BIG (SMART) DATA ANALYTICS IN ENERGY

TRENDS AND BENEFITS

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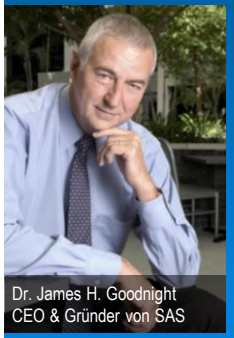
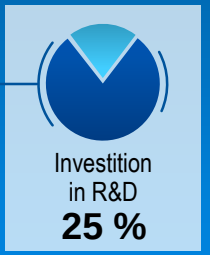

Dr. James H. Goodnight
CEO & Gründer von SAS

Customer around the globe trust SAS at more than 65.000 locations – 91 of Top100 FORTUNE Global 500® companies– trust SAS solutions

- Largest privately held software company
- Founded 1976 in Cary, North Carolina
- 13.000 employees worldwide
- Since 2002 represented in Romania
- Great Place to Work

Constant Revenue increase
1976-2014



SUCCESS

Analysts views

FORRESTER
OVUM
DATAMONITOR
PAC Pierre Audoin Consultants
Gartner
IDC Analyze the Future
Chartis

Value generated continuously

VATTENFALL
npower An RWE company
eDF
DONG energy
ENERJiSA
NUON
BC hydro
Dominion

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SAS INSTITUTE | MARKET LEADER IN ADVANCED ANALYTICS

FORRESTER®

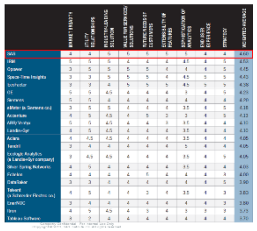
The Forrester Wave™

The Forrester Wave™: Enterprise Business Intelligence Platforms

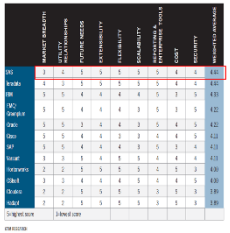
The Forrester Wave™: Big Data Predictive Analytics Solutions

