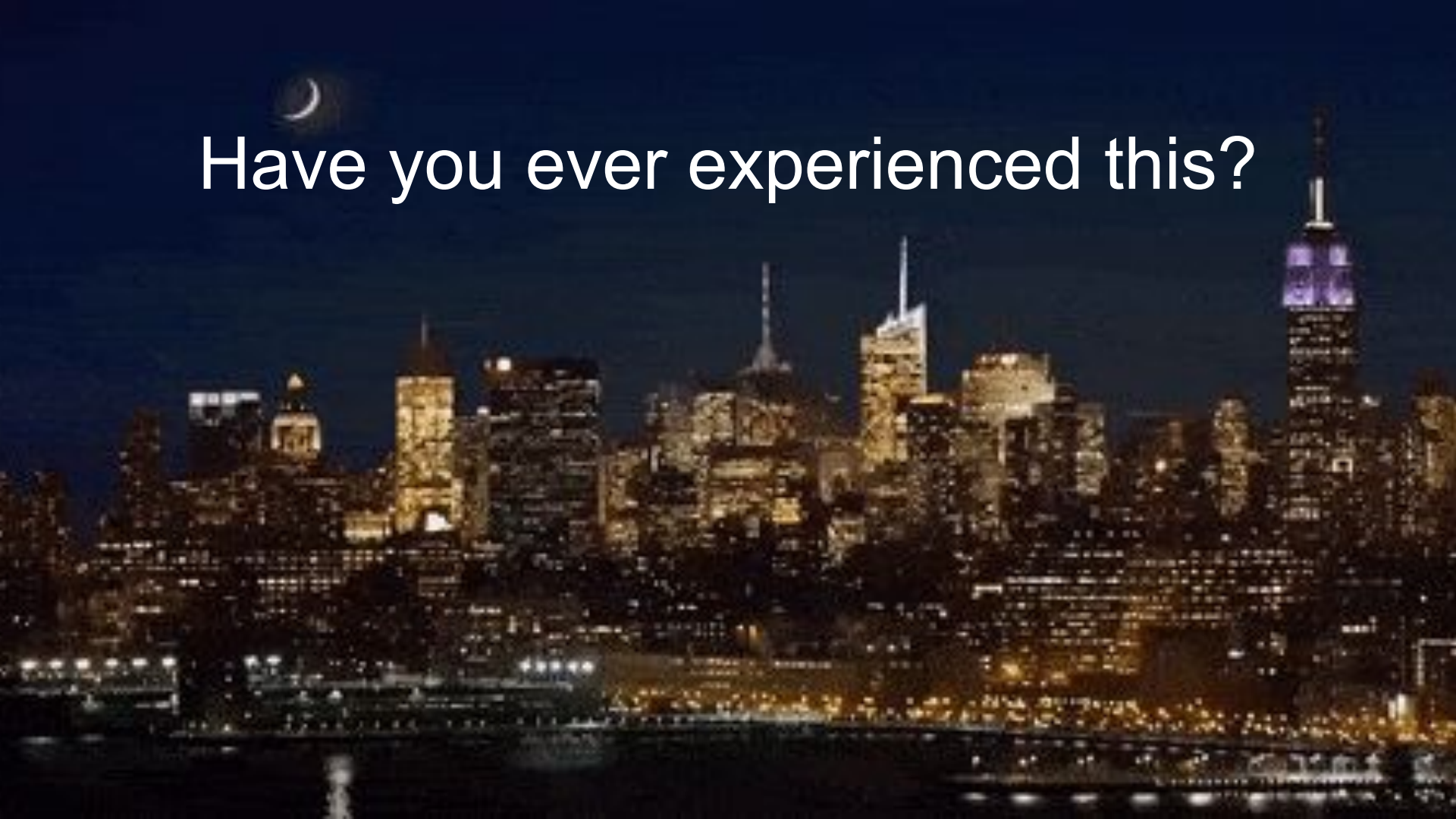
Have you ever experienced this?


