Digital Identity
Workshop
Roland Berger Munich Office
We are looking forward to working with you in today's workshop

Your Roland Berger hosts

Sebastian Steger
Partner

Stephan Janssens
Partner

Sebastian Maus
Principal

Dr. Helene Gehrmann
Senior Consultant

Active field of interest and experience

> Retail Banking
> Digital Platforms/ Ecosystems

> Retail and Corporate Banking
> Digital Transformation
> Organization effectiveness

> Transaction Banking
> Digital Transformation
> Payments

> Insurance
> Digitization of Claims Management
> Performance Optimization
Today we will examine the use of digital identities to build digital business models and process chains based on Blockchain

<table>
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<tr>
<th>Agenda</th>
<th>Focus</th>
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<tr>
<td>10:00 Welcome and Introduction</td>
<td>Why are digital identities important?</td>
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<tr>
<td>10:20 Startup Presentation</td>
<td>Procivis vision: e-government as a service</td>
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<td>10:40 Workshop Session</td>
<td>Which problem is to be solved?</td>
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<td>11:55 Wrap-Up</td>
<td>Workshop summary</td>
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Source: Roland Berger
Blockchain is set to change the way the world does business – First wide application to come in the next 3-5 years

Blockchain offers additional potential for innovation and efficiency

Blockchain allows decentralized, digital and trusted transactions

Critical features include

- One digital identity
- Secure and traceable transactions
- Trigger-based undisputed execution
- One single source of truth

Blockchain will be increasingly used in new and existing business models in next 3-5 years

Source: Roland Berger
Our society and economy are becoming more digital — To get traction, digital identity systems will be necessary.

Why are digital identities important?

- Society and economy are increasingly driven by digital transactions and data ...
  - 54% of consumers buy products online weekly or monthly
  - 53% of the German population access online banking sites
  - 57% of all travel reservations made on the internet

- ... however many transaction processes are still paper based due to a lack of digital identities
  - 55% of all business organizations say top reason for their continued paper use is the need for physical signatures
  - 90% of German banks work with paper based and physical identification (e.g. Postident)
  - 100% of visas and travel stamps are physically entered into passports and are checked manually

Source: Roland Berger Research
Digital identities put real trust in the exchange of assets on Blockchain – Each existing physical identity needs a digital solution

Which digital identities are relevant?

**Digital identity**

<table>
<thead>
<tr>
<th>Parties</th>
<th>Goods</th>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>BEINGS</strong></td>
<td><strong>ENTITIES</strong></td>
<td><strong>TANGIBLE GOODS</strong></td>
<td><strong>INTANGIBLE GOODS</strong></td>
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<tr>
<td>Humans</td>
<td>Animals</td>
<td>Firms</td>
<td>Durable</td>
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<td>Digital ID cards</td>
<td>Track meat</td>
<td>Company data</td>
<td>Real estate</td>
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<td>Diplomas</td>
<td>Pets</td>
<td>Company registry</td>
<td>Land</td>
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<td>Medical records</td>
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<td>Occupational records</td>
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<td>7.4 billion people</td>
<td>260 million tons meat production p.a.</td>
<td>44 million listed companies</td>
<td>10 million Bavarian land registry entries</td>
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</tbody>
</table>

Source: Roland Berger Research
Digital identities can be assigned, stored and applied using Blockchain – Most technology already existent

How can digital identities be stored on a Blockchain?

User/good is assigned an identity by an authority … → … using technology … → … and is stored on the Blockchain. → A request is formulated to the Blockchain. → An agent verifies identity and authorizes action.

Examples

**Human ID: International travel**
- Biometric passport → Iris scanner and fingerprint reader → > Public
- > Private
- > ...

**Physical good ID: Car motor registration**
- Identification number → Scan and data base entry → User wishes to cross national border
- Buyer requests ownership verification
- ID scan, cross-check, ownership information

**Areas of application**
- Finance
- Education
- Health-care
- Commerce
- Travel

Source: Roland Berger
Blockchain-based digital identities are still at the beginning – Broad range of application possible

What is the status of digital identities?

