

FINOS

Fintech
Open Source
Foundation

Introduction to Open Source in Regulated Markets

September 2020

What is FINOS?

The Fintech Open Source Foundation (FINOS) is an **independent, non-profit membership organization** whose purpose is to **accelerate** collaboration and **innovation in financial services** through the adoption of Open Source software, standards and best practices.



FINOS Community by the Numbers

PLATINUM



J.P.Morgan

GitHub

Morgan Stanley

NOMURA



GOLD



SILVER



SCOTT LOGIC



20

Active Open Source Projects
and Working Groups

19

Incubating Open Source
Projects and Working Groups

300+

Contributors

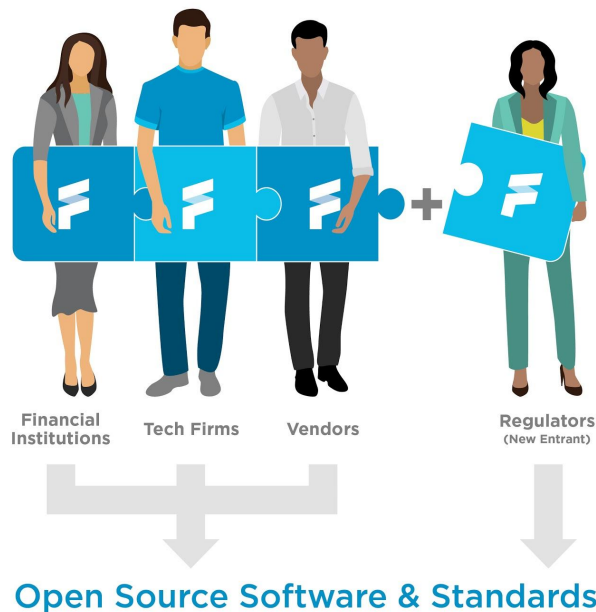
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Member Organizations

Our goal: enable Open Source in Financial Services

FINOS brings together all parties of the financial services ecosystem to deliver open source software and standards.

Financial Services Ecosystem



Let's take a step back... what is Open Source?

- Open Source **software**, as opposed to *proprietary* software, is software with source **code that anyone can inspect, modify, and enhance.**

Source: opensource.com

- Open **standards** are standards made available to the general public and are developed (or approved) and maintained via a collaborative and consensus driven process. Open Standards **facilitate interoperability and data exchange** among different products or services and are intended for widespread adoption.

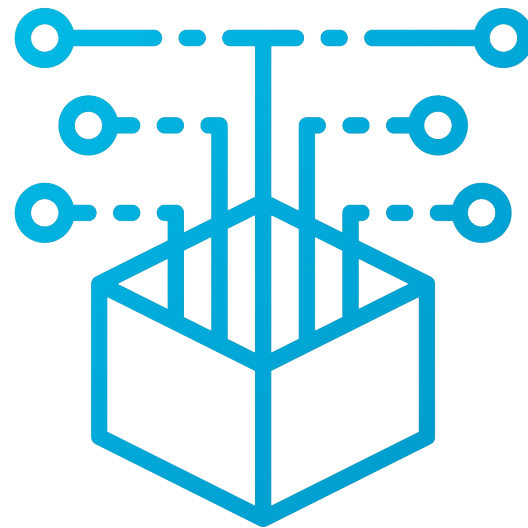
Source: United Nations ITU (International Telecommunications Union)

- Open source is **used pervasively** across tech and non-tech companies alike: **72% of Global Fortune 2000 companies used Open Source Software** for non-commercial or internal reasons and 55% used it for commercial products