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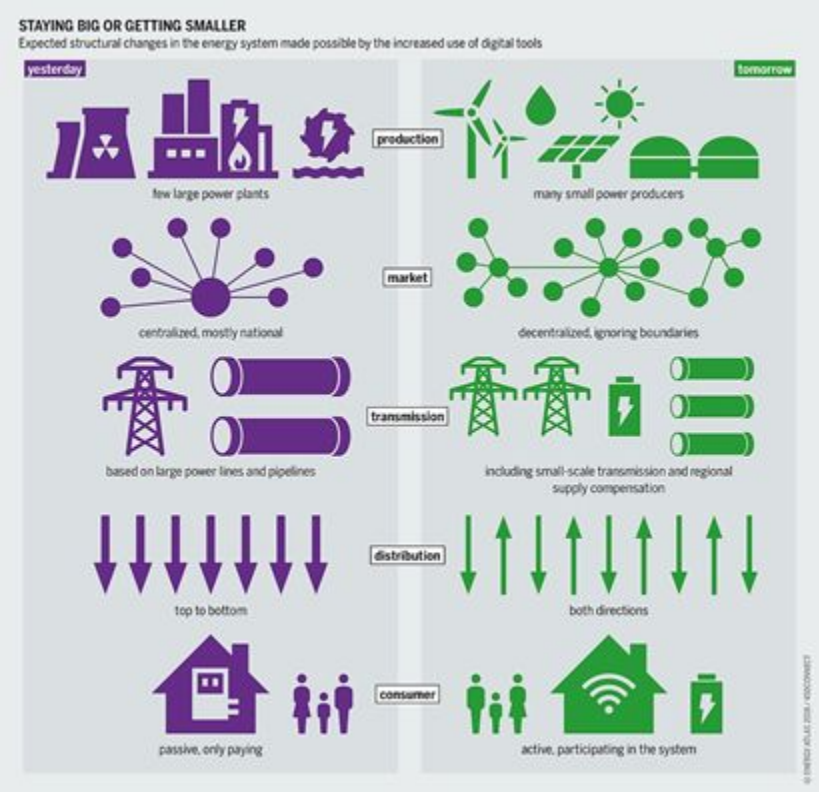
Digital Twins for EMS



Electric Grids of the future

Traditional Utilities are shifting their BM from low profitability, asset-intensive energy production and distribution systems to high margin, energy management services

Increasing number of **small, decentralised and highly variable power producers** and **two-way electric distribution** requires more **sophisticated control systems**

DT collect data from the grid and the environment to enhance:

1. Maintenance. Monitoring and predictive maintenance is essential to ensure efficient energy distribution and avoid blackouts
2. Energy trading. Accurate energy demand forecast will be met by smart energy prices forecast

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Solution

Digital twin for Smart Grids

1. Short-term prediction of energy costs
2. Predictive maintenance on infrastructures

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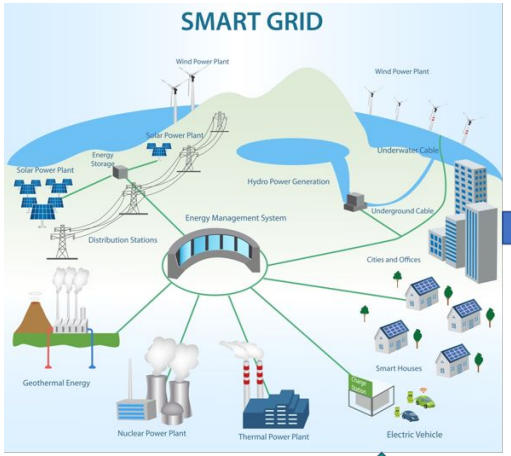
Use Case 2: Predictive maintenance



Grid DIGITAL TWIN

External Data:
- Weather forecast
- Prices
- Expected User behavior

Decide On:
- Maintenance Time
- The target part of the gird

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Use Case 1: Scenario for trading of energy

