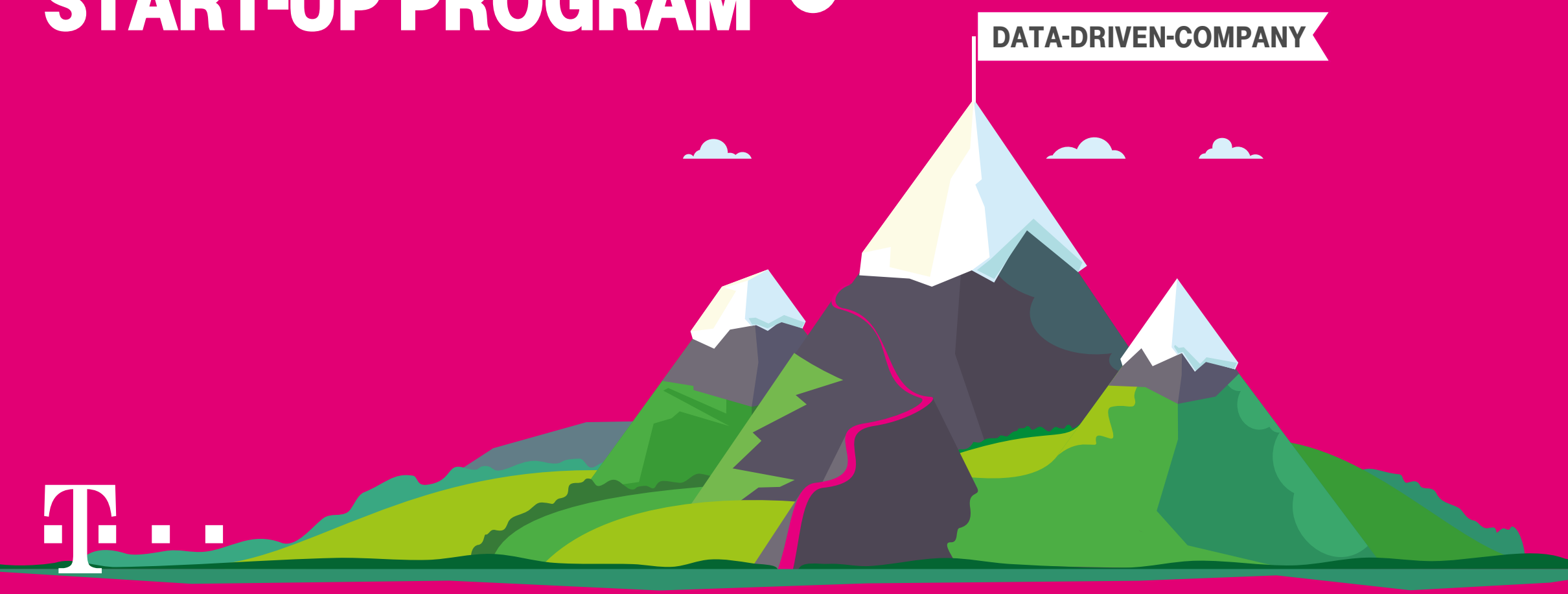
DEUTSCHE TELEKOM CHIEF DATA OFFICE START-UP PROGRAM



WHERE DO WE COME FROM?

ORGANIZE & ORCHESTRATE ANALYTICS ACTIVITIES

internal

- Open and connect current Analytics silos
- Align Core Telco use cases with DT strategic objectives
- Harmonize currently dispersed capabilities

external

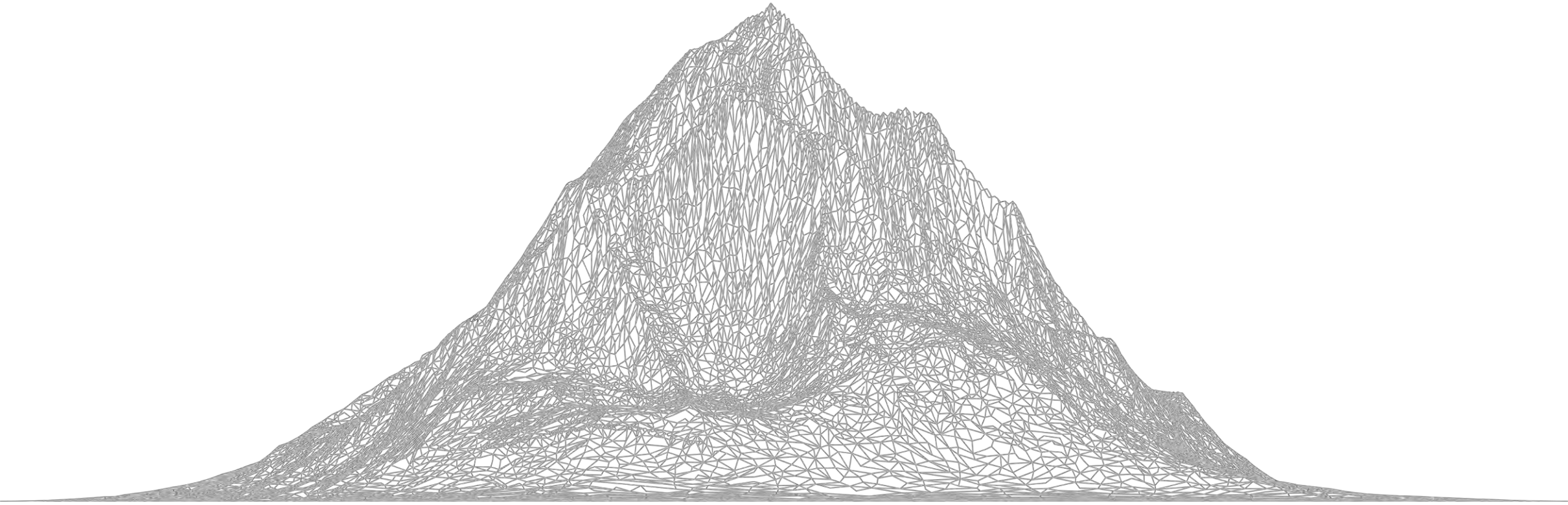
- Competitors set up agile analytics environment
- Artificial Intelligence leads to increasing complexity
- Analysts forecast increasing Core Telco potential

Call for Action:
Need for a Central CDO

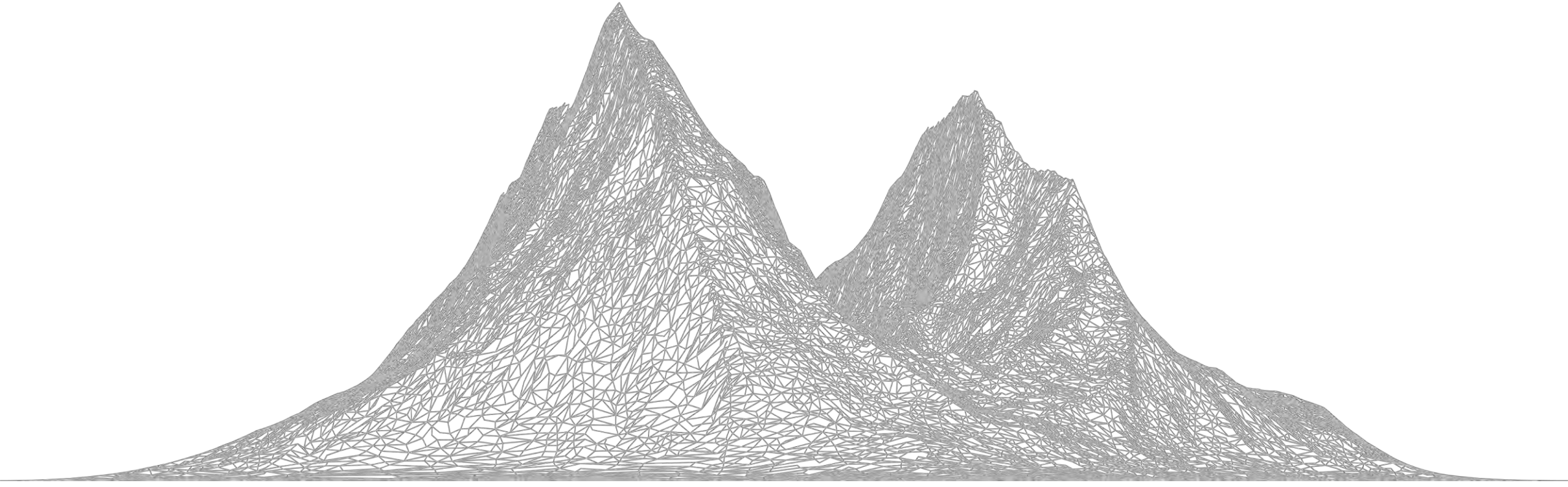
CORE MISSION: REALIZE SYNERGIES IN DATA

> **“OVERARCHING RESPONSIBILITY TO HELP THE ORGANIZATION LEVERAGE DATA ASSETS TO ITS FULL POTENTIAL.”**

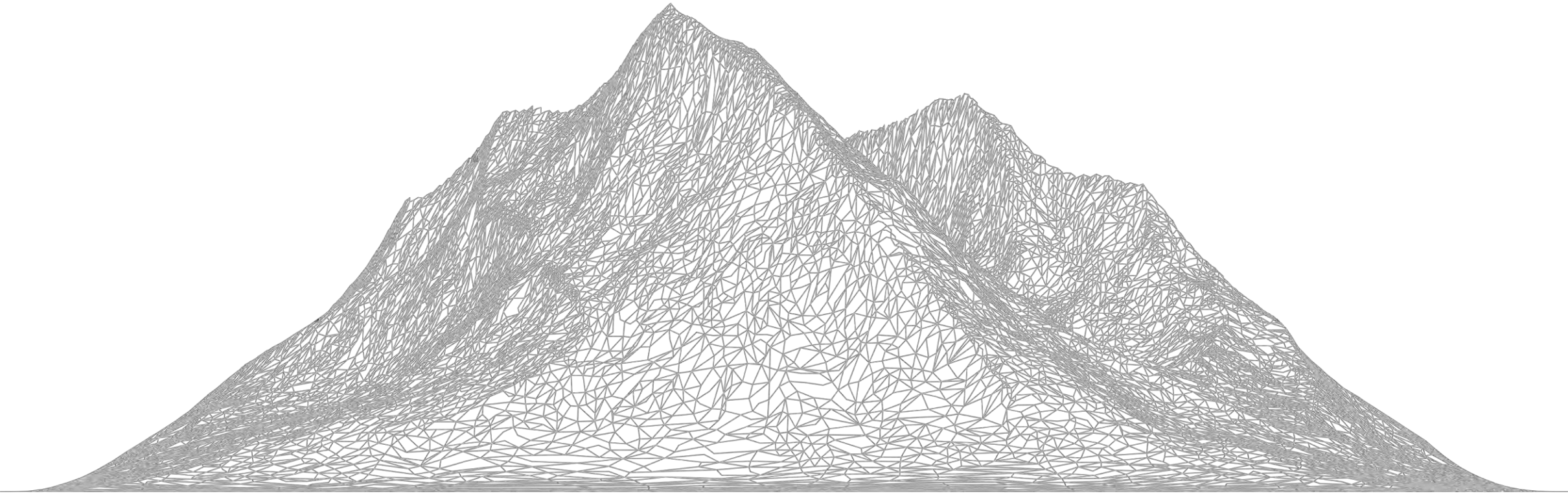
WHY IS CDO SO IMPORTANT – OUR MAIN CHALLENGE