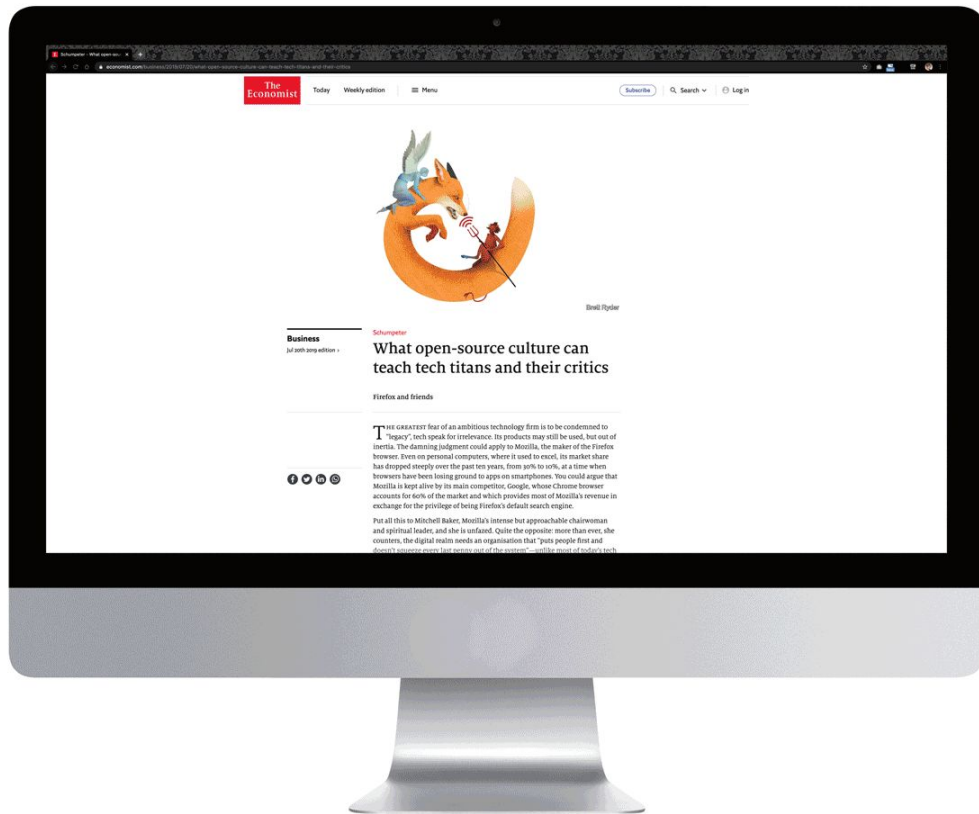
Source: Linux Foundation, 2018

Key attributes of Open Source

- **Collective ownership**
- Structured, collaborative and collective-use oriented development
- Rapid prototyping
- **Transparency**
- Meritocracy
- Engine for sustained innovation
- Mutualization and re-usability



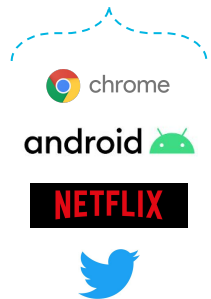
It's becoming mainstream



Who uses Open Source and Open Standards?

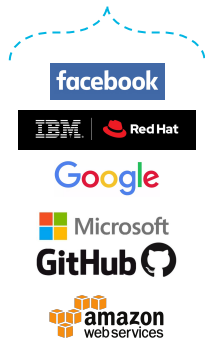
You

Smartphones
Google
Chrome
Twitter
Netflix



Technology

IBM-Red Hat
Microsoft -
GitHub
Facebook
Google
AWS



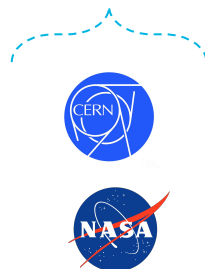
Transportation

Aviation
Automotive:
GENIVI Alliance
Automotive Grade
Linux



Science

CERN
NASA



Government

US Federal
Government
(code.gov)
US Department
of Defense
European
Commission



Financial Services

Financial
Institutions
Standards
Organizations
Regulators



...and why?



Supervision & Control



Simplification

Simplifying the technology stack by leveraging common code



Stability

Reduce software duplication and support burden



Community

Allows organizations to leverage talent beyond their own teams



Security

Shared knowledge and independence from subject matter expertise

Avoid vendor lock-in

Open Source allows flexibility to do-it-yourself

Regulated industries CAN collaborate...

How is this possible?



