Künstliche Intelligenz im Banking

Data Leader Days 2019, 13. November 2019

Dr. Shivaji Dasgupta, Head of AI & Smart Data,
Private Bank, Deutsche Bank

European focus on retail has been steadily agnostic of technology developments, …

93,1 bn EURO
+8,04%

106,2 bn EURO
+5,69%

GERMANY

Delivers goods with trusted quality

CHINA

Delivers technology as a scalable platform

..., while other geographies are profiting from tech-driven platform offerings

Top 10 companies

Apple	Amazon	Google	Microsoft	Facebook	Alibaba.com	Tencent	Samsung	Netflix	SAP
🇺🇸	🇺🇸	🇺🇸	🇺🇸	🇺🇸	🇨🇳	🇨🇳	🇰🇷	🇺🇸	🇩🇪
941	818	783	781	548	526	509	329	157	145

All companies with a clear focus on tech and retail, except a single European company are focusing on B2B
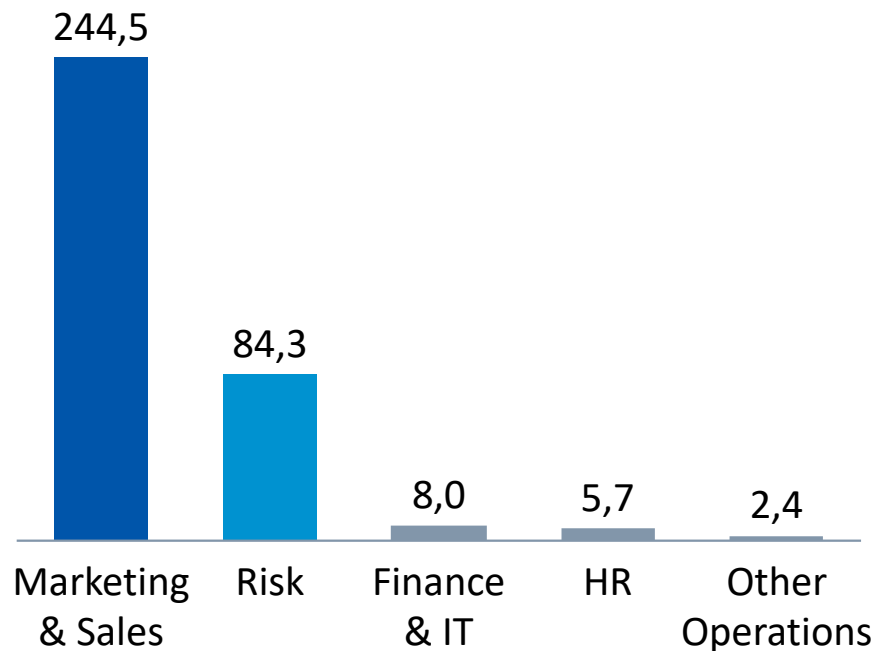
Source: Netzoekonom.de

Banking in a platform world profits with the multi-faceted application of data and AI with correct skills and roles

Estimated impact of AI in global banking

In $ bn (2018)

Marketing & Sales	244,5
Risk	84,3
Finance & IT	8,0
HR	5,7
Other Operations	2,4

Source: McKinsey Global Institute analysis

Top 3 business area - Impact

In $ bn (2018)

Channel management	121,3
Customer service management	73,0
Fraud and debt analytics	84,3

- From 2016-30 about 50% more machine driven tasks
- Technical understanding and emotional skills becomes more important for humans
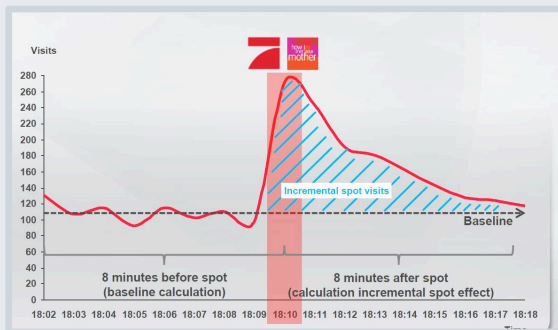
AI implementation is not only done by GAFAs

