AI IN ENERGY @ EWE AG

Beyond Digital Platforms - Eurelectric

Monday, May 11, 2020

1 INNOVATION @ EWE

„Running away from your problems is a race you‘ll never win“ -

THINGS CHANGE…

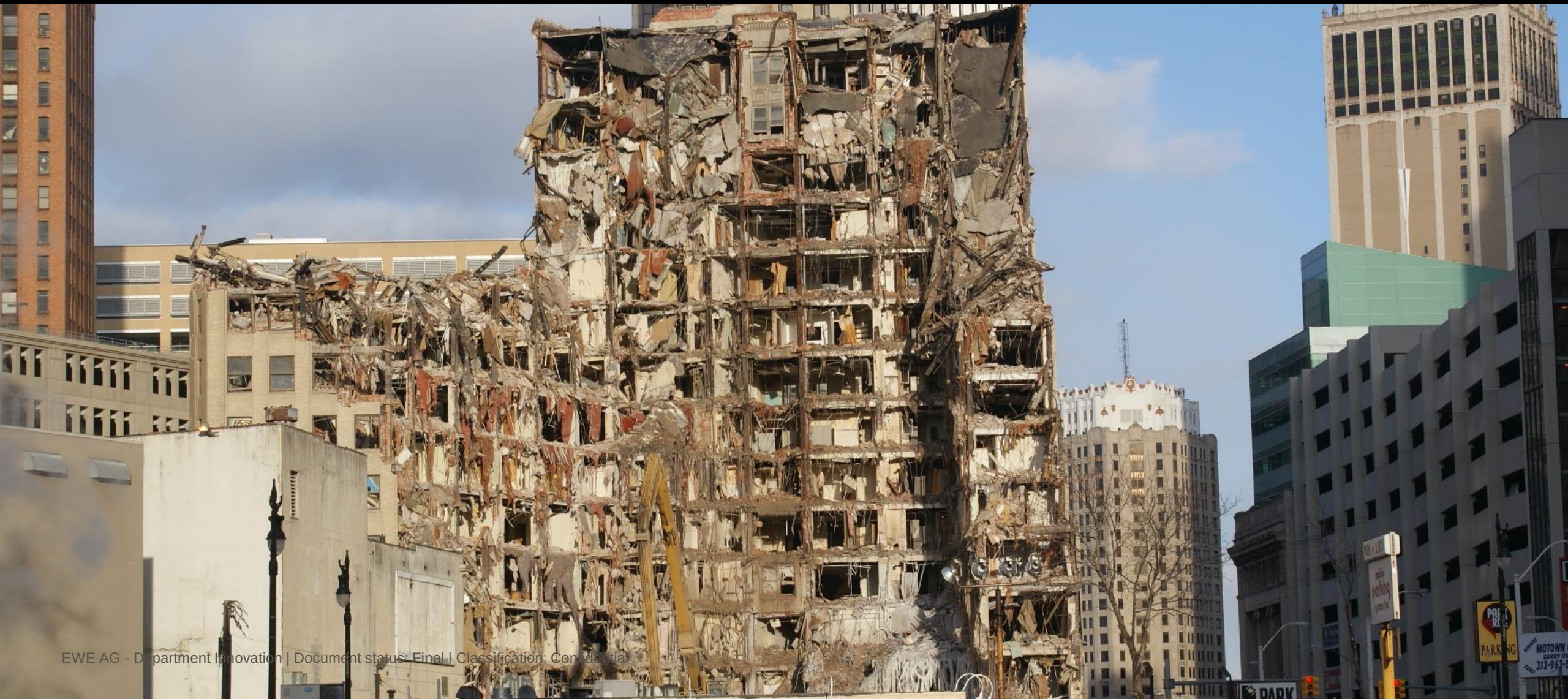
Innovation capital Detroit
100 year ago

EWE

100 year ago in Silicon Valley

EWE

Detroit Today



Silicon Valley Today

EWE

2005: St. Peter‘s Square

Today: St. Peter‘s Square

Biggest Market Caps 50 Years ago

1967	
	FOUNDED
IBM	1911
AT&T	1885
GM	1908
Standard Oil	1870
KODAK	1888

Biggest Market Caps TODAY

TODAY	
	FOUNDED
Microsoft	1975
Amazon	1995
Apple	1976
Alphabet	1998
Facebook	2004

72 % OF THE FORTUNE 500 CEOS INDICATE THAT THE **„RAPID PACE OF INNOVATION“** IS THEIR BIGGEST CHALLANGE

Frankly, I‘m more concerned about two guys in a garage.

