

FINOS

Fintech
Open Source
Foundation

Open RegTech

November 2020

It's a big challenge



ING serves **40 or more markets** and we need to address the requirements of each of those countries.” ⁽¹⁾

**Ian Hollowbread, Head of RegTech for
ING Labs, November 2020**



Financial regulations are projected to reach over **300 million pages** in 2020” ⁽³⁾



Five separate federal agencies directly supervise depository institutions. Several **dozen more get involved** in financial regulatory matters. In addition, the **fifty states and the US territories** regulate banks and nonbank financial companies. ⁽²⁾

AIR Regtech Manifesto July 2020



The Bank now receives **65 billion data points each year** of firm-related information. To put that into context, reviewing it all would be the equivalent of each supervisor reading the complete works of Shakespeare twice a week, every week of the year.” ⁽⁴⁾

**Former Bank of England Governor Mark
Carney, June 2019**



Dodd-Frank's regulatory definition of “Swaps” is **160 pages long** ⁽⁵⁾

⁽¹⁾ <https://www.finos.org/press/finos-launches-open-regtech-initiative-as-it-receives-record-high-number-of-open-source-contributions>, ⁽²⁾ <https://regulationinnovation.org/regtech-manifesto/>, ⁽³⁾ <https://techandfinance.com/2016/04/20/financial-regulations-will-surpass-300-million-pages-by-2020-says-jwg/>

⁽⁴⁾ <https://www.bankofengland.co.uk/media/boe/files/speech/2019/enable-empower-ensure-a-new-finance-for-the-new-economy-speech-by-mark-carney.pdf?la=en&hash=DC151B5E6286F304F0109ABB19B4D1C31DC39CD5>, ⁽⁵⁾ Crews, Clyde. “Tip of the Costberg”. Social Science Research Network. October 2nd, 2014, last revised January 9th, 2017.

And it's expensive

33% of senior executives at financial institutions said they **spent more than 5% of annual budgets on compliance** ⁽⁶⁾

40% of financial crime compliance costs are associated with **technology** ⁽⁷⁾

Bank compliance costs **jumped more than \$50B a year** after Dodd-Frank⁽⁸⁾

Financial Crime Compliance **costs grew by 7% over the 2018-2020 period** ⁽⁷⁾

Compliance with the **EU GDPR** Regulation is estimated to have cost UK banks an average of **£66 million** in 2019 ⁽⁶⁾

⁽⁶⁾ Global Regulatory Outlook 2020, Duff & Phelps, ⁽⁷⁾ "True Cost of Financial Crime Compliance Study Global Report", LexisNexis Risk Solutions, March 2020, ⁽⁸⁾ Hogan, Thomas L. "Costs of Compliance with the Dodd Frank Act". Rice University's Baker Institute for Public Policy Issue Brief, September 6th 2019

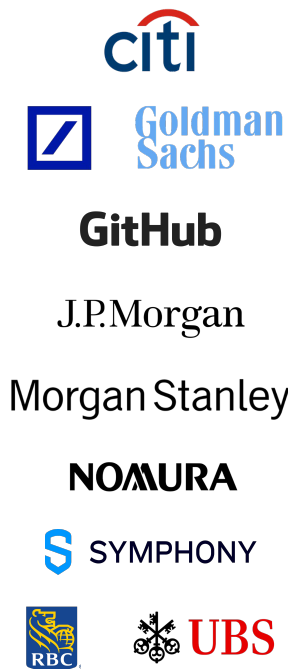
What is FINOS?

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



GOLD



SILVER



ASSOCIATE



15

Active Open Source Projects
and SIGs

23

Incubating Open Source
Projects and SIGs

350+

Contributors

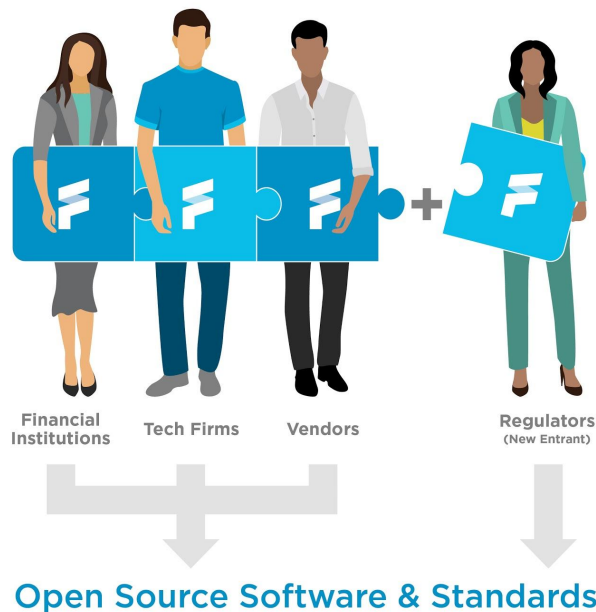
38

**Corporate and Associate
Members**

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



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

The FINOS landscape highlights our many projects solving challenges across the financial services industry.

