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TRANSFORM YOUR WORLD

Management of Remote Assets with PI System and Ominor

Presented by **Luigino Rigitano and Marcelo Rodrigues**

Quarcum Technologies

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Agenda

- About Quarcum Technologies
- Business Challenge
- Why the PI System?
- Cases of success
- Conclusion

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About Quarcum Technologies

- Founded in 2009 to provide IoT (M2M) solutions;
- Business Model: IoT solutions as monthly services (OPEX - Operational Expenditure).
- What we developed:
  - Complete hybrid IoT hardware to transmit raw data over cellular and/or satellite networks
  - Special sensors
  - Hardware interface (to capture data of any device in the field)

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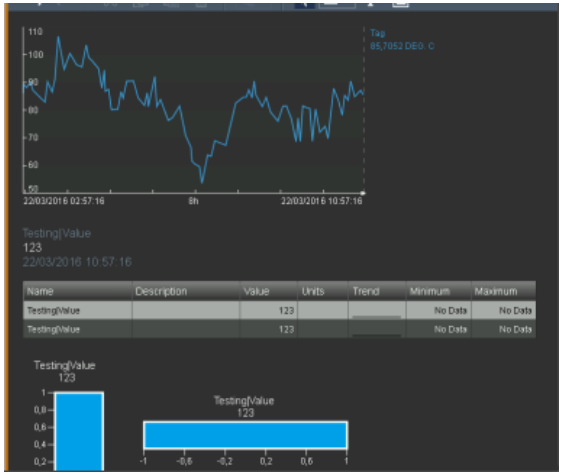
Business challenge: How to deliver valuable information to the customer?

- Visual information – Dashboards
- Easy to customize to any customer
- Anytime and Anywhere (i.e. desktop, smartphones, tablets)



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OSIsoft Connected Services and Quarcum

- provides a simple, secure technical and commercial framework for service providers to access real-time sensor-based data from customer assets
- constant revenue from services
- We don’t sell Hardware. We sell **valuable information** as OPEX or as a monthly service.

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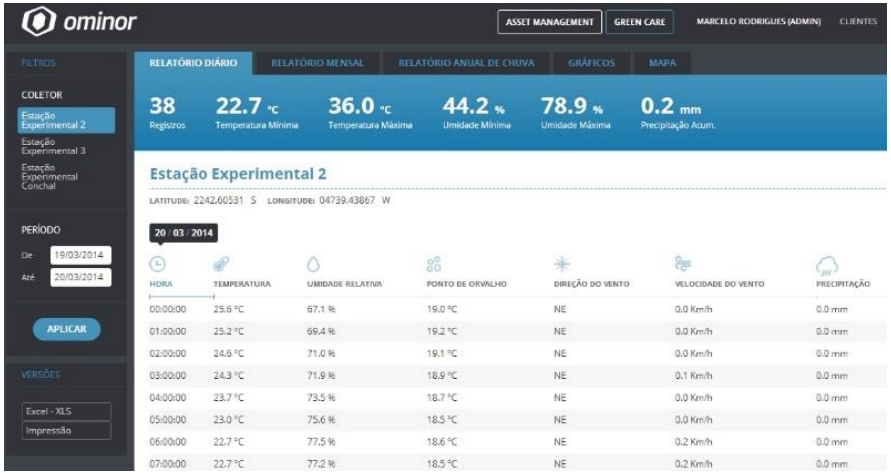
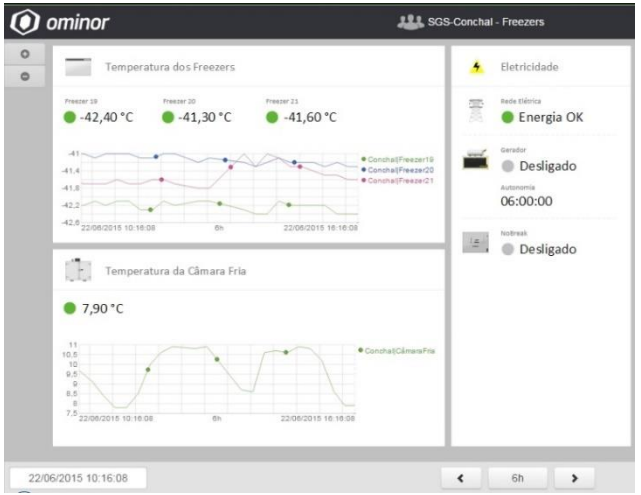
Why the PI System?

