



# Blockchain / Distributed Ledger Technology

## - DLT initiatives from an operations perspective -

ECB OMG Meeting 2019-09-04

André Kolb, Bernhard Brand | Commerzbank AG | Group Banking & Markets Operations

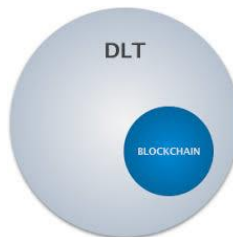
# Distributed Ledger Technology / Blockchain

## Blockchain / DLT Basics

### Blockchain / DLT Principles

- **Electronic Register** – Electronic Records
- **Shared Ledger - decentralized**
- Data / Transactions are
  - documented in chronological order
  - distributed across multiple sites

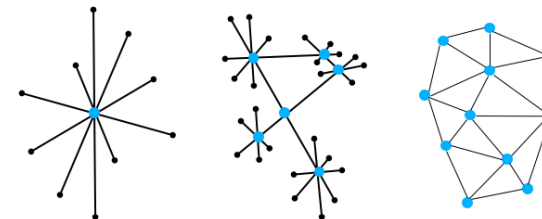
- **No central entity**
- No verification by trustee
- Transparency and Availability (real-time) for participants



### Fundamentals

- **Immutable Data => Finality**
- **Tokenizing of Assets**
- **Automated execution** of agreed conditions
- Potential for cost savings, increased efficiency

#### The concept of a blockchain (distributed ledger)



Centralized

Decentralized

Distributed Ledgers

#### Blockchain Types

Public

Private

Unpermissioned

Permissioned

#### Characteristics

Decentralized Database

Validation, Encryption (Hash)

Consensus (Proof of Work, Proof of Stake)

Smart Contracts



DLT offers high potential for reducing established intermediaries and existing business models => **Disruption**



## Commerzbank DLT Lab

### Core Topics 2019 / 2020

- CASH ON LEDGER
- CAPITAL MARKETS
- TRADE FINANCE
- KYC / DIGITAL IDENTITY

### Principles / Key Objectives

- Client-centric
- Create added value for our customers
- First mover

## Commerzbank Operations

Group Banking &  
Markets Operations

### Cooperation with DLT Lab

- Close collaboration since June 2016
- Support of selected DLT Use Cases / Pilots including New Product Processes (NPP)

### Our Motivation

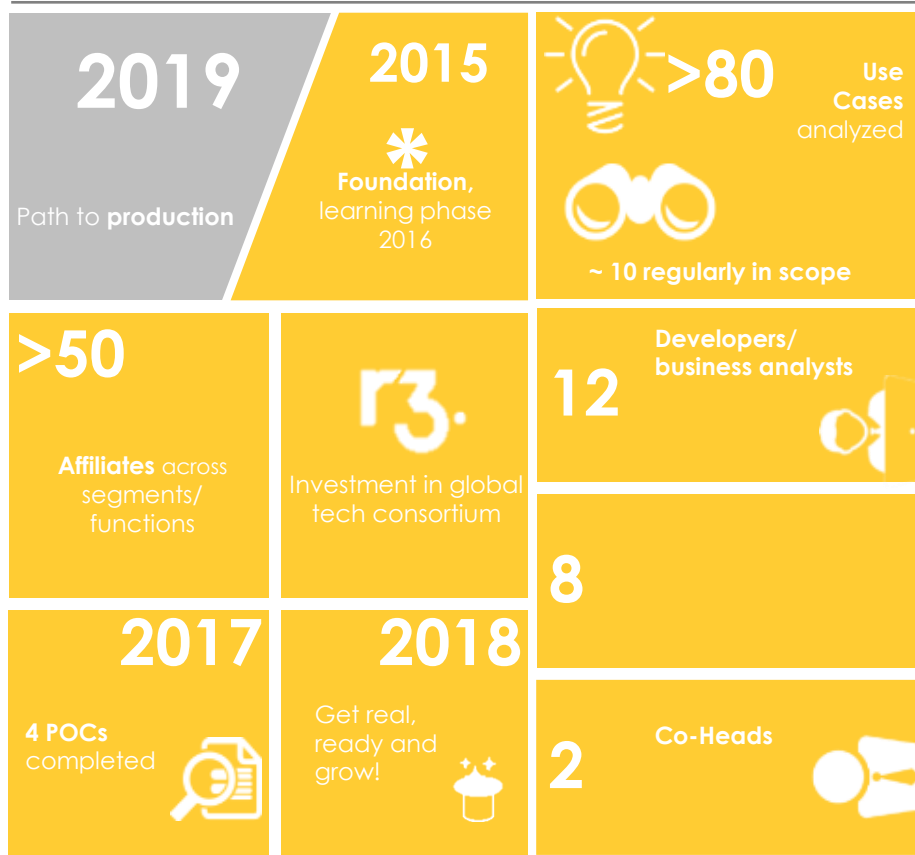
- Awareness of **potential impacts on Operations** (processes and services)
- **Pro-active participation** and support
- Enable **future planning** in Operations (resources, efforts, timelines, etc.)
- **Learning organisation** – Knowledge, **Change, Transformation**