Energy

Energy Management System

Energy

Data

Grid Digital Twin

Data

End Users

External Data:
- Weather forecast
- Prices
- Expected User behavior

Action

Decide On:
- Power Purchasing
- Tradition Energy Production

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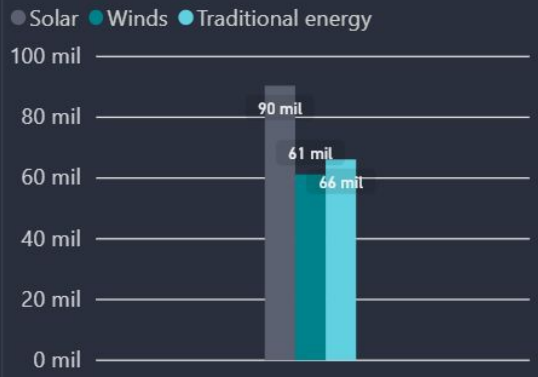
ATOS Digital Twin Systems

1 Energy

2 Price

Location

Purchase Advice
for the next season



Real-Time Price

Sweden
34
SolarPrice

Denmark
38
SolarPrice

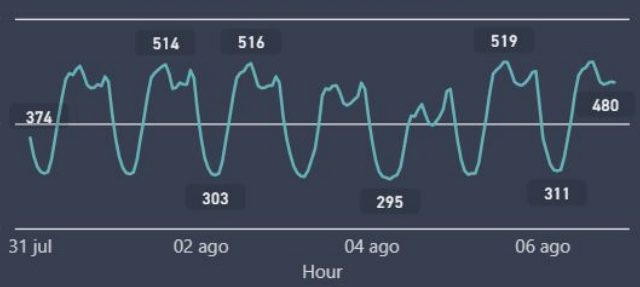
Germany
40
SolarPrice

Spain

Price Monitoring

09/07/2019 23/07/2019

Price Forecast



Fit-Gap Analysis

Variables	Wind Farm DT	Grid Infrastructure DT	Energy Trading
Complexity	Average	Good	Average
Sensor type	Average	Average	Poor
Efficiency monitoring	Good	Good	Good
Predictive maintenance	Good	Good	Good
Act on physical asset	Good	Average	Poor

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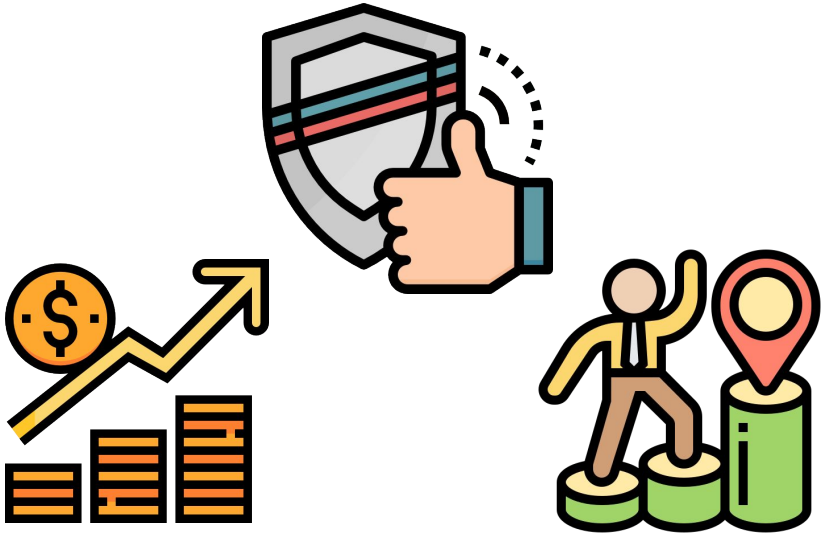
Value Proposition