THE MAIN CHALLENGE – DIFFERENT PERSPECTIVES



THE MAIN CHALLENGE – DIFFERENT PERSPECTIVES



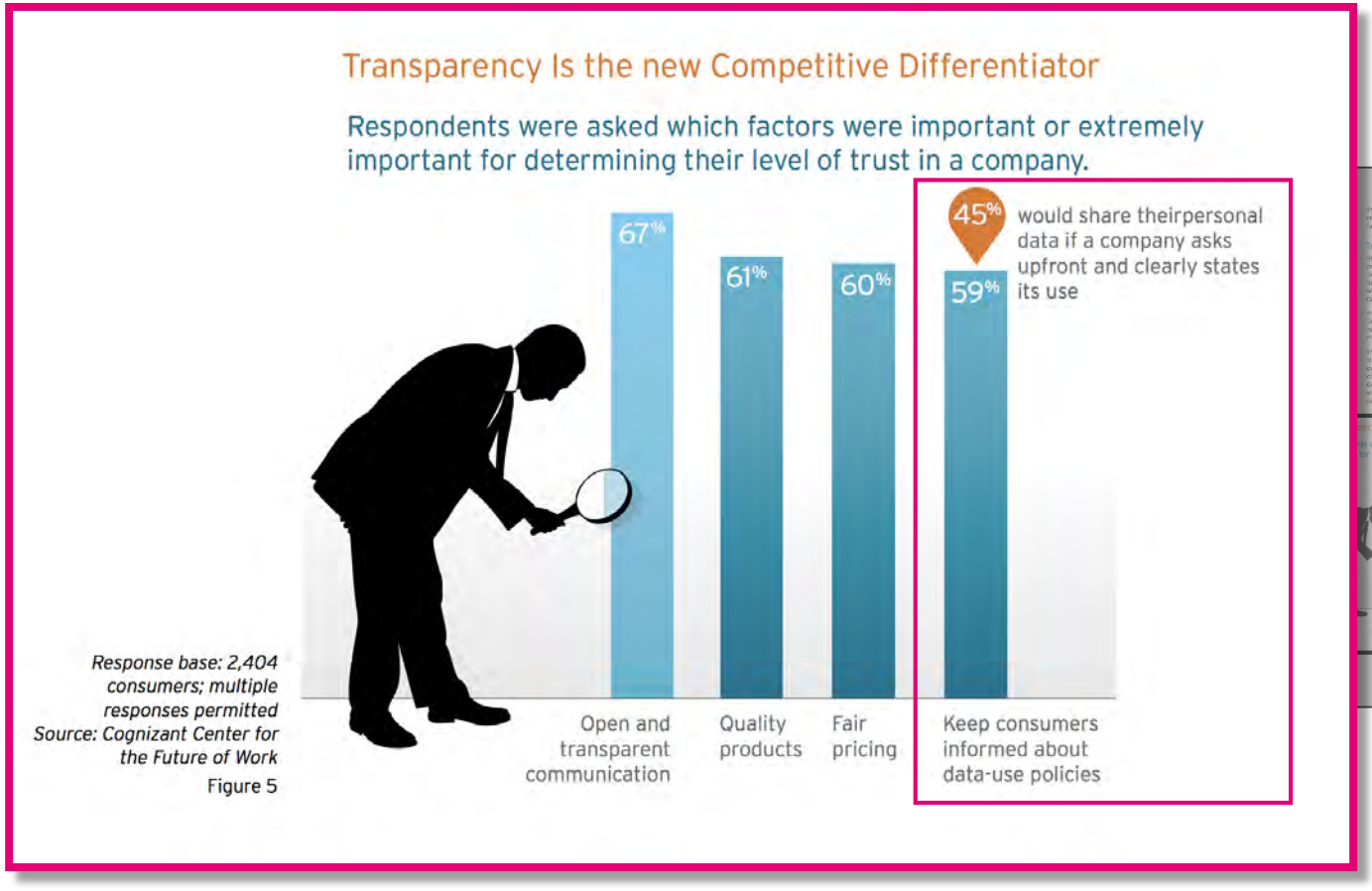
THE MAIN CHALLENGE

LIFE IS FOR SHARING.

DATA IS AT THE CORE OF OUR BUSINESS

LIFE IS FOR SHARING.

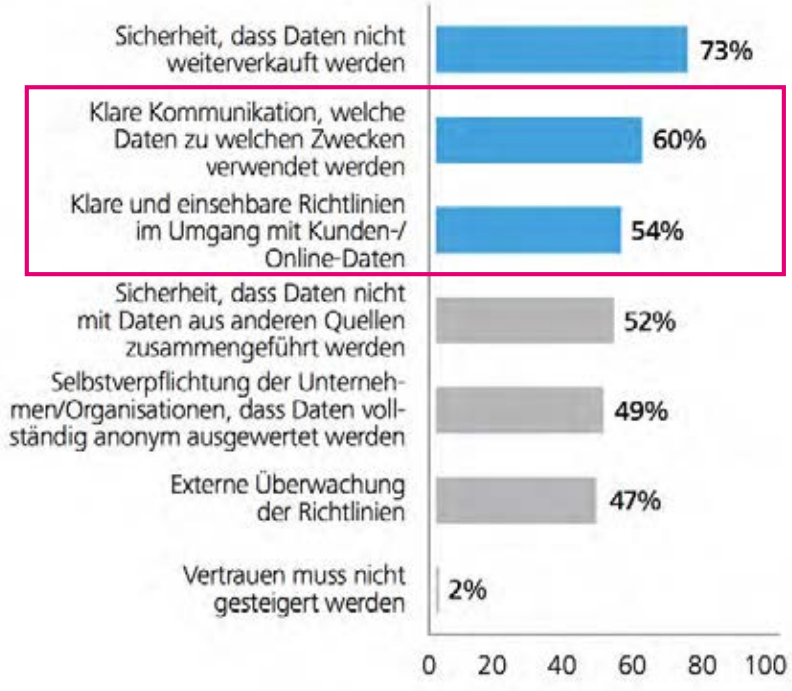
DATA COLLECTION NEEDS TO BE DONE IN A RESPECTFUL WAY

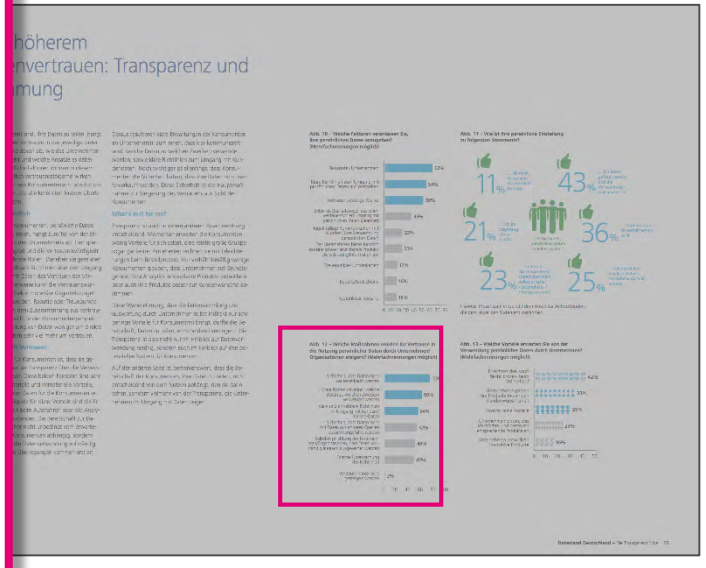


Source: Cognizant – „The business value of trust“, 2016, Asia-Pacific Region, 2.404 responses