JEFF BEZOS
Founder & CEO, Amazon

What do we learn from those examples?

“We have to envision a radical reorganization of the energy landscape. Consequently, we consistently challenge familiar structures in all our actions.

We see competitors as inspiration, orientate ourselves towards international markets and offer products across sectors and regional borders in order to enrich/beautify people's everyday lives as partners.”

EWE AG – VISION

2 BREAKOUT SESSION

In order to take part in the game-changing race of innovation in energy, not only sensory development is crucial

AMUNDSEN

DISCOVER YOUR HOME'S POWER

The Story

Amundsen challenges the interaction with customers by highlighting new potentials regarding energy production and consumption

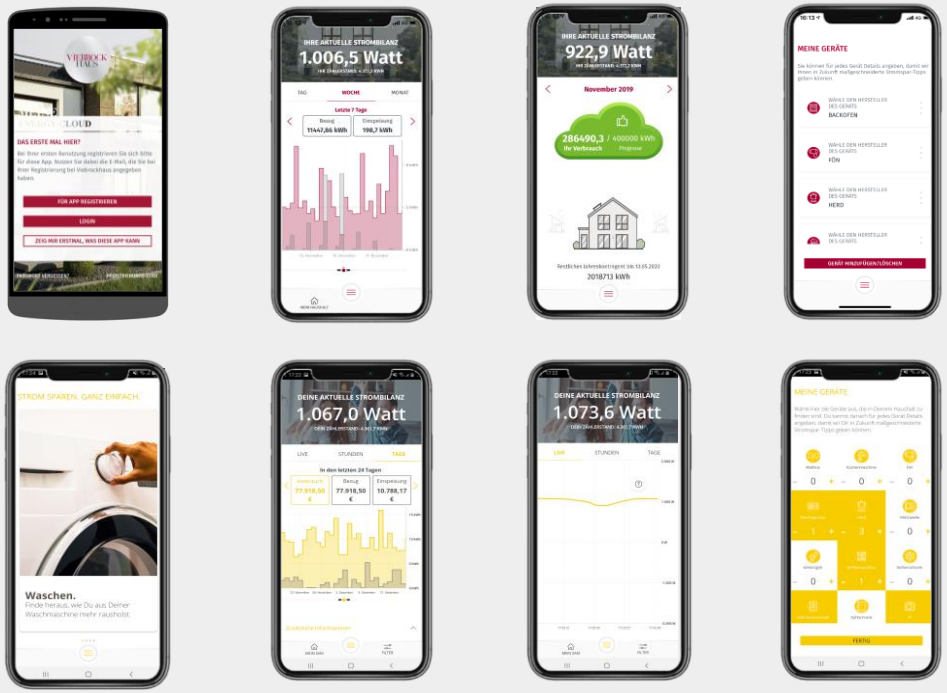
Initially: Energy Transparancy App

In contrast to the energy industry, the consumer, is not really concerned with the digitalization of the energy market. Very few people know what a smart meter, an intelligent metering system or a modern measuring device is. For the communication of municipal utilities and other suppliers this means:

You want something from your customer (access to the meter cabinet) and for the new meter, which basically does the same thing as the old Ferraris meter, you want more money for it than before. But this means that the design of new services, e.g. tariffs that react flexibly to the electricity exchange and the range of green electricity offered there, among other things, is still not possible for private customers with modern metering equipment.

Amundsen addresses this benefit aspect - not only transparency but also functions that will be added over time will provide added value for the customer and increase acceptance by the customer.