The Forrester Wave™: Enterprise Fraud Management

GTM RESEARCH



Analytics



Data Management

Gartner

Magic Quadrant

Magic Quadrant for Business Intelligence and Analytics Platforms

Magic Quadrant for Advanced Analytics Platforms

Magic Quadrant for Data Integration Tools

Magic Quadrant for Data Quality Tools

Magic Quadrant for Multichannel Campaign Management

Magic Quadrant for Integrated Marketing Management

Magic Quadrant for Marketing Resource Management

IDC

Analyze the Future

IDC ranks SAS no. 1 in advanced analytics with a marketshare of 36.2%

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BUSINESS VISUALIZATION

COMPONENTS OF BIG (SMART) DATA ANALYTICS

MANAGED SELF-SERVICE

END-TO-END ANALYTICS PLATFORM

INTEGRATION INTO THE USER'S WORLD

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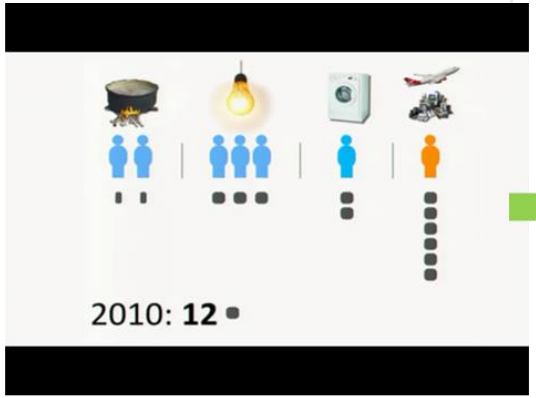
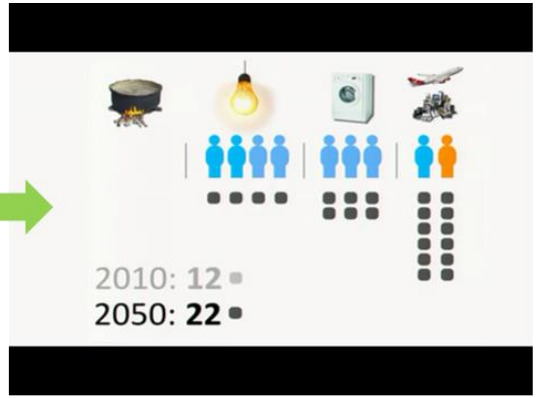
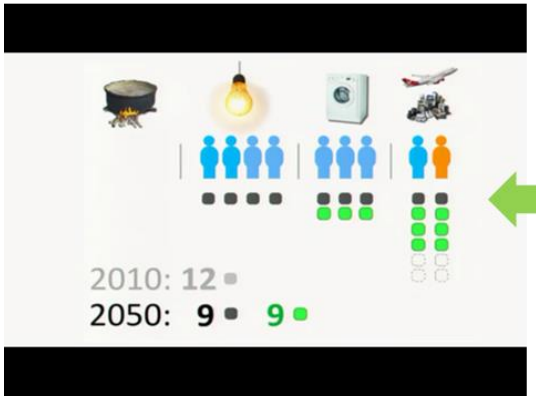
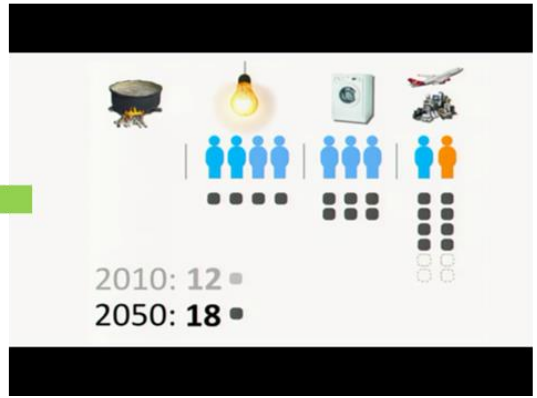
MAGIC WASHING MACHINE TALES

THE ENERGY CONSUMPTION IN THE WORLD (BY HANS ROSLING)









Using and delivering the energy efficiently will become more important!!

http://www.ted.com/talks/hans_rosling_and_the_magic_washing_machine.html

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KEY TOPICS

SMART METER : is the foundation!

…

- ✓ SENSORS (FEEDER METER) … REAL TIME MANAGEMENT
- ✓ PREDICTIVE ASSET MANAGEMENT AND OPTIMIZATION
- ✓ ELECTRIC VEHICLES INFRASTRUCTURE
- ✓ DEMAND RESPONSE
- ✓ RENEWABLES … DISTRIBUITED GENERATION
- ✓ BATTERIES

…

SMART GRID : how to deliver energy efficiently!

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SMART GRID AND PORTFOLIO PLANNING