Improve grid reliability
Increase revenues
Digital Twin market positioning



Customer Segment

Energy Management Systems
Final end users

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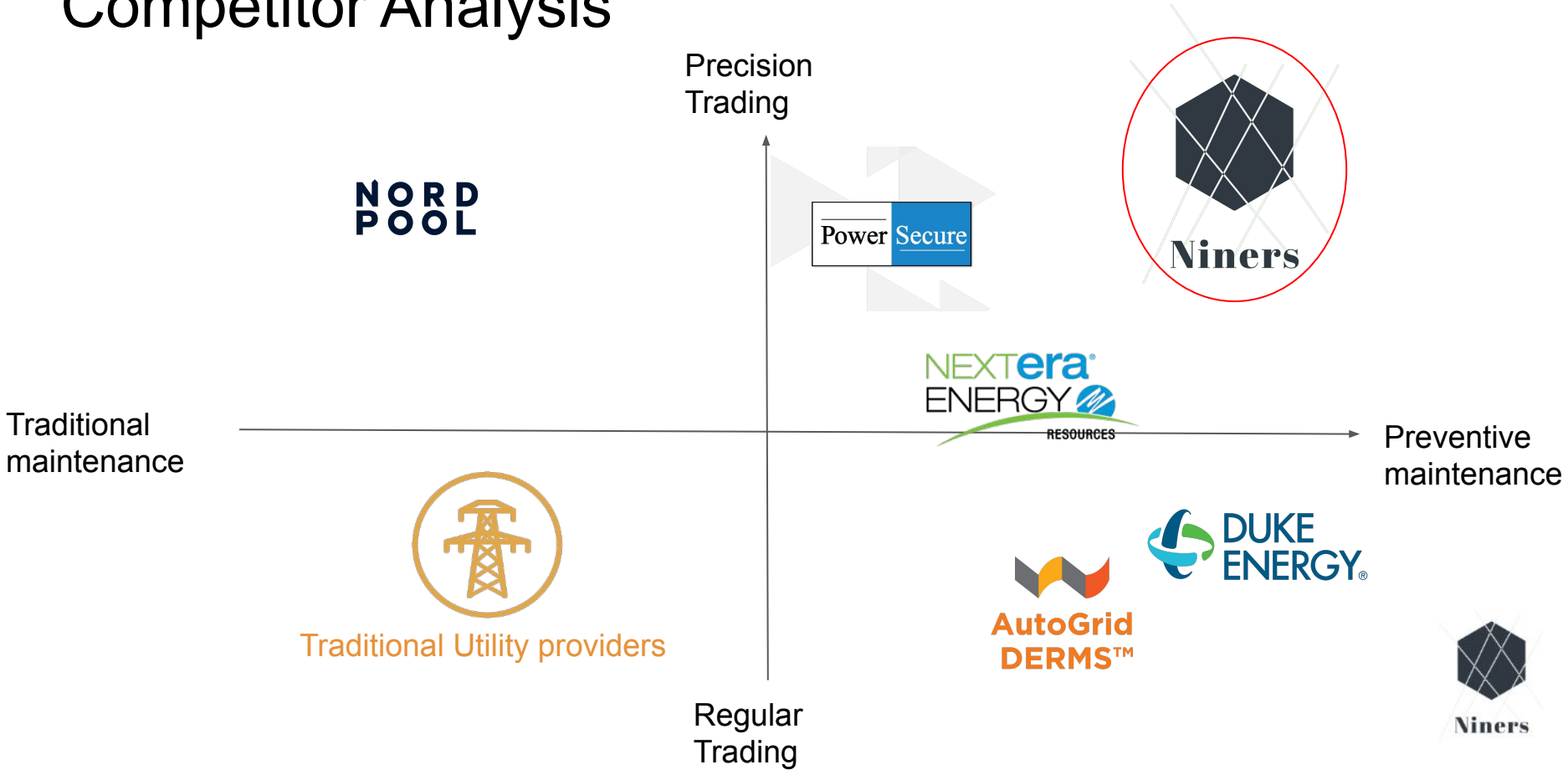
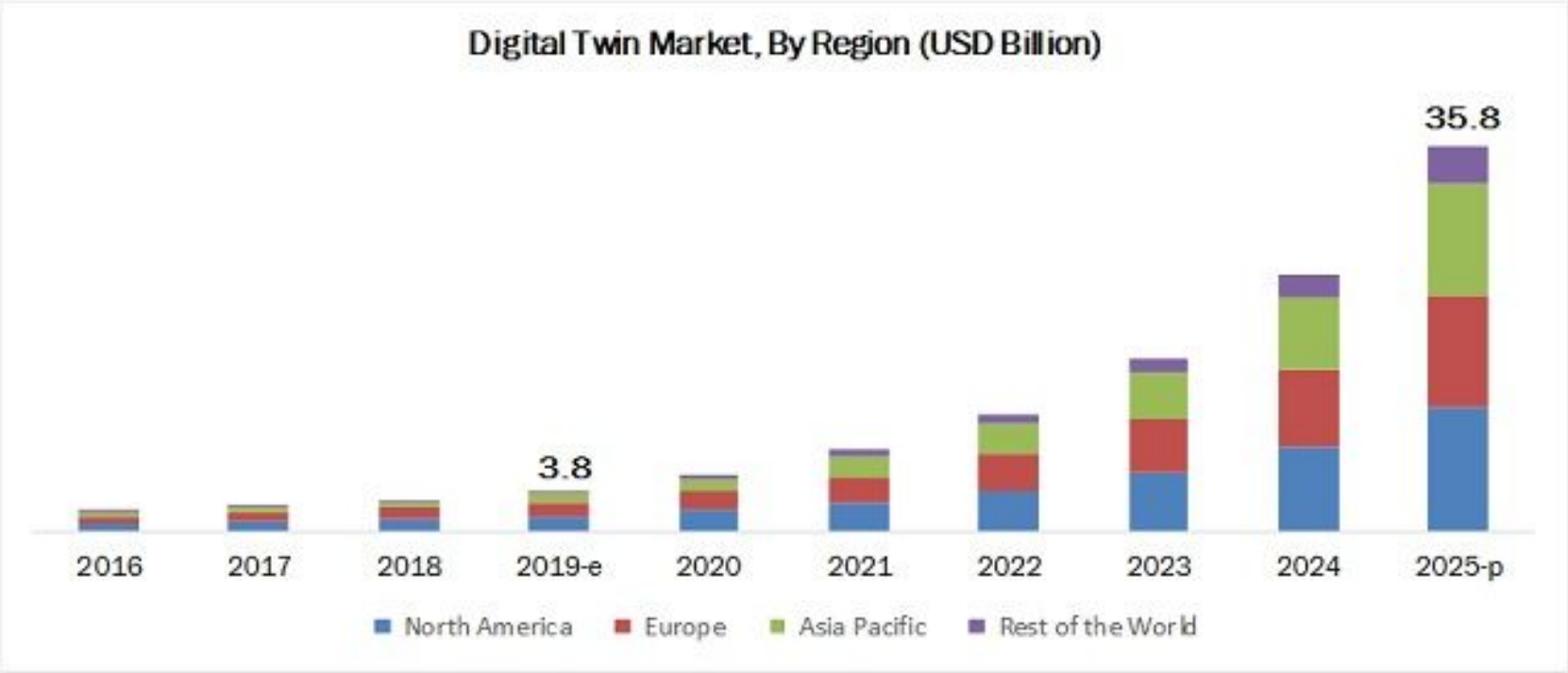
Competitor Analysis



