



INDIGO-DATA CLOUD MEETS OTC – A SEAMLESS AND STATE-OF-THE-ART HYBRID CLOUD SERVICE FOR SCIENTISTS

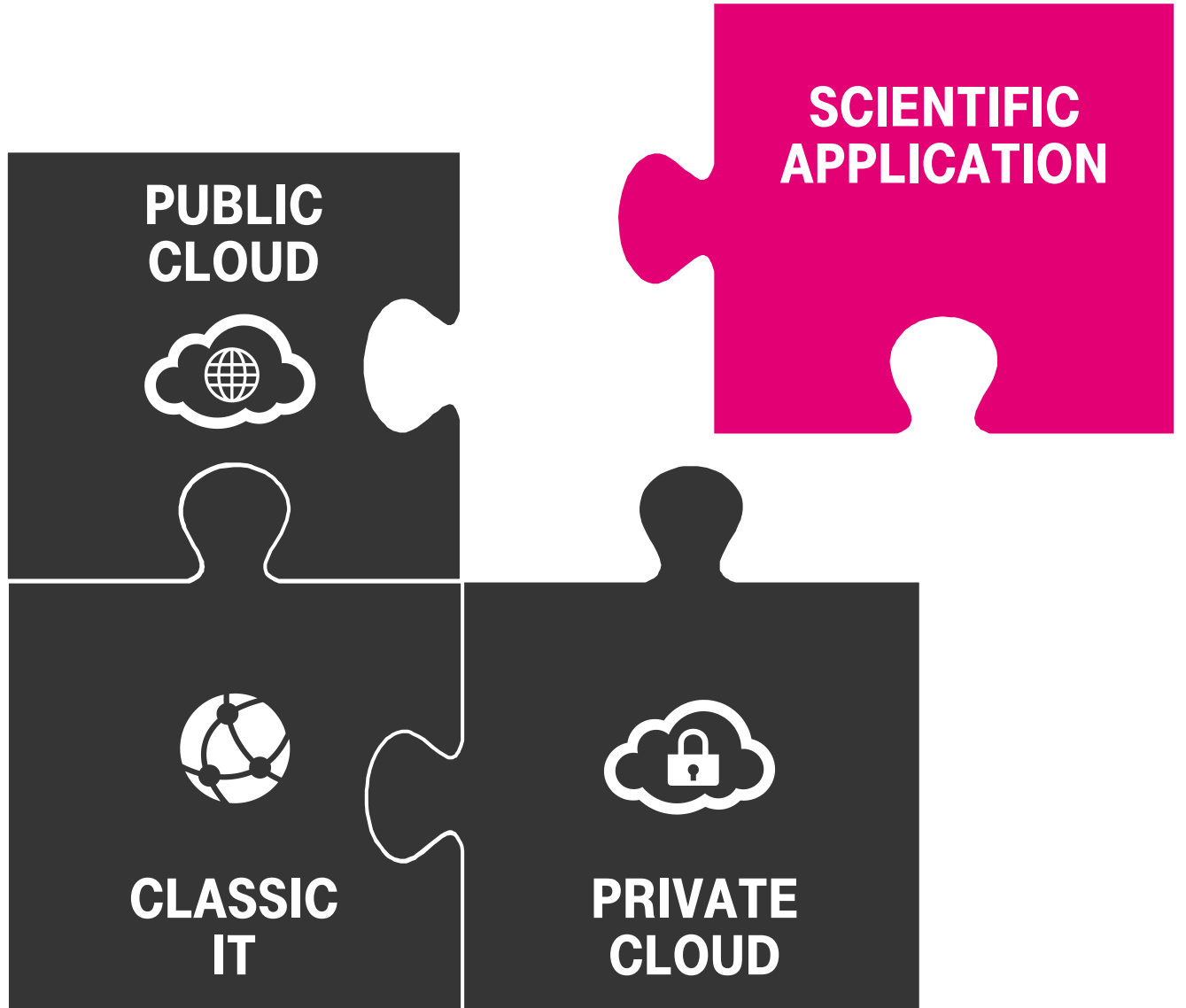
Kaspar Dütting, Tamas Speth, Jurry de la Mar

