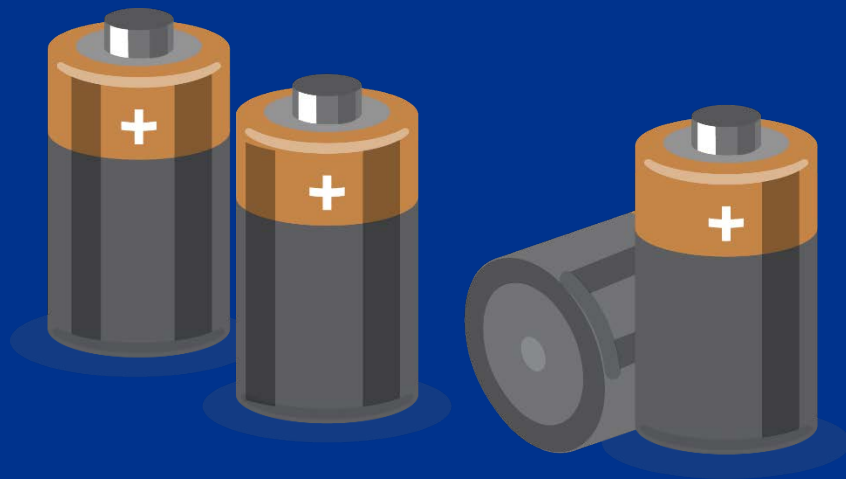


# Digital Transformation to become the clear choice

Christian Rast  
08 November 2016



# Agenda

1

**The Future: From Pipeline to Platform Business**

2

**D&A Platforms: A Cross-Sector Trend**

3

**Our Strategy: Trusted Analytics**

## 4th industrial revolution

The main drivers for the 4th industrial revolution depend very much on data & analytics

### Data & Analytics

**33%**

say D&A has already delivered better business performance and

**49%**

believe that it will deliver better business performance over the next 2 years

### Industry 4.0



### Internet of Things

IoT is expected to grow from just **2%** of the digital universe in **2013** to **10%** in **2020**



### Big Data

Big Data was a **\$28.5bn** market in **2014**, growing to **\$50.1bn** in **2017**

Sources: KPMG CEO Survey 2016, GTAI, McKinsey, Forbes, WikiBon. Baseline

## Potential and Threats

Data & analytics is a given. Nevertheless, we are torn between its potential and our concern about its challenges and threats

### Technology 77%

of CEOs are concerned about whether their organization is keeping up with new technologies



### Innovation 77%

of CEOs say it is important to specifically include innovation in their business strategy



### Disruption 65%

of CEOs are concerned that new entrants are disrupting their business models

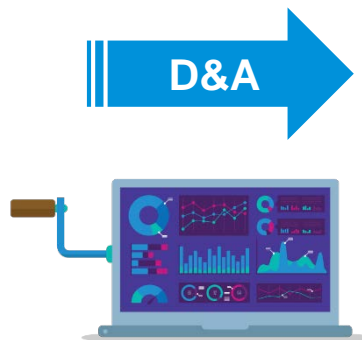


Sources: KPMG CEO Survey 2016

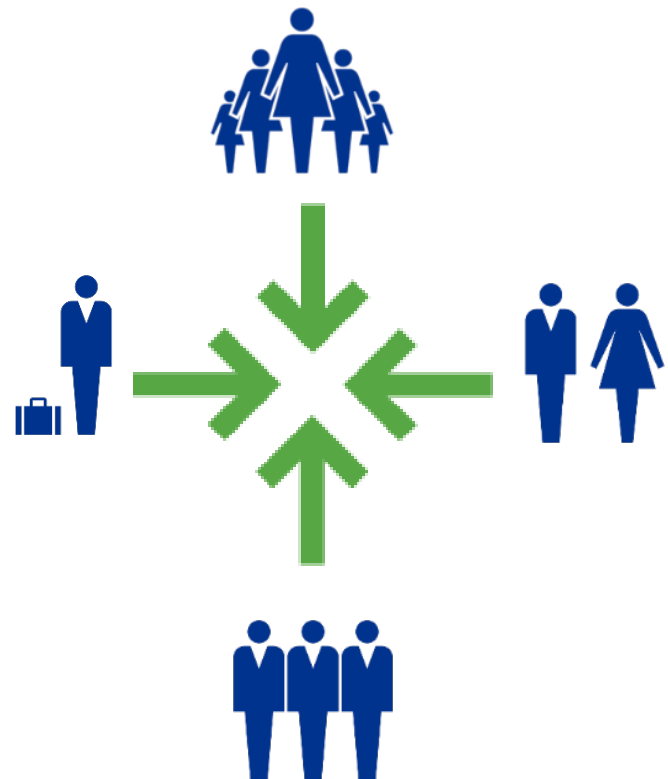
## Platforms

Industries have been disrupted by digitalization. Established business models will be transformed to open platforms exploited by data & analytics