Governance

Decision making and
project leadership

Activity metrics

Collaboration metrics

Documentation



Policies

Antitrust policies

IP Policies

Conflict of interest
policies

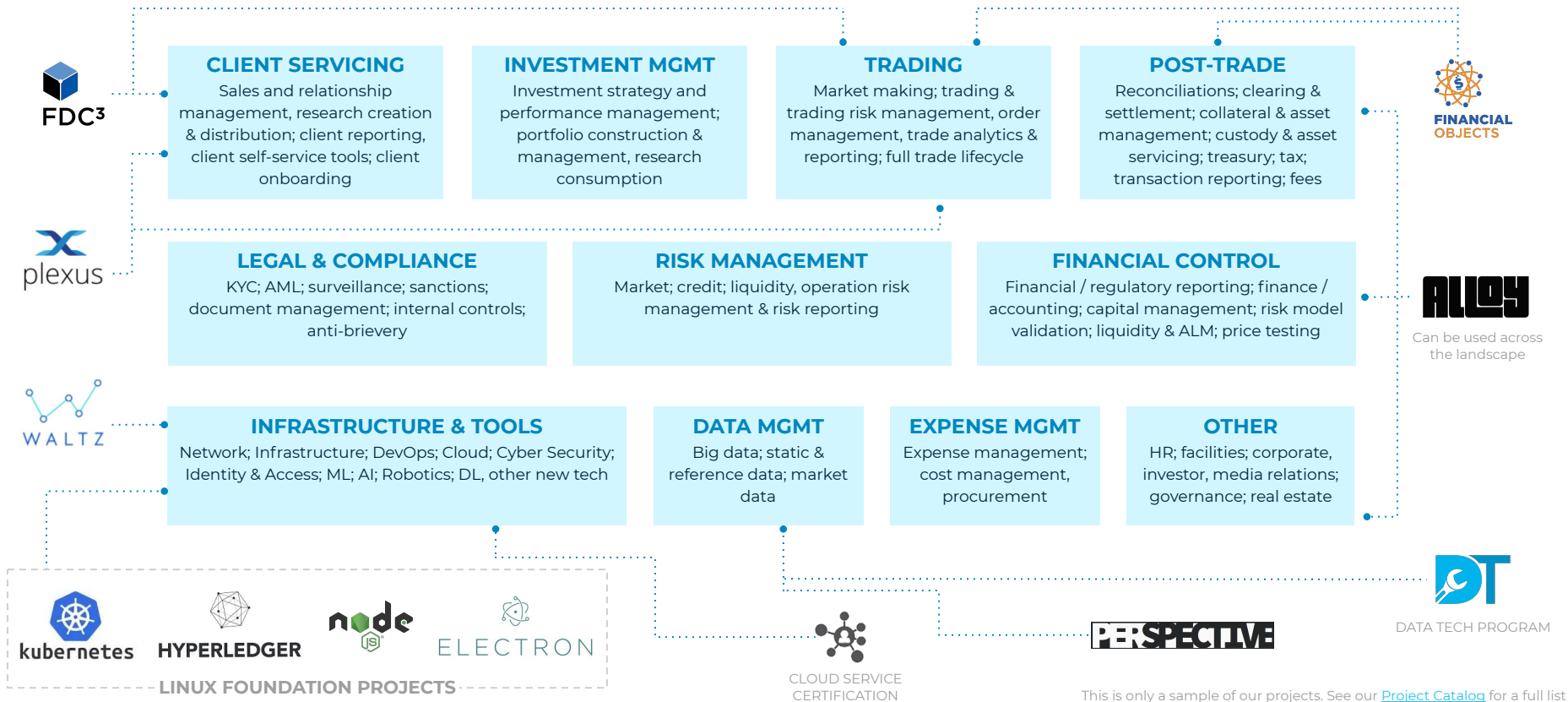


Licenses

Open Source Licenses
(e.g. Apache 2.0)

Contributor License
Agreements (CLAs)

...across the financial services stack



Why projects choose FINOS vs going it alone

Technical Infrastructure



Technical Infrastructure & Tooling. FINOS handles not only Github/Gitlab set-up and maintenance but also provides CI/CD tooling (the [Open Developer Platform](#)) to accelerate compliant, secure developer commits and pull requests.

Security Scanning. FINOS uses WhiteSource integration to scan repositories for [CVEs](#) coming from third-party dependencies, via GitHub Issues or via email.

Migration. For projects not already open sourced, FINOS assists with the legal and technical inspection required to prepare a project code base to be open sourced under the Apache 2.0 license (the preferred license of the foundation).

Community



Ready and Growing Community. Rather than build a developer community from scratch, FINOS projects plug into a [vibrant community](#) across over 30 Projects.