Check back regularly as we continue to map the open fintech landscape.

Visit

landscape.finos.org

Contribute

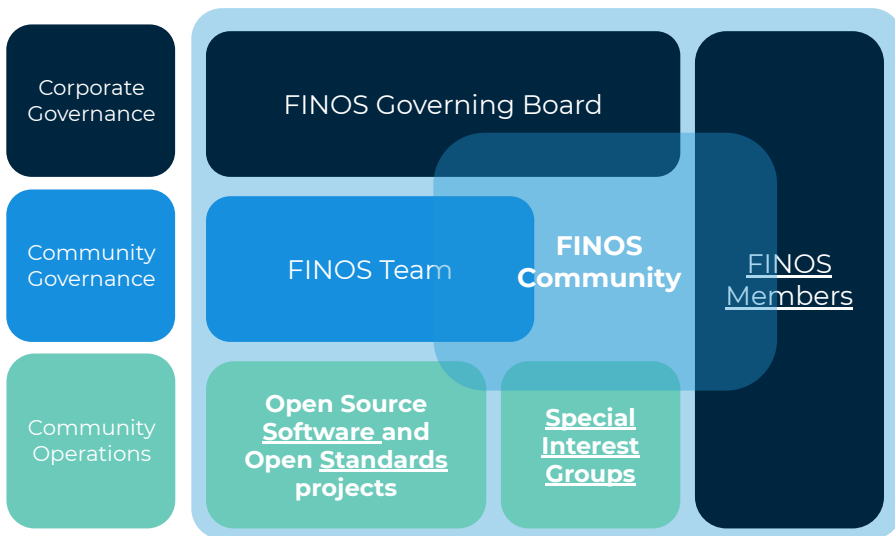


github.com/finos/finos-landscape



A Transparent, Robust and Flexible Governance

- FINOS hosts **40+ collaborative Open Source Software and Open Standards projects**
- The [FINOS Governance](#) provides a **robust framework** that enables **secure, compliant collaboration** in **regulated industries**
- FINOS policies and templates are **flexible** and can be tailored to projects' need for autonomy
- A **meritocratic, governance-by-contribution** model enables transparent, independent operations under the oversight & steering of the FINOS Governing Board
- All FINOS Projects leverage, the [Open Developer Platform](#), and FINOS Focus Projects receive additional support from the **FINOS team**



FINOS Corporate & Project Policies

The Foundation's governance strives for **transparency**, **neutrality** and **meritocracy**. The following policies apply to all FINOS members and activities

CORPORATE POLICIES

- **Antitrust Policy**
Ensures the Foundation's work is not deemed anti-competitive
- **Conflicts of Interest Policy**
Covers disclosure and resolution of conflicts of interest
- **IP Policy**
Contains rules related to the intellectual property of FINOS, our members, and contributors

PROJECT & COMMUNITY POLICIES

- **Community Governance**
Governs the proposal and operation of Open Source Software and Open Standards projects, and Special Interest Groups (SIGs)
- **Contributor License Agreements**
Corporate and individual agreements define contribution requirements

All policies are available at finos.org/governance

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.