The PI System has all we need to transform raw data into information. Delivering valuable information to customers is the key reason for ***Ominor*** to exist. Now using the **PI System** we can offer a complete solution for the IoT market.

Transforming this:



To this:



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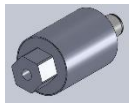
Architecture OMINOR + OSIsoft

Data Sources

- 4-20mA sensors, mV sensors, etc..
- Digital Sensors
- Temperature, Level, Pressure, Position, Load, Torque, etc.
- Power Consumption, Weather Stations, Natural Resource, etc.
-  Quarcum's Sensors
- Industrial protocols: Profibus, CAN, Modbus, WITS, OPC, etc.

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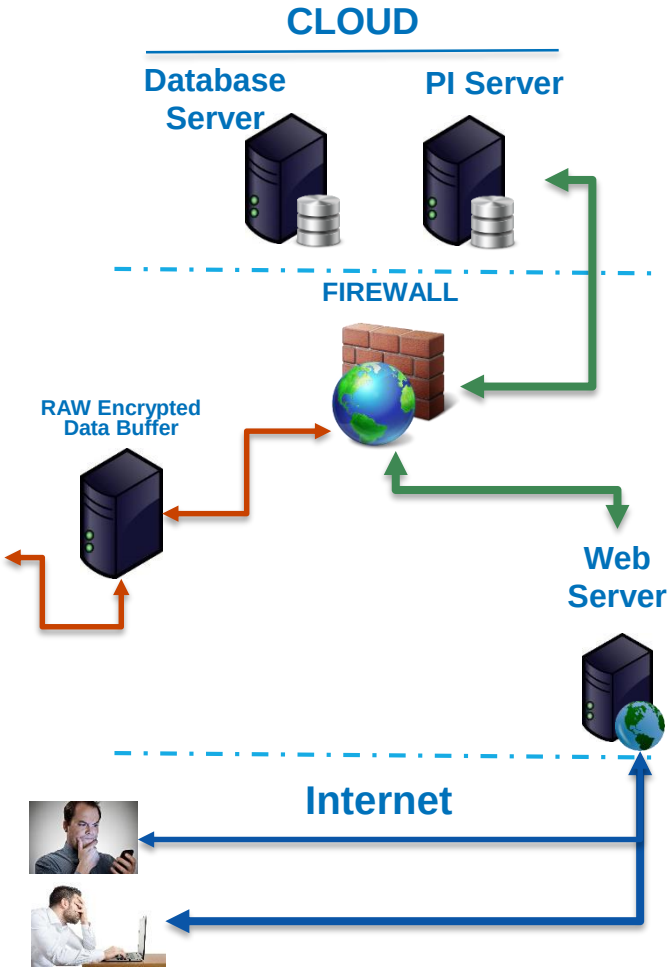
Cable, 2.4Ghz link, 900Mhz link, Fiber, etc.

3G, LTE Ethernet, Wi-Fi, Satellite



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Case: TSMP – CMS Condition Monitoring System

About our customer: TSMP is an **Asset Reliability Services** company. Vibration analysis for rotating machinery is their main service.

Customer's main needs:

- ✓ To have a CMS (condition monitoring system) acquiring data from rotating machinery every 30 minutes
- ✓ To have a special vibration monitoring system to detect unbalancing failure conditions before the failure happens

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Solution Proposed

Data Sources

Quarcum's ***VIBRO3X*** smart vibration sensor with contact temperature

RPM Sensor

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Modbus Communication

Local Alarm Interface

OMINOR and Connected Services

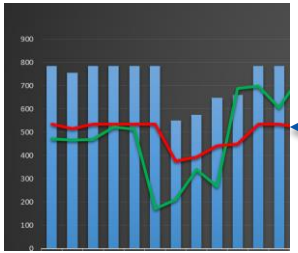
3G Communication

RAW Encrypted Data Buffer

PI System

Web Server

Unbalance Failure Tracking



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Case: TSMP

FACTS:

In the middle of 2015 a TSMP customer had a major failure in a 650HP blower of a boiler system, which caused a loss of more than $**2.5 Million,** including replacing the entire steam boiler and overall cost of downtime, penalties, man hours, parts, etc.