### Complementary

- Member of German Bankers Association (BdB) – Working Group DLT
- Member of EBF Blockchain Task Force

# Distributed Ledger Technology / Blockchain Main Incubator - DLT Lab at a glance

## Facts & Figures

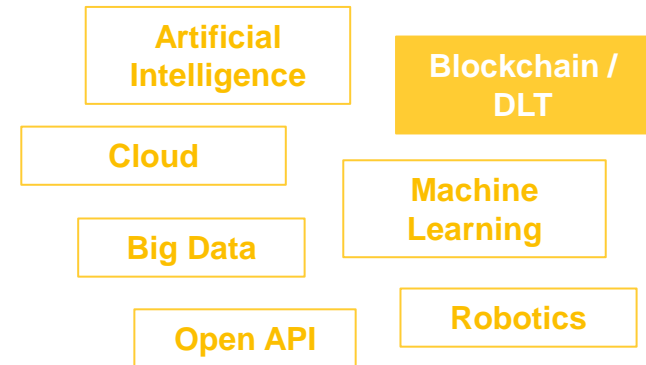


Source Facts & Figures: Commerzbank DLT Lab | Frankfurt / August 2019



The main incubator - a 100 % subsidiary of Commerzbank - supports the bank in its **technological transformation** via three routes:

- **Community** building
- **Ventures** – strategic investment in tech startups
- **Prototyping** – develop own prototypes on the basis of 12 technologies of the future e.g.



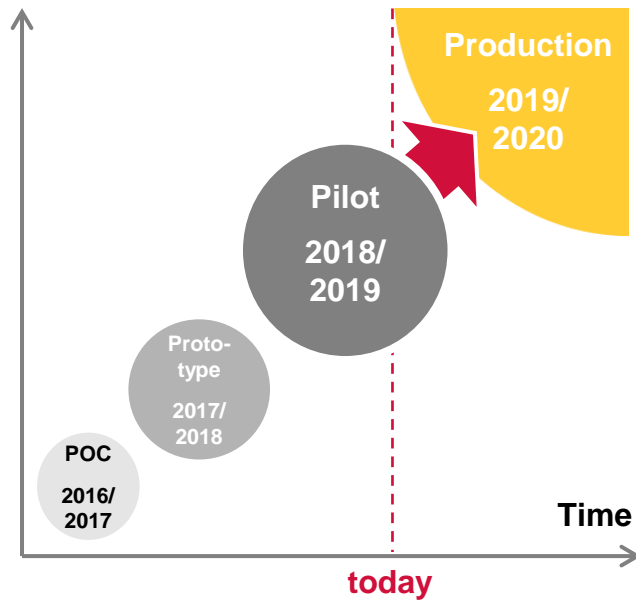
<https://main-incubator.com/en/prototype/>