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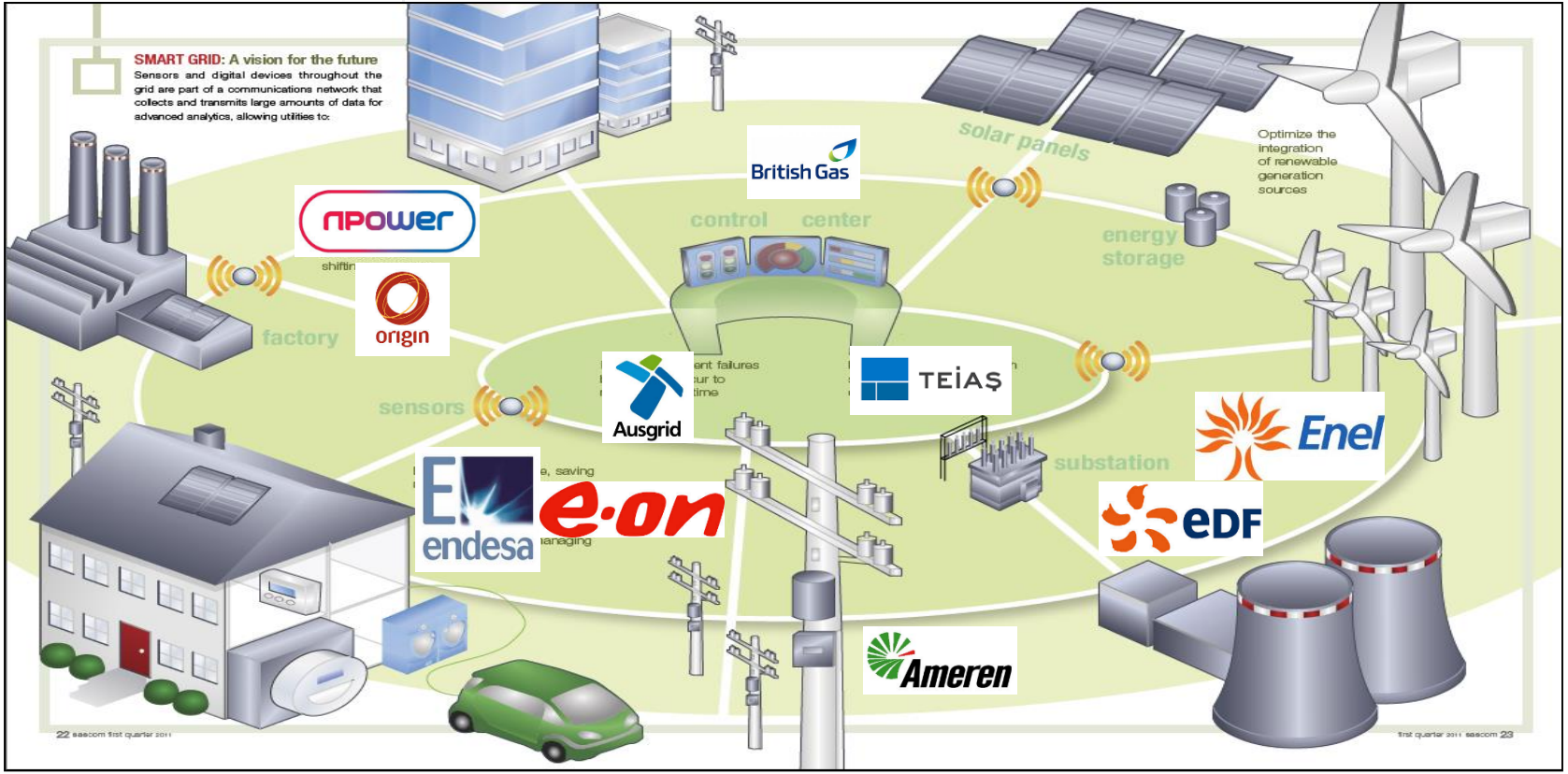
THE SMART GRID

NEW DATA TRIGGERING NEW PROCESSES



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BIG DATA… IS EVERYWHERE

SENSORS AND TRANSACTIONS DATA

- Smart Meters
- Distributed energy sources
- Customer Interactions
- Intelligent Devices
- Transmitters, Indicators
- Line Sensors
- Smart Cars
- And more…