Initial version of the app – customer view



Amundsen connects households and businesses for customized offers based on data

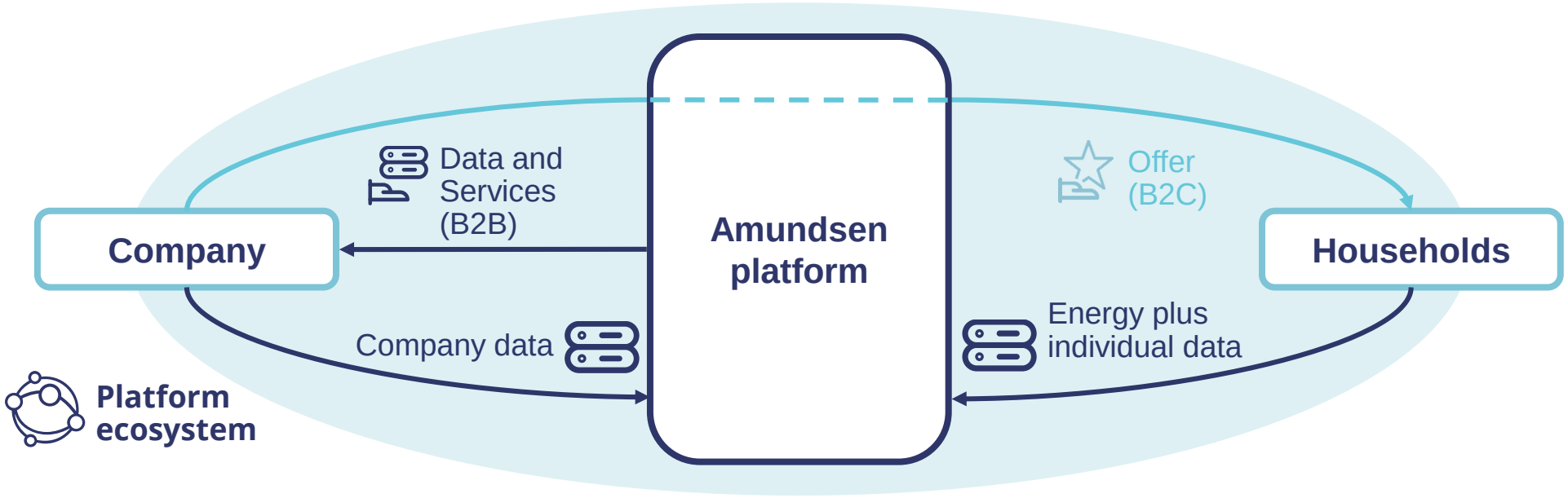
Amundsen Platform Ecosystem

Added value

Amundsen offers companies customer data and insight services that enable better offerings

Amundsen offers households a range of individual offers for the comfort at home

Value creation mechanism



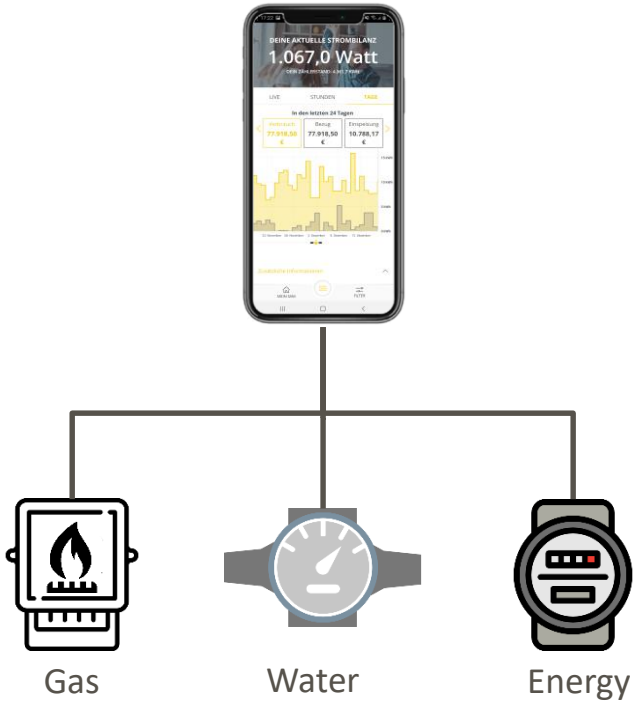
Enabler

- Smart Meter Data access
- European utilities
- Customer trust
- 3rd Party oenness
- IP (algorithms)
- Additional data
- Value perception & recording

Ist not about energy only – Sensory development will include water and gas as well