T · Systems ·



INDIGO - DataCloud

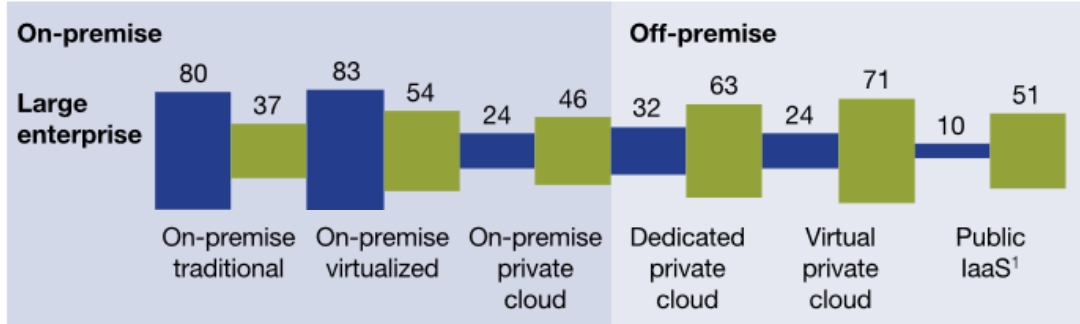
**OUR GOAL:
DEPLOY
SCIENTIFIC
APPLICATIONS
ON
ANY
COMBINATION OF
INFRASTRUCTURE**



MARKET SHIFT TOWARDS HYBRID CLOUD

Migration of enterprise IT workloads

■ 2015 ■ 2018

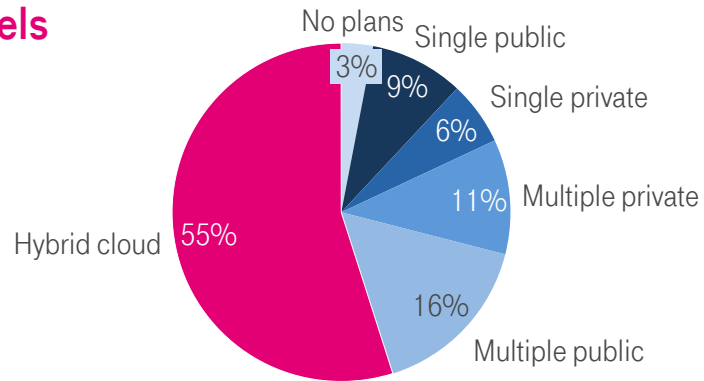


% of companies planning to have following environments as primary environment for at least 1 workload type

Source: McKinsey ITaaS Cloud Survey 2016

Deployment models

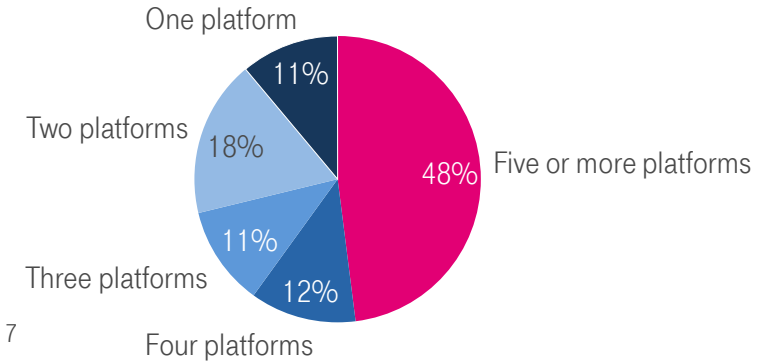
Cloud types planned by enterprises (1000+ employees)