Market Size



Source: https://www.grandviewresearch.com

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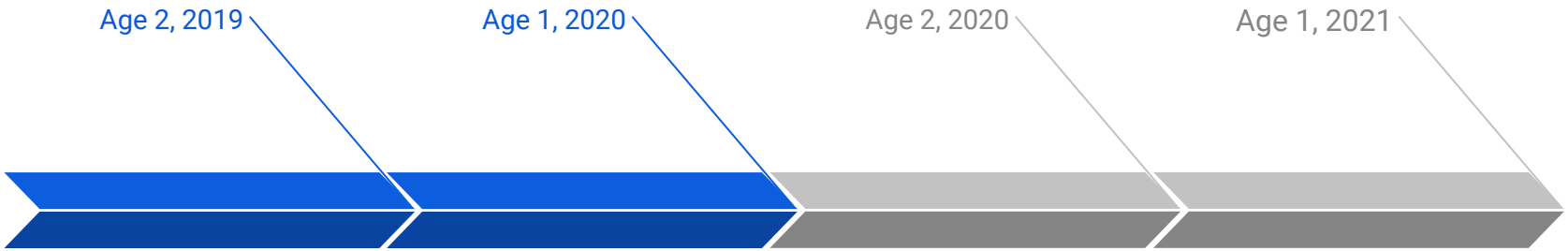
High Level Roadmap



Partnering

Partner selection and onboarding.

Pilot implementation

Apply the Digital Twin solution to a small scenario.

Pilot review

Collect feedback from pilot implementation and upgrade functionalities.

Scaling

Scale with a partner and develop market strategy for other companies.