### Established business models



### Platforms

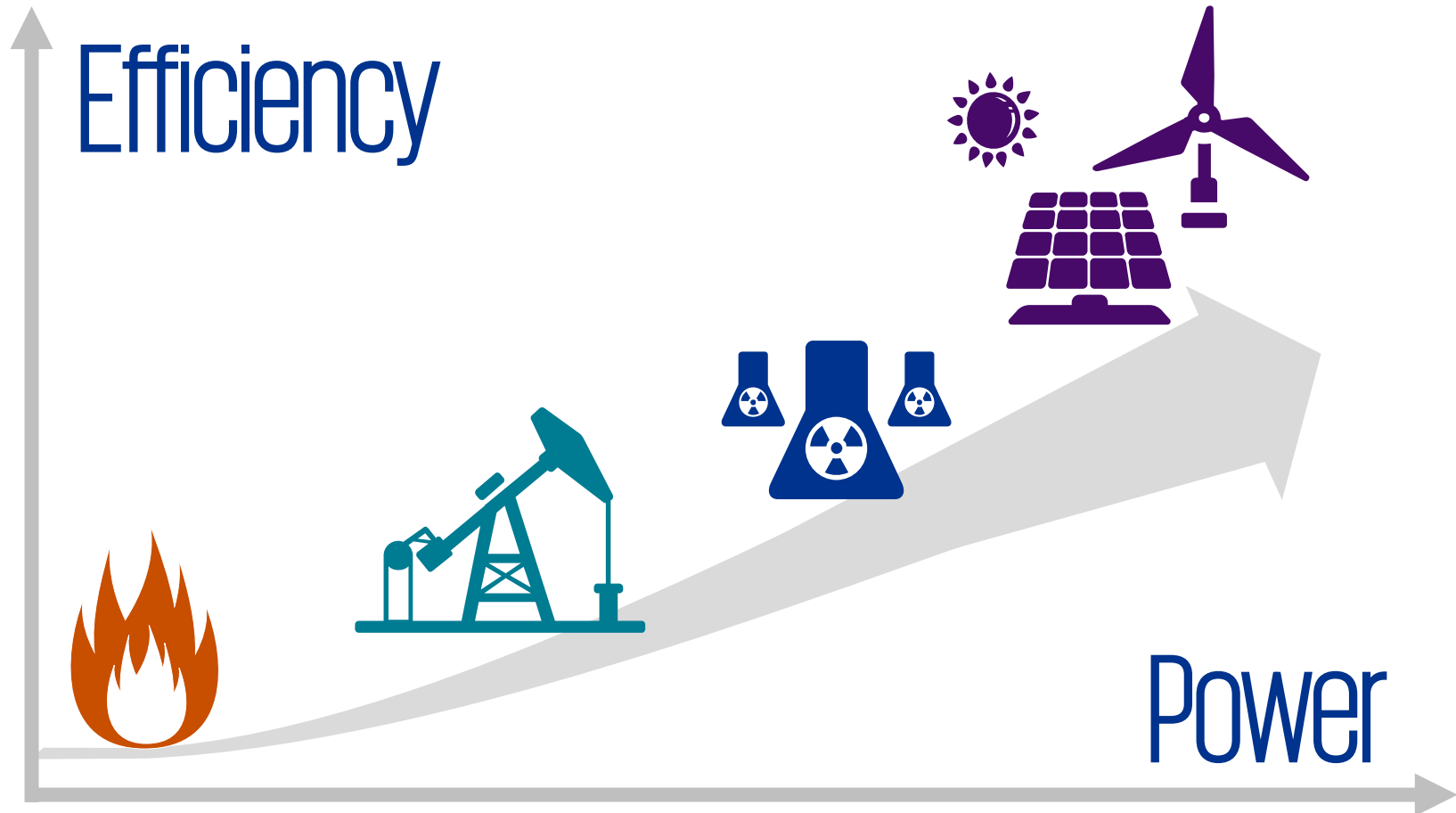




# D&A Platforms: A Cross-Sector Trend

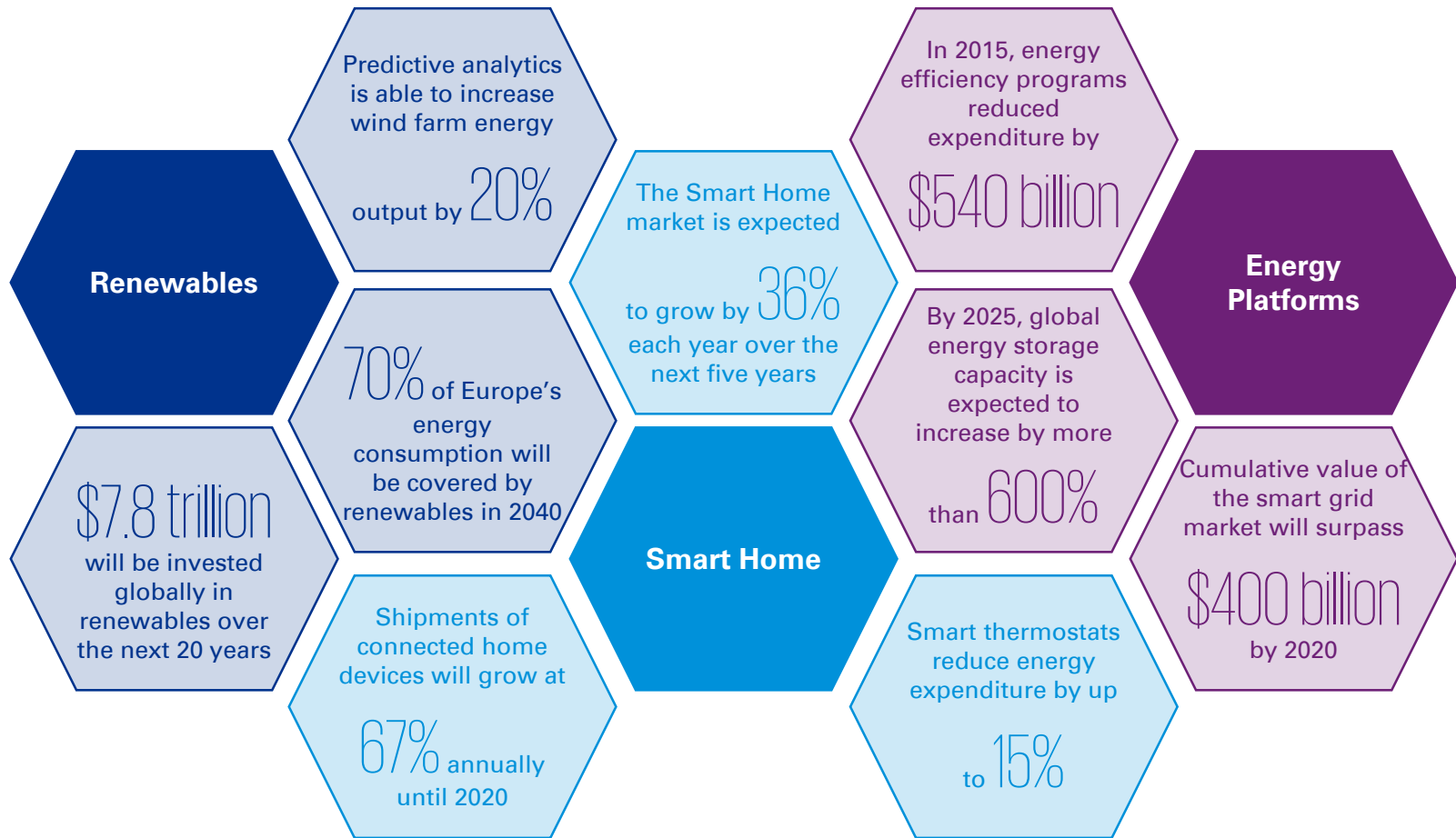
## Development

Historically, the development of the energy sector followed a clear path:  
Growth and Efficiency...



## Disruption

However, recently its continuous evolution is facing disruption by three major industry trends