Source: RightScale 2016 State of the Cloud Report

Multi Cloud Platforms

Amount of /environments of unique cloud vendors currently used within companies



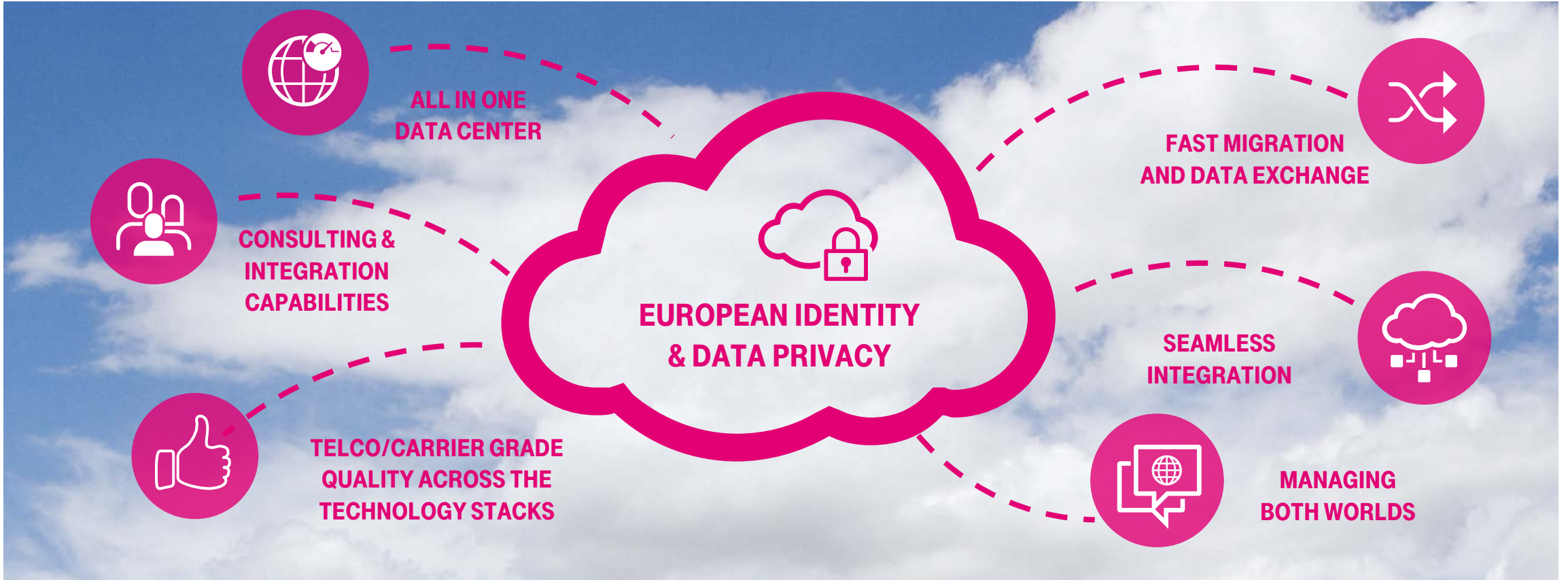
Source: Forrester: Benchmark Enterprise Cloud Adoption, 2017

Observations

- Enterprises are quickly moving to both private and public IaaS cloud
- Hybrid cloud is the predominant deployment model, combining the best of both worlds