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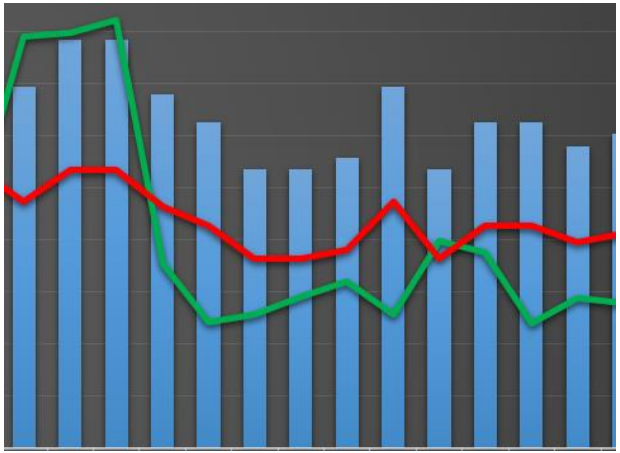
Case: TSMP

FACTS:

Ominor CMS Solution has been proven. TSMP was able to save a recurrent major failure in the same customer



- Using Connected Services and PI Coresight, it was able to track the failure process.
- With Notifications, TSMP and its customer were able to get alarms based on set points of failure trends.
- TSMP was also able to see in real time the blower condition.

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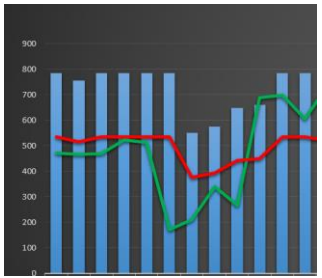
Case: TSMP – Conclusion

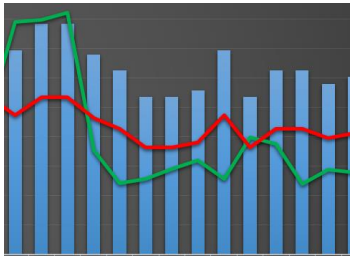
OMINOR powered by Connected Services was definitely decisive to TSMP and its customer by detecting an unbalancing failure and saving them money.

For an $ 899.00 (monthly services fee) TSMP was able to save a couple million dollars for its customer.

- ✓ Avoid **$2.5 Million** in losses (machine rebuild, man hours, power production penalties, etc.)
- ✓ Follow up trends in real time, anytime and anywhere
- ✓ No power generation interruption
- ✓ No machinery destruction
- ✓ Safety

SOLD !!!





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Case: SGS – Remote Freezers Monitoring System

About our customer: SGS is a worldwide service company. Their Agribusiness Services qualifies and tests the real performance of seeds (soy, corn, etc.) in the field (farms).

Customer Main Needs:

- ✓ Temperature Monitoring for industrial grade freezers (ultra freezers) for seeds preservation
- ✓ Monitor power condition, emergency power generator status and fuel level
- ✓ Trend and track temperature conditions inside the freezers each 15 minutes
- ✓ Monitor multiple farm sites around Brazil
- ✓ Get notifications and alarms on pre-established conditions
- ✓ Historical data

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Solution Proposed

Data Sources

Multiple Temperature Sensors

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3G Communication

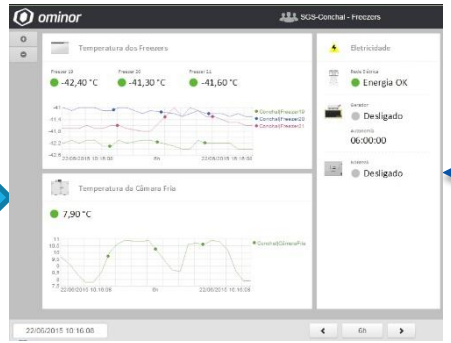
OMINOR and Connected Services

RAW Encrypted Data Buffer

PI System

Web Server

Freezers Dashboard



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Case: SGS

FACTS:

One industrial grade freezer can store a large amount of research seeds.

A freezer failure can destroy a **year of research** with more than **$1 million in losses** in farm plantations, fertilizers, man hours, customer penalties, inconclusive tests, etc.