CUSTOMER ACCEPTANCE STARTS WITH TRANSPARENCY

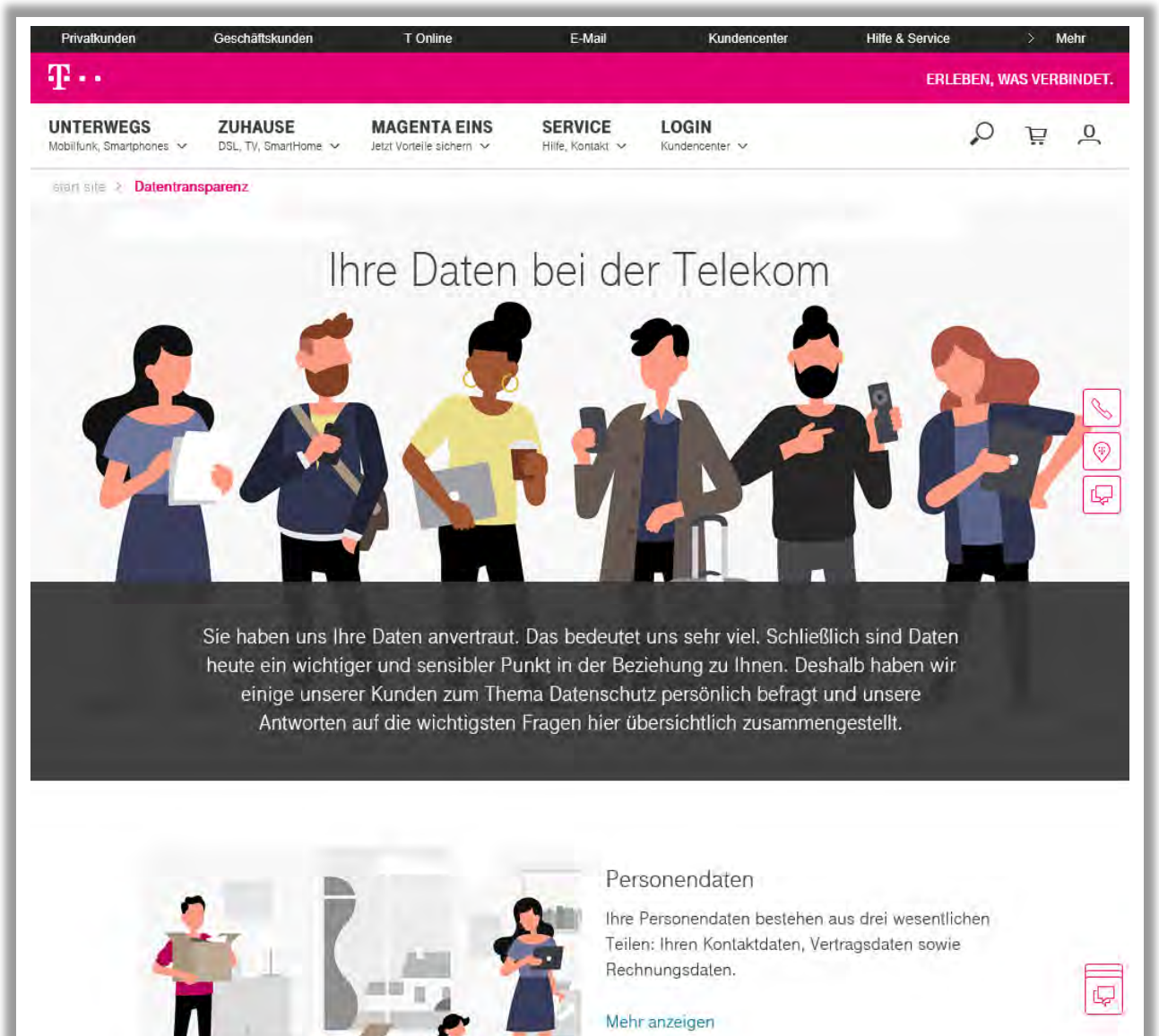
Abb. 12 – Welche Maßnahmen würden Ihr Vertrauen in die Nutzung persönlicher Daten durch Unternehmen/ Organisationen steigern? (Mehrfachnennungen möglich)





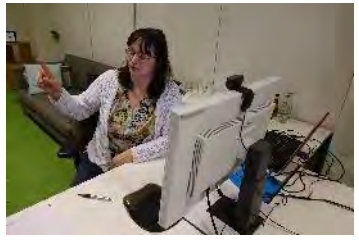
Source: Deloitte Analytics Institute – „Datenland Deutschland - Die Transparenzlücke“, 2014, 1.000 interviewees, 256 corporations

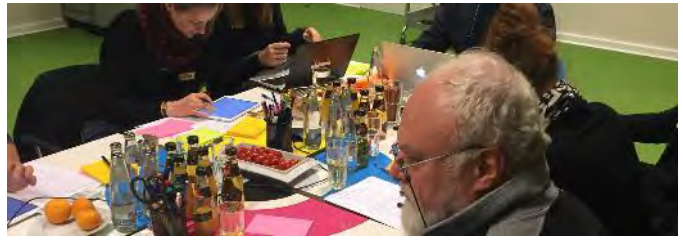
TRANSPARENCY LEADS TO TRUST



LIFE IS FOR SHARING.

MARKET RESEARCH ON MULTIPLE LEVELS





> 20 STUDIES
3 SURVEYS
2.000 RESPONDENTS
10 SPRINTS
31 PILOT USERS

HIGH ACCEPTANCE WITH CUSTOMERS

"DATA COCKPIT WOULD FOSTER MY BRAND LOYALTY, BEING A REASON TO PAY MORE FOR THE SERVICE."

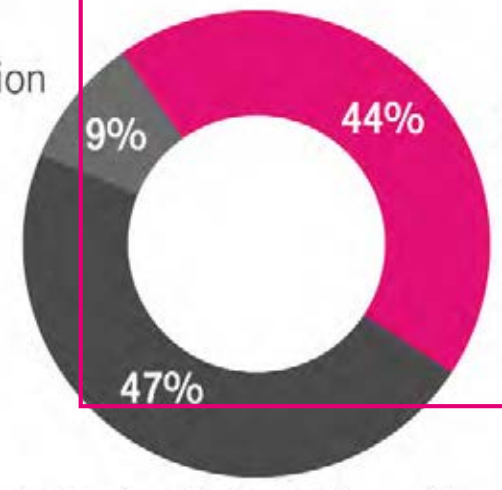
"DATA COCKPIT WHICH INFORMS ON SUCH A SENSITIVE TOPIC IS HIGHLY RELEVANT & IT STRENGTHENS MY TRUST."

"DATA COCKPIT IS CLEAR, CONCISE AND HONEST."

Source: UDI Workshop Sessions - Customer Sprint Club, Oct/Nov 2016, 31 participants

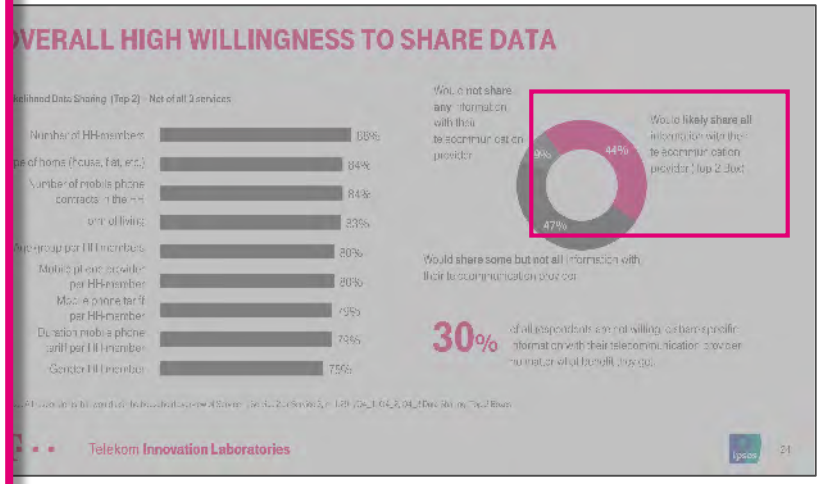
91% WOULD SHARE INFORMATION

Would **not share any** information with their telecommunication provider



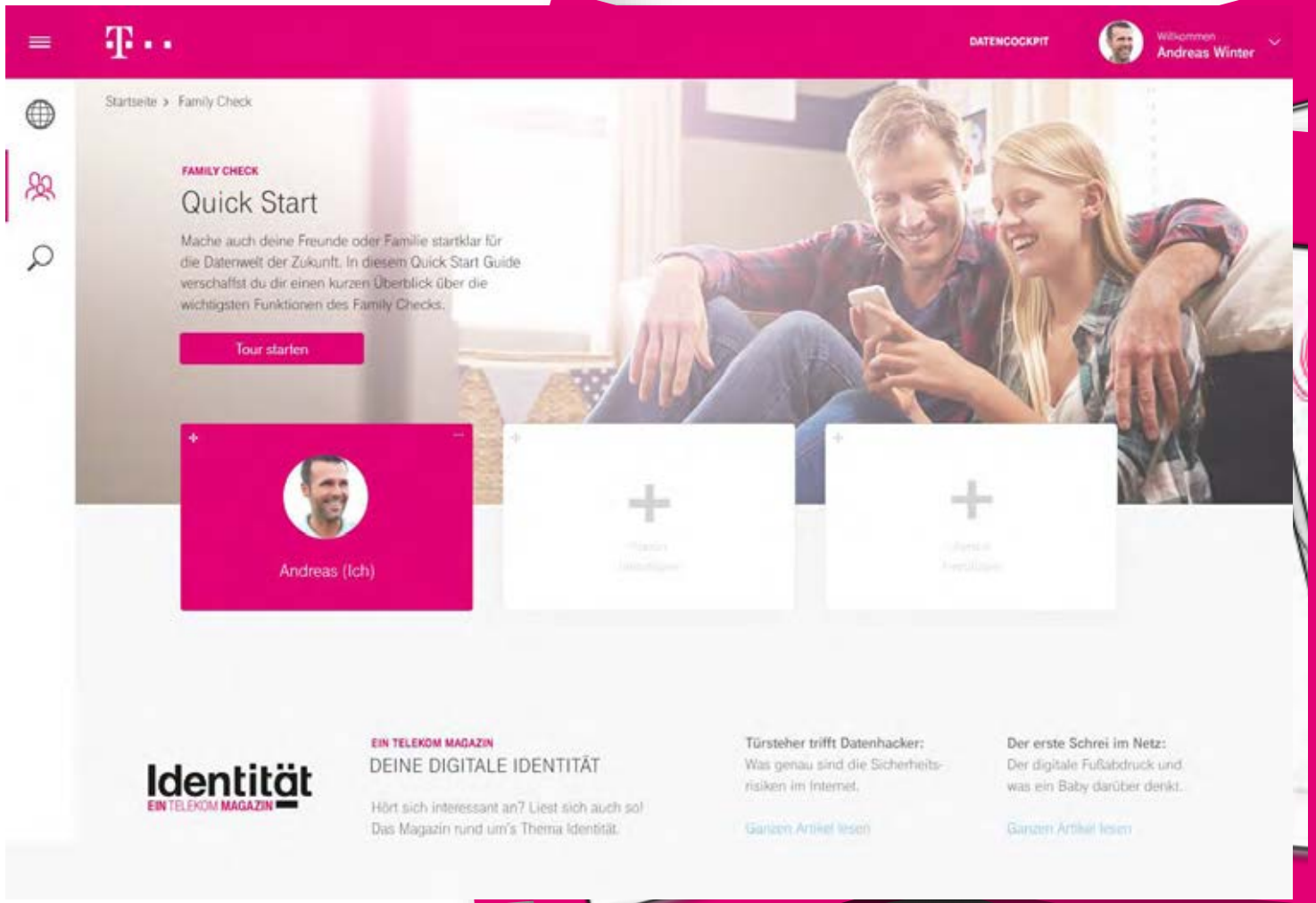
Would **likely share all** information with their telecommunication provider (Top-2 Box)