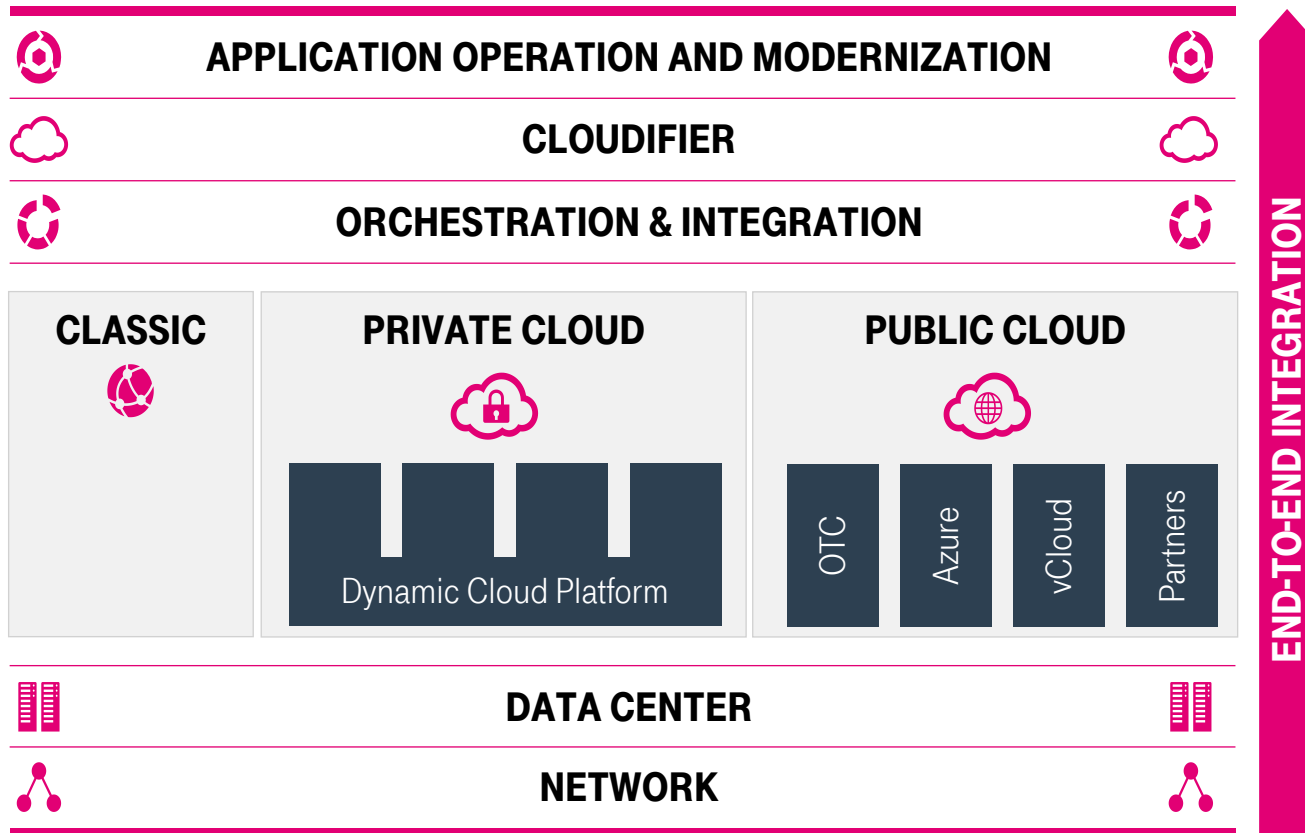
▶ **HYBRID IS NOW THE NORM, NOT THE FUTURE**

HYBRID CLOUD NEEDS A HOLISTIC APPROACH ...



... INDEPENDENTLY FROM A CERTAIN TECHNOLOGY

BUILDING AN OPEN EUROPEAN PLATFORM FOR SCIENCE DATA



Only **multi-cloud hybrid strategy** can deliver

- at scale
- in a cost effective manner

Build on **pure IaaS** to ensure **no lock-in** and **market pricing** and with **minimum intrusion** into the Buyers' infrastructure

INDIGO-DATA CLOUD @ OPEN TELEKOM CLOUD

OPTIMIZED PLATFORM WITH REDUCED COMPLEXITY

INDIGO aims to:

