Improved performance with
INDUSTRIAL INTERNET
– already today

Industrial Internet is a topic that is widely discussed today as something that will come in the future. However, Valmet has already today a strong infrastructure and technical expertise to serve its customers on a daily basis with the help of Industrial Internet.

For Valmet, Industrial Internet means the ability to capture and share data and information from the pulp, paper and energy production machines and processes, and to utilize it for the benefit of our customers.

Together with our customers we move their performance forward by utilizing the data to adjust operations and to plan preventive maintenance. We have already implemented hundreds of solutions utilizing our Industrial Internet capabilities.

"As an example, we have today over 400 online connections with over 70,000 I/O tags monitored. We have been offering advanced remote analysis services to our customers for a long time," confirms **Johan Pensar**, Director of Digital Services and Analytics at Valmet.

The future is already there.

Long history in the digitalization of process industries

Valmet's background in Industrial Internet lies in 1960's when the first automation solutions came to the market. In 1980's, Valmet launched the first distributed controls and monitoring systems, and in the 1990's was already able to embed intelligence and advanced information into the production processes.

"In early 2000, we started to provide our customers with 24/7 remote services for troubleshooting and for preventive maintenance. Already since 2010 our customers have been able to utilize our information services and remote analysis to increase their productivity, end product quality and raw material efficiency," Pensar says.

Today, our customers can enjoy solutions that enable them to improve their performance by utilizing benchmark data and best practices regarding, for example, energy consumption optimization, fleet analytics and next generation process applications.

Industrial Internet impacts all stages of the production process and brings clear benefits. It enables a more efficient supply chain, enhances asset management and makes both the process and operations more effective.

Clear roadmap in Industrial Internet

Today, enabled by advanced communication technology and big data analysis, Industrial Internet is already moving to the next level– outside the production facilities. We believe that in the future we will see networks of different systems impacting each other, connecting different value chains, and thus changing the whole society we live in, in ways that we can hardly envision today.

Valmet has a clear roadmap forward in Industrial Internet and intends to be a frontrunner in this field also in the future. The unique combination of intelligent process technologies, services and automation is a strong platform for further development projects that are currently ongoing.

In the coming few years, more advanced automation technologies and more diagnostics will be embedded into customers' processes, keeping information security a high priority at the same time. Furthermore, mobile and remote services will be developed to the next level, ensuring the customers a fully mobile access to all information anytime and anywhere.

Valmet wants to be a game changer in utilizing Industrial Internet, bringing new opportunities to its customers. ■

Process Technology

Customer

Services

Automation

Customers are extensively utilizing Valmet's Industrial Internet capabilities.

740	350 / 70,000	320	440	80	Ongoing
Valmet-supplied lines with Valmet DCS	350 Condition Monitoring (CM) references with over 70,000 I/O tags	Advanced process control installations	Online connections with customers	Performance agreements with remote connections	Co-creation of advanced analytics with customers

"Industrial Internet for Valmet means the ability to capture and share data and information from machines and processes, and to utilize it to adjust operations and plan predictive maintenance for the benefit of the customers."

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Serving our customers with Industrial Internet

Possibility to use more biomass fuels

Kuopion Energia Oy produces district heat for the residents of the city of Kuopio in Finland, thus the production reliability is in high priority. They have had Valmet's FuelDiet KCL corrosion control system in use since 2013 at their Haapaniemi 3 power plant. The FuelDiet solution enables to use more biomass fuel without increasing the risk of superheater corrosion.

Jaani Silvennoinen, Valmet's Product Manager for FuelDiet explains: "With the performance agreement and remote connection, we can give stability to the customer's energy production process. As a result, they can now use 100% biomass and get real time measurement of the sulfur/chlorine ratio and hence react immediately if the ratio goes too low. Automatic control helps and guides the operator to run the power plant optimally and they have been able to increase the boiler's maximum load."

Virtual connection, remote diagnosis add to Burgo mill results

A Valmet bleach plant optimization project at Burgo's Ardennes kraft pulp mill in Belgium achieved the customer's expectations and a good ROI. However, this was not the end of the task to maintain and improve the results. The control performance has actually improved under the watchful, remote surveillance of Valmet engineers. As an example, Valmet staff has diagnosed and corrected a temperature regulation problem. Valmet's solution reduced the chemical consumption.

Through daily and monthly reporting and proactive follow-up, control solutions continue over the long term. A Performance Service Agreement includes remote system and process monitoring though a data link to Valmet which includes refined key process indicators (KPIs) and performance triggers. As a result, the Burgo process is virtually 24/7 in Valmet offices where the process performance is analyzed and diagnosed and recommendations can be made about how to correct a problem and improve the results of the controls. The bleaching process performance is monitored stage by stage and regular control performance reports are provided to the customer.

Eric Bazzoni, fiber line production manager, finds this a useful tool as it gives a concise report on key control objectives and uncovers any problems. **Pierre Carnevali**, projects manager, adds: "The reports tell us if we are in a good control range or not, and if we are consuming the right amount of chemicals."

Industrial internet supports process improvement at CMPC Guaíba

In 2013, when Valmet and CMPC signed a contract to supply the main technology to Line 2 at CMPC's Guaíba Mill in Brazil, the delivery included a major part of automation systems for the plant operations, such as Distributed control systems (DCS), Operation training simulator (OTS) and Advanced process control (APC).

Embedded in this supply, Valmet delivery also included the possibility to remote access to operation data, allowing process improvement and system check-outs even when Valmet crew are not physically at the mill.

"The remote access to the DCS and mill data has always to be agreed with the client, due to security reasons, but it has shown to be a powerful tool to support customer operations whenever upset conditions take place. It allows us to provide fast support even during the night or when the problem can't wait for a process engineer to travel to the site. It allows us also to analyze historical data to better understand the changes in process conditions along the time and find ways to further improve the plant", says **Dimas Rodrigues**, Valmet's process manager.

Technical assistant Rafael Santos (on the right) and process service engineer Filipe Centenaro of Valmet viewing the operation data together with CMPC's machine crew.