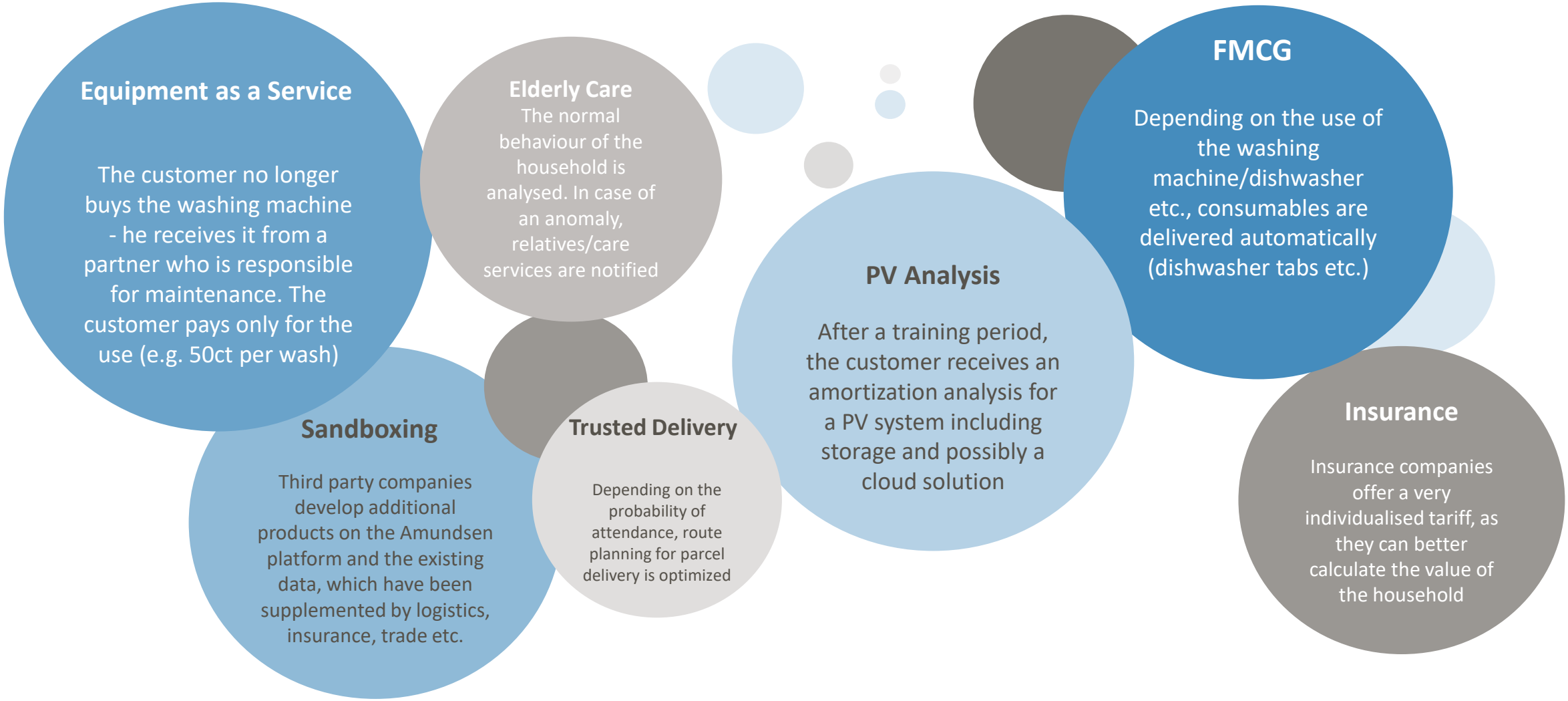
The recording of energy consumption for the electricity division can only be an entry point. In order to capture the entire household and provide its inhabitants with the necessary overview, gas and water must be included in the analysis. This also opens up a further range of options for additional services - leakage detection is one example of other possible services.

Amundsen is working on the necessary sensor technology which will be field tested in 2020.