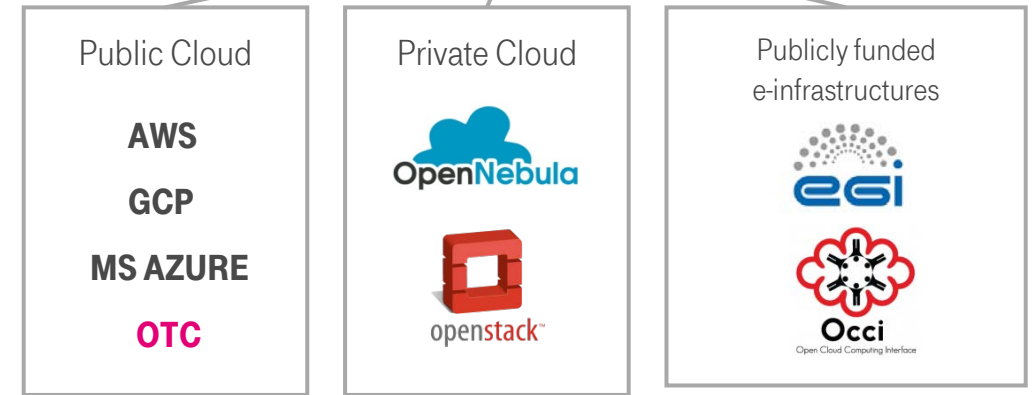
- **Develop a data and computing platform** for science
- **Provide Open Source solutions** deployable on hybrid e-Infrastructures
- **Support Open Science** by enabling collaborations across diverse scientific communities worldwide



INDIGO Advanced Components and Solutions

INDIGO supports a wide range of cloud and compute infrastructures:

- **Public cloud:** AWS, Google Cloud Platform (GCP), Microsoft Azure, Open Telekom Cloud (OTC)
- **Private Cloud:** OpenNebula, OpenStack
- **Federated:** EGI FedCloud, FogBow
- **Containers:** Docker, Kubernetes