Customer targeting

Media Analytics - (offline) viewership data combined with (online) pixel data to **personalize offering** for higher conversion and sales revenue
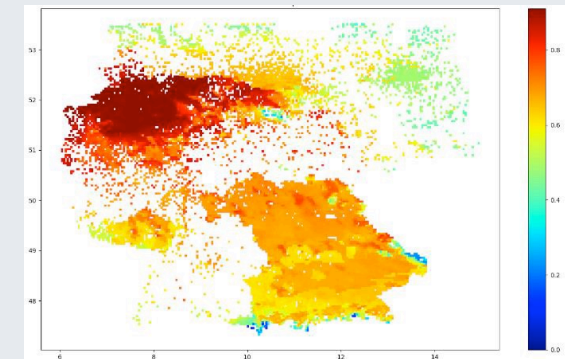
Risk reduction

Tariff calculation for **reduced risk** by **identifying** high accident-prone **customer groups**

Customer service

Pre-reserved **repair services** for customer based on **building damage prediction** derived from weather forecast
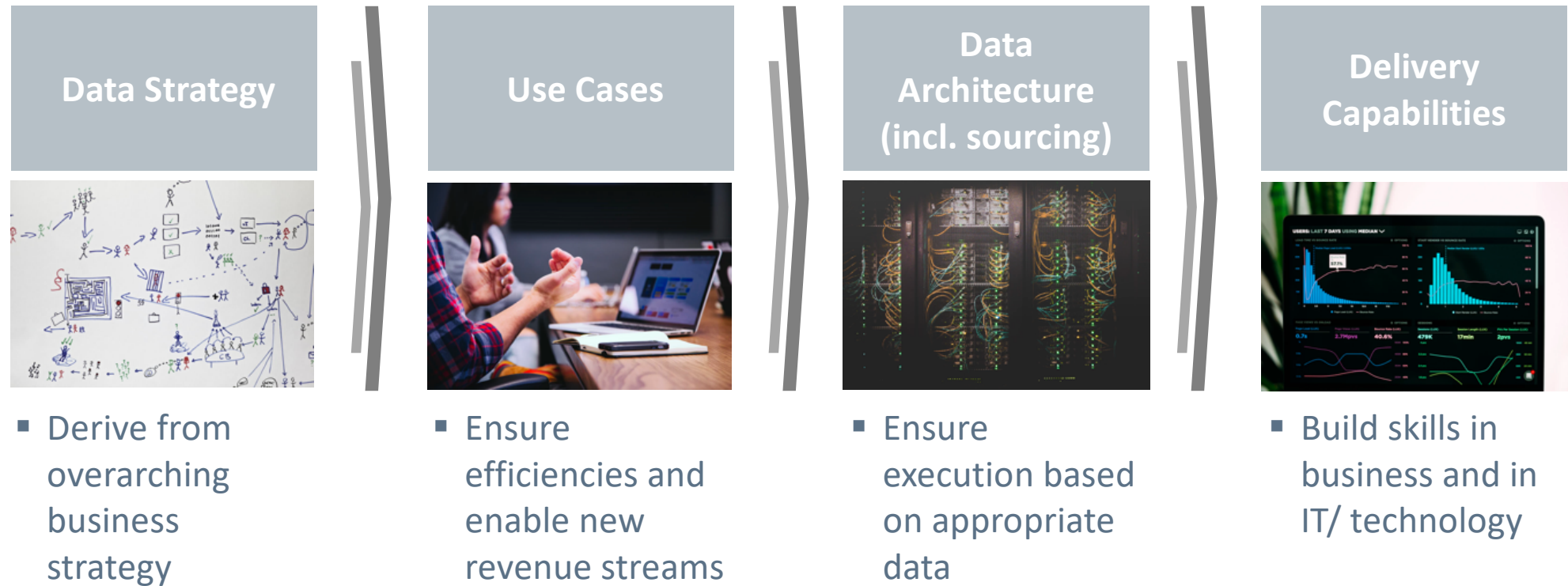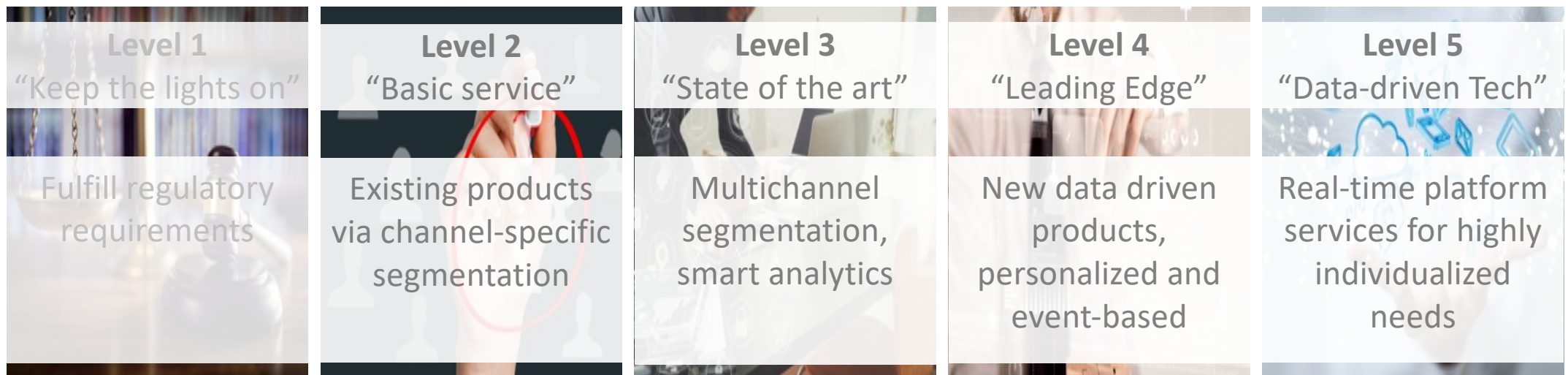
Awarded best innovation