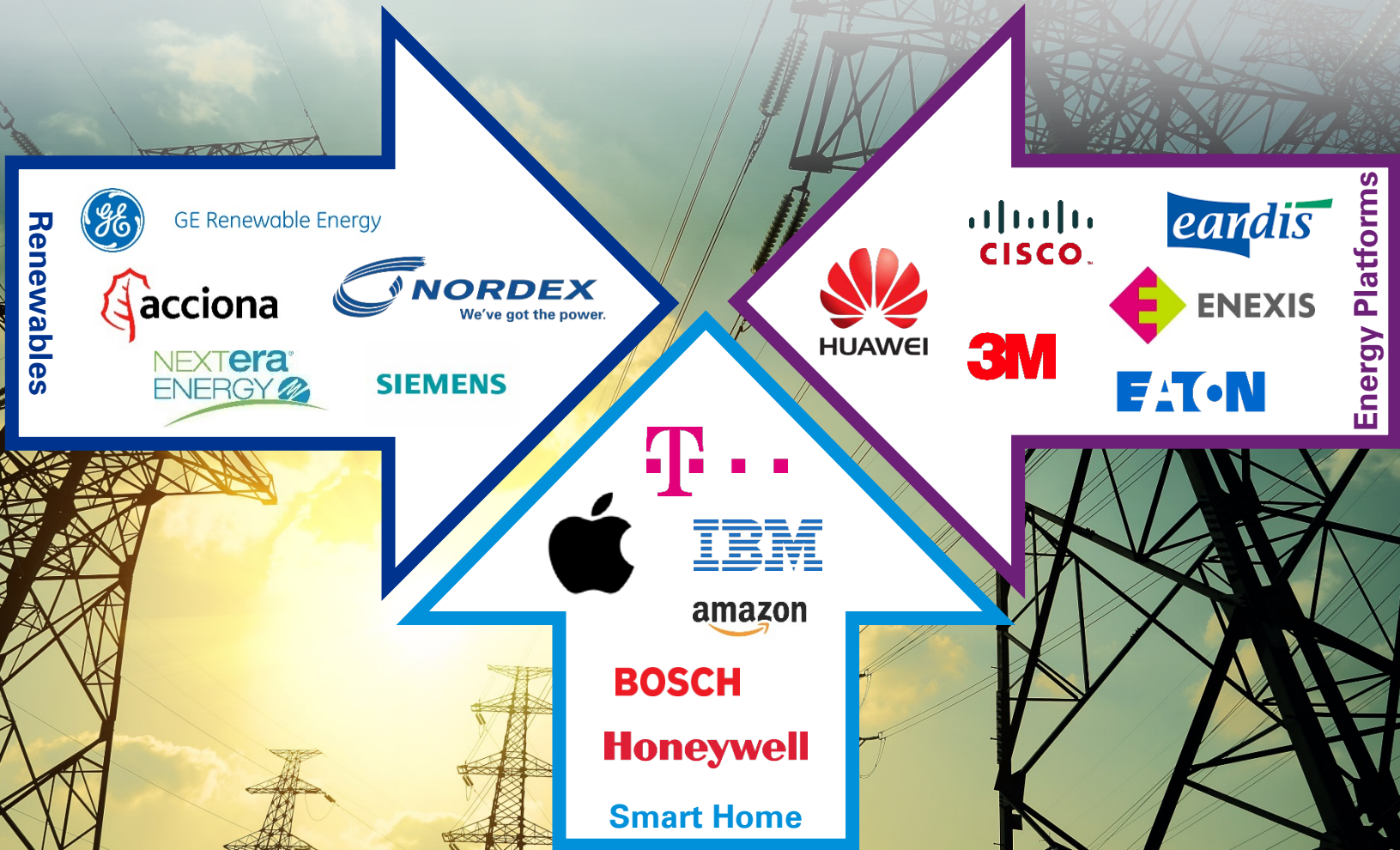


Sources: International Energy Agency, GE, BNEF, Statista, Deutsche Telekom, GTM Research



## Competition

And each new trend will entail the market entry of new competitors



## Automotive

Horizontal and vertical platforms for the automotive industry are booming with a market standard not yet established

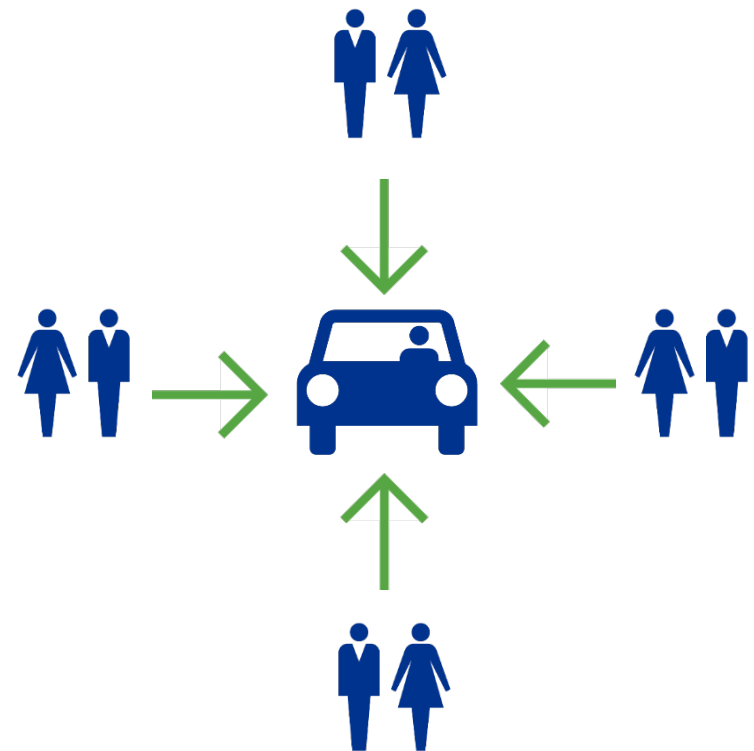
## Smartphones

Taking control of the car's screen offering maps, messaging, music and more



## Diverse mobility

**35m** drivers will use car-sharing by 2021



Sources: Bloomberg, IHS Automotive, Morgan Stanley, BCG, Barclays

## Automotive

Connectivity and digital platforms enable new business models like autonomous driving and car sharing to disrupt the automotive sector

### Autonomous cars

There will be **21m** autonomous cars by **2035**



### Electrification

There will be **400m** electric cars on our roads in **2040**



### Car sharing

More than **15%** of all cars on the road will be shared by **2030**



Sources: Bloomberg, IHS Automotive, Morgan Stanley, BCG, Barclays

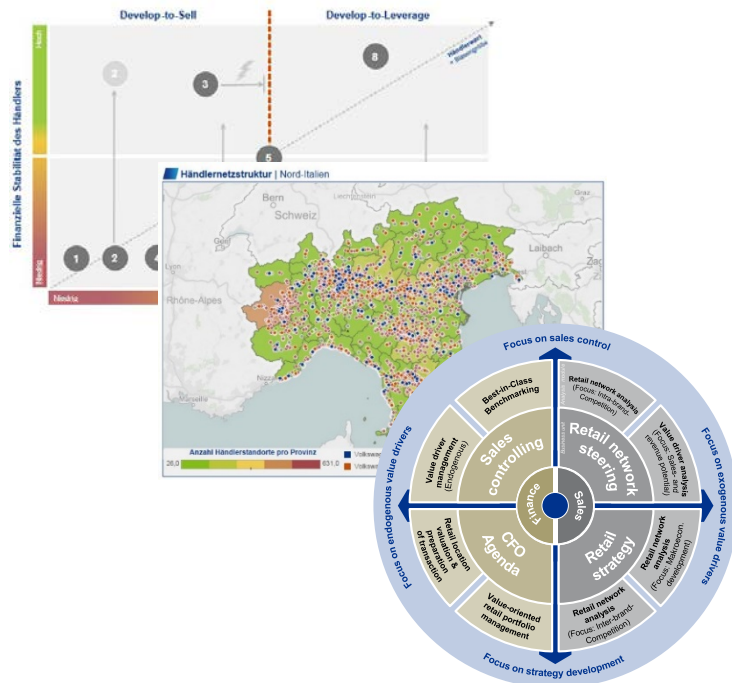


## Automotive

Data & Analytics tools used along the entire value chain provide deep insights and generate sustainable value for the automotive industry