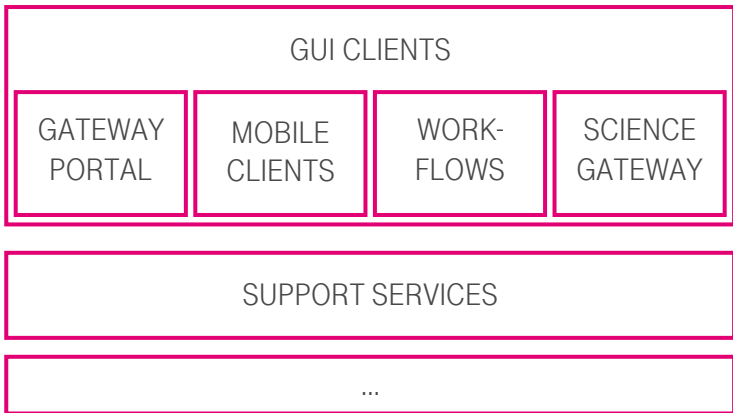


INDIGO-DATA CLOUD @ OPEN TELEKOM CLOUD

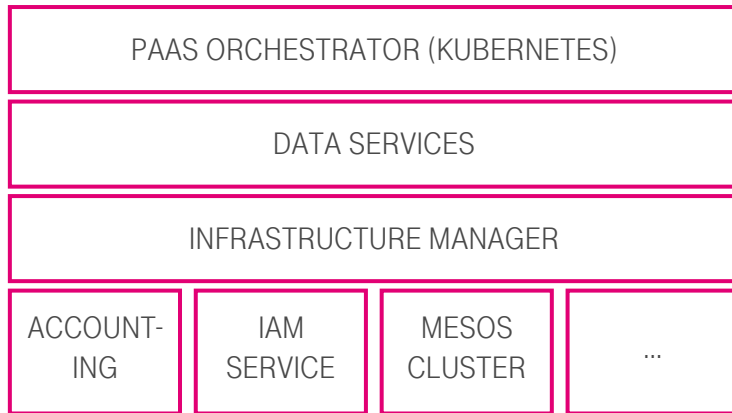
SERVICES RUNNING ON OPEN TELEKOM CLOUD



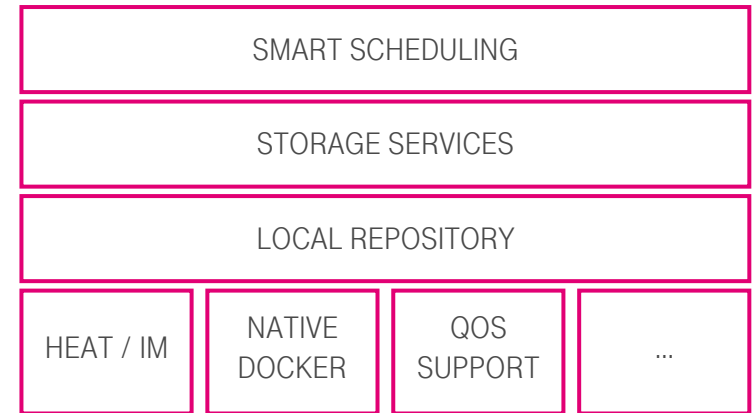
USER INTERFACE & CONTROL



PLATFORM & AUTOMATION

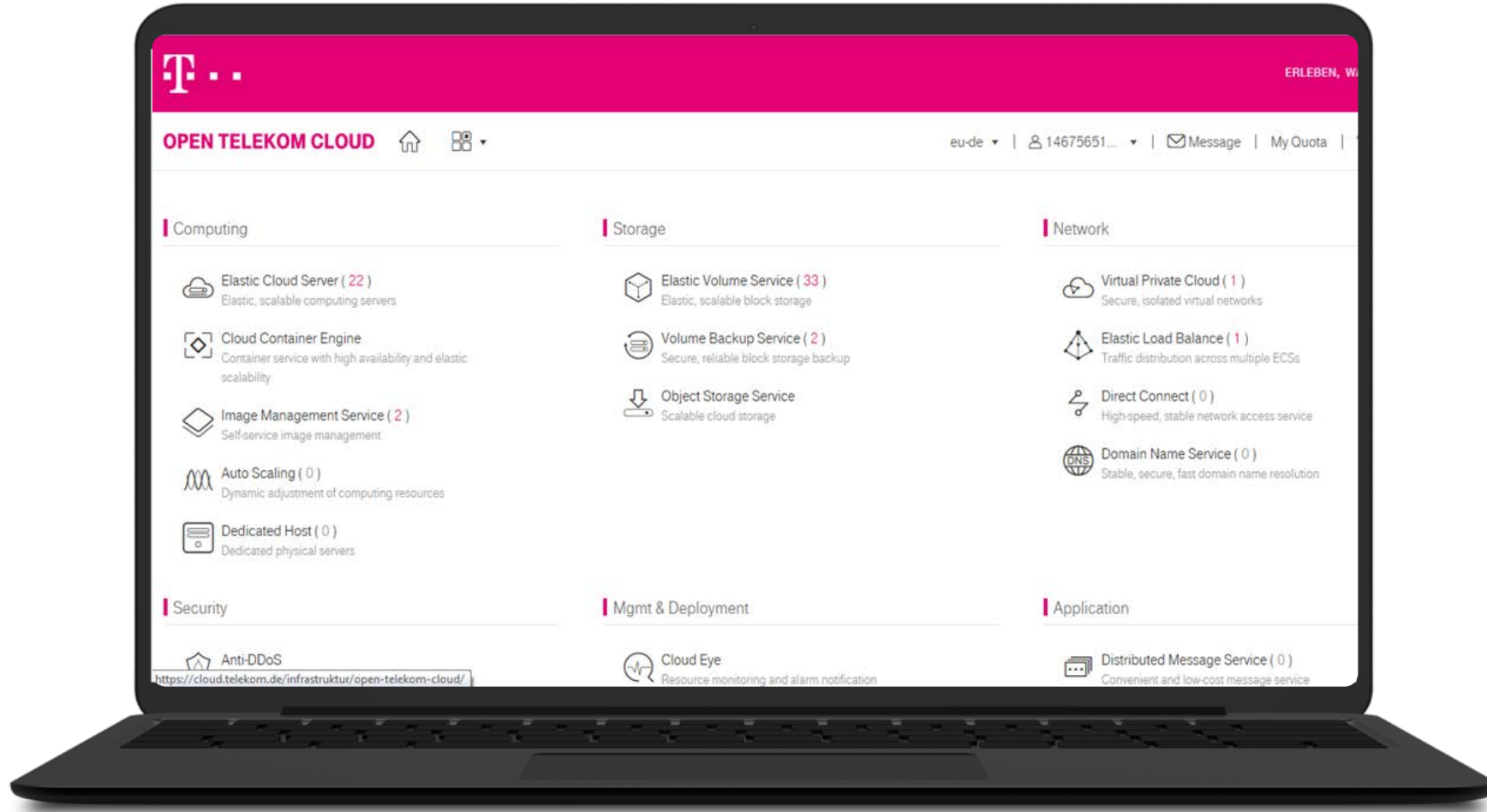


COMPUTE & STORAGE



LIVE SHOWCASE

MANAGEMENT OF CONTAINERIZED APPLICATIONS ON OTC





THE CUSTOMER

CERN is a research organization of 21 member states, operating the largest particle physics laboratory in the world. The laboratory had >2,500 staff members in 2015 and hosted >12,000 fellows and visiting scientists and engineers.



THE CHALLENGE

- Managing the scaling of hundreds of virtual machines...
- ... fully integrated into existing scientific experiment workflows...
- ... while providing user-friendly interface and OpenStack APIs for customization



THE SOLUTION

- OpenStack based IaaS-solution
- Servers, data-storage and network capacity on-demand
- Certified, highly secure Data Center with 99.95% availability



CUSTOMER BENEFIT

- Combining existing infrastructure with public cloud IaaS
- Rapid availability through intuitive self-service with full cost transparency
- Hosted on German territory – trusted and secure