Starting on an AI journey begins with a pit-stop for data strategy

Framework for data strategy

Data Strategy		Use Cases		Data Architecture (incl. sourcing)		Delivery Capabilities

- Derive from overarching business strategy

- Ensure efficiencies and enable new revenue streams

- Ensure execution based on appropriate data

- Build skills in business and in IT/ technology

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Concrete data strategy defined for retail banking globally to achieve ambitiously targets in 2020 …

Level 1	Level 2	Level 3	Level 4	Level 5
"Keep the lights on"	"Basic service"	"State of the art"	"Leading Edge"	"Data-driven Tech"
Fulfill regulatory requirements	Existing products via channel-specific segmentation	Multichannel segmentation, smart analytics	New data driven products, personalized and event-based	Real-time platform services for highly individualized needs

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Digital strategy provides the cornerstones for a business-driven data strategy in a platform world

Digital Transformation of Core Business

Competitors:

Approach:

- Digital and omni-channel sales along the funnel
- Digital first front-to-back customer journeys and processes

Data related:

- Regulatory requirements
- Increase revenues on existing products
- Enable efficiencies

Attract New Markets & Target Groups

Competitors: ...

Approach:

- Digital Mobile Wallet („Yunar")
- New beyond banking offerings for existing customer
- Digital investments/partnerships

Data related:

- Data monetization
- Data driven business models

Ambition Level: Data-driven Tech

Level 4 Transform the Core: Digitalisation and automatization of consumer finance business

A

Collection → Scoring → Processing

Y

N

- Data collection within E2E process
- Credit scoring based on ECB approach
- Automatized approval based on collected data and credit scoring