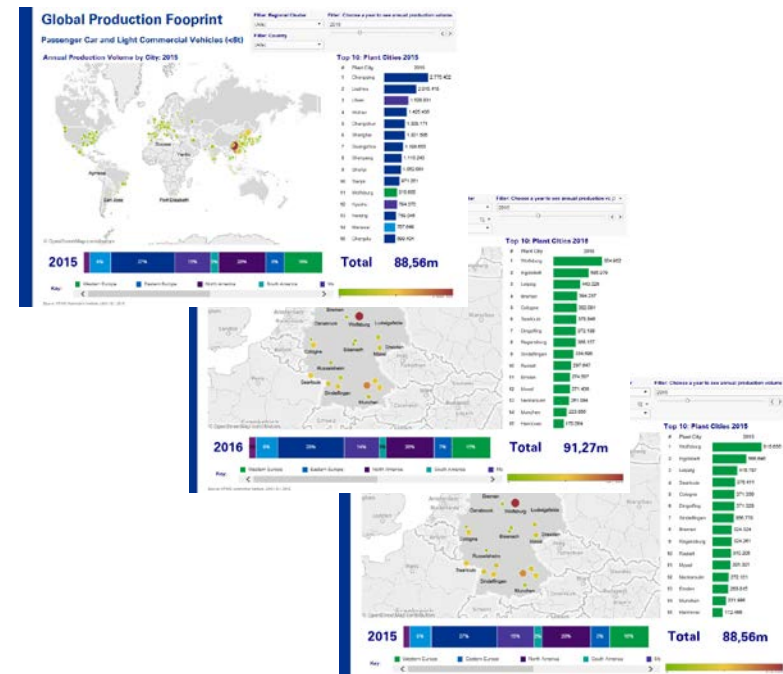
### KPMG dealer network optimization

Strategic options for an automotive dealership based on market attractiveness



### KPMG global production footprint

Use of data & analytics tools to monitor and visualize production processes



## Retail

The disruption in the retail industry will be driven by technology platforms.  
Platform providers will own the data and exploit its value



## Retail

From public and social media data to GPS and video observation enriched with a retailer's proprietary data, this will be the real source of value creation

## Big Data

Retailers who fully leverage the power of Big Data could **increase** their **margins by 60%**

72%

are collecting and  
analyzing open data  
(e.g., government data)



64%

are gathering social  
media data  
(e.g., Facebook, Twitter)



78%

are collecting location  
on-based information  
(e.g. GPS, mobile logins)



Sources: GTAI, McKinsey, Forbes, WikiBon, Baseline, Infosys, IBM, WIPRO

## Retail

And platforms will allow retailers to fully exploit data & analytics tools to forecast demand, to optimize pricing and to identify future customers

### Video analytics

- Study customer paths and behavior, helping retailers to design more effective store layouts
- Utilizing video analytics for traffic and conversion analysis to integrate workforce management and re-align staffing based on traffic trends



### Real-time pricing

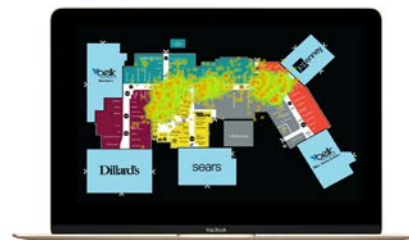
Macy's adjusts pricing in near-real time for 73m items, based on **demand and inventory**, using technology from SAS Institute



### KPMG Location Analytics solutions

Provides retailers the ability to **track customer movement** in real-time, easily integrating various data sources and having the ability to **interact with visitors** in real-time based on their profile

Shopping mall heat map



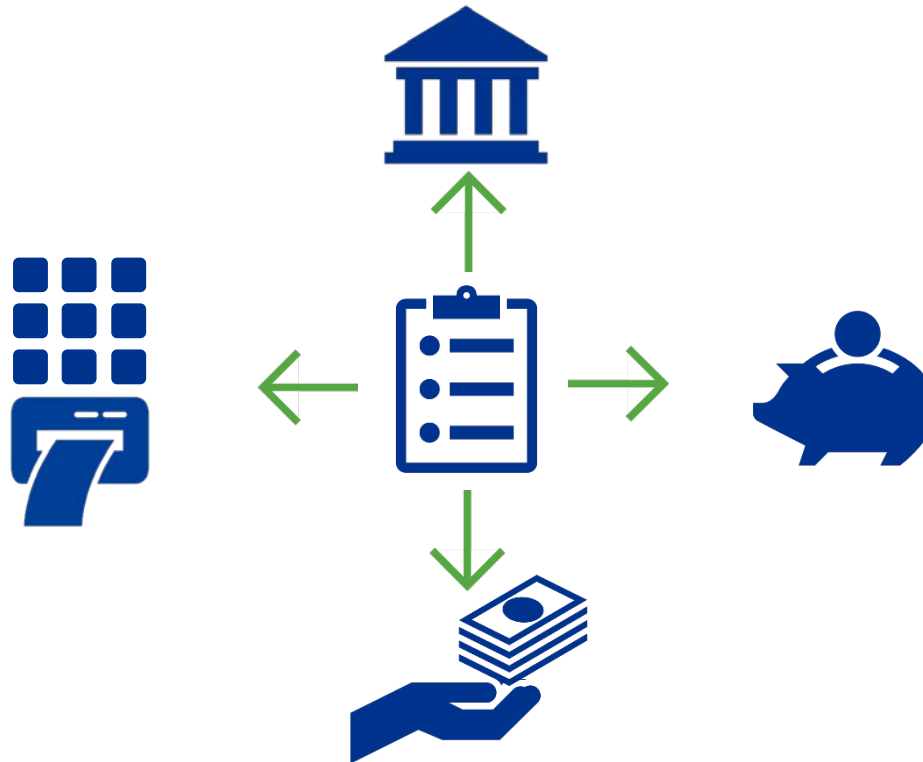
Customer interaction



Sources: GTAI, McKinsey, Forbes, WikiBon, Baseline, Infosys, IBM, WIPRO

## Banking

Each bank has its online banking portal. A global standardized platform for transactions and communication with regulators is yet to be established



**Hosting a global platform, monitoring its traffic and owning the data will generate tremendous value**



## Banking

Banks know how to generate insights from their client data. A platform enriched by public sources will multiply the potential of D&A tools

### Matching & rule-based algorithms



Deutsche Bank

Enable the business to gain greater **visibility** on its performance and identify abnormal information to quickly flag errors (applied, e.g., in **anti-money laundering** processes).

### Big Data analytics

Use analytic capabilities to generate credit card information, transactional data and publicly available economic statistics to develop proprietary insights into consumer trends.



Monitor financial market activity by using **network analytics** and **natural language processors** to catch, e.g., illegal trading activity

**JPMorganChase** 

### KPMG Deposit Pricing Optimization solution

A fully automated, closed-loop pricing optimization solution that leverages **predictive analytics** combined with a **pricing optimization model**.