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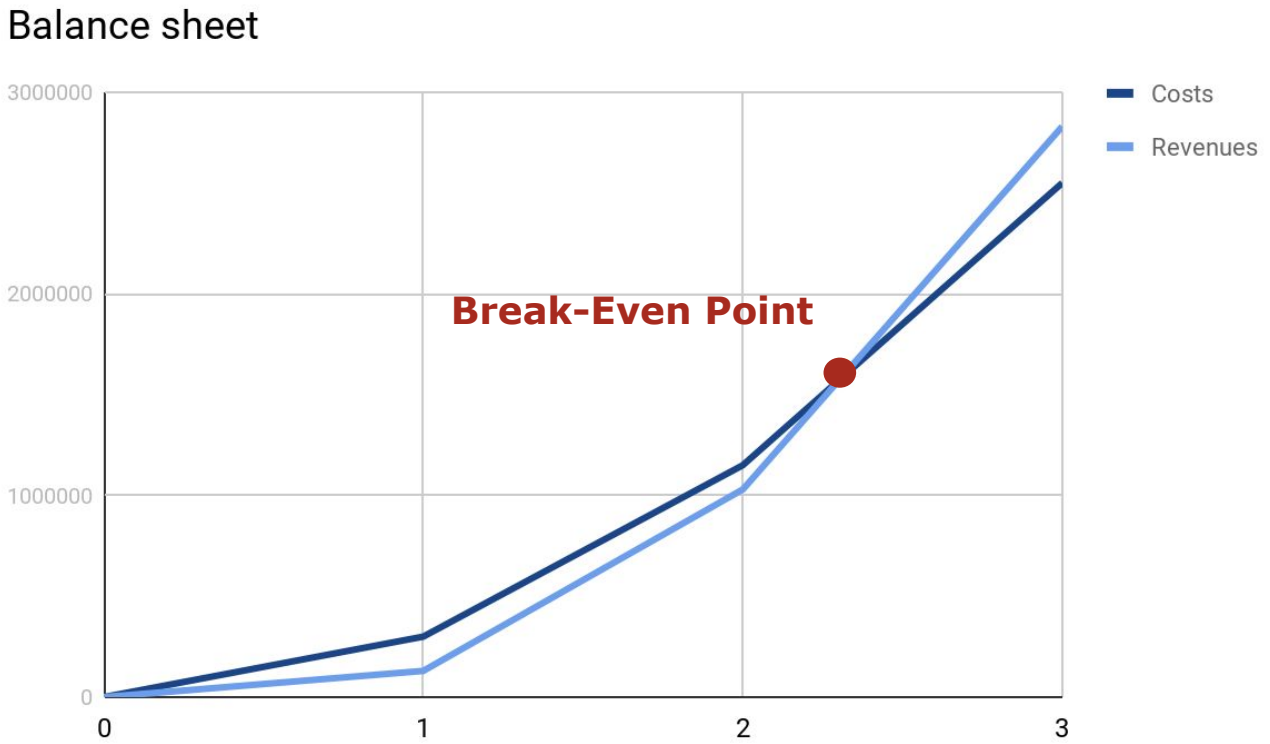
Financial Return



Founding Team

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Industrial Engineer

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Data Scientist

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Business Administrator

José Pérez
Telecom Engineer

Mohammed Seridi
Computer Networks

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Conclusions

We ask for a seed investment of

https://bit.ly/2YT4iQm

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BACKUP SLIDES

Revenue in Million USD (NOT A SLIDE)

7	E.ON	Electric utility	157,057	Germany
15	Engie	Electric utility	126,076	France
22	Enel	Electric utility	110,560	Italy
32	Électricité de France	Electric utility	90,806	France
45	RWE	Electric utility	68,345	Germany
71	SSE	Electric utility	50,610	United Kingdom
85	Iberdrola	Electric utility	44,005	Spain
97	Centrica	Electric utility	36,860	United Kingdom
131	Vattenfall	Electric utility	27,890	Sweden
136	EnBW	Electric utility	26,126	Germany
159	National Grid	Electric utility	22,067	United Kingdom

Risk Analysis

Complexity

Willingness to invest

Developing time