Would **share some but not all** information with their telecommunication provider



Source: IPSOS survey, 2017, 1.500 participants, Germany

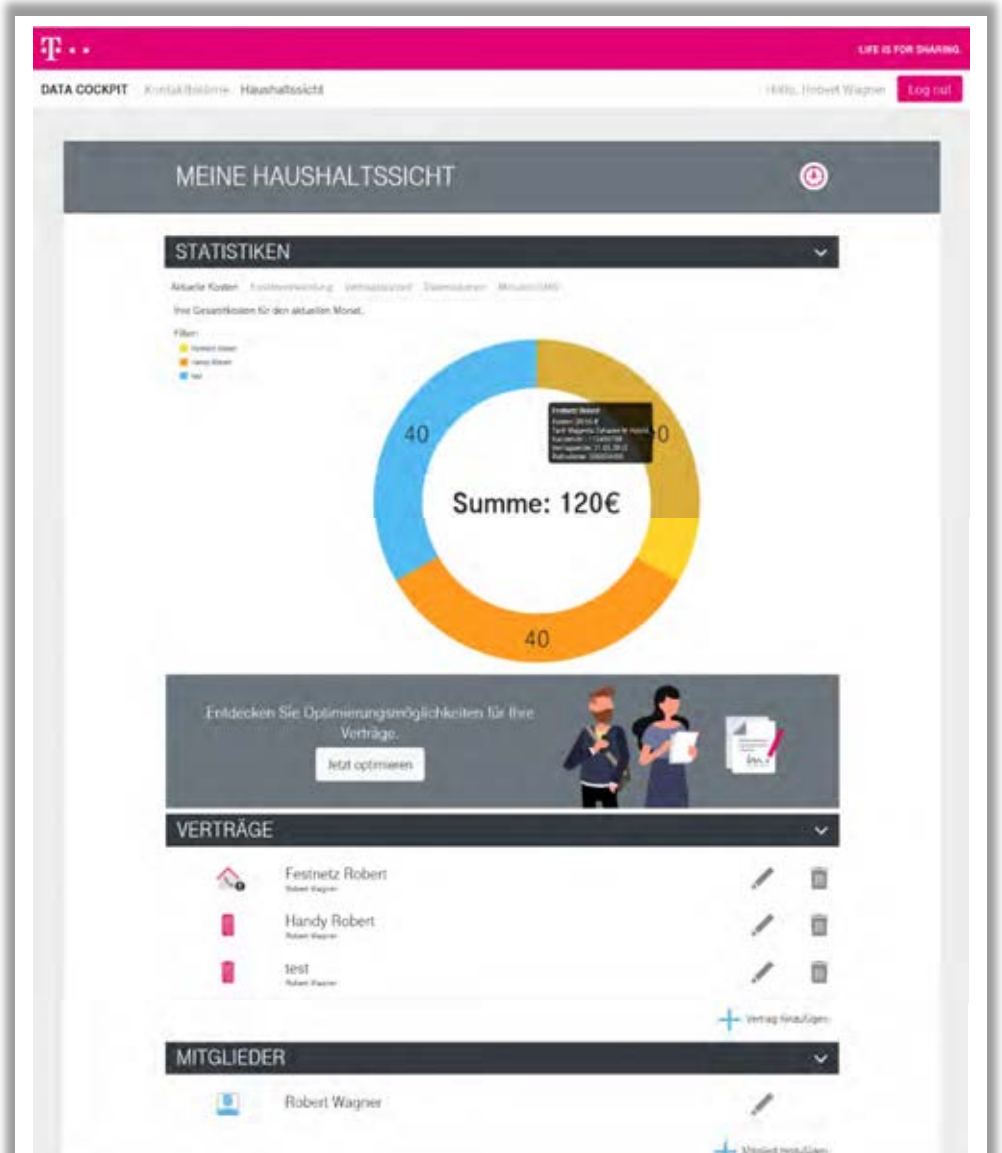
DATA-BASED USE CASES CREATE CUSTOMER BENEFITS



FAMILY CHECK

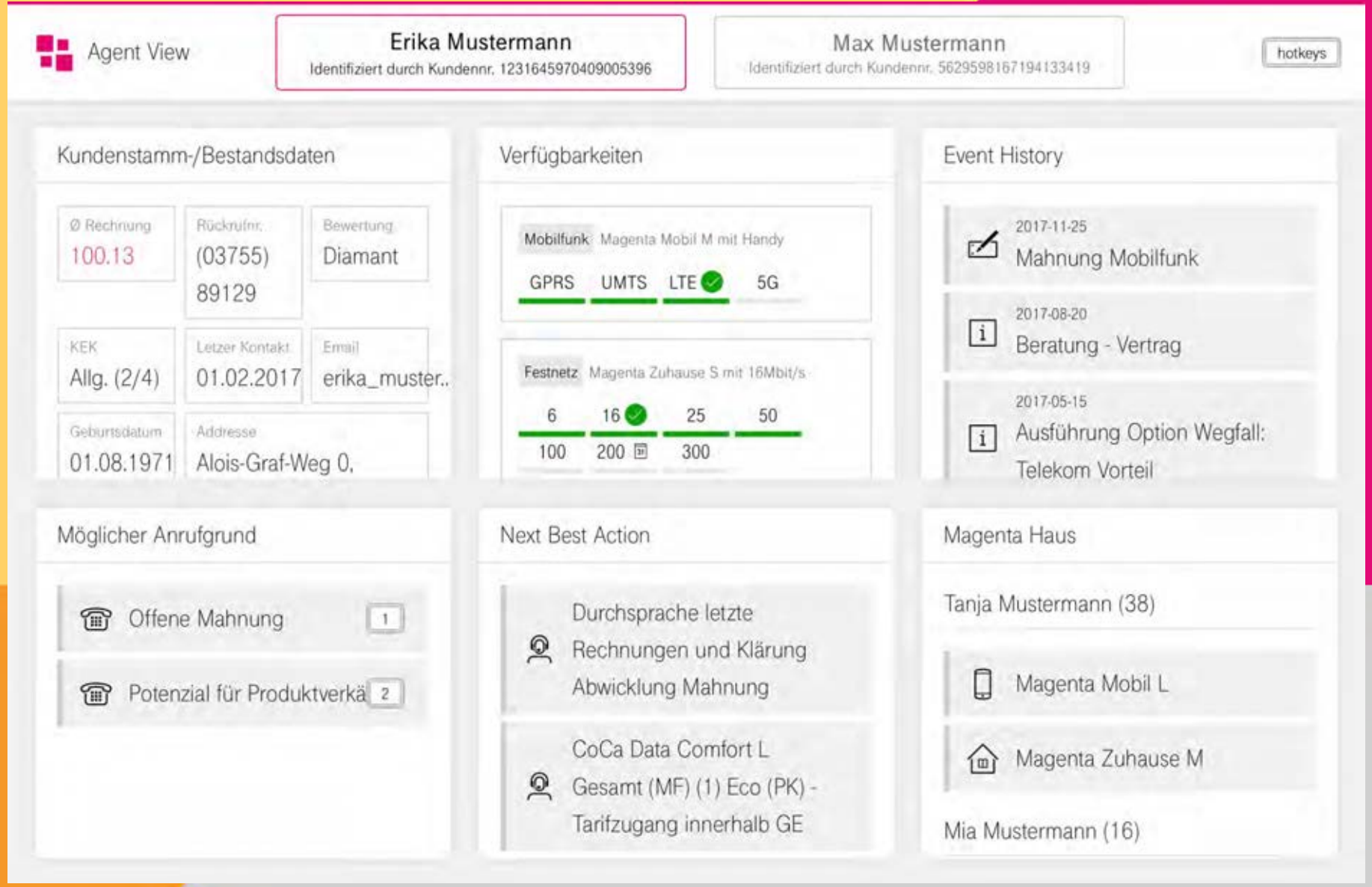
- **Opt-in:**
  Sharing of family/household information
- **Benefit:**
  Overview, special family options and benefits

CUSTOMER BENEFITS LEAD TO WILLINGNESS TO SHARE



EXAMPLE: CUSTOMER SERVICE

QUALITY AND ACCESS MATTERS



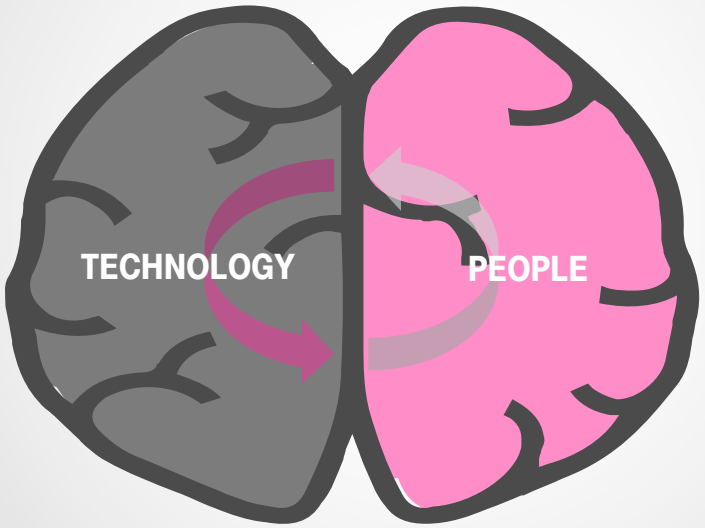
AI IS NOTHING WITHOUT DATA

OUR GROUNDWORK

USABLE DATA

- Data access must be accompanied by clear data governance & policy
- Quality of analytics & AI scales with volume, variety & availability of prepared data

OUR VISION: „PEOPLE AUGMENTED BY TECHNOLOGY!“



OUR GOALS: TARGET 2022

SMART CUSTOMER EXPERIENCE

- 24/7 service & no waiting time
- Highly customized & predictive sales
- AI as enabler for products (not as product itself[1])

