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Netico Energy Insight

Know your energy future

About Netico

- Founded in 2010
- Headquarters in Horgen, Switzerland (Netico GmbH)
- R&D office in Nis, Serbia (Netico Solutions DOO)
  - Established in April 2011
- Branch office in Doha Qatar (Netico Middle East Ltd.)
  - Established October 2012
- Employs 30 highly skilled development/application engineers
  - Experience in embedded hardware and software development and delivery of integrated industrial solutions
- Specialized in delivery of Industry 4.0 products, solutions and services


The company Netico GmbH based in Horgen is certified

"ready for sustainable business development"

and awarded with the

CTI START-UP LABEL

Bern, April 14, 2015

Lutz Nolte
Chairman of
CTI Certification Board

Peter Harboe-Schmidt
Head Coach East

CTI CERTIFIED

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Innovation Promotion Agency CTI

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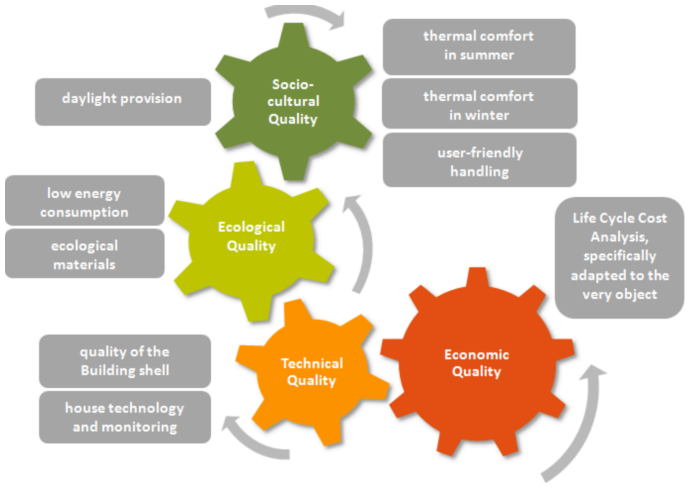
Today Communities challenged World

- Role models for climate protection and energy efficiency.
- **Accurate forecasting** of electrical energy consumption is important for
  - Management of energy use
  - Demand planning
  - Electrical energy trading
  - Balancing and management of renewable energy sources
  - Management of energy losses
- To exploit the savings potential, establishing a professional energy management.

Upcoming Questions



- Do you need energy data collection for energy balancing or your energy management system?
- Would you like to use not only the energy data but also process or operating data for the generation of key figures?
- Is your data recorded on existing systems but can not be evaluated?
- Do you want to reduce your load peaks or react to market conditions through targeted load management?
- Are you legally required to save energy or signed an agreement and need external help to save?
- ...