- E2E-automated process
- Video legitimation/ Digital signature and document upload
- Realtime third-party account analysis
- Straight-Through-Processing
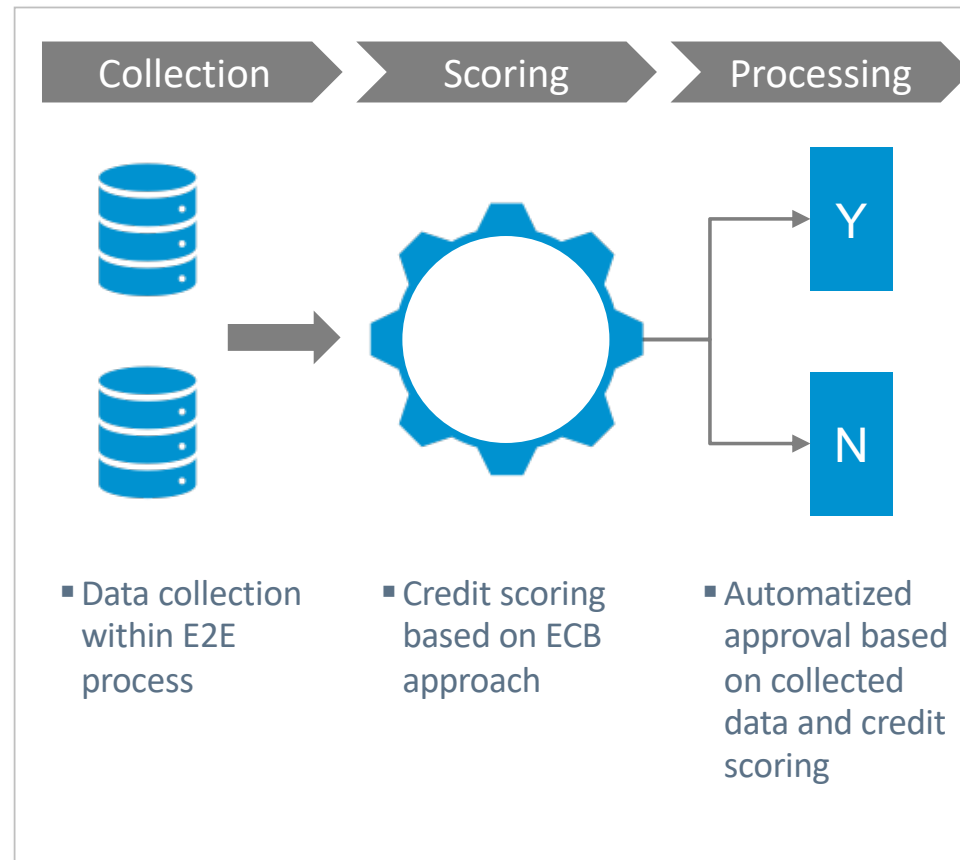
+36% YoY

Avg. 12k volume

45% rejection rate

Optimize scoring based on external data

Level 5 Becoming a platform: Complete your tax declaration directly in your browser or via app

:buhl

- Prefilled tax declaration by analysing bank account data

- Automatically categorization of tax relevant data

- Submit documents digitally to tax authority

Collection	Aggregate	Processing

General information

Income

Donations

Insurances

...

- Analyzing transaction and master data via dbAPI connectivity

- Enrich with external data

- Categorise transactions data with ML

- Highlight tax savings based on current jurisdiction

- Transform data into tax form and ensure paperless submission to tax authority
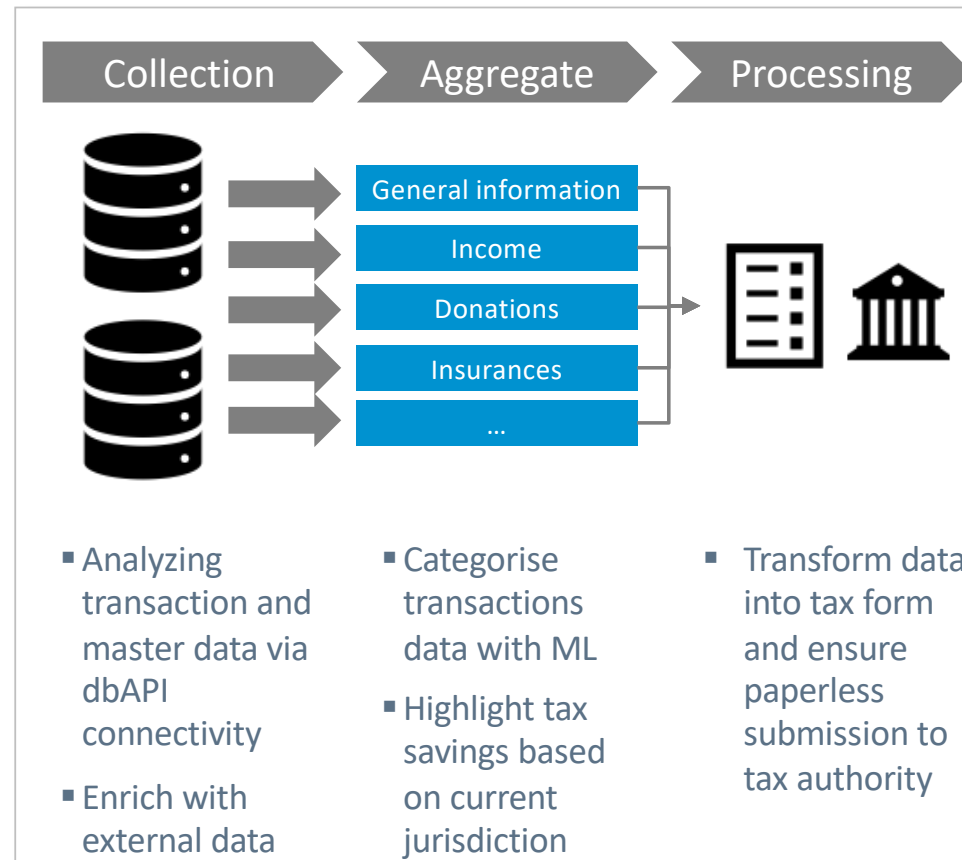
Simplify tax data collection

