Vestas and Spotfire

Governed Data Discovery & Self Service
Spotfire Apps – Rapid Configuration
Spotfire APIs – Enterprise Deployments
Predictive/Prescriptive Analytics

Global wind energy provider, $8B revenue, 16k employees
Vestas: Turbines and Weather Data

- 60,000 Vestas Turbines in Production
- 33,000 Turbines: real-time data to Vestas
  - 500-1000 sensors / turbine
  - 10 minute interval – 1 minute interval if needed
  - 2,376,000,000 data points / day

Weather data
- 3km grid across globe
- Wind measurements: 1 degree increments, by hour for last 16 years
500+ signals

- Environment
  - Wind Speed
  - Wind Direction
  - Nacelle Direction
  - Temperature

- Components
  - Rotation Speed
  - Vibrations
  - Temperatures
  - Pressures
  - Consumption

- Controller Cabinet
  - Event Logs
  - Configuration

- Production
  - Power Output
  - Power Quality

- Operation
  - Pitch
  - Position
  - Speed
  - Loads
Jobs Done. Analytics Self-Service

1. Software Roll-out
2. Availability Simulator
3. Performance benchmarking
4. De-icing (business case and performance)
5. CIM Execution
**Customer Success**

**Customers Current on Software**
Issues with old software highlighted – bad actors, inefficiencies and root cause analysis.

**Support team working in tandem with sales and services to maintain optimal equipment performance**

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**Sales & Services**

**Sales & Service Field Analysis**
What is Uptime + Energy Delivery to Grid for given turbine model in specific location.

**Sales can sell revenue-sharing contracts! High-Value, bottom-line €€€€€€€s**

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**Operations & PdM**

**Equipment Surveillance: Services**
Analytics senses ice-build-up with weather context in real-time; using known patterns from historical data.

**Equipment is remote-controlled for maintenance + wind-capture by turbine and across farm!**
“Spotfire has evolved at Vestas,” Andersen said, “non-specialists have become increasingly adept at using it, a self-service analytics environment with more than 1000 licenses used daily.”

"In 2008, Vestas’ Lost Production Factor was 4.4 percent. Last year, it was 1.5 percent, which, according to Andersen, compares to an industry average of 3.6 percent. For Vestas customers,” Andersen said, “this translates into a savings of €150 million.”

- Kim Emil Andersen, Head of Analytics, Vestas

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Vestas Analytic Apps – Functional Areas

Maybe put the functional area icons below at bottom of slide 9 - Shows how apps have spread across functional areas as part of the growth