... you can't improve what you can't measure

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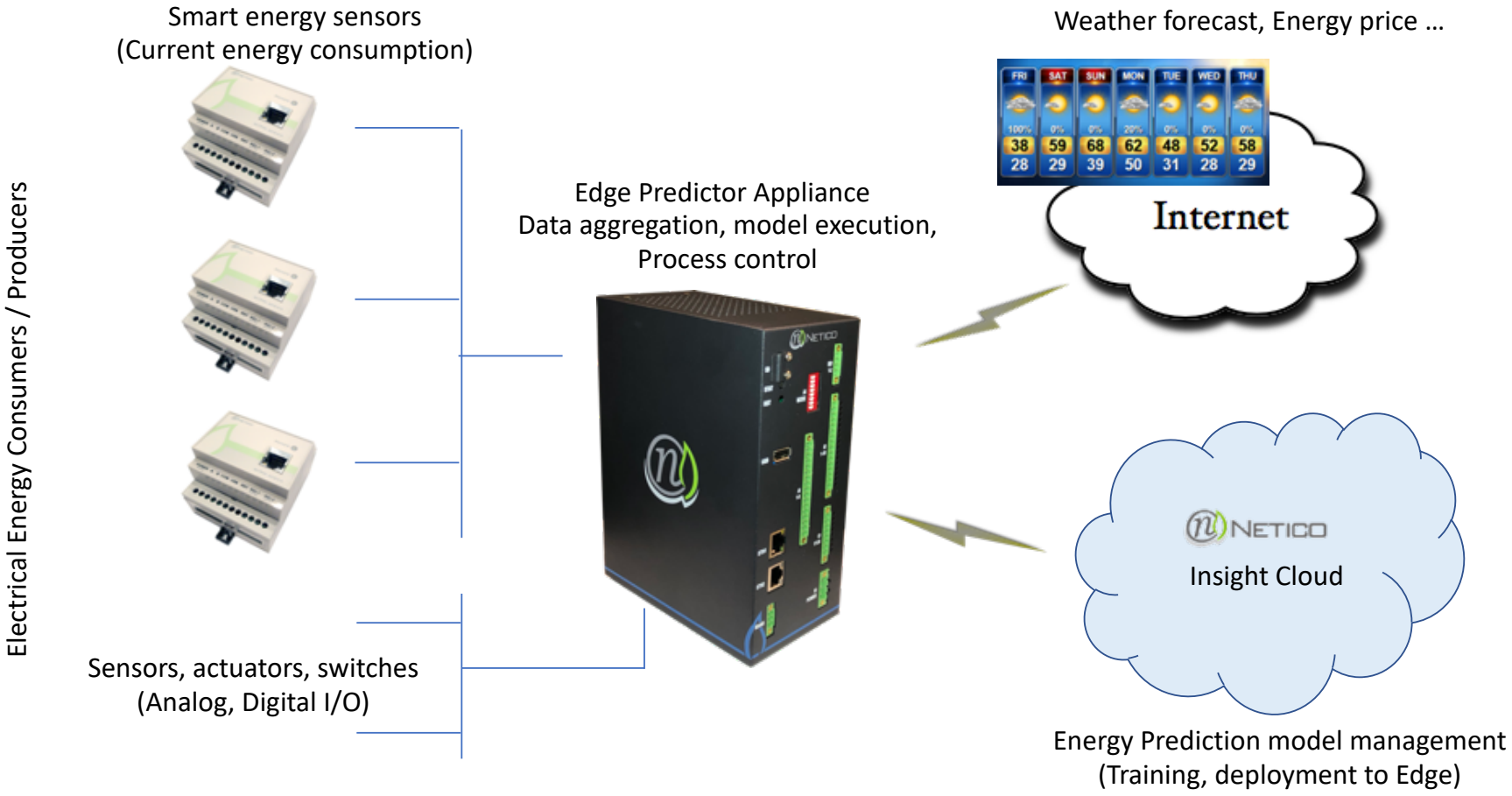
Solution

- Record the energy and operating data for every possible data interface - simply and with little effort.
- Our energy prediction algorithms help you look at your future electrical energy needs
  - optimize energy purchasing practices and future energy use
  - optimize the yield of renewable energy sources through balancing of demand and supply
  - decrease energy losses