REVENUE INCREASE

SMART INTERNAL DECISIONS

- AI enabled network design, operation & maintenance
- Internal processes to support value chain overarching perspective

COST EFFICIENCY

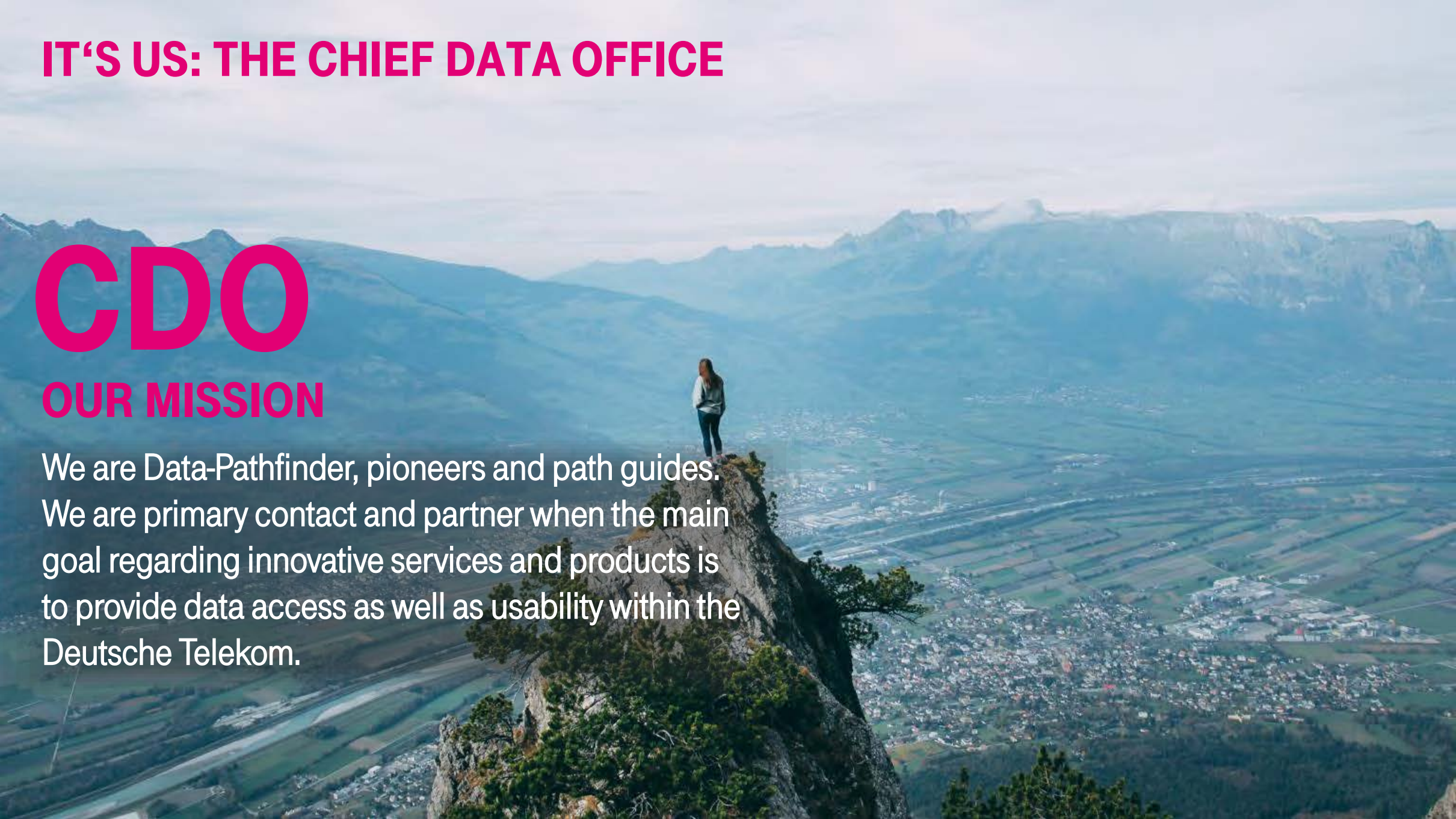
WHERE DO WE GO?

OUR MISSION

Every summiteer (Data Analyst) is pleased to find path signs or a safety rail on his way to the summit that tell him: He is on the right track.

But who placed the safety rail?
Who discovered this path before and left guiding posts by the track?

IT‘S US: THE CHIEF DATA OFFICE



CDO

OUR MISSION

We are Data-Pathfinder, pioneers and path guides. We are primary contact and partner when the main goal regarding innovative services and products is to provide data access as well as usability within the Deutsche Telekom.

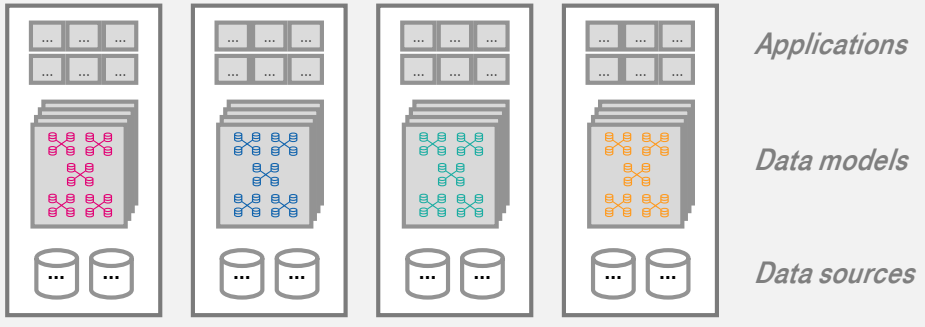
SHARING IS CARING
Improving Exchange inside DT
LIFE IS FOR SHARING.