### Computational complexity example:

**1m**

customers

**46**

pricing zones

**18**

products



Sources: Deutsche Bank, Aureus Analytics, STBigData, Data Science Association

## Healthcare

Several global corporates provide platforms to host healthcare apps and interfaces to connect with Smart devices



Sources: Apple, IBM, GE

## Healthcare

Smart devices monitor patients' conditions and treat diseases. Connected via platforms these devices can provide massive insights

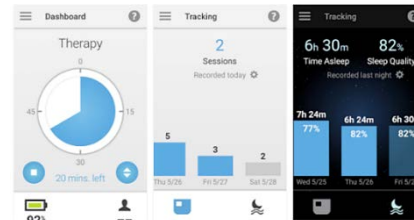
### Internet of Things

**\$177b** projected healthcare IoT market segment by 2020



### Zio XT Patch

Electrocardiogram patches developed by **iRhythm** aim to detect abnormal **heart activity** over an extended period of time



**HealthPatch MD**, a **biosensor** developed by **Vital Connect** that measures and tracks a patient's heart rate, respiratory rate, skin temperature, and body posture



### Quell

Wearable created by **NeuroMetrix** to **reduce pain** by using an accelerometer to gauge a user's activity level and adjust its stimulation intensity



### Glucose monitoring

Abbott designed a wearable continuous glucose monitoring system for people with **diabetes**

Sources: InformartionWeek Healthcare, Study: Big data analytics in healthcare

## Healthcare

Networks of hospitals, physicians, insurers and government organizations use these platforms on which they share data and analyze patterns

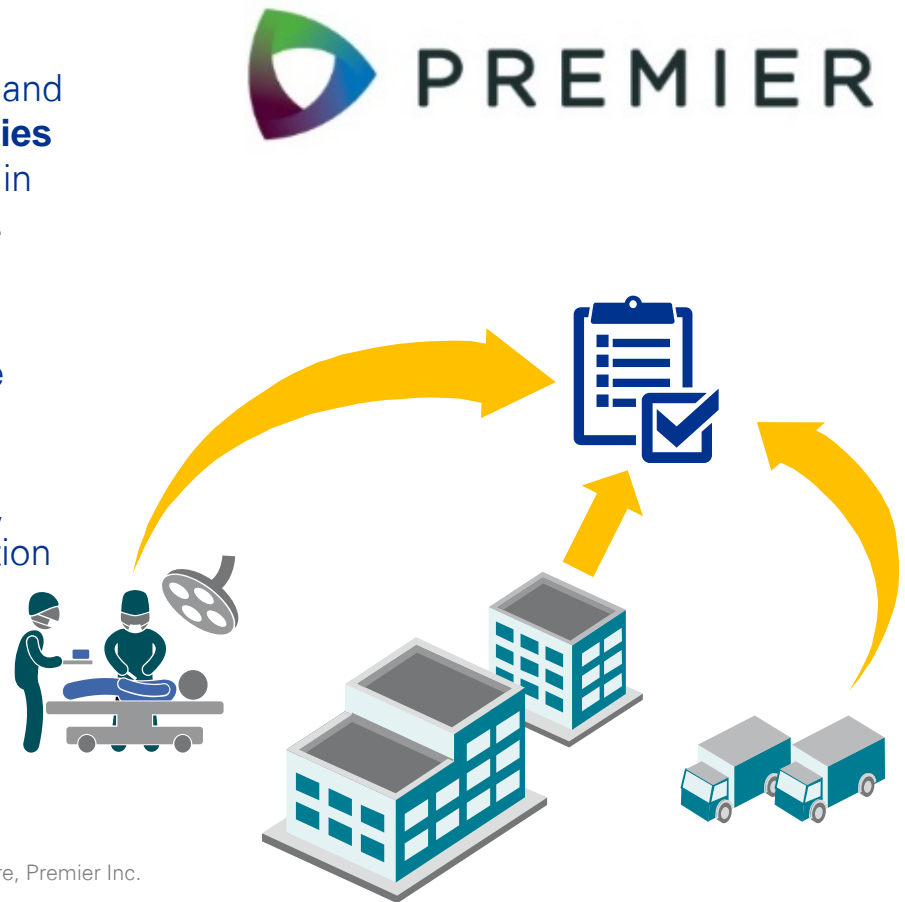
### Example: premier US healthcare alliance network

- Network of more than **3.75k hospitals** and health systems, **130k non-acute facilities** and **400k physicians** with data on one in four patients discharged from hospitals.
- Large **database of clinical, financial, patient, and supply chain data**, with which the network has generated comprehensive and comparable clinical outcome measures, resource utilization reports and transaction cost data.

### Outcome

Saving of **~29k lives**

Reduction of healthcare spending by **~\$7 billion.**

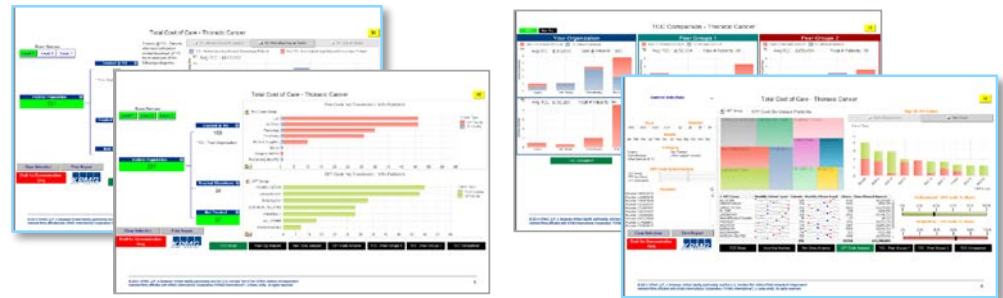


Sources: InformartionWeek Healthcare, Study: Big data analytics in healthcare, Premier Inc.

Having all data available on one centralized platform will allow companies to run trusted algorithms and gain medical as well as financial insights

- Converts, e.g., a month end reporting process that took six weeks into a click-of-the- button process
- Provides additional value-added features including advanced analytics and data visualization

- TCC methodology leverages KPMG's National Claims **Database** (100m+ covered lives, refreshed quarterly)
- Proprietary algorithms to construct a patient and disease-centric longitudinal and episodic view of care
- Cost of care analysis with the client's peer group to provide **cost and quality comparison** metrics





# Our Strategy: Trusted Analytics

## Trust Deficit

People are suspicious of disruptive developments. To fully leverage the potential of Data & Analytics, it will be key to overcome the trust deficit

### Trust in data

# 78%

of CEOs have concerns about the **quality of data** on which they base their decisions.

- Reliable sources
- Data protection
- Availability
- Real-time data
- (Un)structured data

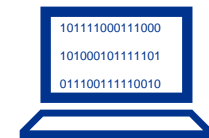


### Trust in analytics

# 34%

of CEOs have limited **trust** in the **accuracy** and **effectiveness** of the way their organization uses **Data & Analytics**.

- Suitable algorithms
- Efficient technology



Source: KPMG CEO Survey 2016

## Trust Deficit

Besides trust in the input data and the processing, it is important to know how to exploit the output and derive the right decisions



## Trust in decision makers

# 85%

of CEOs are concerned with having to consider the integration of basic **automated business processes** with **artificial intelligence** and **cognitive** processes.