Solution overview – key components

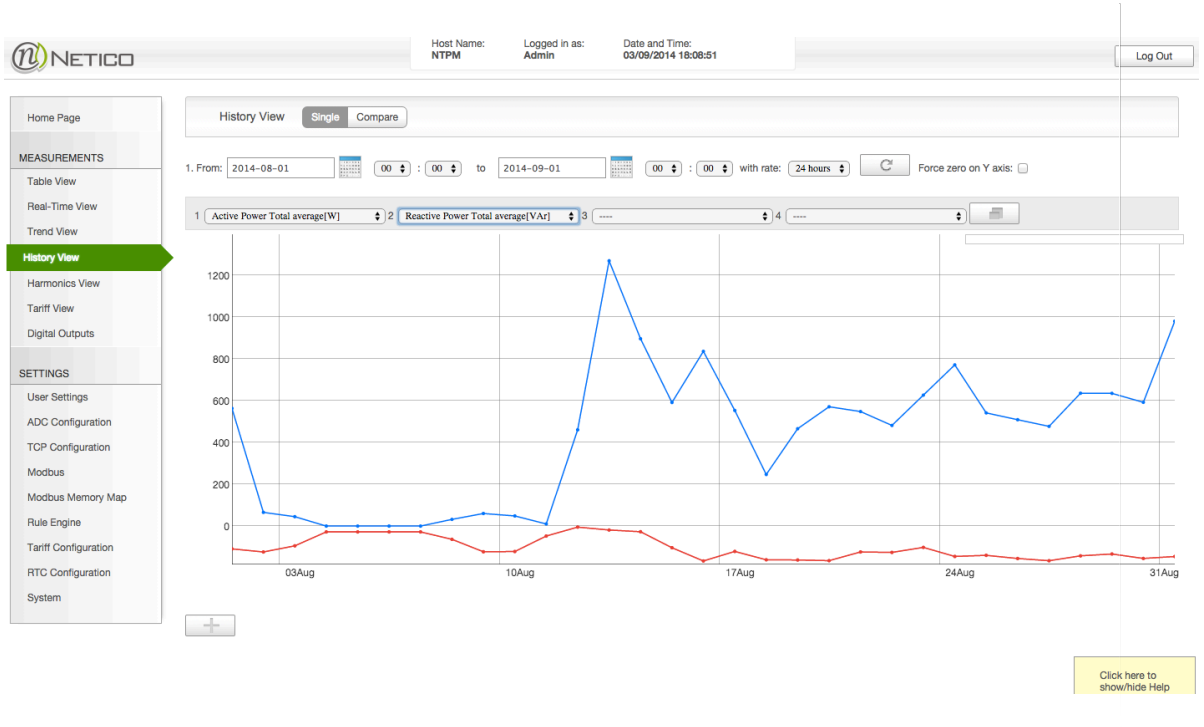
- Smart energy sensor
  - For real time measurement of current energy consumption/production
- Predictor appliance
  - For aggregation of energy consumption measurements
  - For collection of additional data relevant for energy consumption (weather forecast, process data, etc.)
  - For execution of prediction models and execution of local actions based on predictions
- Cloud application
  - For management and training of prediction models
  - For automatic deployment of prediction models to Edge appliances
  - For publishing and distribution of energy prediction reports

Solution Architecture



Example Energy reports

- Record consumption signals
- Detect events and separate overlaid signals
- Classify identified events and display patterns



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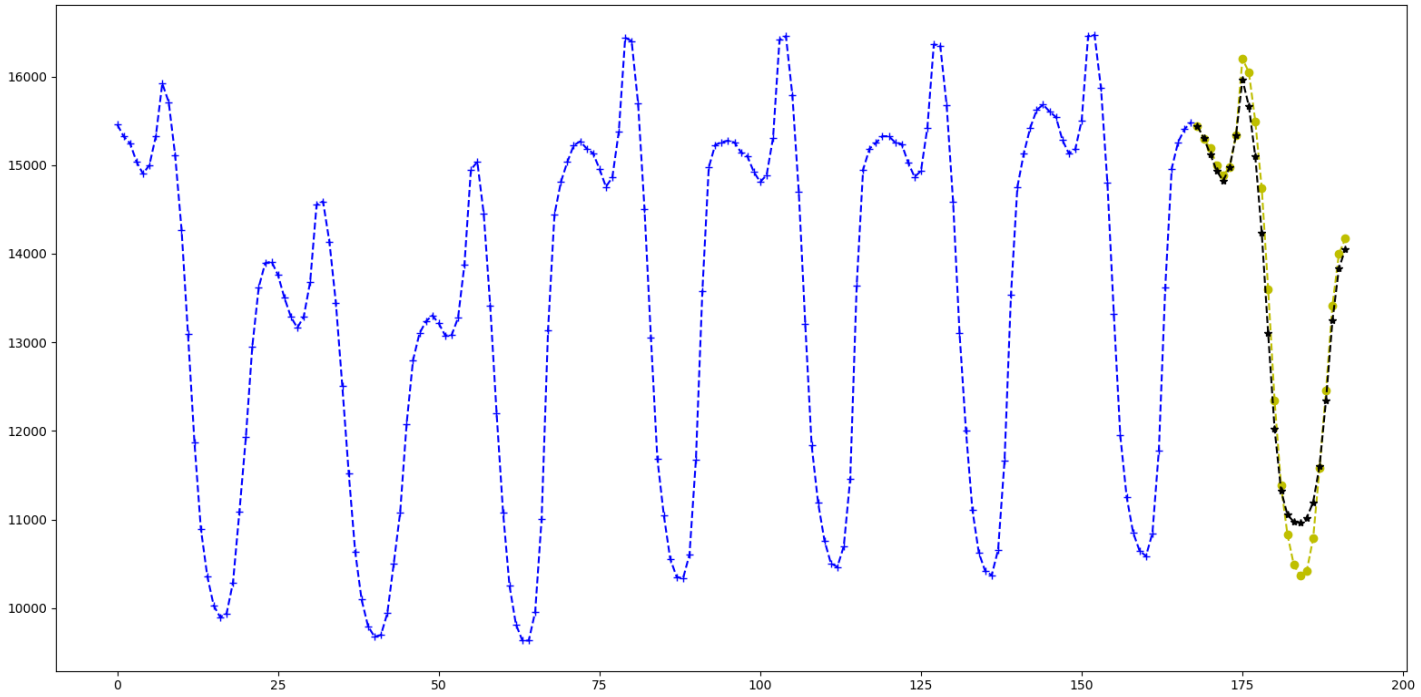
Example prediction results