HIGHER SCALABILITIY OF SOLUTIONS THROUGH VIRTUAL DATA PLATFORM, COMMON DATA MODEL AND PORTAL

CDO Chief Data Office

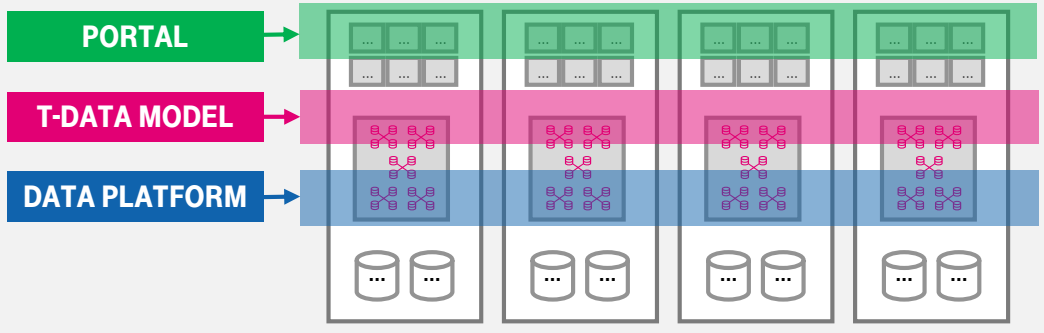
TODAY

"SILOED" SOLUTIONS: LIMITED RE-USE OF COMPONENTS, HETEROGENOUS ENVIRONMENTS

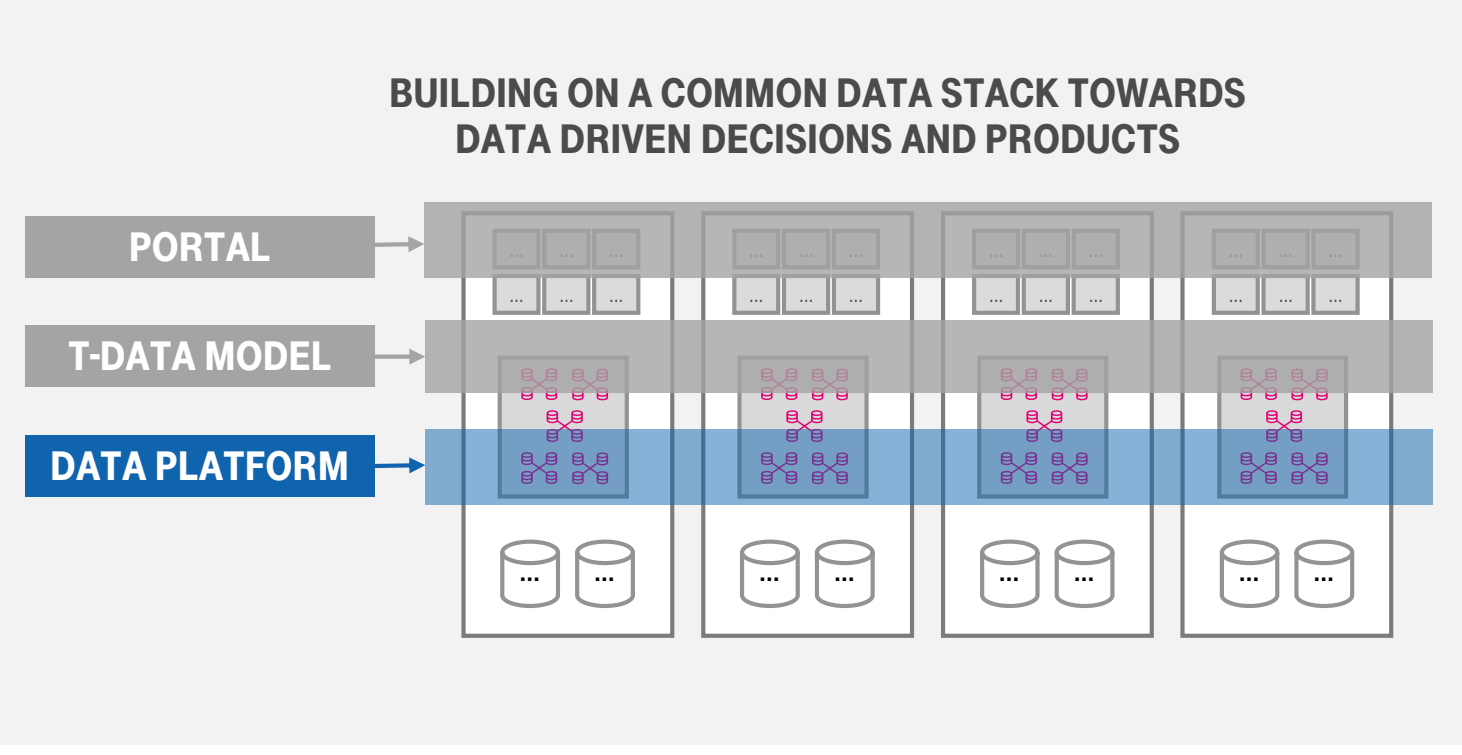


TARGET

BUILDING ON A COMMON DATA STACK TOWARDS DATA DRIVEN DECISIONS AND PRODUCTS



PART 1: DT VIRTUAL DATA PLATFORM



DT DATA PLATFORM ENABLES EXPERTS ON DATA ACQUISITION

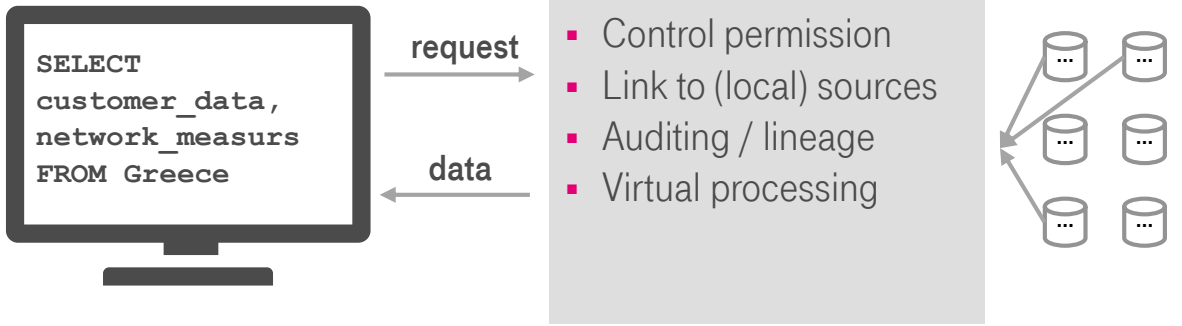
CDO Chief Data Office

5 Obstacles for a data scientist:

- Location of data
- Meaning of data
- Reliability of data quality
- Completion of data
- Handling of data

Automation

With Data Platform (target)

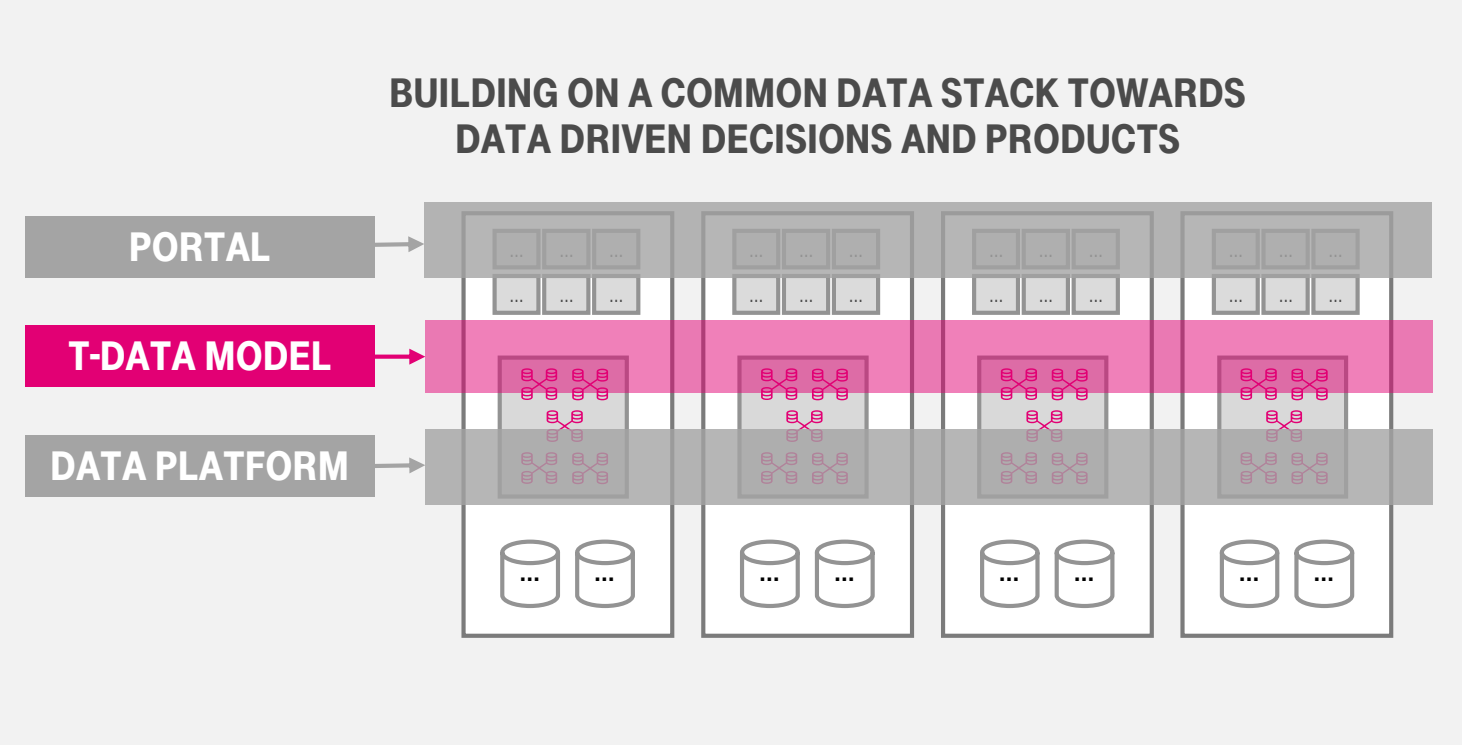


Manual

No access layer (situation today)

Manual work leads to huge time delays

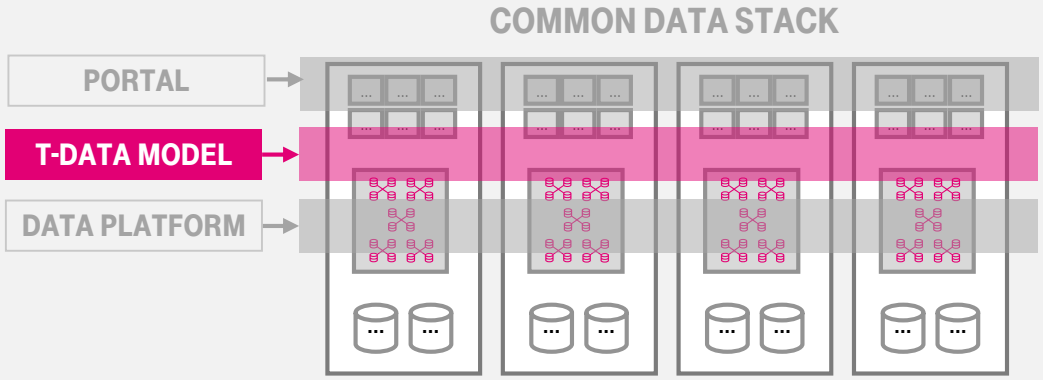
PART 2: DT COMMON DATA MODEL



PROVEN EFFECT: MAPPING BENEFITS ACROSS USE CASES

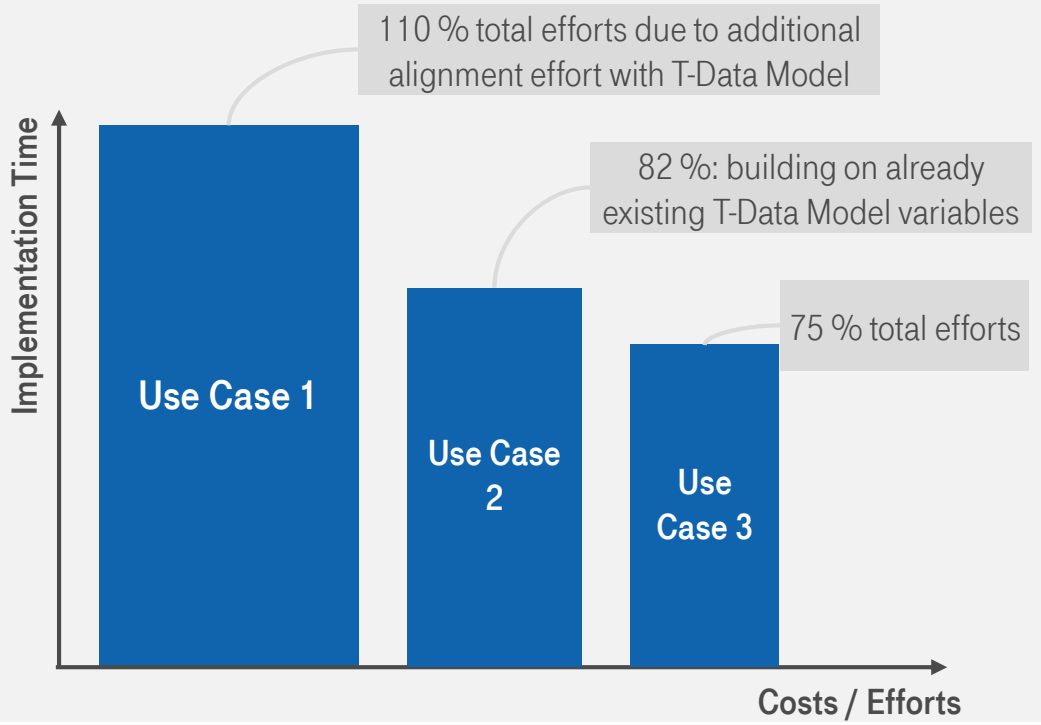
Inside single Country

TARGET



The concept works!

