured with 100% sugarcane fiber, also called bagasse.

The sugarcane is a natural resource produced in regions of Colombia. It is harvested year around and it is renewable in short periods of time. The sugarcane fiber is an agro-industrial waste and its use in paper manufacturing positions it as an environmentally responsible fiber.

Carvajal Pulp and Paper’s production plants are strategically located in the Departments of Cauca and Valle del Cauca, sugar producing regions of Colombia and suppliers of the main raw material. There are 2 production plants: Plant 1 – Located in Yumbo, 7 kms from Cali / Plant 2 – Located in Guachené, Cauca.

Challenge

Carvajal Pulp and Paper was challenged to lower its Manufacturing Costs to become more competitive. This reflected in the needs to gain more control over energy costs, chemical costs, and production losses.

As an initial scope, Carvajal Pulp and Paper focused on driving best practices to setup its paper machines. Operators were challenged with a manual setup of the paper machines using parameters that were tracked in several paper sheets or applied based on their own knowledge and experience. This drove many inconsistencies in their production that reflected in downtime, slowdowns and rejects.

To resolve these business demands, Carvajal Pulp and Paper needed to have more visibility of the data, including process, equipment data, raw material costs, quality results, recipes, production schedules among others. This required unification of data from several sources of information – control systems, quality systems, manufacturing execution systems, enterprise resource planning to name a few.

The intelligence gained from this unification allows better runs for each grade of paper. The process allows Carvajal Pulp and Paper to select the best strategies to manufacture each grade/grade spec of paper, optimize costs and standardize quality factors, and also measure and evaluate anomalies to define new guides or process standards. This process is called “The Golden Run”.

“Within three months, Carvajal Pulp & Paper has realized the benefits of The Golden Run Solution. Honeywell’s technology offers us a scalable and expandable solution that can target other areas of our Smart Operations initiative”

Hermes Garcia, Lead Automation & Control Engineer
Solution

Carvajal Pulp and Paper engaged with Honeywell’s consultants to work on the company’s challenges and needs; Honeywell began engineering a flexible, vendor-independent solution to integrate Carvajal Pulp and Paper’s plant floors with its entire enterprise. Honeywell presented a comprehensive solution to achieve Carvajal Pulp and Paper’s vision of Smart Operations.

“\text{We chose Honeywell solutions because Honeywell offered us the best of technology, application experience, and life cycle costs. We used Honeywell Advanced Solutions, including Uniformance Process History Database (PHD), Matrikon Operational Insight (OI) and Matrikon Production Intelligence (MPI)},” said Carlos Garcia, IT Project Manager of Smart Operations.

The solution makes the best use of the company’s process and information technology investments. It complemented existing systems such as ABB Distributed Control System (DCS) and Quality Control System (QCS), Honeywell OptiVision (MES) and SAP (ERP). “\text{Because it involved process control and business systems, this required a strong collaboration between our IT, Process Control and Operations Department(s)},” said Jaime Parra, IT & Telecommunication Manager.

Benefits

“\text{Within three months, we have realized the benefits. Honeywell’s technology offers us a scalable and expandable solution that can target other areas of our Smart Operations initiative},” said Hermes Garcia, Lead Automation & Control Engineer.

Working with Honeywell, Carvajal Pulp and Paper has realized a quick return-on-investment (ROI), achieving benefits such as:

- 25% - 30% downtime reduction on paper machines by stabilizing Top Former’s Drainage and by eliminating web breaks in certain sections due to speed and load
- 3% reduction in rejects per run by enabling the operators to set paper machines as per “The Golden Run”
- A detection of large steam temperature fluctuations on a paper machine’s drying section, which affected product quality over an extended period
- Immediate resolution of frequent variations of amperage and speed in the press section
- Record downtime reduction in coating area(s)

“\text{Smart Operations allows us to make informed operations and management decisions. It provides visibility to measurable variables that need short-term actions; and to indicators and cost information for mid to long term},” said Jaime Parra, IT & Telecommunication Manager.

Carvajal Pulp and Paper’s plant, production and area managers now have a greater understanding of production processes and refer to Smart Operations during regular meetings. This is helping to drive a culture shift to increased accountability by:

- Changing plant operations by allowing Operators to use historical trends to make better decisions to improve long-term production
- Enabling operations engineers to use trends to detect anomalies that could jeopardize plant production before they occur
  Providing maintenance and support engineers with a diagnostic solution that allows for collaborative discussions to identify correct resolutions to problems
- Optimize plans and schedules by improving operations instructions and practices

“\text{Smart Operations represented a cultural change to our Operations, I use this solution every day to understand my plant production},” said Cesar Zuluaga, General Plant Manager. “\text{My team from operators to managers uses this solution on a daily basis to operate, to review results and to understand production constraints that we discuss during our regular meetings}.”
Honeywell Helps Carvajal Pulp and Paper Drive Smart Operations, Lowering Manufacturing Costs Through The Golden Run

**Products/Solutions Installed by Honeywell**

- Uniformance Process History Database (PHD R300)
- Uniformance Process Studio (UPS R300)
- Production Intelligence, Powered by Matrikon (MPI 7.1)
- Operational Insight, Powered by Matrikon (OI 3.5)
- Previous systems installed: Honeywell OptiVision and MatrikonOPC

**For More Information**

Learn more about Honeywell’s products and services, visit our website [www.honeywellprocess.com](http://www.honeywellprocess.com) or contact your Honeywell account manager.

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