# Distributed Ledger Technology / Blockchain





## Commerzbank DLT Lab - Road Map

### Road Map for DLT Lab

#### Maturity of Use Cases

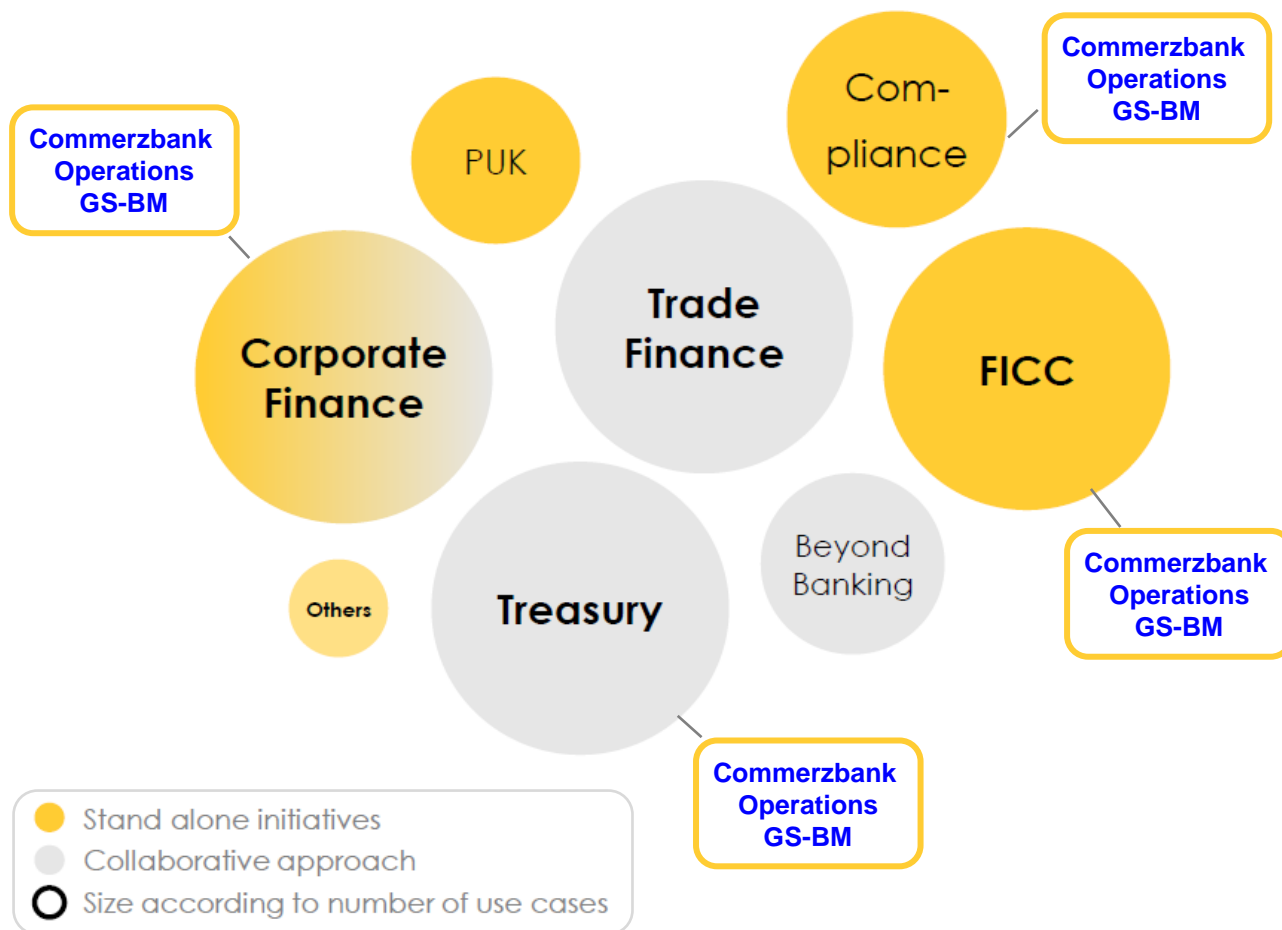


### Focus areas of Commerzbank's DLT Lab in 2019

Application area & maturity	Examples
 <p><b>CAPITAL MARKETS</b></p> <p>PoC    Pilot    Production</p>	Securities issuance and trading, (post-) trading processes, FX, syndicated loans
 <p><b>TRADE FINANCE</b></p> <p>PoC    Pilot    Production</p>	Open account, bank payment obligations, digital letter of credit
 <p><b>PAYMENTS</b></p> <p>PoC    Pilot    Production</p>	Plain payments and delivery vs. payment, e.g. by using e-money
 <p><b>KYC/ ID MANAGEMENT</b></p> <p>PoC    Pilot    Production</p>	Self-sovereign digital ID management for private persons, corporate KYC