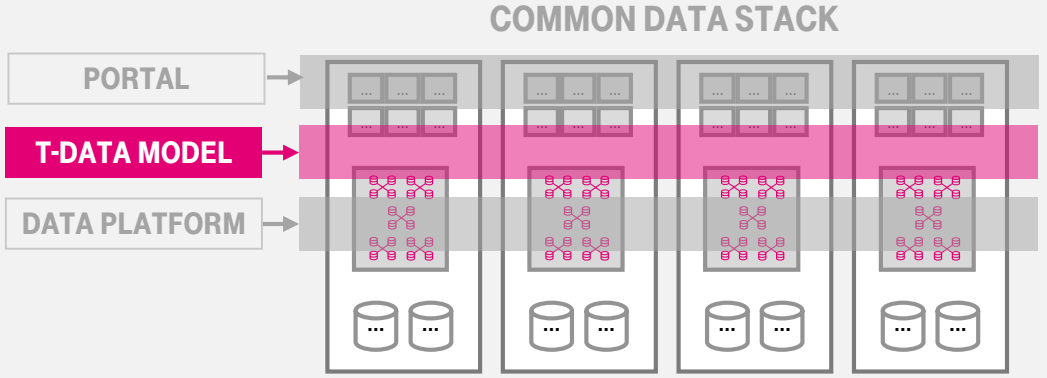
map once - benefit often



PROVEN EFFECT: USE CASE TRANSFER ACROSS GROUP

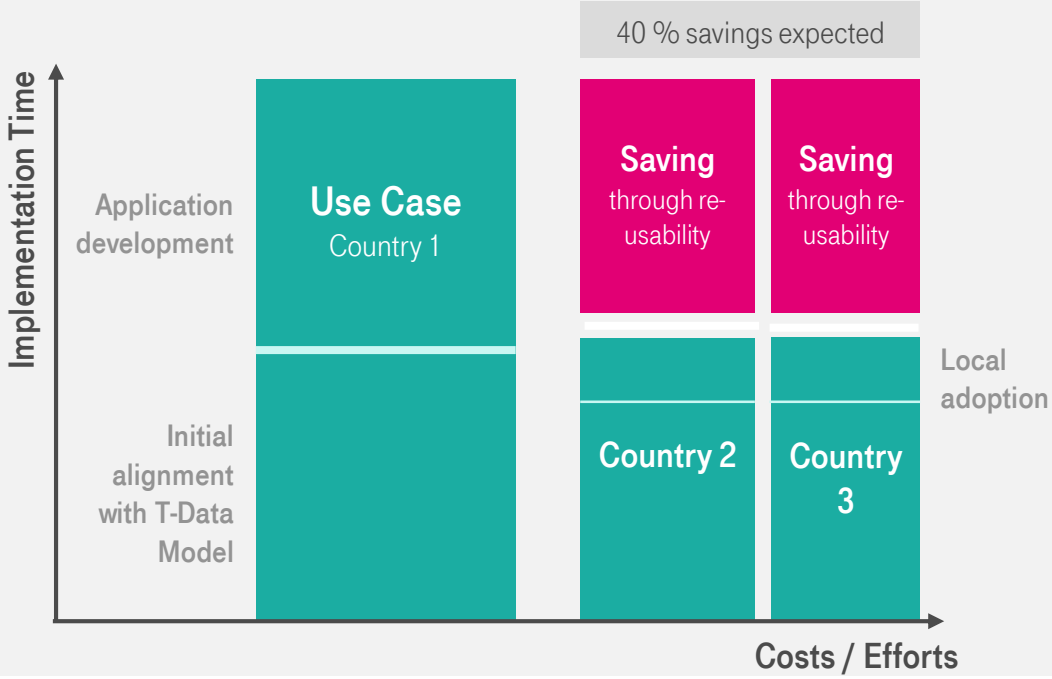
Across
NatCos

TARGET



Example

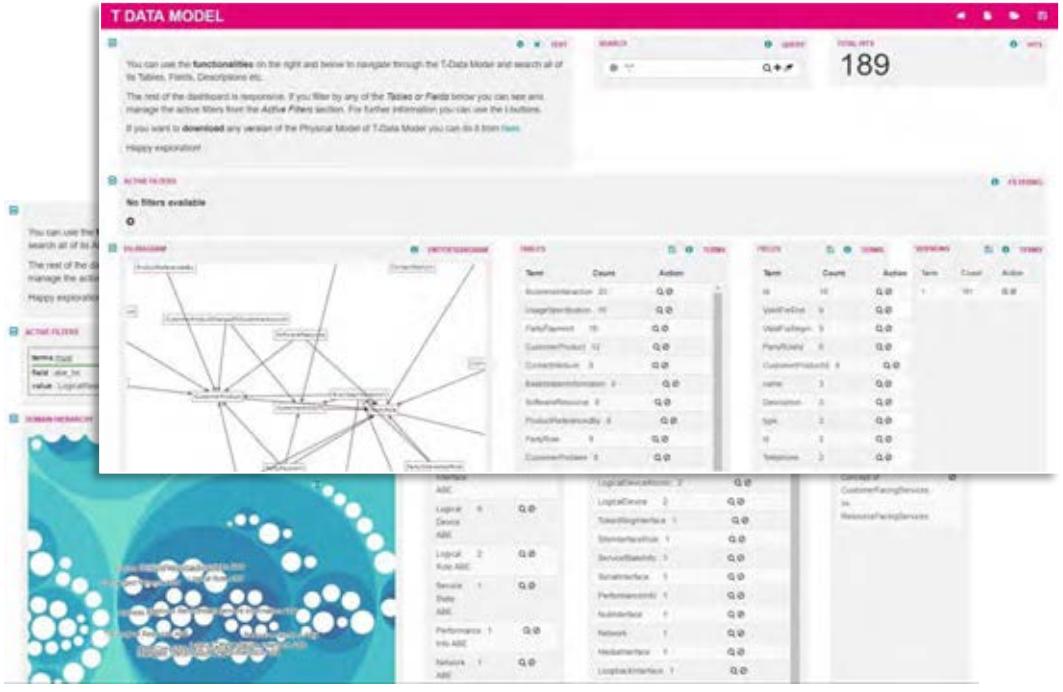
develop once - transfer & save often



T-DATA MODEL WEB-TOOL FOR DT-WIDE IMPLEMENTATION

CDO Chief Data Office

T-DATA MODEL WEB TOOL

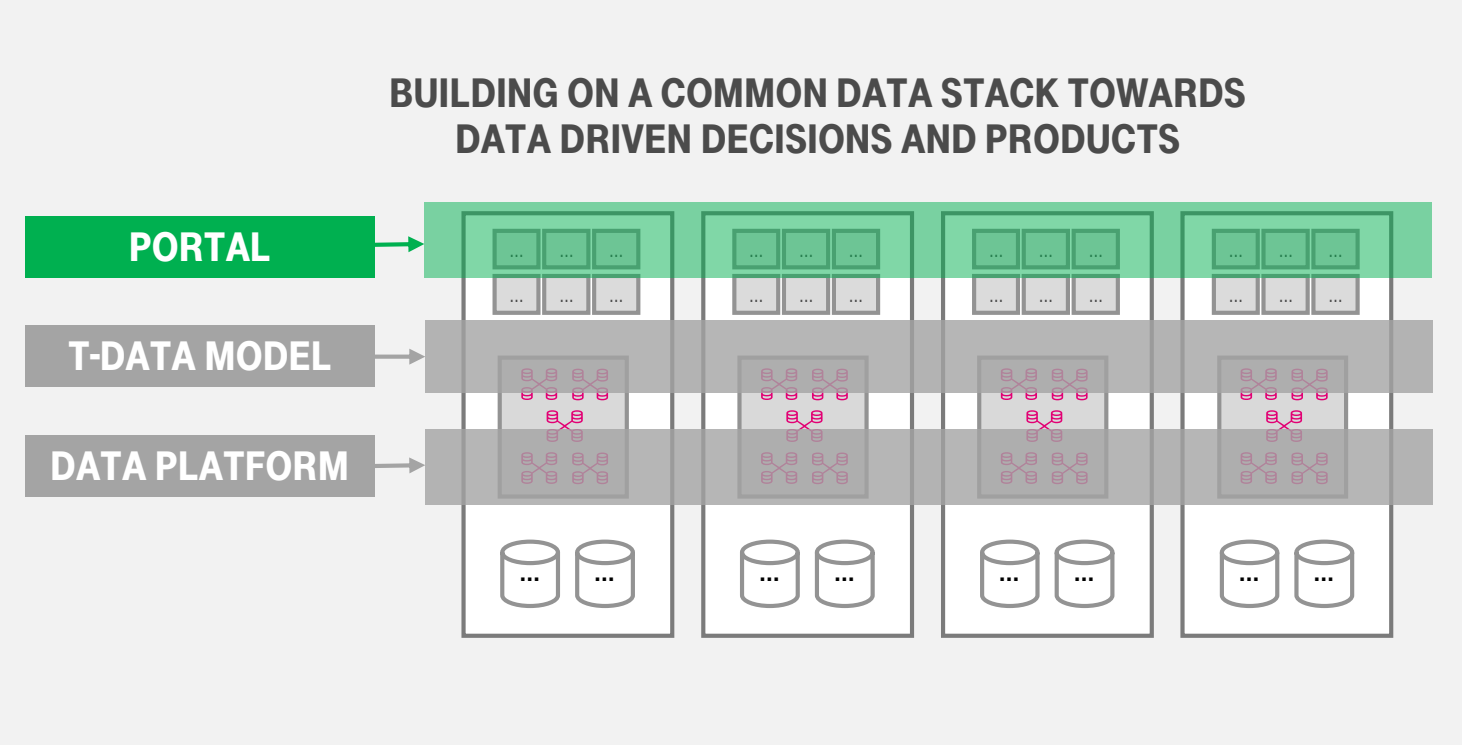


AVAILABLE for everyone in the group

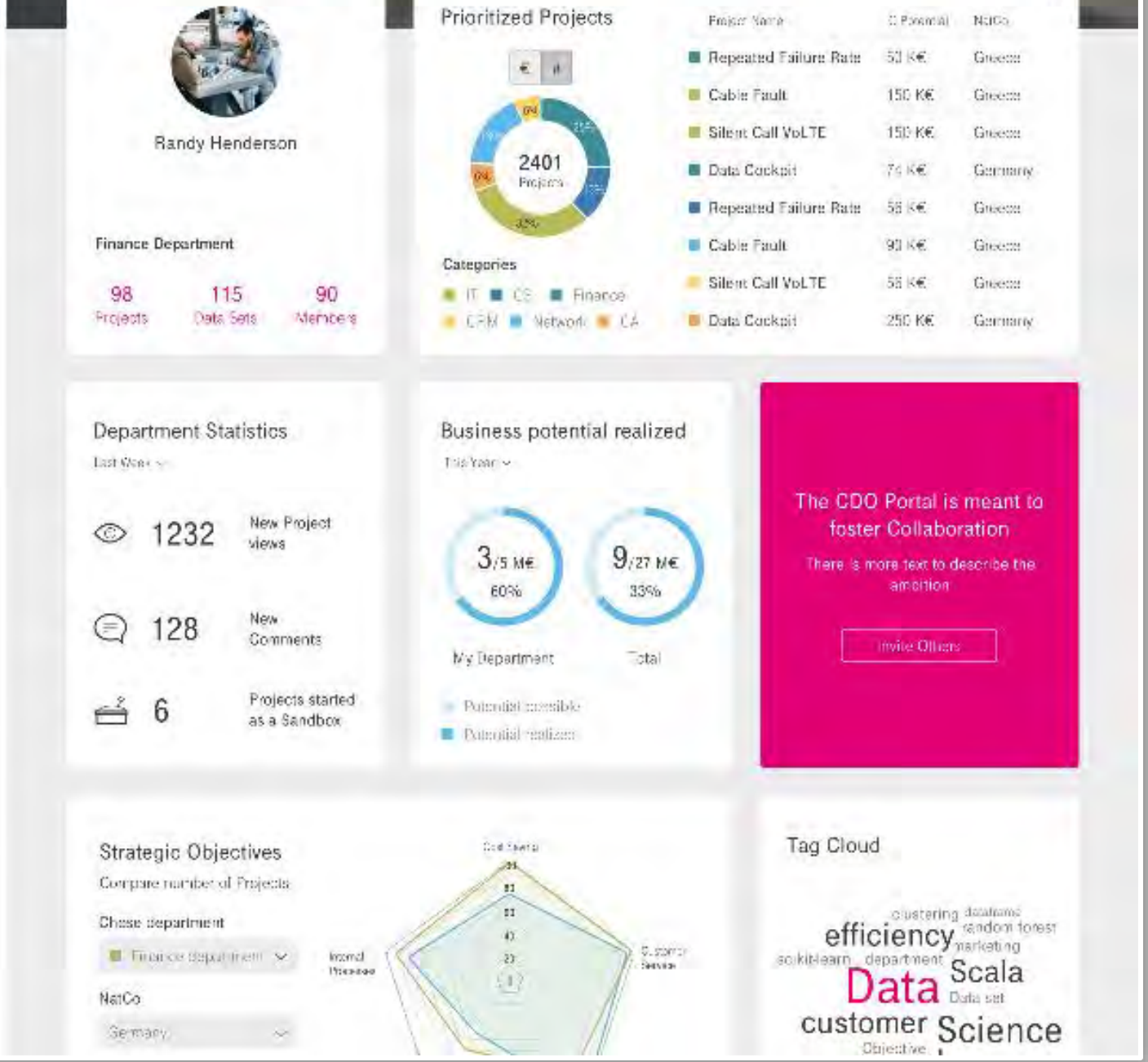
ROLL-OUT currently in preparation
(NatCo by NatCo, driven by use cases)

T-Data Model is supported also by already available Blueprint Document describing the process of implementation

PART 3: INTERNAL, DT WIDE DATA PLATFORM



Welcome to CDO!
Explore data science projects and data sets
Projects
Search
CDO
PORTAL
Management Dashboard
Randy Henderson
Finance Department
98
Projects
115
Data Sets
90
Members
Prioritized Projects
2401
Projects
Categories
IT
CS
Finance
CRM
Network
CA
Repeated Failure Rate
50 K€
Cable Fault
150 K€
Silent Call VoLTE
150 K€
Data Cockpit
Repeated Failure Rate
58 K€
Cable Fault
90 K€
Silent Call VoLTE
58 K€
Data Cockpit
250 K€
Germany
Department Statistics
1232
New Project views
Business potential realized
The CDO Portal is meant to foster Collaboration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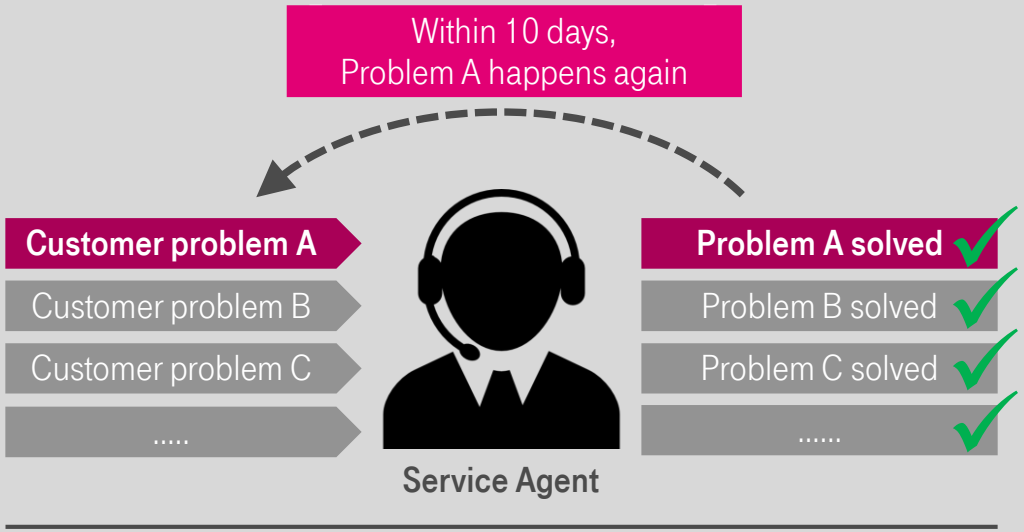
Silent Call VoLTE
Data Cockpit
Repeated Failure Rate
Cable Fault
Silent Call VoLTE
Data Cockpit
Germany
Department Statistics
1232
