

Cloud Forum 2022

The multi-cloud journey of Deutsche Börse Group

10 Nov 2021



About me



Christian Tüffers

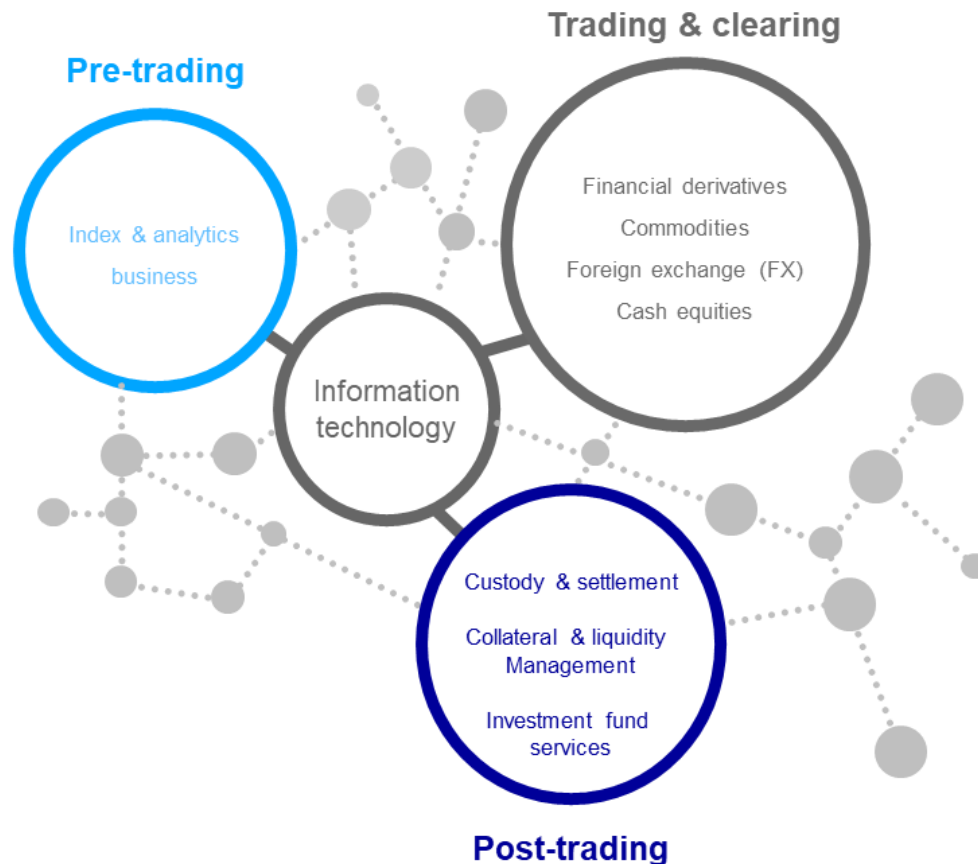
Deutsche Börse AG

Mail: christian.Tueffers@deutsche-boerse.com

LinkedIn: <https://www.linkedin.com/in/christiantueffers/>

Deutsche Börse Group: An Overview

IT at heart of a full digitized end-to-end trading value chain



As an international exchange organisation and innovative market infrastructure provider, Deutsche Börse Group offers its customers a wide range of products, services and technologies covering the entire value chain of financial markets.

Its business areas include the provision of index and analytics solutions, trading and clearing services for investment instruments, securities settlement and custody, collateral and liquidity management, and investment fund services. In addition, the Group develops state-of-the-art IT solutions and offers IT systems all over the world.

Public cloud is one of the main technologies to support our IT Roadmap

Operating IT workload from a public cloud environment offers proven benefits ...

Agility

React dynamically to changing business demand with instant provisioning of new systems and hundreds of services readily available

Quality

Leverage geographical spread of cloud service providers, improve **quality** with **standardization, automation and repeatability**

Cost

Reduce operations cost, especially for standard software, increase level of standardization and automation; optimize asset utilization



... and lays the foundation for other Roadmap initiatives



Use public cloud technology to develop and run **blockchain-based services**



Include public cloud components in **big data/ analytics solutions** to analyze large data sets