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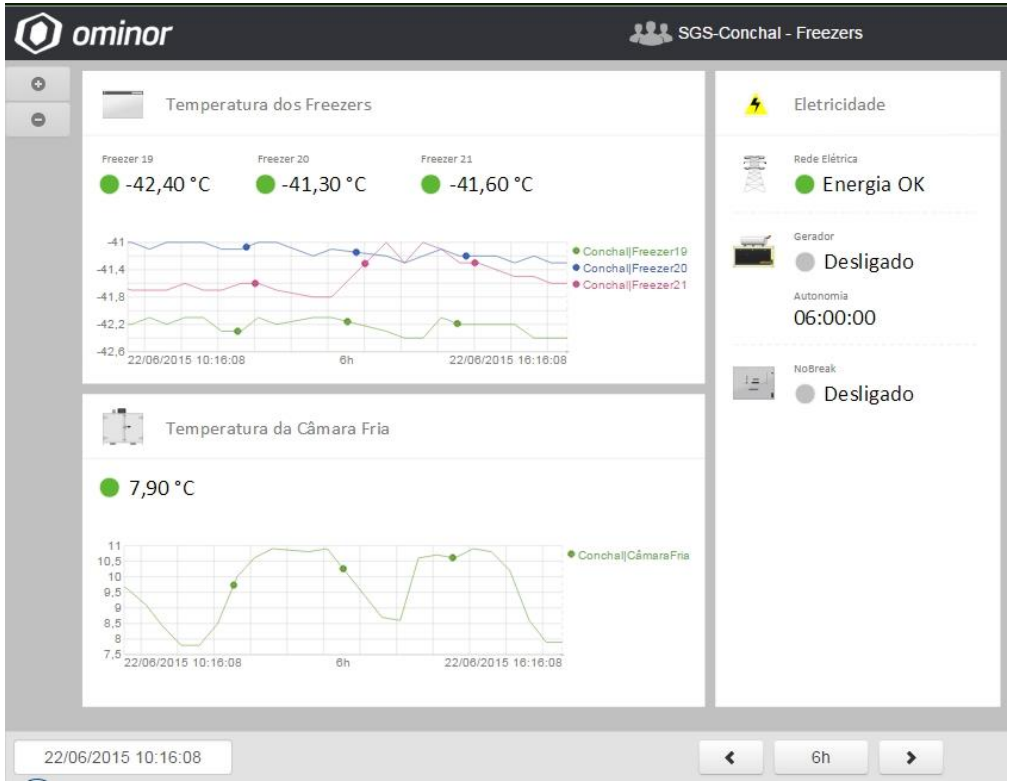
Case: SGS Gravena



- PI Coresight dashboard shows real-time information from each farm installation.
- Notifications is configured to send alerts based on pre-established conditions.
- Dashboard is available anytime and anywhere.
- A report is generated weekly by the PI System.

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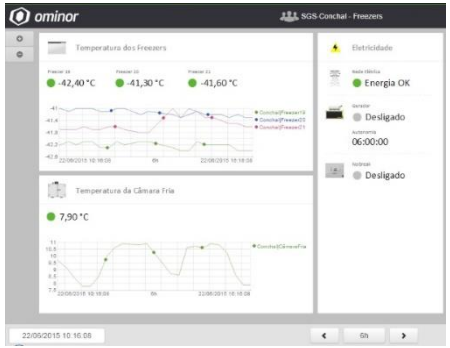
Case: SGS Gravena - Conclusion

OMINOR powered by Connected Services was definitely decisive to SGS by completely monitoring their seed assets in different locations.

For a $150.00 (monthly services fee) per site location SGS is able to care for its most expensive asset – THE SEEDS.



- User has access to dashboard anytime and anywhere.
- Notifications help all research personnel to take actions avoiding the loss of seeds.
- Customer pays for OPEX – Monthly fee
- SGS has adopted the OMINOR solution for all its seeds research farms in Brazil

SOLD !!!

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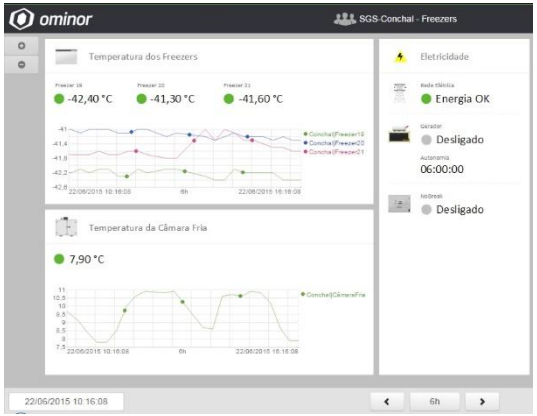
Conclusion

OMINOR powered by Connected Services has proven to be great for customers who are looking for a complete IoT solution based on **SERVICES** with plans for a 12, 24 or 36 months contract as OPEX (operational expenditure).

It is a very flexible, complete, high end and proven data integration solution with a lot of applications.



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State your **name & company**

Please remember to…

Complete the Online Survey for this session

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谢谢

Danke

Gracias

Merci

Thank You

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Спасибо

Obrigado

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