⇒ Interpretation

⇒ Conclusion

## Make better decisions faster

Source: KPMG CEO Survey 2016



## KPMG D&A Strategy

Four elements are key to make the most out of Data & Analytics, to derive trustworthy decisions - Our D&A Strategy

### RICH DATA



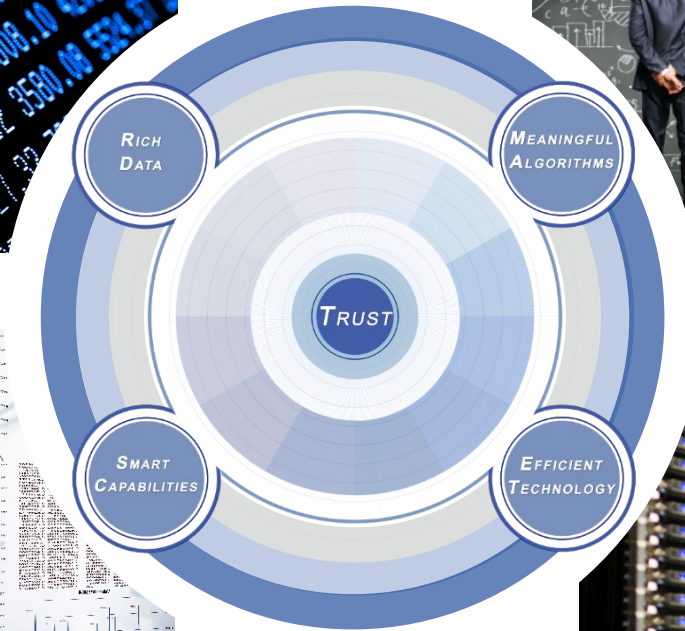
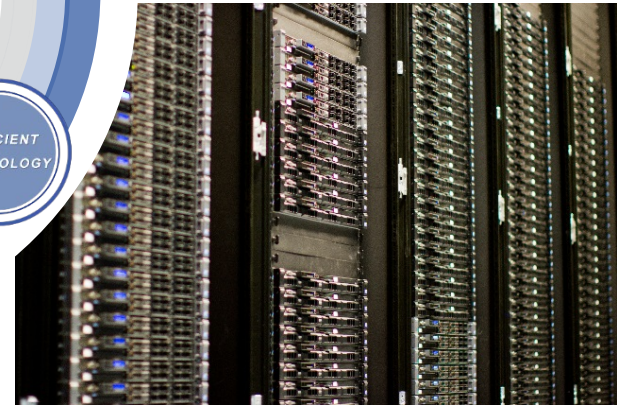
### MEANINGFUL ALGORITHMS