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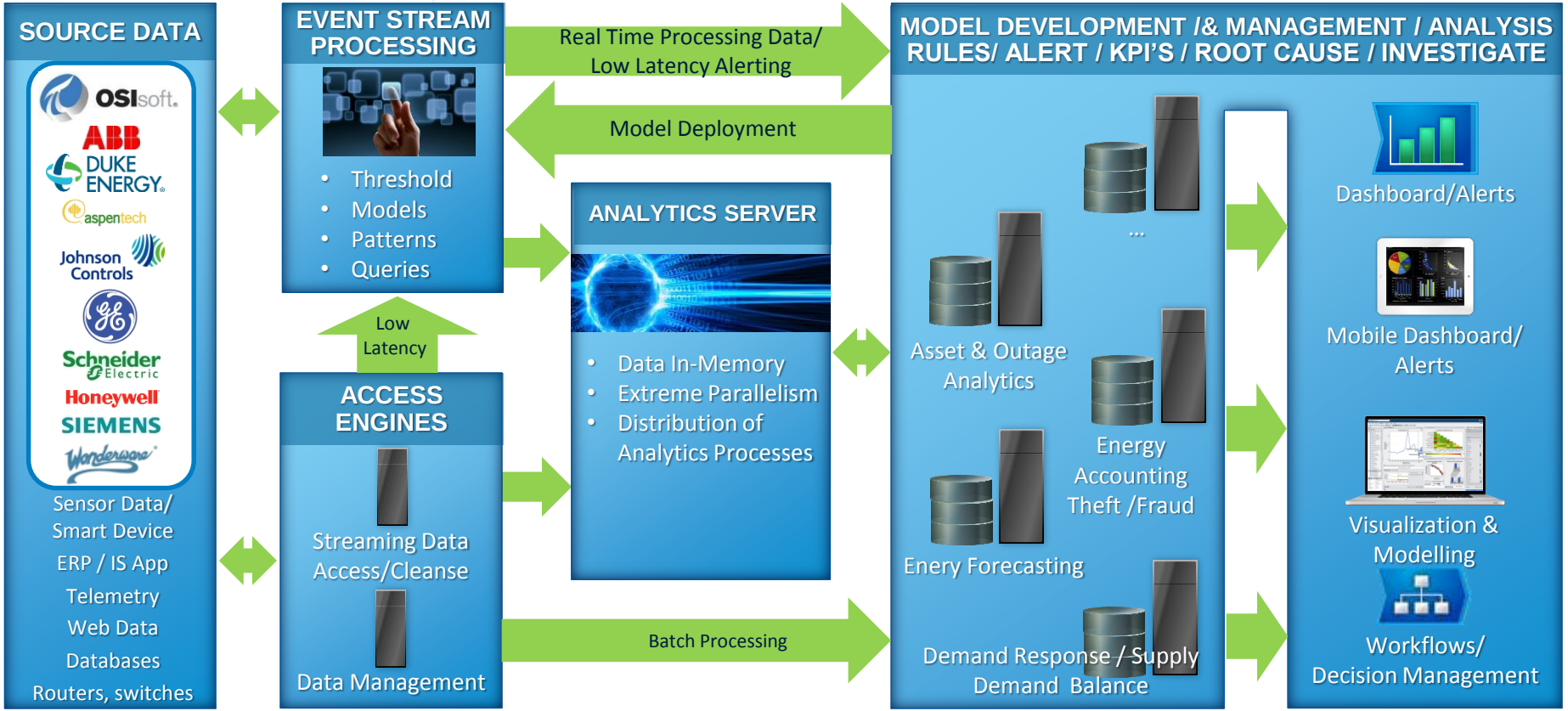
Can you see the problem?
Can you find a solution?
Can you convert to a predictive monitoring?
16Apr
2011
01May
16May
01Jun
16Jun
01Jul
16Jul
01Aug

SMART GRID ANALYTICS

HIGH PERFORMANCE ANALYTICS PLATFORM – EFFICIENT & OPTIMIZED APPROACH



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LESSON LEARNED | THINK BIG … START SMALL

FIRST STEP

SMART METER DEPLOYMENT … OPTIMIZATION

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SMART METER DEPLOYMENT OPTIMIZATION

WHAT DOES DEPLOYMENT OPTIMIZATION INCLUDE

- ✓ Optimize the rollout process
- ✓ Monitor performance of the rollout plan
- ✓ Choose the right pilot customers
- ✓ Manage timely and effective customer communications
- ✓ Forecast resources for installations

What if you could ...

Smooth the rollout process
What if you could reduce stranded assets, increase hit rates for installation appointments and quickly profile resource usage and availability?

Closely track deployment plans
What if you could track installation problems online, conduct accurate root-cause analyses of faults and get near-real-time updates to installation plans?

Increase retention
What if you could install meters for the most profitable customers first and avoid installations for those likely to churn?

Communicate more effectively
What if you could strengthen consumer awareness, trust and knowledge through more timely, targeted communications?

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DEPLOYMENT OPTIMIZATION

EXECUTIVE OVERVIEW; ROLLOUT SUMMARY

(1) Initial screen for Financials shows the high cost on logistics and staff

(2) Moving to the forecasting of meter installation (yellow = historic installation, red = forecasted installations) will show the amounts to be installed until end 2014 on a monthly basis. Tendency is increasing when new installation troops are coming in

(3) Waterfall diagram shows accumulated installations until end of 2014 (program end) and there is no gap in the end of the program. So, the program is progressing as it should in velocity of the roll-out.

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DEPLOYMENT OPTIMIZATION

EXECUTIVE OVERVIEW; PREDICTIVE ANALYTICS

(1) Exec investigates the employee performance and find a high correlation of highly ranked employees to their ‘good’ performance; they are also meeting their appointments in most cases

(2) Focusing on training the engineers the installation complaints are decreasing over time (right bottom). The target to be below 5% complaints is still not met (left bottom). (right upper) shows the sentiment in the public related to smart metering in general collected from social media networks. Two dips are related to (1) quality issue of devices and (2) health and security issues of smart meters

(3) Visibility on high percentage that engineer did not show up in appointment, or customer was not there or customer cancelled (10.6%+14.1%+1.9% = 26.6%)-> high costs due to re-visits

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DEPLOYMENT OPTIMIZATION

CUSTOMER MGT; COMPLAINTS

(1) It is also visible, that the complaints on the installations are 6.95% and therefore quite high. So, the installation process seems not optimal and customers seem to have this perception too.