Up to 80% of relevant data prefilled[1]

Data as key to fulfill digital tax process

Improve categorization approach via ML/AI

1) in dependency to complexity of single tax use case

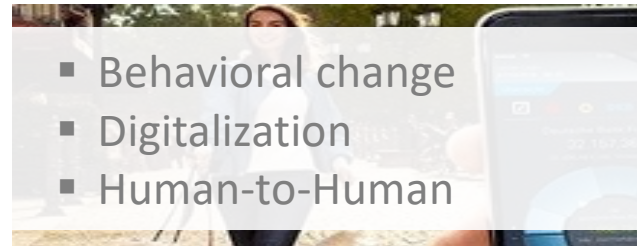# Best practice data architecture and capabilities enables use cases and adheres to data regulations

Regulation
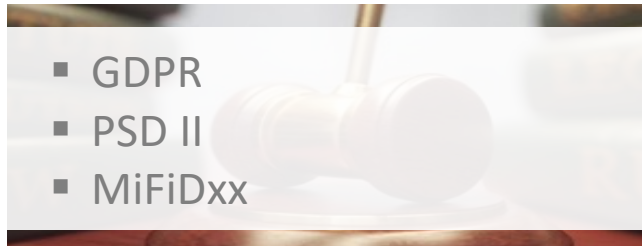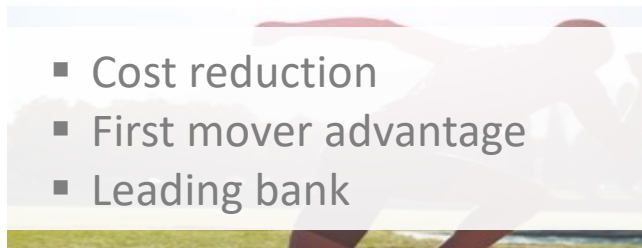
- GDPR
- PSD II
- MiFiDxx

Use Cases for Customer

- Behavioral change
- Digitalization
- Human-to-Human

Time-to-market

- Cost reduction
- First mover advantage
- Leading bank

Cloud

- New Business Models
- Data Monetization
- Costs

Business-driven data factory with co-located IT and business data experts

New co-located data factory leading to sustainable implementation of use cases and data-driven business models

- Establish strategic approach
- Share process knowhow
- Ensure Data quality

Data Quality Managers

Bus. Data Managers

Business

Data Analytics

Co-located Data Factory

Technology

- Facilitate external partnerships
- Drive analytics and AI
- Focus on innovation and trends

Strategic Data Leads

Data Scientists

- Enable best in class technology
- Implement architecture and tools

Data Application Arch.