OSS Enabled Community. FINOS is trusted by the largest financial institutions to enable their developers to participate in open source projects in a compliant way.

Product Management and Marketing Support. FINOS supports programs in their development of roadmaps and feature prioritization. FINOS also helps with promoting projects to both contributors and end-users including press releases, microsites, social media, webinars, and in person events.

Legal & Governance



Neutrality. FINOS provides a neutral home and governance for industry standards and open source projects.

Open Source Readiness. Our [Open Source Readiness \(OSR\)](#) project supports your journey towards Open Source.

IP Validation. FINOS handles the licensing agreements with developers -- and our CI/CD tooling checks they are in place upon commit.

Governance. FINOS [provides](#), monitors, and helps (gently) enforce “rules of the road” to foster community, promote contribution, and encourage meritocratic development based on quantity and quality of pull requests, not who shouts the loudest.

Why should Regulators care?

THE BIG PICTURE

- **Access to talent:** talent crunch makes it difficult for regulators to keep up with technology
- **Robust market infrastructure:** build and sustain a more transparent, fairly competitive and user centric set of services
- **Boost innovation and welfare** by freeing up resources

REGULATION

- **Standardization:** common standards used across the industry to meet regulatory requirements

SUPERVISION & ENFORCEMENT

- **Transparency:** access to information and eventually real-time reporting
- **Automation:** leverage open standards, tech and processes to automate manual processes
- **Efficiency** in policy making and inspection when open standards & open source are used

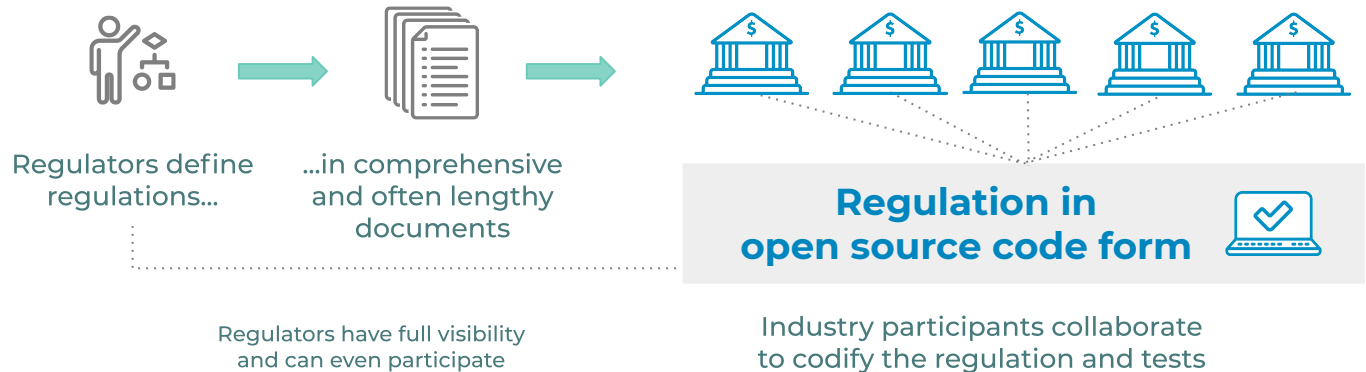


Potential to collaborate on Regulation

TRADITIONAL MODEL



OPEN SOURCE OPPORTUNITY



Examples of where this is already happening



Consumer Financial
Protection Bureau

Home Mortgage
Disclosure Act (HMDA)