(2) Sentiment for smart meter installation collected from social media networks are yellow (0.24), so also here some room for improvements

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DEPLOYMENT OPTIMIZATION

PROGRAM OPT.; SUPPLIER PERFORMANCE

(1) In general it is visible, that the meter manufacturers do underperform their SLAs (lower)

(2) Same result on this screen (upper right)

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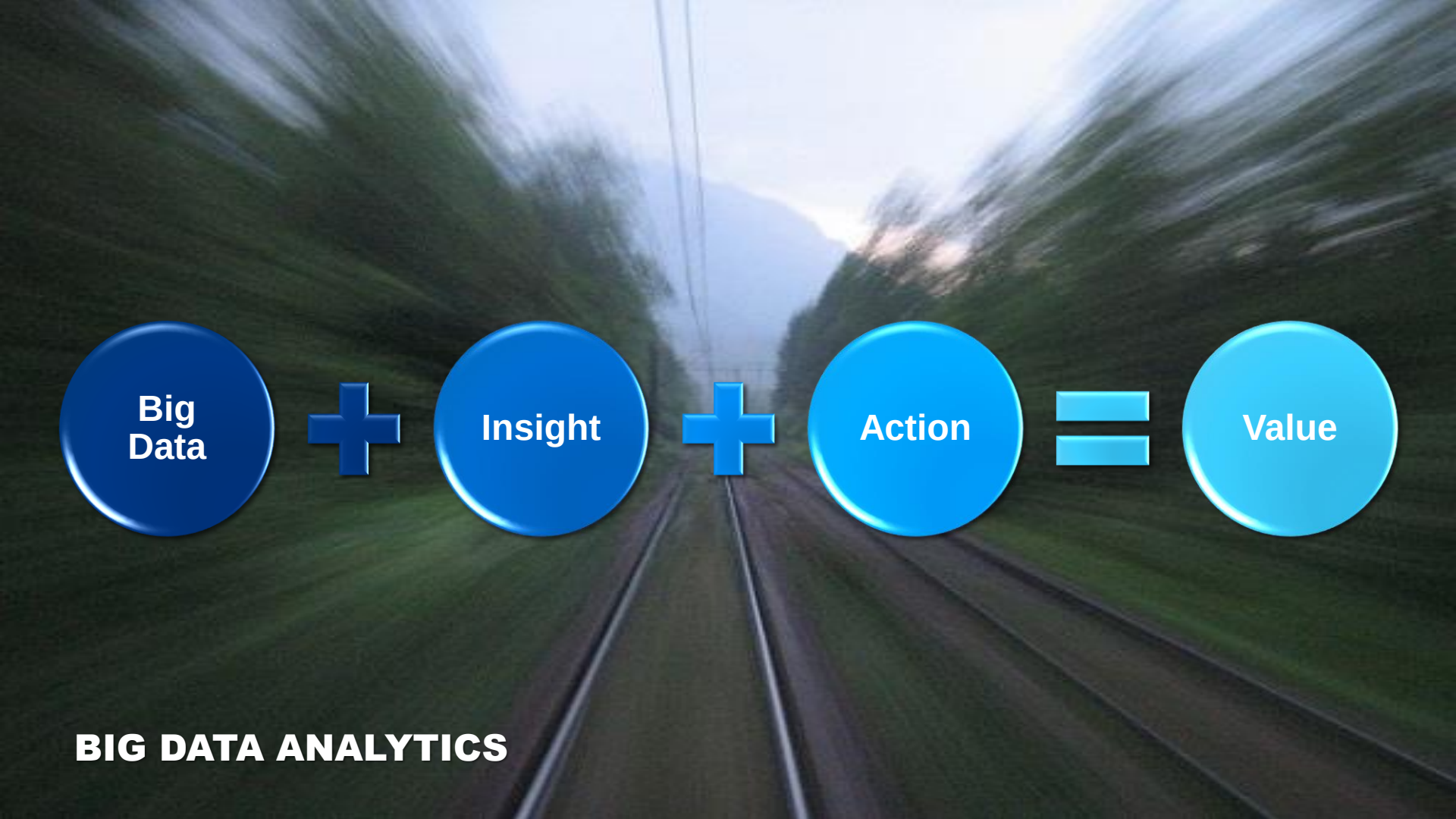
Big Data
Insight
Action
Value
BIG DATA ANALYTICS