In parallel to the sensory enhancements, MVPs are developed for functionalities that go beyond supply topics

Objective: Open the platform to third parties in order to orchestrate a variety of such functionalities



3 BREAKOUT SESSION

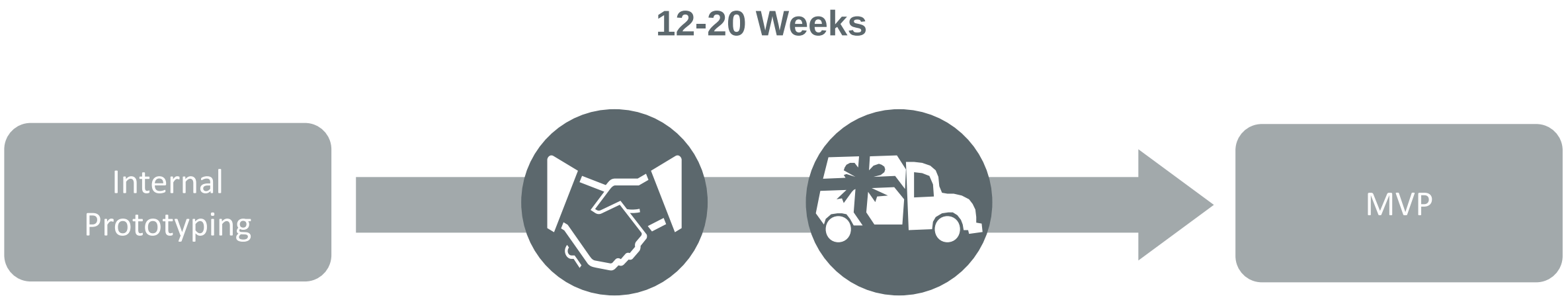
The Datalab is our core engine of all AI-approaches within the innovation department

DATA THINKING IS FUNDATIONAL IN ORDER TO DEVELOP DATA-BASED BUSINESS MODELS

EWE

Starting with internally prototyping and identifying potential for optimization we develop business models from scratch

BRAIN2MARKET



Internally we found the need to deep dive the process of FTTX development to identify promising areas

BRAINWAVE I

Starting point: EWE expands FTTX areas

Objective: Data-based identification of potentially interesting development areas

Data: Historical expansion plans, external data sources (e.g. land registry)

Solution: Various machine-learning procedures, "Bundesliga table

As a result of the prototyping process, we scaled the digital capability to a full functioning business model