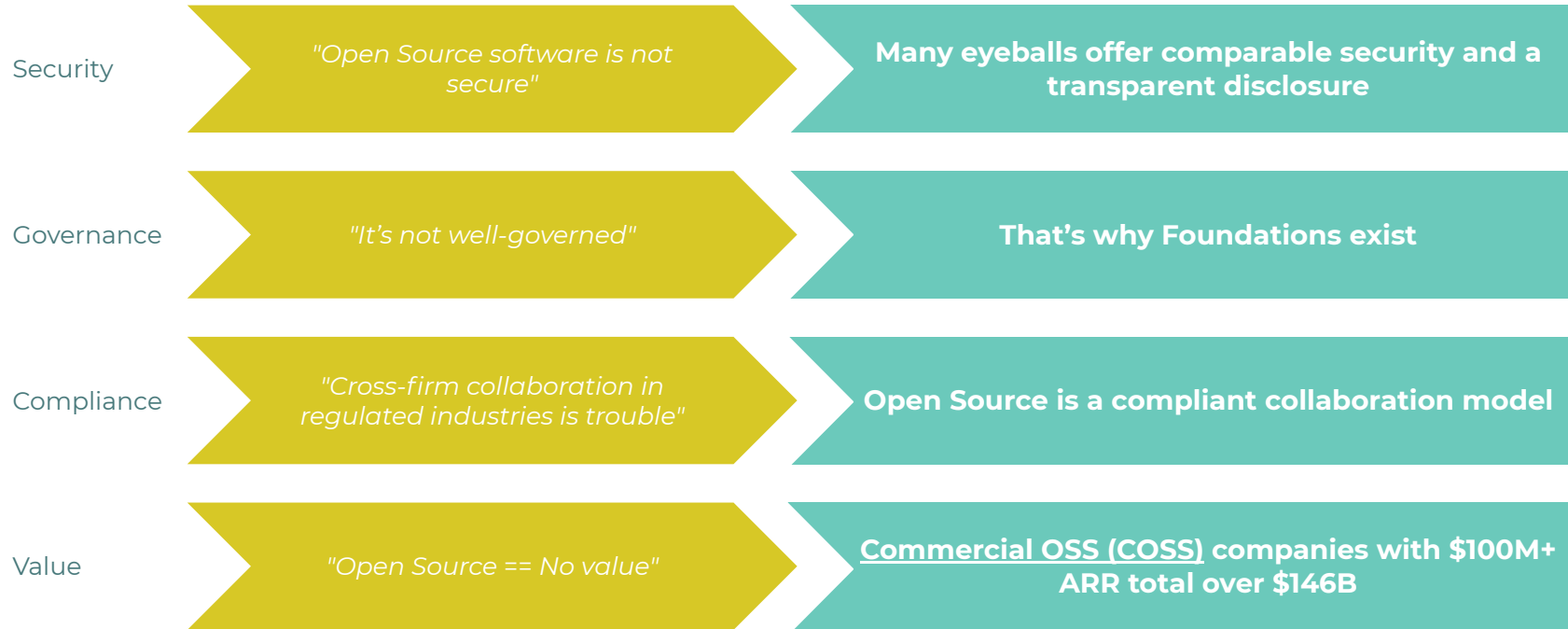
Morgan Stanley

Morphir



Cloud Service
Certification

Debunking OS Myths



Evaluating the risks

Category	Risk Level	Mitigation Strategy
Security vulnerabilities	High	All software has vulnerabilities; with OSS they're documented. Risk higher for services exposed to public internet. Mature consumption policies and automated tooling can mitigate this almost 100%..
"Data leakage"	Moderate	Risk is highest with passwords and keys embedded in source code. Automated scanning is effective here.
"IP Leakage" (copyleft effect)	Low	Copyleft requires providing source code to <i>recipients</i> of object code, not public. Injunction more likely than specific performance. Avoid copyleft licenses for redistributable code.
Accountability (licenses)	Low	Licenses govern how the software can be used and distributed. Ultimate responsibility for the output of the software lies with each organization who runs it.

Call to action

- Who in **your organization is consuming or contributing to Open Source?**
- Are there any **use cases** where you could see benefits of the industry working together?
- Share your **concerns**. Tell us why you think it would or wouldn't work



Open Source RegTech in the news

watertechnology

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REGULATION

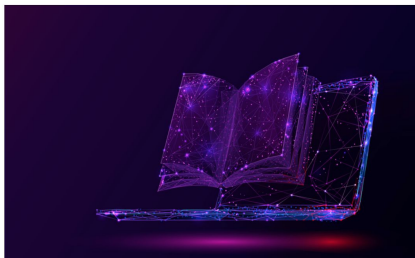
Finos Sees Opportunity for Open Source in RegTech Space

The nonprofit is reaching out to regulators to determine where open source could ease regulatory burdens on financial institutions, while keeping them competitive with tech companies.



Rebecca Natale
@rebnatale

15 Jun 2020



Realign your
marketing strategy
with
watertechnology

FINOS

Fintech
Open Source
Foundation

Questions?

Learn more at
finos.org/open-regtech
github.com/finos
wiki.finos.org