- History window size 7 days
- Prediction windows size 1 day
- Resolution 1 hour
- 93.5 % prediction accuracy



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Competitive advantage

- Complete end to end solution which includes metering, historical data collection and model(s) for prediction.
- Possibility to do real-time prediction as the current energy patterns change.
  - Competitive solutions mostly work in a batch mode using accumulated historical data.
- Possibility to instantly react, e.g.
  - Buy energy on the market
  - Switch power from alternative energy sources to batteries
  - Initiate battery charge to prepare for limited output of alternative energy sources
  - Switch to conventional grid

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Thank You!

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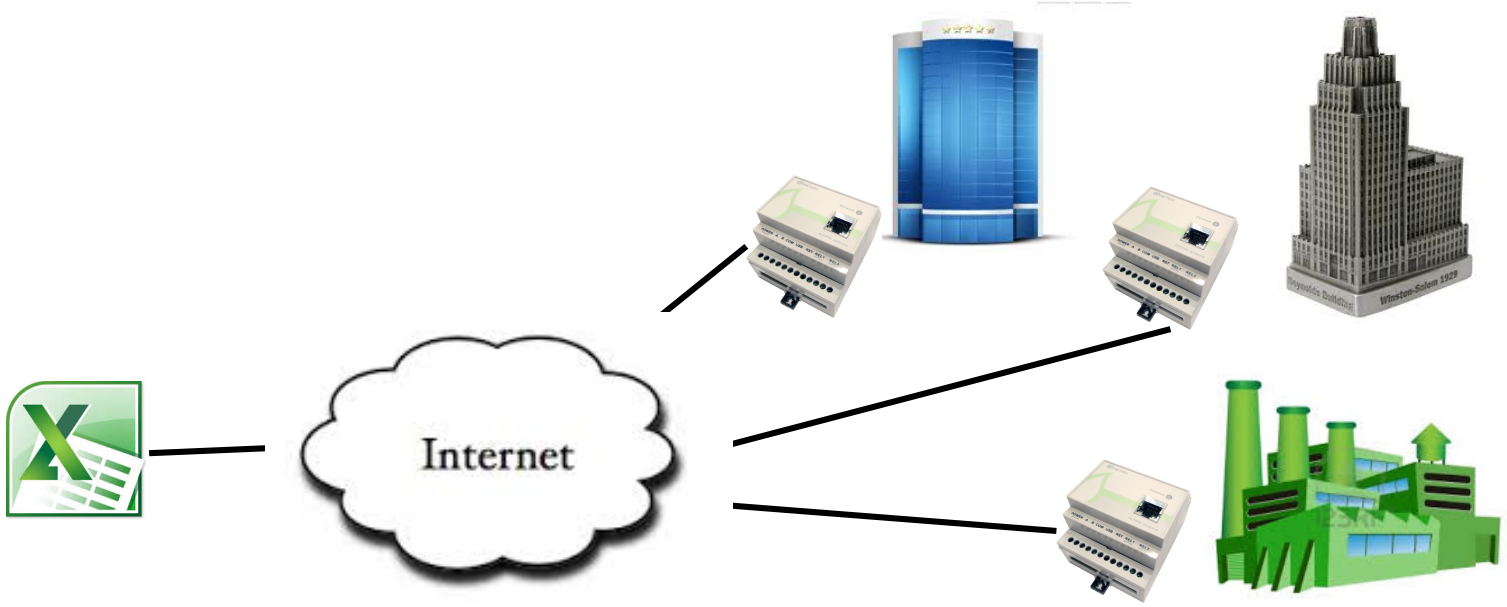
Use case 1: Sustainability Reporting