### SMART CAPABILITIES

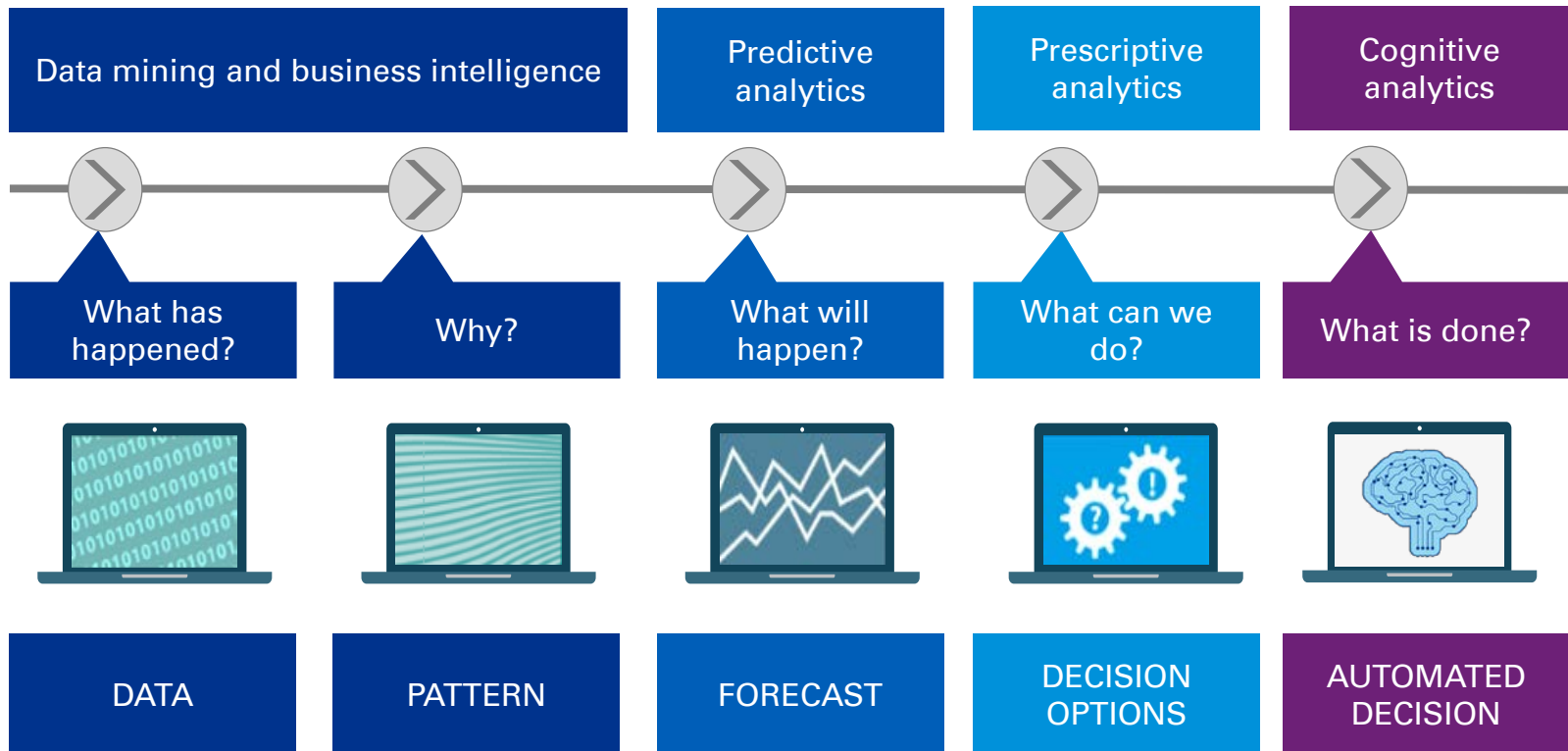


### TECHNOLOGY/ALLIANCES



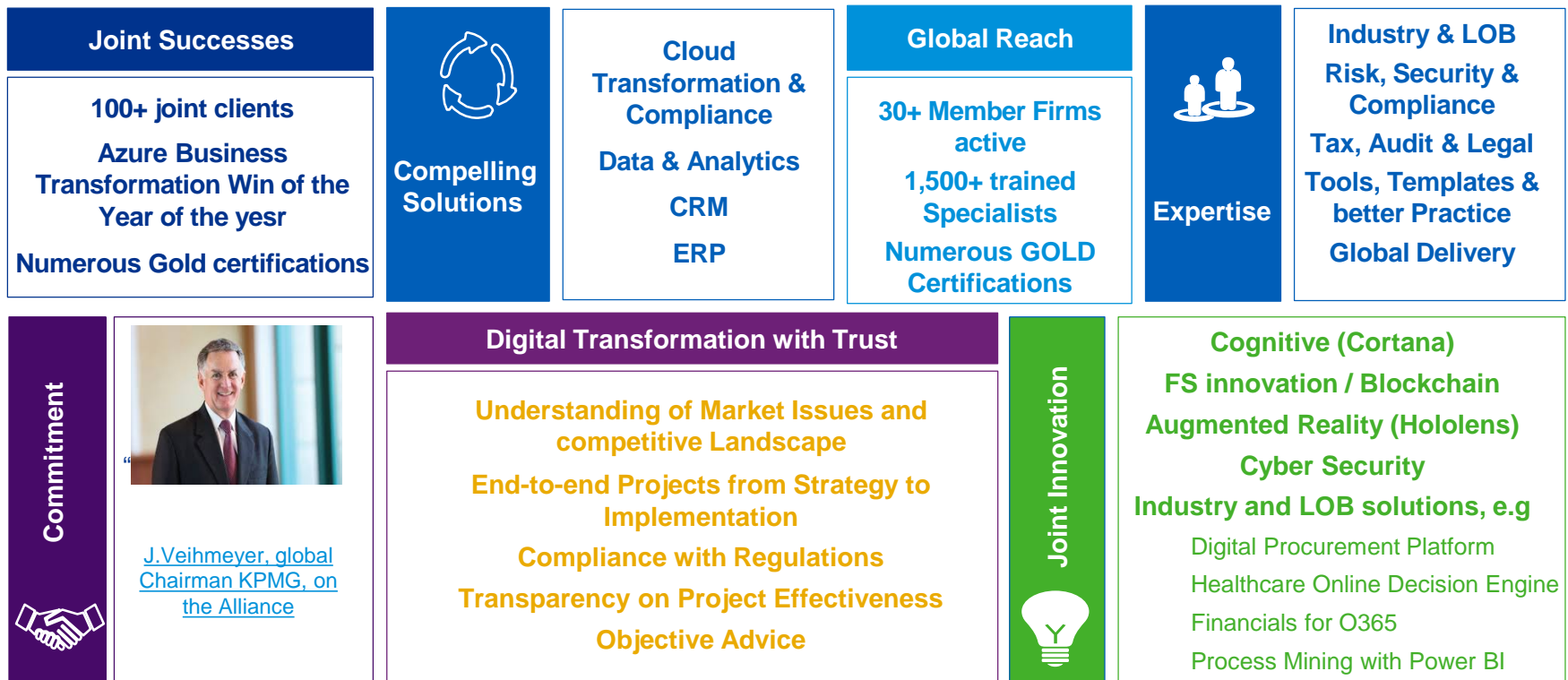
## Data & Analytics

The D&A landscape is changing rapidly. But we are not yet exploiting its full potential - automated decisions and thus digital labor...



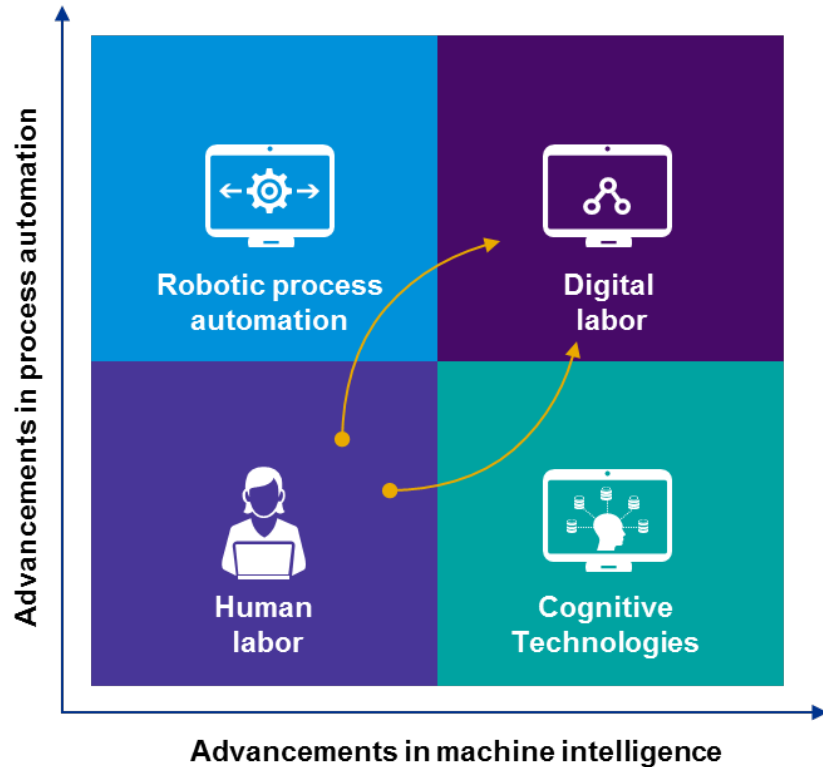
## Microsoft Alliance

Partnering with Microsoft supports KPMG's aspiration to become "The clear choice" on a global scale



## IBM Watson

With RPA to increase efficiency and Cognitive Technologies to enable knowledge gains we will turn human resources into digital labor





## Energy – Best Practice

KPMG introduced an IoT architecture to govern and monitor plant operations using IoT sensor data in real time



### Challenge:

Collect plant data and analyze in real time



### KPMG Solution:

Set up IoT architecture in Amazon cloud considering technical and business requirements



### Added Value:

Efficient plant management



## Energy – Best Practice

With EPA, KPMG provides a Data & Analytics solution for the digitalization of business processes in the energy sector



