



BIG DATA in manufacturing

Lauri Ilison, PhD

Data Scientist

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What is Big Data.....?

Concept definitions

- Only volume issue
- Unstructured vs structured data
- 3V's - Volume, Velocity, Variety
- 7V's – Volume, Velocity, Variety, Variability, Veracity, Value, Visualization

The story

- Google invented technology, published through the whitepapers,
- Rewritten by open-source community
- Heavily used by all big internet companies, internet scale capabilities

Hadoop has been adopted!

2003 2004 2005 2006 2007 2008 2009 2010

Google Whitepaper

Google file system reimplementation

YAHOO! Google AOL Amazon

facebook

Microsoft

IBM

Oracle

LinkedIn

Twitter

Netflix

EBAY

Microsoft

IBM

Oracle

LinkedIn

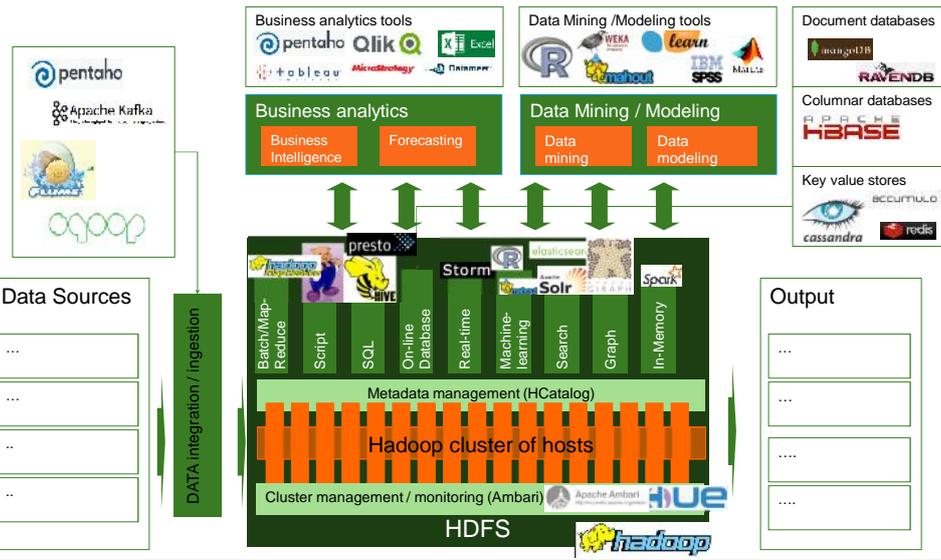
Twitter

Netflix

EBAY

NORTAL

Big Data technical stack



The values of Big Data

- ‖ Collect and store all data generated during the manufacturing
- ‖ Analyzing all data Batch or Real-Time
- ‖ Apply Machine Learning to find patterns from all data
- ‖ Put the data driven focus into the business models

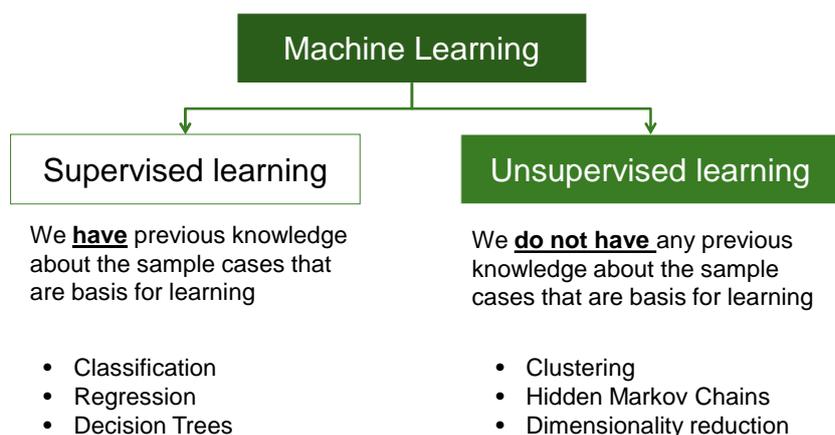
The logo for NORTAL, featuring a stylized green and blue graphic to the left of the word "NORTAL" in green capital letters.

BIG DATA technology cornerstones

- Scales out horizontally
- It is tested in extreme performance measures
- Linear cost increase, step-by-step rollout
- Mostly open-source technology
- No costly license fees

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Supervised and Unsupervised learning



NORTAL

What to do next as technology is there?

What are possible problems to be solved?

How to start?

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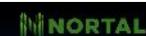
Nortal 4 steps approach for Big Data problems

STEP 1	Knowledge creation	Seminars, workshops Real-life examples
STEP 2	IDEAs discovery	Find potentially valuable data Apply short validation, test
STEP 3	Plan and prototype	Minimalistic Prototypes Setup and business value validation
STEP 4	Implementation	Implement: fast, low risk, scalable technology Integrate with existing processes



Use cases in manufacturing

- Manufacturing data analytics
- Predictive event modeling
- Predictive maintenance
- Defects detection/analytics – quality controls
- Product feedback collection
- Product performance analytics
- etc



Nortal Group

Nortal is an international high-end software development solutions & services provider in public and private sector.



1120+

implemented projects

36

MEUR turnover(2013)

445

clients in 22 countries

650

professionals in 8 countries

10

Operation countries

 NORTAL

Hortonworks partner

Nortal is Hortonworks system integration partner in Finland and Baltics

Hortonworks Data platform is industry's only 100-percent open source Hadoop distribution



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Thank you!

Questions?

Lauri Ilison, Nortal

Email: lauri.ilison@nortal.com