- Stock-Exchange listed companies must provide Sustainability Reports
  - At least once per year
  - Electrical energy consumption is part of the report
- Most companies
  - Collect energy bills from subsidiaries
  - Aggregate consumption info from the bills to get the total energy consumption on the corporate level

Use case 1: Sustainability Reporting

- Put one Netico Energy Sensor per office and factory building
- Once a year read the accumulated consumption



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Use case 1: Sustainability Reporting

- Benefits
  - Significant reduction of cost in information gathering and processing
  - Simple and easy installation comparing to competitor solutions (no middleware required)
  - Low total cost of ownership
- Additional benefit
  - If energy consumption and other parameters are monitored more frequently it is possible to make an informed decision on when to buy energy based on price, actual consumption, etc.
  - Possibility to indirectly measure real time CO2 footprint and make efficient offsetting

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Use case 2: Office, Manufacturing and Residential Energy Management

- Follow the energy parameters in real time and control devices to reduce energy consumption
  - Switch off non essential devices
    - Scanners, copiers and computer equipment left on over night
  - Switch off devices on stand by power
    - TVs, DVDs, computers, etc.
  - Control the reactive energy compensation equipment in real time
  - Just increasing visibility of energy consumption is enough to trigger saving

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Use case 3: Smart and Efficient cities

- Monitoring and control of street lighting
- Monitoring and control of energy consumption of traffic infrastructure
- Monitoring and control of park watering infrastructure
- Monitoring and control of public office and infrastructure buildings

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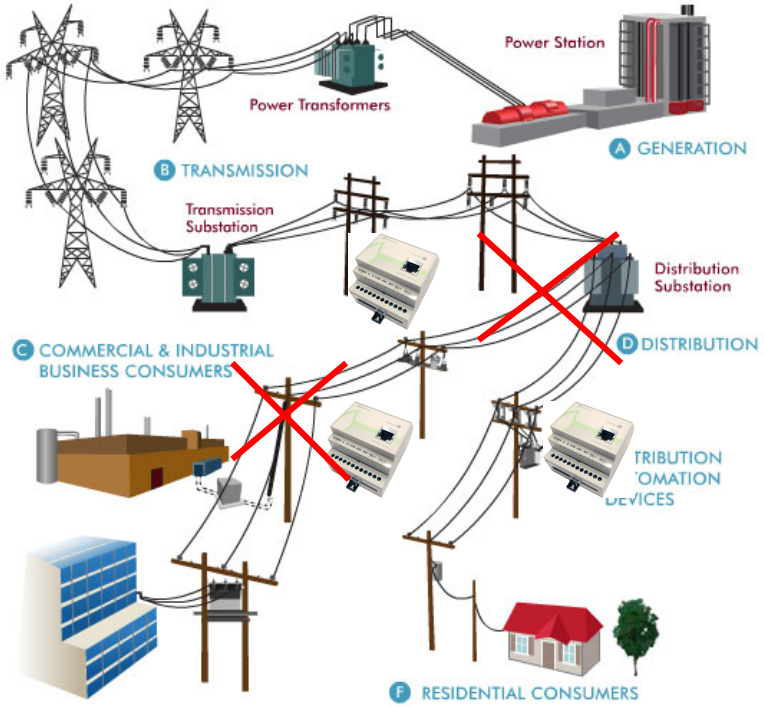
Use case 4: Smart Grid

- Monitoring and control of the Energy Distribution network
  - Detection of faults and automatic network sectionalizing



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Business Model

- Platform as a Service
  - Yearly fee per prediction model.
  - Includes one Edge appliance.
  - Includes yearly model updates based on new data.
  - Includes yearly software updates.
  - Doesn’t include smart energy sensors, which have to be purchased separately if needed.
  - Doesn’t include installation and integration costs.
  - Minimum one year contract.
  - Upon contract termination, customer can keep the latest prediction model, Edge appliance and purchased energy sensors.