### Challenge:

Identification of system failures and monitoring of business processes



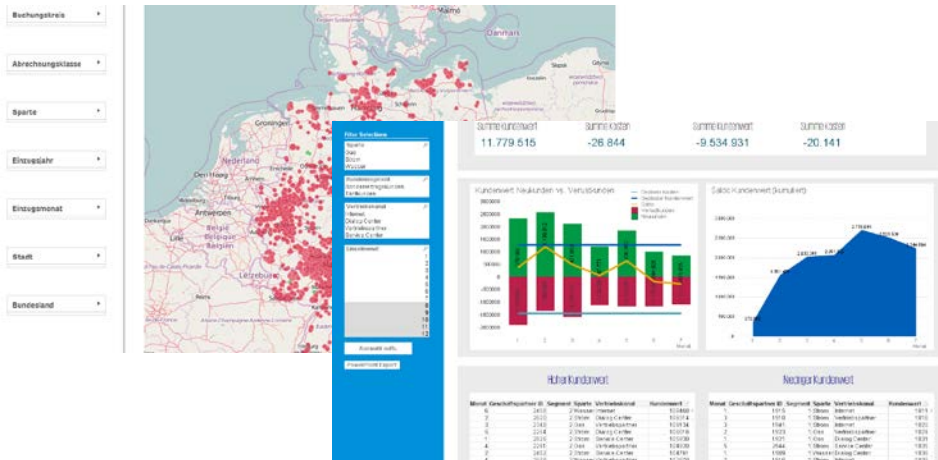
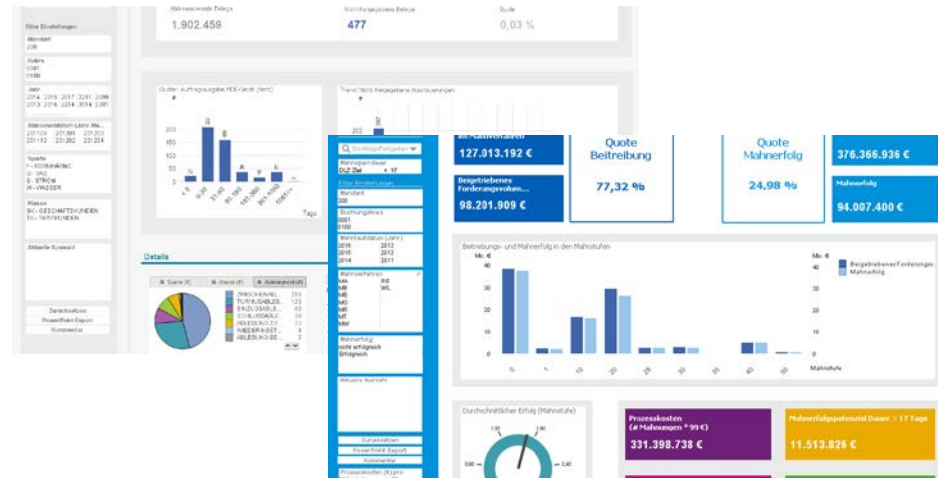
### KPMG Solution:

Automated data gathering, processing, benchmarking and provision of insights



### Added Value:

Optimized business processes



## Energy – Best Practice

KPMG built an analytical model for predicting capital intensive asset failure to improve a utility's ability to make faster, better-informed decisions



### Challenge:

Optimize the physical asset investment and management strategies



### KPMG Solution:

Integrate and understand financial and engineering data with a variety of data description and visualization tools



### Added Value:

Faster and better informed investment decisions

## Predictive Modeling of Asset Risk Profile

### Qlikview dashboard



## Energy – Best Practice

# KPMG built a call center trigger model to optimize the operations for an electric utility



### Challenge:

Enhance customer experience and service, while also reducing call center volume and costs



### KPMG Solution:

Build a highly interactive call center trigger predictive model to anticipate call volume

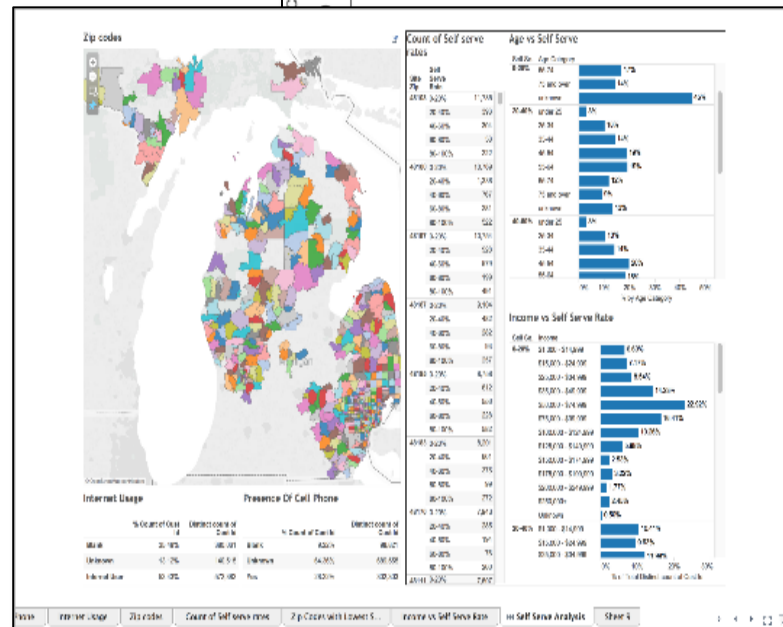
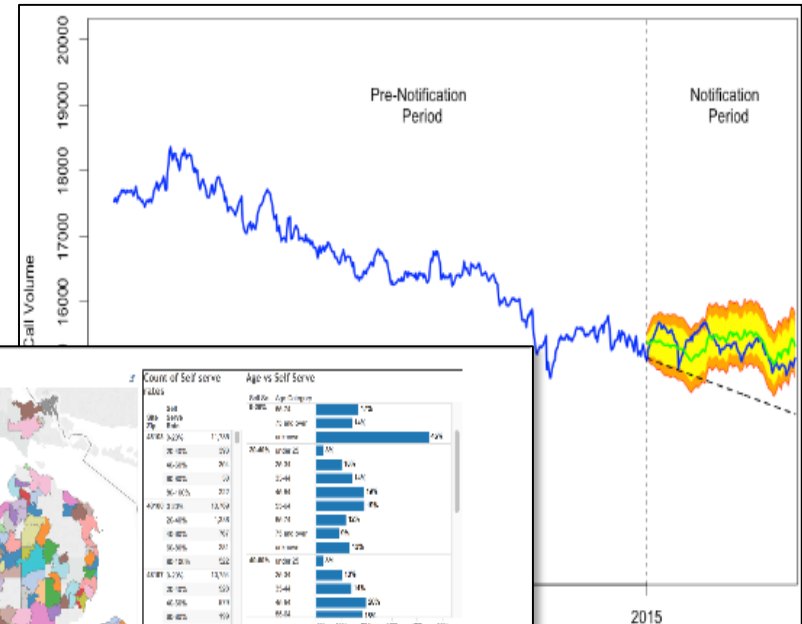


### Added Value:

Increase self-service rates and reduce call volume

### Trend Line Prediction with applied corrections

## Self-service Adoption by Customer Segment





## KPMG Data & Analytics

KPMG D&A combines deep subject matter expertise with strong D&A capabilities empowered by trusted data & technology alliances

**\$2,16bn**

D&A revenue

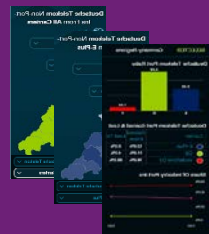
**KPMG**  
**Data & Analytics**

**10,000+**

specialists worldwide

**600+**

D&A solutions



**~10k**

Proprietary benchmarking  
samples

**5**

Global  
Insights Centers

London  
Frankfurt  
New York  
Hong Kong  
Paris

**400+**  
Global Credentials

Partners and  
Investments



Microsoft



Imperial College  
London



Link  
Analytics



**1** KPMG Capital

## Insights Centers

Our global Insights Centers in New York, Frankfurt, Hong Kong, London and Paris offer the perfect environment to experience Data & Analytics



### KPMG INSIGHTS CENTER



**5**  
global  
Insights  
Centers

**600+**  
solutions



**250**  
client sessions



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