Data DevOps Engineers
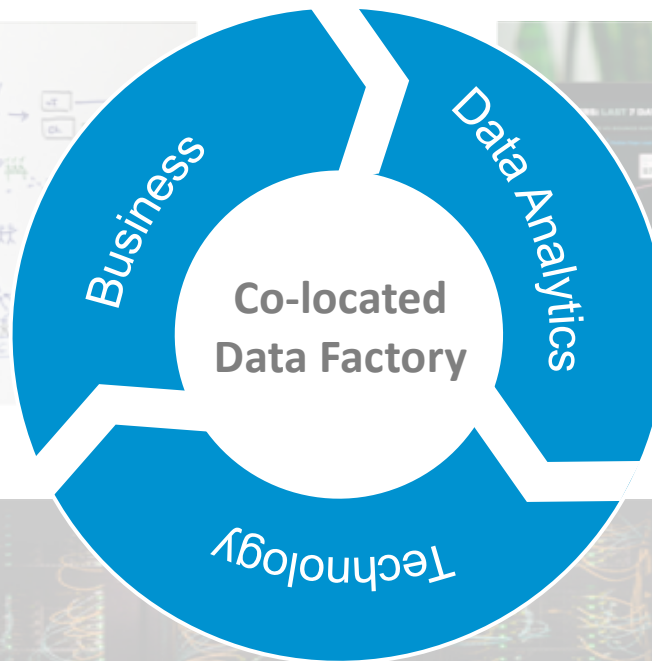
Unlock internal and external requirements to ensure and measure success of a data driven business model approach

Own value

Customer
Radical changed customer behavior – bank customers ready for GAFA offer

Employees
Significant impact on existing jobs and skill sets

Ethics
Important to comply with fundamental rights (democratic and constitutional)

Boundary conditions

Regulation
PSD II: Fundamentally change competitive situation

GDPR: Significant change in control of data

Competitors
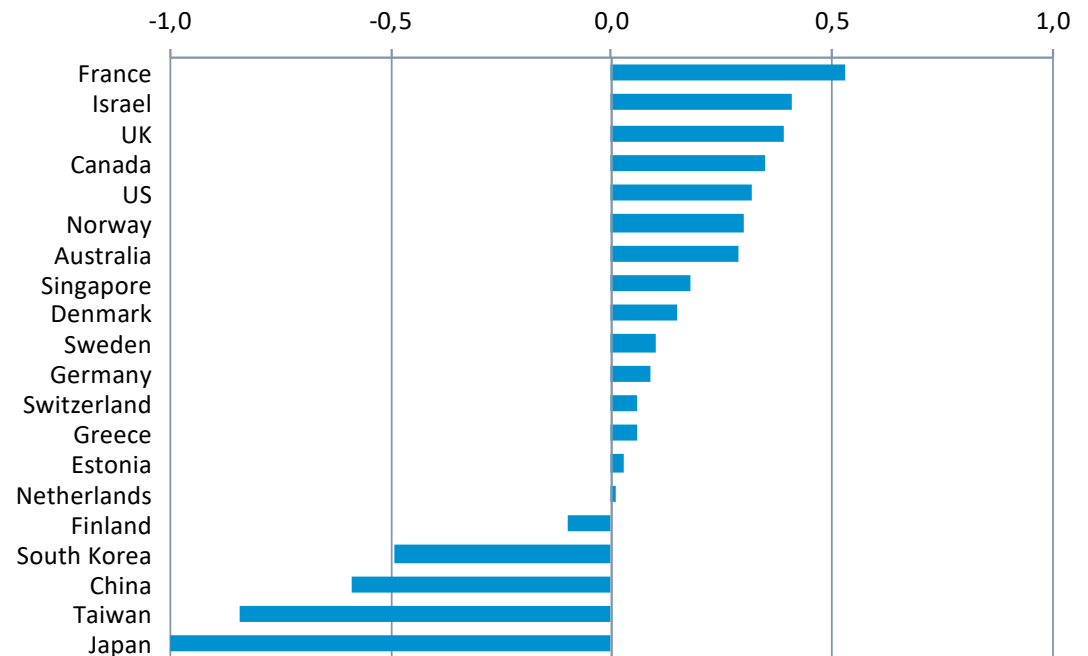Digital challenger banks become "Unicorns"

> More cooperation across sectors in EU needed for data pooling e.g. European Data Space

Further development of AI and data-driven models need to be monitored with correct definitions of Ethics

Moral machine decision based on MIT – Result shows average vote in country

Difficult to define one set of ethical & transparency guidelines across multiple geographies

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Takeaways

Artificial intelligence has an immense impact on the financial industry - the application has to be based on a case-by-case approach.

AI is reshaping the industry and therefore is leading to a transition of required skills which needs to be retrained in responsibility of companies

Development and usage of AI must be derived from clear defined ethical principles and always be in humans hand