

# Using Innovation in Pricing to Engage Consumer Interest - "Energy a la Carte at Household Site"



**Demand Side Management - Demand Response**

# XTN Group

- Consumer choice of energy form
- Consumer values per energy form turned into price premiums then transferring these price premiums to upstream

# Content

- What's happening – Driving forces
- The Challenge
- Which strategy do you choose
- Business Idea
- The Solution
- The Result

# Driving forces – What's happening?

- New energy streams in the world due to:
  - Fraction of shale
  - Renewables – wind and sun
  - Green certificates
  - Carbon quotas
  - Closing of atomic plants
  - Ocean cables transporting electricity
  - Environmental issues
- Digitalization of the energy industry

# XTN Group - Germany

- Germany challenges the trends from the driving forces
- High operational gearing (2.5)
  - growth in operational result / growth in sales

# The Challenge Energiwende

## Imbalance in the pricing system

- Fixed price for renewables independent of lower market price. Consumers finance the gap as a duty
- The lower the market price for electricity is due to low price on brown coal, the more the consumers will have to pay in duty
- The duty hits only the small guy
- Stormy days with lots of renewable and surplus electricity give higher cost for consumers not lower cost
- Surplus energy with falling prices on electricity exchanges means consumers have to pay more
- Consumers subsidize electricity being exported on stormy days.

# The Challenge (cont)

## Energiwende

### Consumer complaints

- Electricity price is the hot topic despite that consumers use gas, oil, coal or regional heating to heat their houses
- Consumers complain that the price system does not function
- Many consumers think the price is too high – one of the highest in Europe
- Consumers complain about high prices, coal producers complain about low prices and the gas producers complain about being squeezed out.

# The Challenge (cont)

## Energiwende

### Secure energy

- Goal 80 % from renewables within 2050
- On cold, dark days with no wind and sun dependency on other energy sources. Risk of black out if not for coal power
- Political closure of atomic plants
- Fear of not having electricity on cold days – Capacity market



# The Challenge (cont)

## Energiwende

### Political

- Do something with the complex price system and still keep the ambitious investment in clean energy.
- However, no political party showed any solution to the problems with energy surplus and price
- Statkraft, Vattenfall and E-On: gas production plants in moth ball
  - outcompeted by subsidized renewables on one side and cheap coal on the other side.

# The Challenge (cont)

## Energiwende

Not sustainable

- Need to release the forces now being built in the market
  - New system to be implemented which carries the energy industry into a new paradigm
  - Hence, there is an enormous need for a system that is:
    - Secure
    - Competitive
    - Environmentally sound
- all at the same time

# Which strategy do you choose?

- Kodak strategy – not facing the realities
- Face the realities – Innovate outside the “accepted frame”
  - This the americans are exceptionally good at (Apple, Microsoft)
- This is THE CHALLENGE

# Business Idea

- XTN Group is an energy company that with selected energy companies as co-owners, will release the forces building up in the market, transferring the industry into a new paradigm and as such become the market leader

# The Solution – (functional)

## ”Energy a la Carte at Household Site”

- Virtual chain store that exploits:
  - consumer’s personal values
    - (environmental concern, climate change, pollution, price etc.)
  - when buying preferred energy form
    - (wind, solar, water, gas, coal, regional heating)
- Automatic switching between energy forms after consumer set his personal parameters
- Energy companies as co-owners and suppliers of different forms of energy.
- Co-owners profit by moving this “price premium” from downstream to upstream (in addition to good corporate profit)

# The Solution – (functional)

## ”Energy a la Carte at Household Site”

- Balancing demand / response with different forms of energy.
- Wind Mill parks will be especially competitive independent of government subsidies
- Capacity market by itself balancing Demand / Response without the cost encountered with the newly defined “Capacity Market”
- Complys with EUs 4 “shrines”: free flow of Labor, Capital, Goods and Services
- Apps distributed to consumers by SMS which then connects them to the system.
- **.....and all is automatic thereafter after the consumer sets his price/values preferentials**

## The Solution – (system)

### ”Energy a la Carte at Household Site”

- Middle ware – a datahub – which can turn consumption units in households on/off
- Top Ware – an automatic smart grid – which turns consumption units on/off automatic in accordance with chosen parameters decided by consumers based on offered prices per energy form by XTN Group
- Apps distributed to consumers by SMS

# The Solution – (technology)

## ”Energy a la Carte at Household Site”

- **Machine-to-Machine (M2M) communications**

i.e. communications between the Hub server machine and a device machine in order to monitor and control devices.

**Main benefit:** monitor and send commands to/from devices in homogeneous way, i.e. it doesn't matter what 'language' (e.g. protocol) the device uses, you always use the same syntax and the Hub translates the command using the correct protocol/language for the particular device. The Hub is also used to send messages to other types of devices/appliances, like email or SMS.



# The Solution – (technology cont)

## ”Energy a la Carte at Household Site”

- **Open standards, implementing separate Application Programming Interfaces (API) for different parties.**

**As an example:** We implement a separate Web Service for Service Providers for them to access a predefined set of information from the Hub system. End user access is implemented and controlled using different API and communications with devices/gateways is implemented using separate API as well. All API's are built on open standards and using industry de-facto security standards. The Hub can easily be integrated with other systems that supports open standards. We have, for example, integrated with the Telenor billing system, various credit card payment providers, etc.

# The Solution – (technology cont)

## ”Energy a la Carte at Household Site”

- **Scalable**

**Implemented as server pairs (backend and frontend servers)** Additional server pairs are added to the server farm as the traffic increases. The number of households that each server pair can handle depends on the services offered and the traffic generated from each household.

- **All communications are encrypted using standard SSL encryption**

**End users are only allowed to see their own information.** Service Providers typically only have access to limited set of data belonging to their service offerings and the data is typically not connected with individual customers.

# Competition

- Accenture: "The first company to "bundle" products and services at a single point of contact to consumers will surface 2020-2030"
- Currently hot in US marketing
- XTN Group is here today with a lead of 5-8 years after 7 years of development and USD 20 mil. in investment

# The Result

## **The Low Carbon Society**

# Patent application

- Patent Application is registered with the European Patent Office

# Summary

- Driving forces – What's happening
- The Challenge
- Which strategy do you choose
- Business Idea
- The Solution
- The Result