Source: Commerzbank DLT Lab | Frankfurt / August 2019

### Current focus areas along value chain and beyond



### DLT Initiatives 2018 / 2019

**DLT Lab /**  
Group Digital  
Transformation & Strategy

- 8 Areas
- 18 Use Cases

**Operations**  
Group Markets &  
Banking Operations  
(GS-BM)

- 4 Areas
- 10 Use Cases

### CAPITAL MARKETS

Details on next slides

COMMERZBANK   
 ABN-AMRO  
 KBC ING 

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**Euro Commercial Paper**

MVP  
 APR 2017

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DLT platform provider



KFW MEAG

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COMMERZBANK 

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**Euro Commercial Paper**

ISIN: DE000A1V4HP3  
 SEP 2017

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DLT platform provider



Rabobank  ING 

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**Euro Commercial Paper**

ISIN: FR0125350217  
 DEC 2018

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DLT platform provider



Continental   
 SIEMENS

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**Euro Commercial Paper**

ISIN: XF0000C24384  
 JAN 2019

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DLT platform provider



COMMERZBANK   
 DEUTSCHE BÖRSE GROUP  
 EX 

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**Repurchase Agreement**

ISIN: DE000A1V4HP3  
 FEB 2019

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DLT platform provider



DEUTSCHE BÖRSE GROUP  
 EX   
 MEAG


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**Secondary Trade**

ISIN: DE000A1V4HP3  
 Q1 2019

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DLT platform provider



thyssenkrupp  
 COMMERZBANK   
 EBT DEUTSCHE BÖRSE GROUP


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**USD Deposit**

SEP 2018

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DLT platform provider



thyssenkrupp  
 COMMERZBANK 

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**EUR / PLN FX Forward**

MAY 2018

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DLT platform provider















Source: Commerzbank DLT Lab | Frankfurt / August 2019

# Distributed Ledger Technology / Blockchain

## Commerzbank DLT Lab – Selected Initiatives

### Euro Commercial Paper

		III SEP 2017	III DEC 2018	III JAN 2019
Parties & Roles	Issuer			
	Investor			
	Dealer			None
	Platform			
Implementation	Security	On Ledger simulated, ISIN: DE000A1V4HP3	On Ledger UK law, ISIN: FR0125350217	On Ledger LUX law, ISIN: XF0000C24384
	Payments	traditional	traditional	On Ledger (E-Money by  )

Source: Commerzbank DLT Lab | Frankfurt / August 2019



### Selected Press Releases (Extracts)

Dec. 2018: Euro Commercial Paper on DLT



**FINTECH FUTURES**

Learn about building and your digital core banking

News

## R3 and European banks complete euro commercial paper transaction

Written by [Henry Vilar](#) 6th December 2018

[f](#) [in](#) [t](#) [r](#) [p](#) [e](#)

R3, the blockchain consortium, has partnered with [Commerzbank](#), [ING](#), [Natixis](#) and [Rabobank](#), to produce a live commercial paper transaction on the Euro Debt Solution application, built on R3's platform Corda.

This event follows the [previous simulated transaction](#) on an earlier version of the solution in September 2017.

"The issuance and settlement of securities is a complex process and current models are rife with inefficiency," says David E. Rutter, CEO of R3. "Corda addresses these challenges by enabling parties to financial agreements to record them once and collaborate to maintain accurate, shared records of these agreements."



With Natixis acting as the issuer, Rabobank acting as the investor and ING as both the dealer and escrow agent, the trade involved an issuance of €100,000 notional, with a one-day maturity.

Commerzbank provided the pilot framework, software and distributed ledger network for the trade as well as guidance on regulatory implications.

Feb. 2019: EURO Commercial Paper on DLT

Press Release

### Continental, Commerzbank and Siemens Successfully Field-Tested Blockchain Technology on Money Market

- Commercial paper transaction processed in minutes rather than days thanks to blockchain technology
- Project is a major step toward fully blockchain-based securities trading

Hanover, Frankfurt, Munich, February 21, 2019. For the first time, Continental, Commerzbank and Siemens have carried out a test transaction as part of a pilot project to process a money market security between the companies using blockchain technology. The transaction took place in January. It had a volume of €100,000 and a term of three days. Continental was the issuer of the money market security, which was in the form of a euro-denominated electronic commercial paper according to legal requirements stipulated in the Luxembourg law. Commerzbank provided the Corda-based blockchain platform through its research and development unit, Main Incubator, and acted as a service partner. Siemens subscribed to the money market security as an investor. Corporate law firm GSK Stockmann provided legal advice on the transaction.