SECOND STEP (POSSIBLE)

SMART GRID AND PREDICTIVE MAINTENANCE

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SMART GRID AND PREDICTIVE MAINTENANCE

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SECOND STEP (POSSIBLE)

SMART METER DATA MONETIZATION

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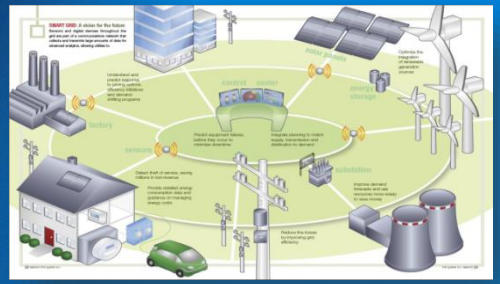
SAS ANALYTICS FOR UTILITIES

NETWORK OPERATIONS – CASE STUDY

Ausgrid



Ausgrid, Australia network comprises more than 200 large electricity substations, 30,000 small distribution substations, 500,000 power poles and almost 50,000 kilometres of above- and below-ground cabling.

Business Issue:

- Need to draw greater insight from its 67 billion meter reading records to support its decision making, management reporting, regulatory compliance and forecasting.

Results:

- Enabled management reporting in minutes instead of hours
- Helped fine-tune investment and operating strategies and expenditures for the next five years
- Single customer view help gain insight into network performance and demand forecasting
- Enabled quantify the network benefits of solar generation

> *"We've saved hours when it matters most. Furthermore, our skilled resources are now redirected from data-intensive work to working on strategic questions."*
>
> Daniel Collins
> Manager for Strategic Analysis

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#1 SMART GRID ANALYTICS VENDOR

GTM RESEARCH: Comparative Vendor Rankings for Data Analytics and Application Layer

	MARKET BREADTH	UTILITY RELATIONSHIPS	INDUSTRY-LEADING SOLUTION	VALUE FOR SERVICES/ SOLUTIONS	FUTURE NEEDS OF CUSTOMERS	EXTENSIBILITY OF FEATURES	SOPHISTICATION OF ANALYTICS	END USER EXPERIENCE	STRATEGY	WEIGHTED AVERAGE
SAS	4	4	5	5	5	5	5	4	4	4.60
IBM	5	5	5	4	4	4	4.5	4	5	4.53
Opower	3	5	5	5	5	4	4	4	5	4.45
Space-Time Insights	3	3	5	5	5	4	4.5	5	5	4.43
EcoFactor	3	3	4	5	5	5	4.5	5	5	4.38
GE	5	5	4.5	4	4	4	3	4	5	4.23
Siemens	5	5	4	4	4	4	4	4	4	4.20
eMeter (a Siemens co.)	3	5	5	4	4	4	3.5	4	5	4.18
Accenture	4	5	4.5	4	5	3	3	4	5	4.13
ABB/ Ventyx	5	5	4.5	4	4	3	3.5	4	4	4.10
Landis+Gyr	4	5	4.5	4	4	4	3.5	4	4	4.10
Aclara	4	4.5	4.5	4	4	4	3.5	4	4	4.05
Tendril	3	4	4	4	4	4	5	4	4	4.05
Ecologic Analytics (a Landis+Gyr company)	3	4.5	4.5	4	4	4	3.5	4	5	4.05
Silver Spring Networks	4	5	4	4	4	4	3.5	4	4	4.03
Echelon	4	4	4	4	5	4	4	4	3	4.00
DataRaker	3	3	4	4	4	4	4	4	5	3.90
Telvent (a Schneider Electric co.)	4	5	4	4	3	4	3.5	4	3	3.83
EnerNOC	3	4	4	4	4	4	4	4	3	3.80
Itron	4	5	4.5	4	3	4	3	3	3	3.73
Tableau Software	3	2	4	4	4	4	4	4	4	3.70

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THANK YOU

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