Building an open source culture

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Deutsche Bank’s open source journey

- **Recognising the potential of open source**
  - Programme initiated and Open Source Review Council established
  - Mission statement and guiding principles agreed
  - Inner sourcing launched and first external contributions made

- **Scanning and contribution**
  - Identify tools to scan IT estate for existing open source licences in use
  - Formalise processes around which employees can safely use and contribute open source software

- **Unlocking the value**
  - Hundreds of updates made to inner sourced components
  - Thousands of commits in response to DB open source contributions
  - Several active cross-bank collaborations on FINOS projects
Inner sourcing has been a crucial step

- **2014**: dbOpensource platform initially launches in C#
- **2017**: Hackathon team begin to translate the code into Java
- **2019**: Translation completed by team of distinguished DB engineers

Facilitates discovery of re-usable software assets, lowering development costs and improving delivery

Enables the engineering community to access and improve a variety of components, increasing innovation and agility

Leveraging marketplace dynamics, teams only utilise components that are useful

Subject to continuous enhancement

**Usability**:
- New metrics to track component’s performance
- Improved responsiveness
- Optimised UI

**Functionality**:
- CI/CD pipeline
- Openshift liveness and readiness checks
- Active monitoring of application health

- 752 contributors
- 26,490 commits made by the top 10 contributors
- 86,772 total commits
- 130+ contributions to date
- 893 component updates 2018
- 2018: 26,490 commits made by the top 10 contributors
- 2019: 893 component updates
- 2020: 86,772 total commits
dbCORE enables low-code development

Internal library of productivity tools based on Angular, which streamlines web application building and maintenance through tooling and automation.

- Community driven ✓
- Applications built through simple drag-drop approach ✓
- Develops complete web apps within hours ✓
- 20+ successful projects to-date across three brands ✓

Focus on component reusability

Established 2017 at DB’s Frankfurt Digital Factory

50+ contributors
Several projects have made contributions, with more on the way.

**Plexus Interop**

**Description:** Code designed to connect different applications from across the financial services industry, enabling banks and clients’ systems to communicate.

**Open source date:** October 2017

**No. of commits:** 1,677

**Releases:** 147

**Waltz**

**Description:** Tool providing architecture-related information to a broad spectrum of DB consumers.

**Open source date:** December 2017

**No. of commits:** 5,762

**Releases:** 154

**Muster**

**Description:** Library which acts as a universal data layer for applications and services.

**Open source date:** December 2018

**No. of commits:** 260

**Releases:** 8
Waltz is an example of the collaborative power of open source

An architecture information service, collating and presenting insight on applications, infrastructure, data, processes and more.

- **1m** hits per year
- **15k** users
- **80k** lines of Java and Javascript rated A+
- **200k** edits in 2019
- Waltz supports DB’s GDPR compliance efforts
- Waltz is central to the Bank’s data lineage initiative

**JULY 2015**
Waltz conceived as an architecture information service

**OCTOBER 2015**
Waltz becomes an open source project

**JANUARY 2017**
Deutsche Bank implements Waltz into the organisation

**DECEMBER 2017**
Deutsche Bank makes part of its internal Waltz code publicly available

**SEPTEMBER 2019**
NatWest Markets announce an intention to contribute to Waltz

**TODAY**
Waltz becomes a candidate for onboarding to FINOS
Committed to open source

The contribution and usage of open source software at Deutsche Bank presents an exciting avenue of innovation for the Bank.

Our commitment to be at the forefront of the open source community shows that we recognise the opportunities open source brings for participation and collaboration not just within the Bank, but with our industry peers.