**Today:** Blockchain-based digital identity with single applications

- **National services**
  - Estonia: Pioneer Blockchain digital identity system, managing access to public/financial/medical services

- **International trade**
  - Maersk & IBM: Plans for cargo tracking – Sign-up of >400 enterprise clients

- **Financial services**
  - Canada’s biggest banks & IBM: Plan to run existing digital identity solution on Blockchain

**Vision:** Broad application of Blockchain-based identity systems

- **Blockchain** technology widely combined with digital identity verification via
  - **Knowledge**: E.g. password, PIN or account number
  - **Ownership**: E.g. token or chip card
  - **Features**: E.g. biometric data

- Numerous areas of application, incl. human identification, documents storage/verification & anti-counterfeit registration

Source: Roland Berger
Procivis vision: Empowerment of citizens through e-government applications built around self-sovereign digital identities

Profile

Idea
- Development and offer of an "e-government as a service" solution that draws on Estonia’s leading experience
- Drawing on strengths of emerging Blockchain technology
- Building on Switzerland’s trusted values

Implementation
- First proof of concept presented in January 2017: Mobile phone-based e-voting application running on the Procivis platform that allows tamper-proof voting for citizens
- Platform will be designed to run a government-curated app store that can offer the full range of public administration services, including tax filings, land registry or commercial registry
- Close collaboration with Estonian e-government experts

What else…
- Procivis is a Swiss venture founded in autumn 2016 and is currently raising seed funding

Daniel Gasteiger – Founder & CEO
- 20+ years managing director level professional experience with Credit Suisse and UBS
- Mainly Investment Banking (FX trading and B2B sales & product management)
- Various strategy roles in Investment Banking and Corporate Center (Group Technology and Chairman’s Office)
- Co-Founder of nexussquared (September 2015)
- Founder of Procivis (September 2016)

Source: Procivis, Roland Berger
Blockchain-based digital identity systems have great potential in numerous application areas – Workshop teams develop their visions.

Interactive workshop session: Task and schedule

**Task**

Develop a vision of a Blockchain-based application of digital identities leveraging your team's knowledge and experience.

**Answer the following questions on your flipcharts**

- **Problem**: Which problem is to be solved?
- **Solution**: What is your solution?
- **Advantages**: Which advantages does your solution bring?

- Lower motivation to vote among young generation, slow communication with voters
- eVoting platform: Citizens can vote with their mobile device using their digital identities
- Voting can be done conveniently anytime and anywhere over the internet

Source: Roland Berger
Generally, there are three ways to organizationally drive digitization: support, substitute, and sequencing.

Approaches to foster digital transformation

**Support**
- Digital impulses
- Incremental transformation
- Development of digital ideas
- Roll-out if successful
- Core lab/incubator

**Substitute**
- Digital clone
- Parallel development:
  - Creation of digital core
  - Leverage of resources in analog core
- Core 1'

**Sequencing**
- Digital core
- Comprehensive development
- Complete organization involved
- Funds for idea development & tests

**Description**
- Quick first results
- Least investment required
- Selected employees to develop digital expansions

**Assessment**
- Medium ramp-up with long-term knowledge transfer
- Medium investment for digital transformation of organization
- Slow implementation time
- High investments
- Trial-and-error mode, all employees part of transformation

Source: Roland Berger
Roland Berger recommends a four-step approach to companies to create conditions required to benefit from Blockchain technology.

From landscaping to action

- **A. Landscaping & framing**
  - Business opportunities
  - Technical opportunities

- **B. Prioritization**
  - Filters

- **C. Design / shaping**
  - Business
  - Partnerships
  - Technology

- **D. Action & Synthesis**

**Activities to be addressed**

1. Design most disruptive use cases
2. Evaluate technical possibilities of Blockchain/ DLT
3. Classification of opportunities
4. Test initiatives on small scale using rapid prototyping
5. Select consortiums & partnerships
6. Strategic Blockchain Roadmap
Collaboration with startups and exchange with partners is critical to the successful integration of Blockchain technology.

Collaboration critical success factor

Blockchain adaptation requires a collaborative approach

Leveraging know-how and experience of startups and partners

Using innovation and digital hubs for idea generation and use case development

Roland Berger Digital Hub

8 corporate innovation projects

- Big data & smart data
- Digital design
- Innovation process
- Disruption of client interaction
  & more

200+ workshops and projects with 7,500+ participants from 12 different industries

"This will change our company, the way we approach new projects."

Source: Roland Berger Research
50 YEARS

navigating complexity