HNSciCloud moves to the Prototype Phase: 3 consortia have been awarded at CERN, in Geneva

On the 3rd April 2017, the awards ceremony for the successful contractors moving to the Prototype Phase of the Helix Nebula Science Cloud Pre-Commercial Procurement took place at CERN, in Geneva, Switzerland.

Congratulations to the three winning consortia!

Contractor 1: T-Systems, Huawei, Cyfronet, Divia

Contractor 2: IBM

Contractor 3: RHEA Group, T-Systems, exoscale, SixSq



T-SYSTEMS HYBRID CLOUD IS BASED ON EXPERIENCE



CLOUD PLATFORM



SKILLS & COMPETENCE



TRANSFORMATION EXPERIENCE



T-Systems offers **SEVERAL PUBLIC** and **PRIVATE CLOUD PLATFORMS**



T-Systems **CONSULTS** customers to choose the best fitting platform to support their **BUSINESS NEEDS**



10 YEARS OF EXPERIENCE & Best in Class Transformation



20 TWIN CORE DATA CENTERS incl. "House of Clouds" DC M./Biere



>28,000 Colleagues in IT, **>8,000** Systems Integration employees



>20,000 SI PROJECTS on time & budget – also through **AGILE DEVELOPMENT METHODS**



62,000 cloud systems, **85 MN** SAPs & **4 MN** named SAP users



Quality certification of **25,000 EMPLOYEES** each year and ongoing investments in **SKILL ENHANCEMENTS**