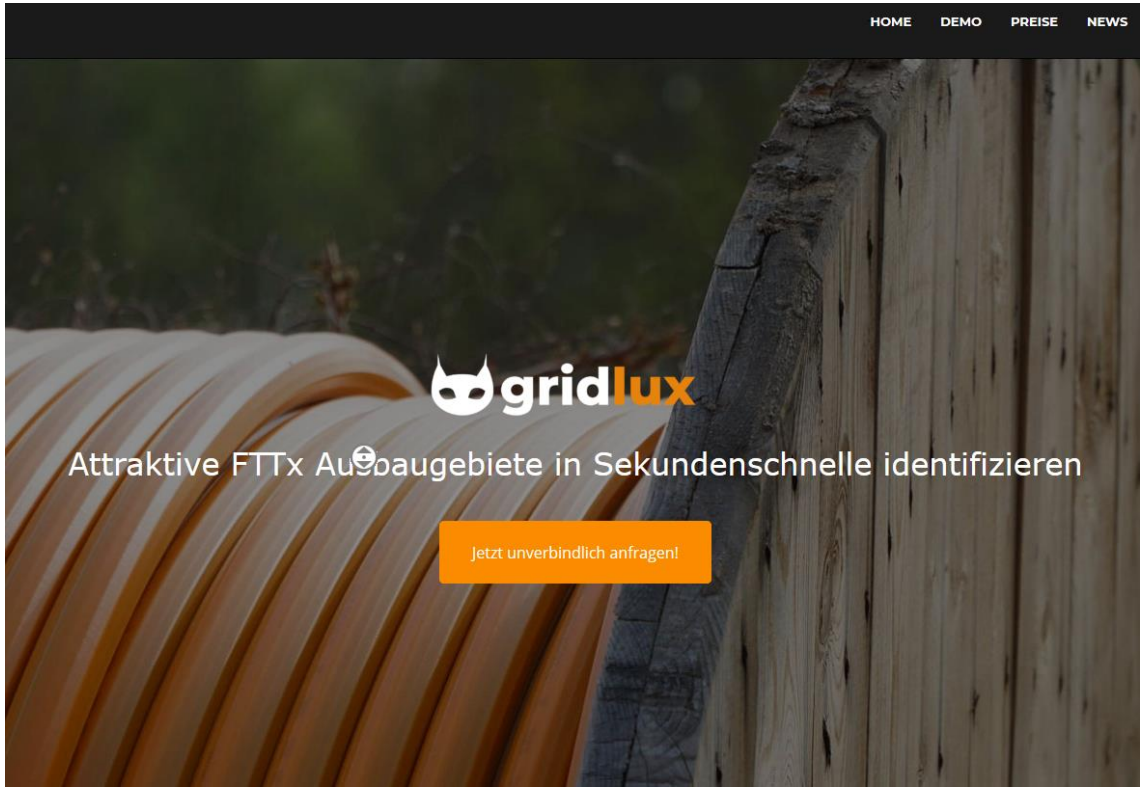
BRAIN2MARKET

Starting point: Calculation core works well in the EWE field

Objective: Data-based offer to new customers - Focus: strategic planning

Data: Learned models, area data

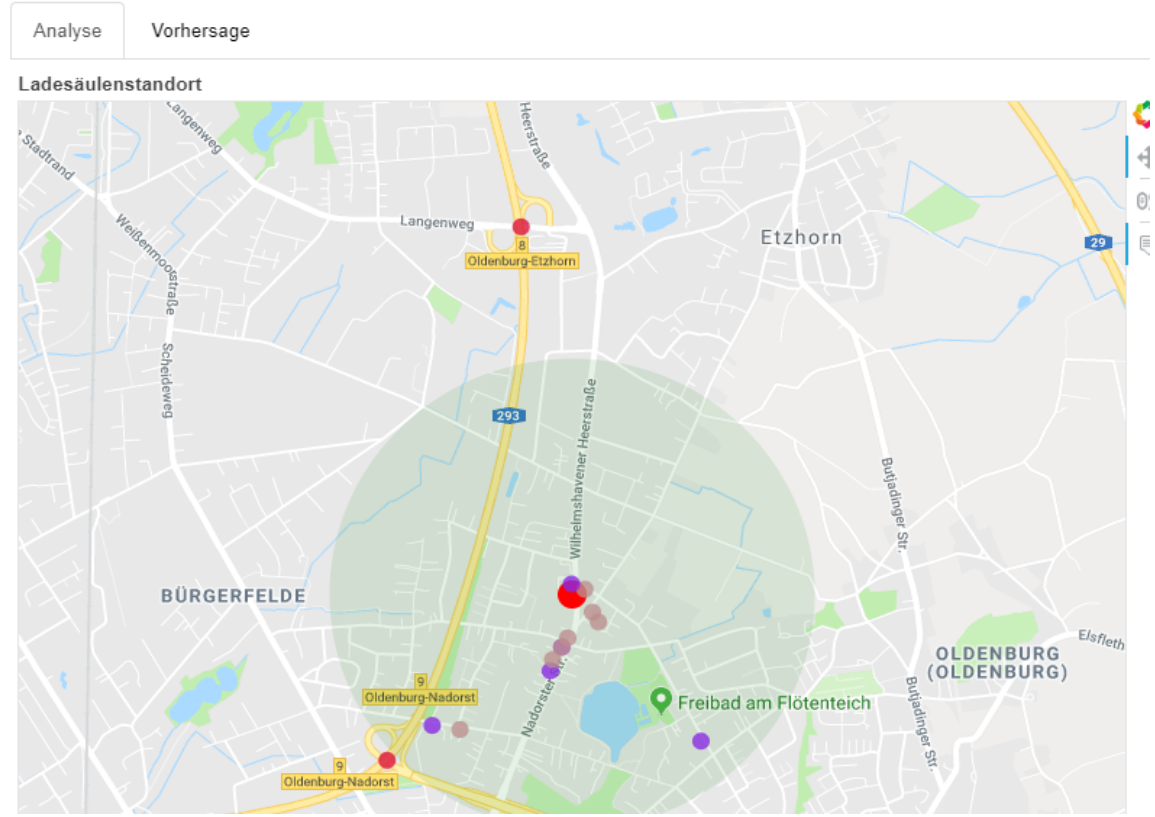
Solution: AWS service for integration in GEO tools, web planning software, sale of finished planned areas



