ETIP Wind

EUROPEAN TECHNOLOGY & INNOVATION
PLATFORM ON **WIND ENERGY**

digitalization@windenergy How to harvest the full potential?

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September 2016

Potential of Digitalization

Project origination / development
- Project portfolio management
- Business case tracker
- Modelling

Wind farm planning
- 3D simulations
- Array Layout Designer
- Tendering
- Project optimization
- E-auctions

Construction
- RFID chips
- Logistic tracking
- Drawings
- Digital Copy
- Training
- Quality management
- Virtual reality

Operation
- RT Monitoring
- Field force management
- Smart repairs
- Logistic optimizer
- Predictive analytics
- Forecasting
- Blade inspections
- CMS
- Connected services
- databases

Decommission
- Mobility
- Spare parts management
- O&M optimization
- Machine learning for analytics
- Augmented reality
- System integration

BIG UNKNOWN
- Project management
- documentation
- Logistic tracking

Manufacturing
- New revenue streams ?
- Documentation
- CAD / CAF
- certificates
- 3D printing
- Load test
- Simulations

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We are operating in a box - and how to integrate the box?
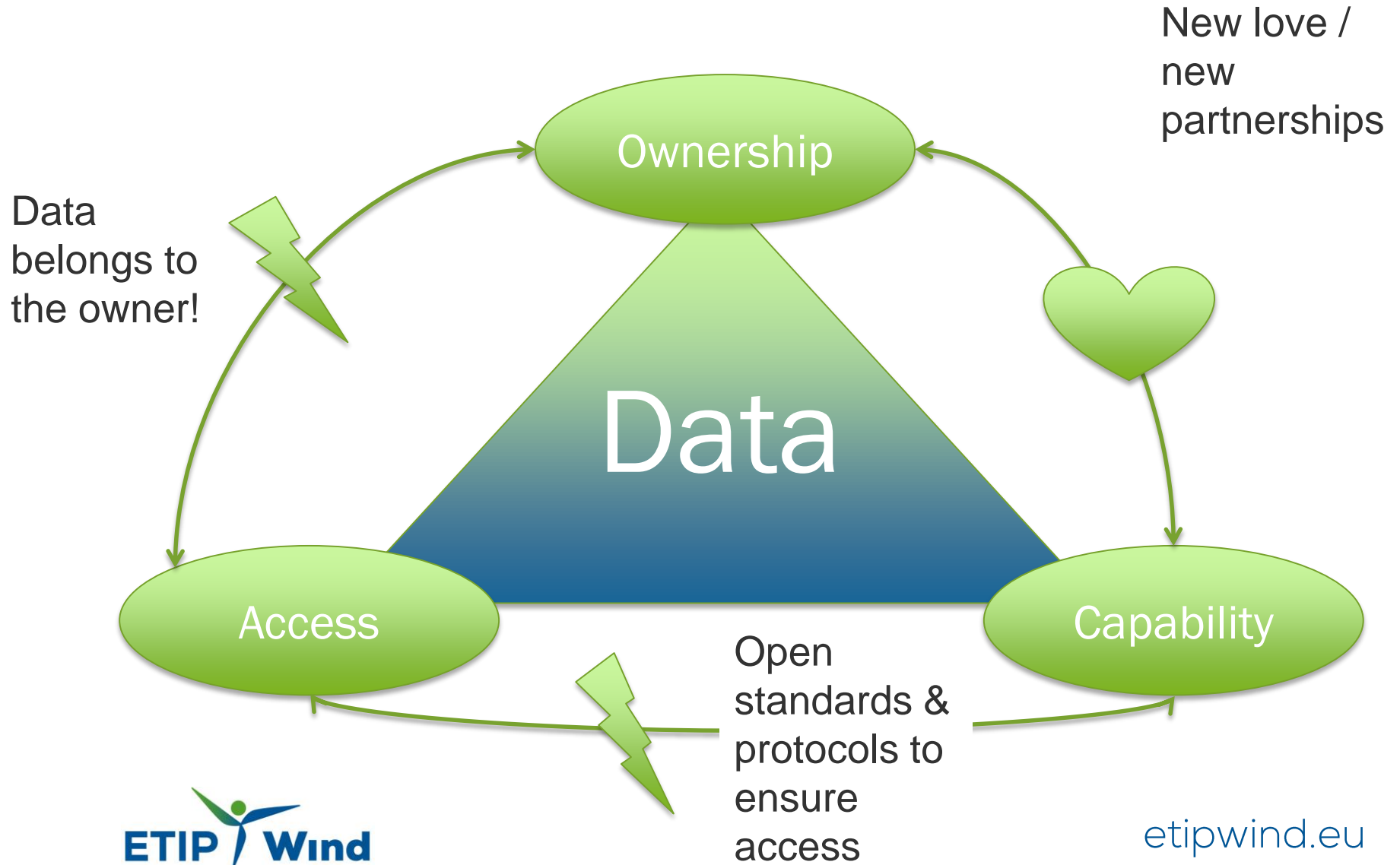
"Expand the box"