Feb. 2019: Repo Transaction on DLT



Deutsche Börse Group > Media > Press releases

Release date: 06 Mar 2019 | Deutsche Börse

### Commerzbank and Deutsche Börse execute legally binding securities settlement using distributed ledger technology

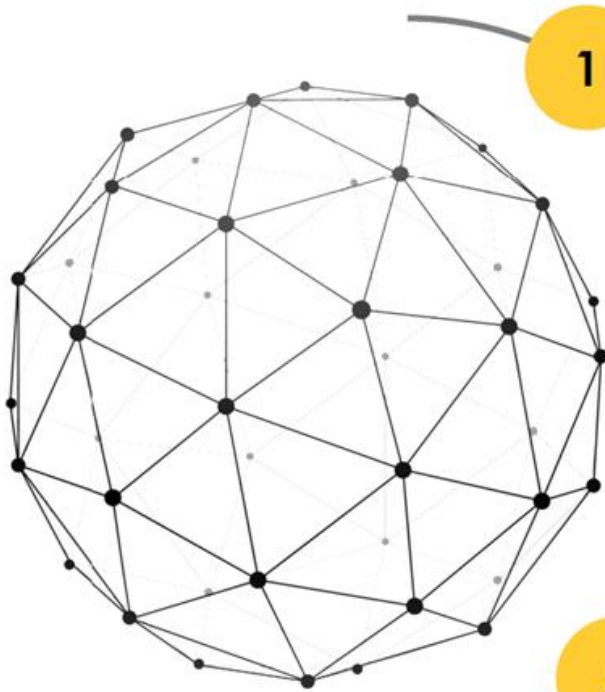
Proof of concept for the generation of digital cash and securities tokens / Completion of the first repo transaction based on delivery versus payment using distributed ledger technology

Commerzbank and Deutsche Börse have for the first time successfully used distributed ledger technology to execute a legally binding settlement of a repo transaction. The prototype transaction based on delivery versus payment was executed as part of a joint proof of concept examining the possible use of blockchain technology in securities settlement.

# Distributed Ledger Technology / Blockchain

## DLT Initiatives - Commerzbank Operations

### Selected DLT Initiatives 2019 with support from Operations Units



01/2019: **Euro Commercial Paper (ECP) – Pilot Trade**  
Secs. Issuance (Lux. Law) – Distribution - Redemption of ECP  
Partners: Siemens, Continental

03/2019: **Repo Pilot Trade** (Secondary Market)  
Focus: Securities and Cash on ledger  
Partner: Deutsche Börse / Eurex

Ongoing: **HQLA – Exchange for Collateral**  
Exchange of **Digital Collateral Record** (tokenized Secs.)  
for High Quality Liquid Assets (HQLA)  
Partners: ING, CS, UBS, CIBC, Dt. Börse, Commerzbank

Ongoing: **Digital Custody Solution (DCS)**  
Internet of Things (IoT) – Asset tokenizing,  
**Asset deposits 24/7** for Corporate Clients

**Credit Agency Services (Coba Lux.)**  
**Syndicated Loan Administration via DLT**  
Platform LenderComm (Finastra) – Tests planned

GS-BM driven  
initiative

# Distributed Ledger Technology / Blockchain

## DLT / Blockchain => Challenges - Opportunities

### Regulatory Legal Tax

**Legal certainty – pre-requisites** (Commerzbank Operations view)

- **Clear Guidance for DLT based applications** – Level Playing Field – Sandbox Approach
- Modification of existing laws and regulations most likely (e.g. CSDR, SFTR)
- **Harmonisation of EU jurisdictions and in a global context => competitive aspects**
- Regulatory Reporting, Tax Aspects

### Technical Functional

- DLT Scalability and Performance => **Standardization, Taxonomy**
- **Participants to agree on / determine a dedicated DLT Technology**
- **Interoperability**
- Dual Infrastructure => e.g. existing traditional securities vs. DLT based securities  
Securities Value Chain: Pre-Trade – Trade – Post Trade => gradual approach on DLT?