Being a charging station operator, we need to optimize our rollout processes in terms of efficiency and scaling potential

BRAINWAVE II

enera Öffentliche Ladeinfrastruktur



Starting point: EWE is charging station operator and is looking for promising locations

Objective: Data-based identification of promising locations

Data: Historical load behaviour, external data sources

Solution: Various machine-learning methods, web prototyping

As a result of the prototyping process, we scaled the digital capability to a full functioning business model

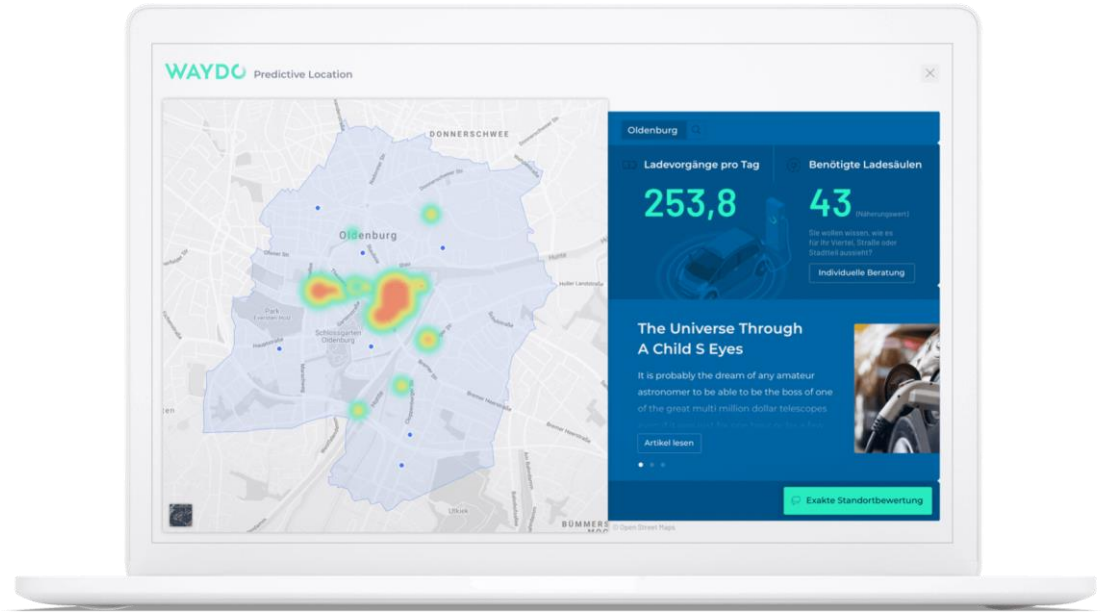
BRAIN2MARKET

Starting point: Forecast core works well on inventory

Objective: Data-based offer to new customers

Data: Learned models and GEO-coordinates or areas for potential charging points

Solution: AWS service for integration into the sales interface



4 AI VISION @ EWE AG

In order to take part in the game-changing race of innovation
in energy, not only sensory development is crucial

What is crucially needed to parttake in the race of innovation regarding the energy market?

Discussion

I. **Ecosystem of excellence**
   i. Clear policy framework to set the boundaries for research and innovation

II. **Ecosystem of trust**
   i. Regulatory framework with clear distincion between risk-protention and degrees of freedom - Distincion between sectors

III. **Contraints**
   i. Capex vs. Opex – Incentive plan of business model structures in existing ecosystem frameworks

“In today’s hypercompetitive environment enabled by technology, ownership of infrastructure no longer provides a defensible advantage. Instead, flexibility provides the crucial competitive edge, competition is perpetual motion, and advantage is evanescent (…) !”

Geoffrey G. Parker

Source: Geoffrey G. Parker, Platform Revolution: How Networked Markets Are Transforming the Economy--and How to Make Them Work for You

Thank you.

EWE AG | Christian Arnold, SVP Innovation

EWE AG
Tirpitzstraße 39
26122 Oldenburg

Mail: Christian.arnold@ewe.de
Mobile: +49 160 94828557