Use specialized services for **machine learning**, e.g. complex GPU¹ computing

Our way into the cloud was a way of constant learning and improving



- | | | | | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> ▪ Onboarded first CSP ▪ Large, shared accounts -> limited flexibility ▪ Manual account creation ▪ Proof-of-Concept like approach ▪ Introduction of a central DevOps Toolchain | <ul style="list-style-type: none"> ▪ Definition of process for cloud migration ▪ Large scale training rollout and investment ▪ First production workload on cloud ▪ Initiated Collaborative Cloud Audit Group (CCAG) ▪ Started automating account creation ▪ Started onboarding of second CSP, more fine grained approach -> product centric | <ul style="list-style-type: none"> ▪ First successful CCAG Audit conducted ▪ Centralize on Terraform and Infrastructure-as-Code ▪ Working with the different teams on their cloud journeys ▪ Introduce Center-of-Excellence structure | <ul style="list-style-type: none"> ▪ Onboarded third CSP, even more fine grained down to project level ▪ Conduct CCAG audits with all CSPs ▪ Fully fledged automation of creation of accounts, subscriptions, projects ▪ Create first consolidated cloud roadmap / journey as part of IT strategy | <ul style="list-style-type: none"> ▪ First material workload in the cloud ▪ CCAG approach fully operational ▪ Ongoing re-factor of setups ▪ Co-engineering efforts with CSPs ▪ Introduce Cloudability as tool for FinOps | <ul style="list-style-type: none"> ▪ M365 adoption ▪ Further develop CCAG setup ▪ Go live of central OpenShift container orchestration on public cloud | <ul style="list-style-type: none"> ▪ Further on-prem to cloud migrations ▪ Centralize way of provisioning cloud infrastructure ▪ Push cloud security to cloud native approach ▪ Target: 50% of data center estate in public cloud |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

DBG Multi Hybrid Cloud to leverage benefits in multiple areas

Core elements of Cloud

Global reach

Hyperscalers have deployed their services in more than 20 regions each and constantly expand their global coverage

Hyperscale infrastructure

Investments of < €10bn annually per hyperscaler allow using and scaling services on demand

Service library

Hyperscalers offer a rich service library of about 200 services each, enabling customer to implement new functionality much faster

Orchestration/hypervisor layer

Orchestration layers differ, but new technologies allow to abstract and manage uniformly like Kubernetes

Multi Hybrid Cloud brings significant benefits

- **Enabling several cloud providers resolves limitations and provides flexibility and choice**
 - **Global reach:** using 3 major hyperscalers combines coverage and extends coverage to specific jurisdictions like e.g. Switzerland only covered by few CSPs
 - **Service library:** extends choice to select best supplier for each use case
 - **Orchestration/hypervisor layer:** Prevent lock in and achieve portability across clouds using technologies like Kubernetes or VMWare Cloud
- **Connecting on prem and public cloud to a hybrid model unlocks further benefits**
 - **Hyperscale:** public cloud provides hyperscale, while retaining existing competitive advantages on-premise like low latency
 - **Exit option:** ability to dynamically shift workload between on-premise and cloud and exit scenario

A Multi Hybrid approach brings significant benefits, worth the additional effort as we do not want all eggs in one basket

Deutsche Börse has laid a solid multi-cloud foundation – now realise the full business benefits

TODAY

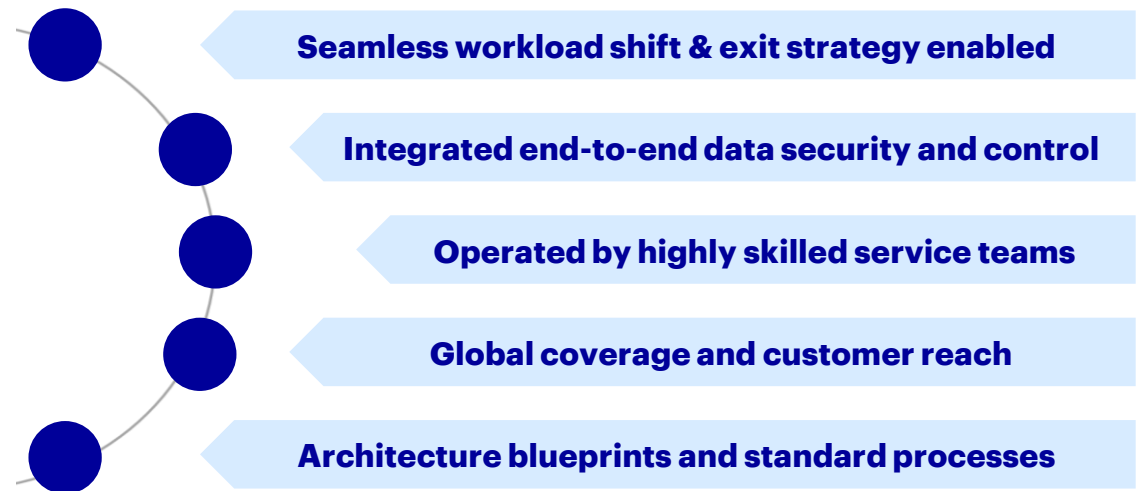
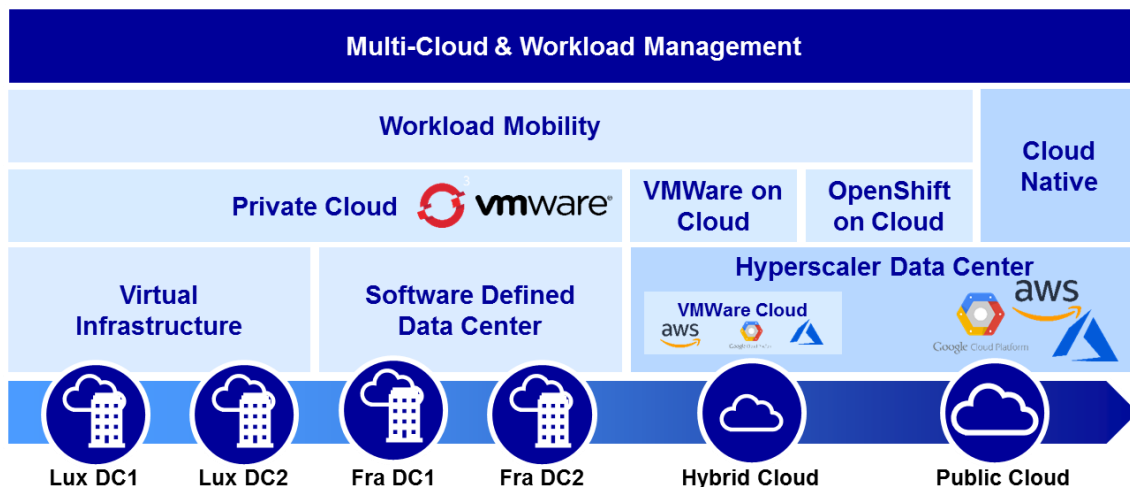
Cloud is foundation for innovation and agile delivery