New Project views
128
New Comments
6
Projects started as a Sandbox
Business potential realized
3/5 M€
60%
9/27 M€
33%
My Department
Total
The CDO Portal is meant to foster Collaboration
There is more text to describe the ambition
Invite Others
Strategic Objectives
Compare number of Projects
Chose department
NatCo
Germany
Tag Cloud
efficiency
Data
Scala
customer
Science
clustering
random forest
marketing
department
Data set
Objective

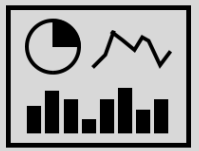
CDO IN ACTION: HOW WE REDUCE RECURRING ISSUES



$$\text{RFR} = \frac{\text{\# of repeated complaints}}{\text{\# of all complaints}}$$

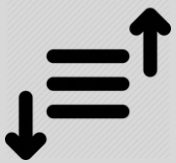
MACHINE LEARNING GOALS

VISUALIZE RFR drivers over time to manage root causes and see patterns



PREDICT probabilities of problems getting repeated and their root causes

ENABLE customer service unit to prioritize and optimize their operations



MILESTONES WE ARE PROUD OF

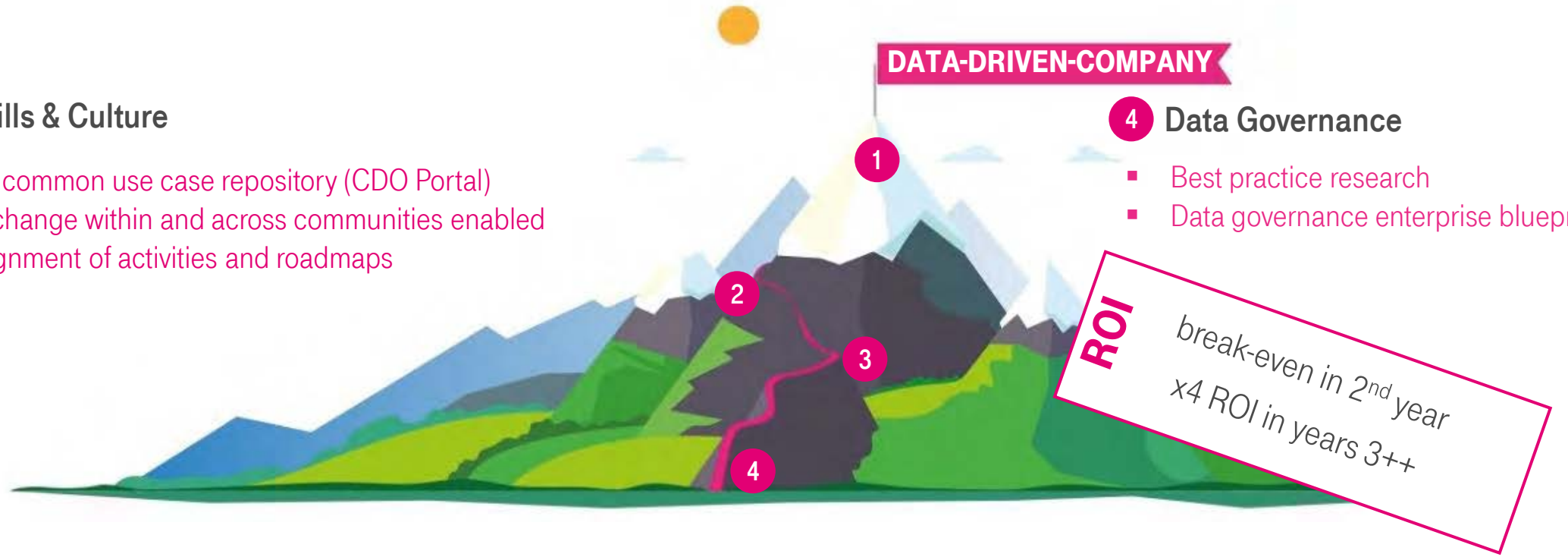
CDO
Chief Data Office

1 Data Analytics and Enablers

- Use cases for key business stakeholders
- Personal data self-service-portal (Data Cockpit)
- Smart Data Lab

2 Data Architecture and Models

- One data lake per National Company
- Harmonized groupwide data model
- Central Data Virtualization



3 Skills & Culture

- DT common use case repository (CDO Portal)
- Exchange within and across communities enabled
- Alignment of activities and roadmaps

4 Data Governance

- Best practice research
- Data governance enterprise blueprint