### Processes

- Security Aspects – Access to private keys
- Verification Services – e.g. specification of user rights (Read and Write)
- **High Data Quality**  
Blockchain / DLT requires **harmonisation of data and processes**

## Regulatory Developments

DE

### Objectives

The Federal Government of Germany has set up a **Blockchain Strategy** to promote digital innovations and strengthen innovative technologies

- 
- Jan 2019 **BaFin** approval of Securities Token Offering in Germany for the first time  
Bitbond Bearer Bond: Issuance volume: 100 Mio. EUR, 10 years duration, FRN
- Feb 2019 **German Ministry of Finance (BMF): Online Consultation DLT / Blockchain**
- Mar 2019 **German Ministry of Finance (BMF): Key note “electronic securities”**  
Legal Framework for DE issuers, starting with debt instrument  
i.a. omission of physical documents (global certificates) foreseen

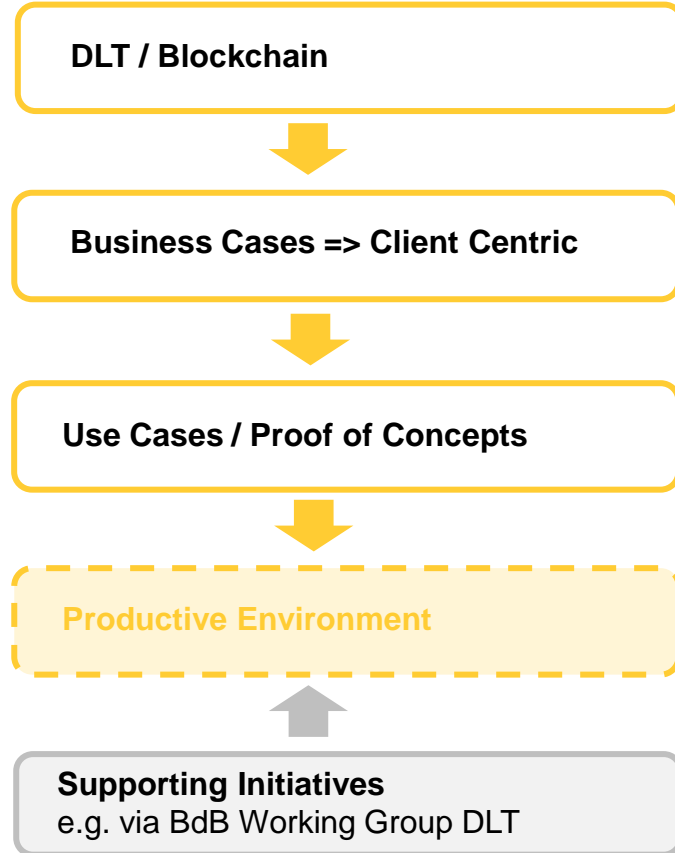
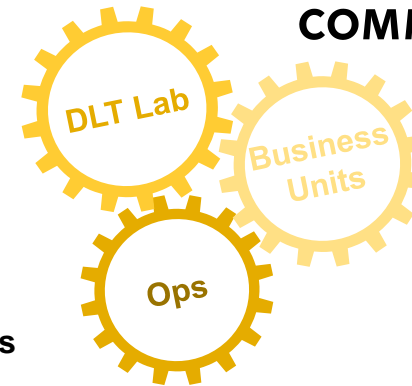
## Commerzbank DLT Lab

- Tailor made DLT Use Cases continued => Pilot Trades / Transactions
- Several Corporate Clients approach Commerzbank asking for DLT/Blockchain-based solutions (e.g. **Issuance of Securities**)

# DLT / Blockchain Outlook 2019 and beyond

1 / 2

How can we improve from an Operations perspective?



## Benefits

- **Participation - collaboration - visibility**  
Operations Process Expertise, Know-how
- Increase **awareness of Employees for Digitization topics and potential changes**
- **Gateway to Digital Technologies - Commerzbank 4.0**
- **Touch Points** with DLT Lab and leading CBK Units
- Lessons learned
- **Cultural Change => Mind Set**



Stay connected – Engagement Group Banking & Markets Operations



Staff Members Operations (GS-BM)

Talents

DLT Community GS-BM

### Activities

- **Monitor DLT Initiatives** and developments
- Analyse potential areas of application
- Provide **DLT Updates for Senior Mgmt.**
- Continue DLT Community Meetings
- **DLT Information Sessions** - Operations

### External

- DLT Events: e.g. “**Between the Towers**”



### Internal

- DLT Lab Affiliates Calls
- **Digital Working Group** (cross-segments)
- **Networking** - DLT Contacts
- Alignment with other Digitization Topics

**Thank you – Any questions?**

**Bernhard Brand**

**Key Area Trading  
Cluster Post Trading**  
- Market Advocacy -

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