- Foundation for tech driven innovations like AI, Big Data and DLT and agile delivery
- Strengthening quality & security while maintaining positive business case

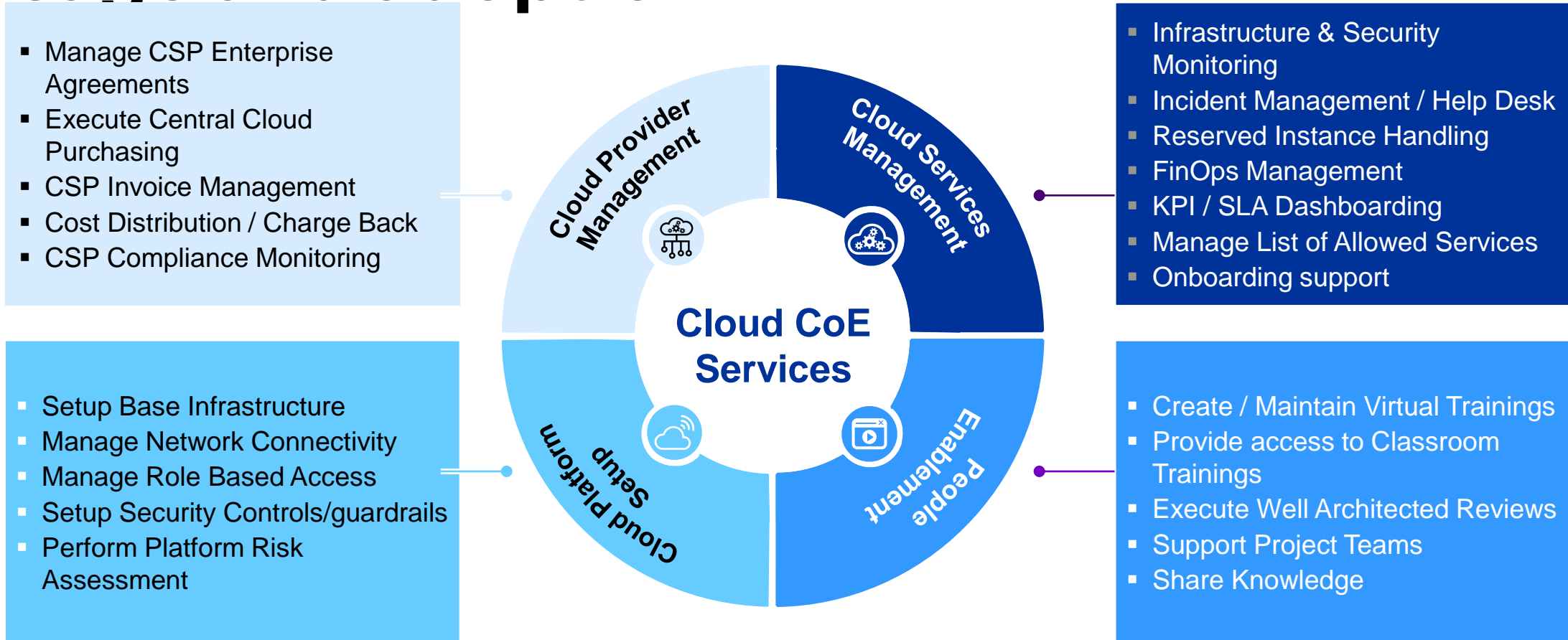
TOMORROW

Expand move and focus on business value delivery

- Focus on business value and support secular growth strategy
- Accelerate move to cloud, establish true Multi Hybrid Cloud and Cloud first / Cloud native as well as lean processes