- Increase energetic availability/ reduce down times

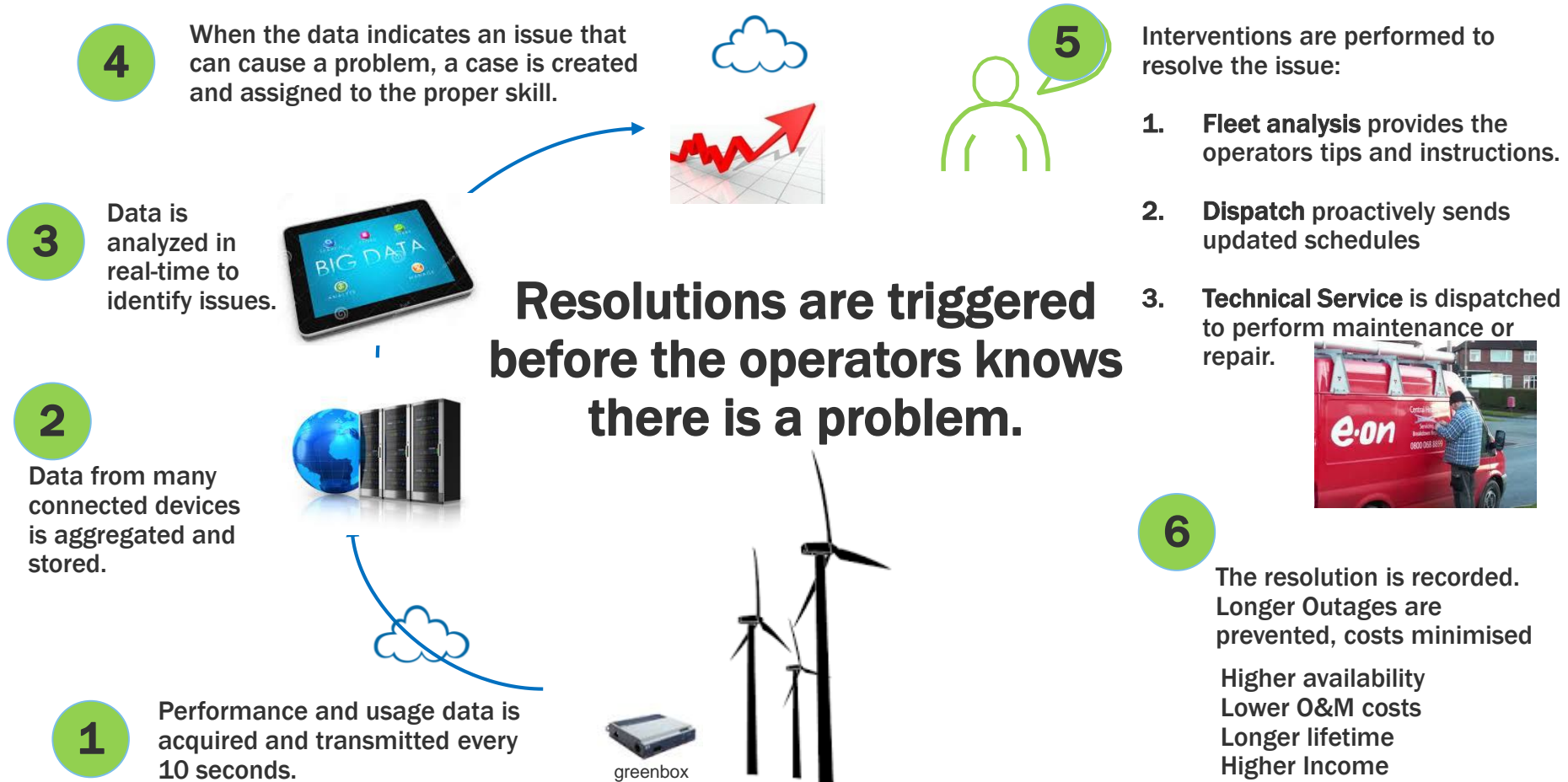- Increase efficiency

- Reduce O&M costs

- Extend lifetime

"Integration into the new energy system"

- How to integrate wind farms / Solar PV into a future energy system?

- Number of "Prosumer" is increasing

- Quo Vadis Grid quality?

- Role and potential of block chain technology not clear yet

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It is all about data! - a new currency?

New love / new partnerships

Data belongs to the owner!

Open standards & protocols to ensure access

Ownership

Data

Access

Capability

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Only if those questions are answered we can create a world of connected services

4 When the data indicates an issue that can cause a problem, a case is created and assigned to the proper skill.

5 Interventions are performed to resolve the issue:

1. **Fleet analysis** provides the operators tips and instructions.

2. **Dispatch** proactively sends updated schedules

3. **Technical Service** is dispatched to perform maintenance or repair.

3 Data is analyzed in real-time to identify issues.

Resolutions are triggered before the operators knows there is a problem.

2 Data from many connected devices is aggregated and stored.

6 The resolution is recorded. Longer Outages are prevented, costs minimised

Higher availability
Lower O&M costs
Longer lifetime
Higher Income

1 Performance and usage data is acquired and transmitted every 10 seconds.

greenbox

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**Technology development will not stop -
Let's use it – for a cleaner energy world**

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Thanks for your attention

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