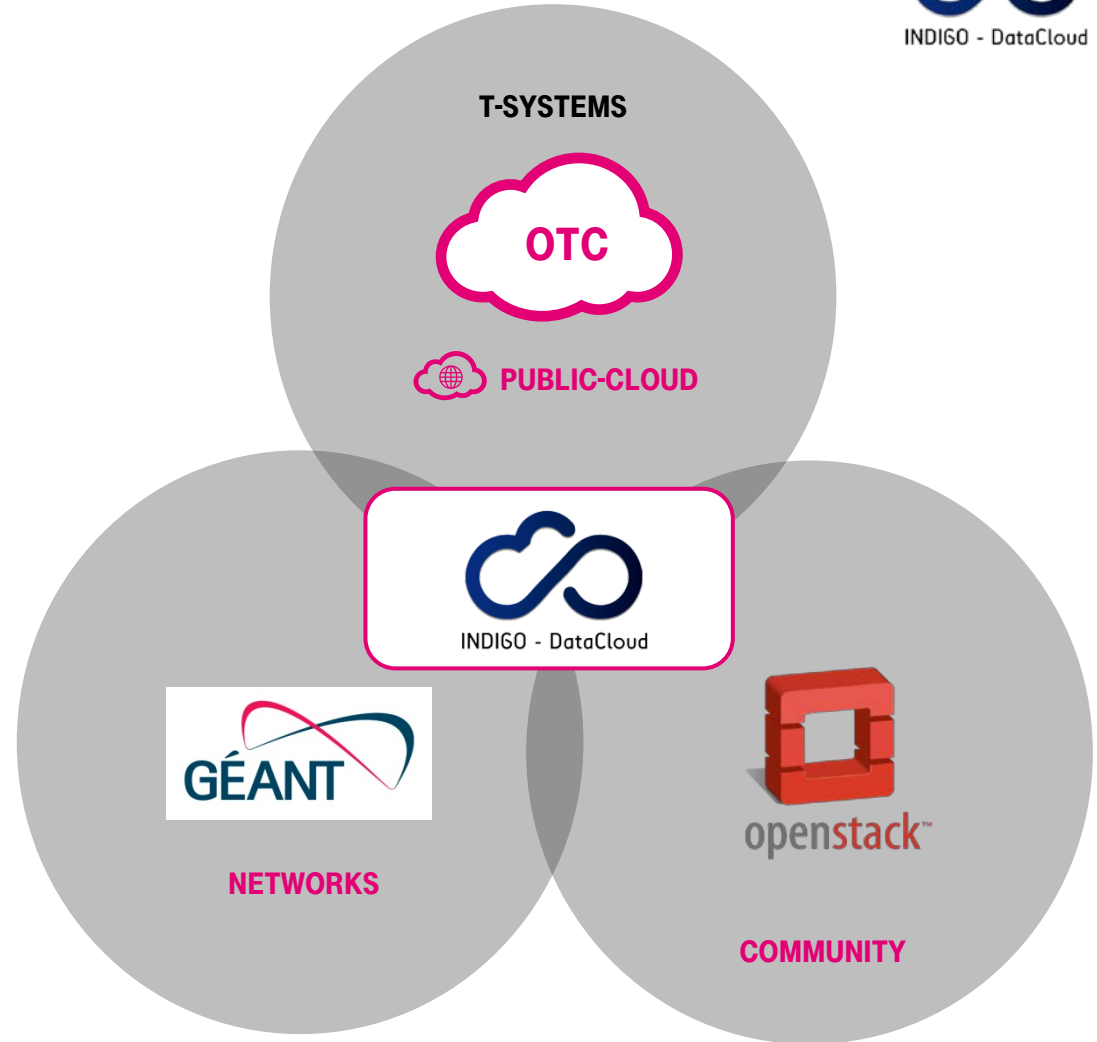
Largest Lotus to Exchange transformation - **1,500 E-MAIL ACCOUNTS** migrated every night



WE OFFER END-TO-END SOLUTIONS AND SERVICES FOR OUR CUSTOMERS' DIGITAL JOURNEY

INDIGO-DATA CLOUD MEETS OTC SUMMARY

- T-Systems OTC enables **HYBRID CLOUD** platforms for the operation of diverse scientific workloads
- It supports **MOVE OF WORKLOADS** between **PRIVATE, PUBLIC** and **ON-PREMISE CLOUDS**
- It gives organizations **GREATER FLEXIBILITY** and more data deployment options
- **SCALABILITY** and **PAY-AS-YOU-GO** enable higher efficiency and reduction of IT costs
- Customers benefit from short term availability and **FAST PROVISIONING**



The background is a vibrant pink color with a dynamic splash of liquid, creating a sense of movement and energy. A large, semi-transparent question mark is overlaid on the right side of the image, partially obscuring the liquid splash. The text is in a bold, white, sans-serif font.

THANK YOU!

**ANY
QUESTIONS?**