Cloud Center-of-Excellence (CoE) offers a wide set of services around public cloud usage and adoption



Communication is key in driving cloud within DBG

Cloud Update – Executive Summary

1. CSP readiness

☐ Azure

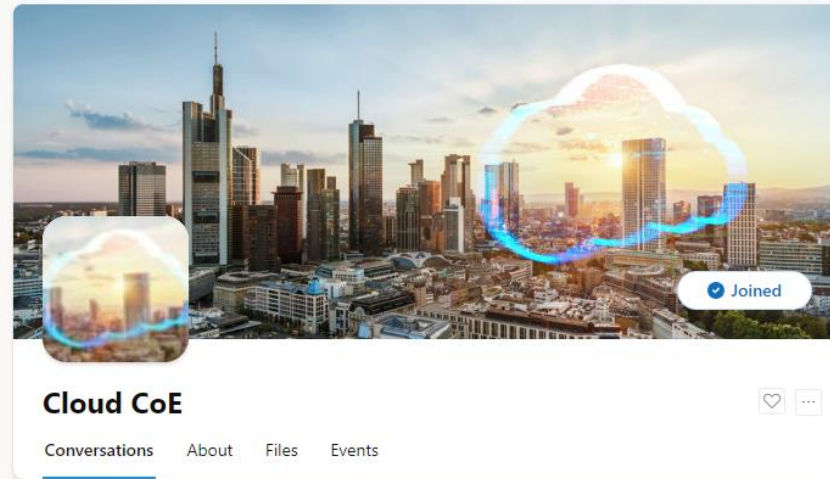
Headed to Las Vegas on November 20 to December 2nd for re:Invent 2022, the annual learning conference hosted by AWS for the global cloud computing community? If so, here is what to look out for with AWS Cloud Operations at re:Invent 2022! Wherever you are in your digital transformation, you can set up, maintain, and [...]

AWS Cloud Operations Kiosks at AWS re:Invent 2022
The Expo on Day 3 of AWS on Wednesday, December 1, 2021 at the Venetian Resort in Las Vegas, Nevada. For most organizations, the question isn't "if we move to the cloud" "how soon can we be operating in the cloud?" Wherever you are in

Amazon Web Services
AWS Cloud Operations Kiosks at AWS re:Invent 2022 | Amazon Web Services
The Expo on Day 3 of AWS on Wednesday, December 1, 2021 at the Venetian Resort in Las Vegas, Nevada. For most organizations, the question isn't "if we move to the cloud" anymore; it's "what do we move first?" and "how soon can we be operating in the cloud?" Wherever you are in your digital [...]

20:58 **Recent Announcements** **APP** Amazon RDS Multi-AZ option with up to two readable standby database (DB) instances across three Availability Zones (AZs) is now available in twelve additional regions. This deployment option gives you up to 2x faster transaction commit latency, automated failovers typically under 35 seconds, and readable standby instances. (edited)

Amazon Web Services, Inc.
Amazon RDS Multi AZ Deployments | Cloud Relational Database | Amazon Web Services



Cloud CoE

Conversations About Files Events

Joined

Share thoughts, ideas, or updates

Discussion Question Praise Poll

All conversations ▾

Recent posts ▾

Michael Girg
Oct 20

Seen by 219 ...

Block your calendar now for November 22!



Internal

Members • 567



Cloud news published by the Cloud CoE and a place to ask cloud-related questions. For info on support, compliance or trainings, check our SharePoint.
Edit description

Info

The Cloud CoE does the initial setup and configuration of the cloud public infrastructure and takes care of overall operational aspects like security monitoring and billing. Our goal is to enable the product teams, so that they can develop, migrate and operate applications efficiently in the cloud.

Pinned

SharePoint Cloud CoE

Community resources

- My Learning / Library
- # cloud-aws
- # cloud-aws-alarm
- # cloud-aws-changes
- # cloud-aws-experts
- # cloud-aws-limits
- # cloud-aws-news
- # cloud-aws-status
- # cloud-azure
- # cloud-azure-alarm
- # cloud-azure-changes
- # cloud-azure-controls
- # cloud-azure-experts
- # cloud-azure-limits
- # cloud-azure-news
- # cloud-azure-status
- # cloud-baseimages
- # cloud-coe
- # cloud-gcp
- # cloud-gcp-alarm
- # cloud-gcp-changes
- # cloud-gcp-experts
- # cloud-gcp-limits
- # cloud-gcp-news
- # cloud-gcp-status

Thank You