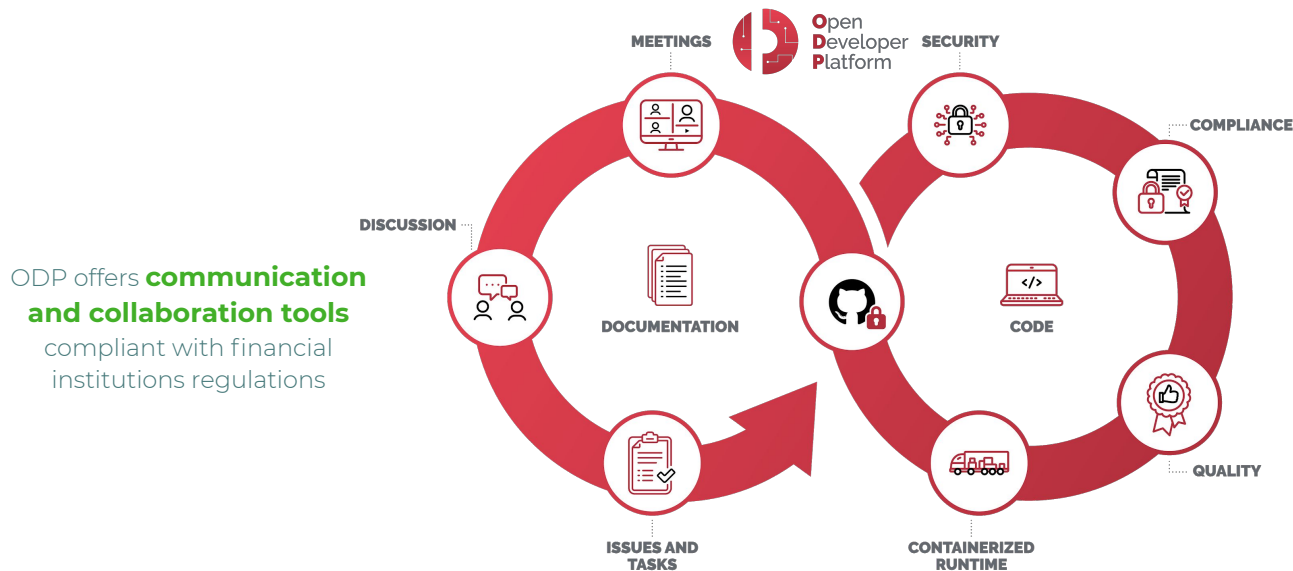
Open Source Readiness. Our [Open Source Readiness \(OSR\)](#) project supports your journey towards Open Source.

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.

The FINOS Open Developer Platform

The Open Developer Platform (ODP) project provides a collection of **services, tools** and **best practices** that deliver a secure and compliant **collaboration and development workflow** across all FINOS hosted projects.



ODP offers **communication and collaboration tools** compliant with financial institutions regulations

ODP delivers a software **development workflow** with continuous legal, security, quality scanning

For more information, visit odp.finos.org and join the next [ODP project meeting](#)

FINOS helps firms become “Open Source Ready”

The purpose of the OSR Project is to **accelerate our members' journeys toward Open Source Readiness**

Financial services firms face **unique obstacles** to collaborate in the open:

Legal & regulatory concerns

Lack of internal policies

Cultural friction

Heavily restricted technology environments

We support financial services firms every step of the way through our [Open Source Readiness Project](#), providing guidance and tools for participants at every stage of Open Source maturity:

Meetings

The [biweekly OSR Meetings](#) are open to participants at every stage of open source readiness. Each meeting focuses on a particular Open Source topic, introduced by a reading or presentation, followed by a discussion and "office hours" where members can raise issues and get answers.

Resources

[Reference OS Policy](#)

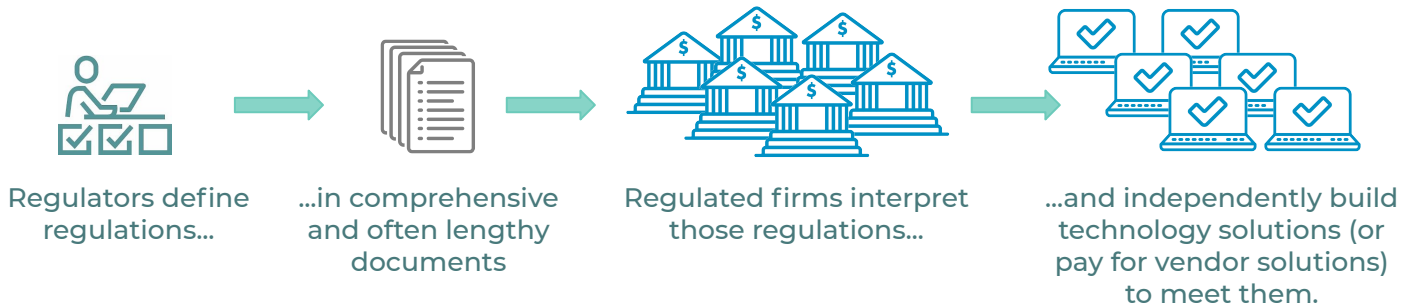
Template for a comprehensive open source software policy for a financial services institution, including sample provisions governing the acquisition and use of OSS, and contribution to OSS projects.

[OS License Compliance Handbook](#)

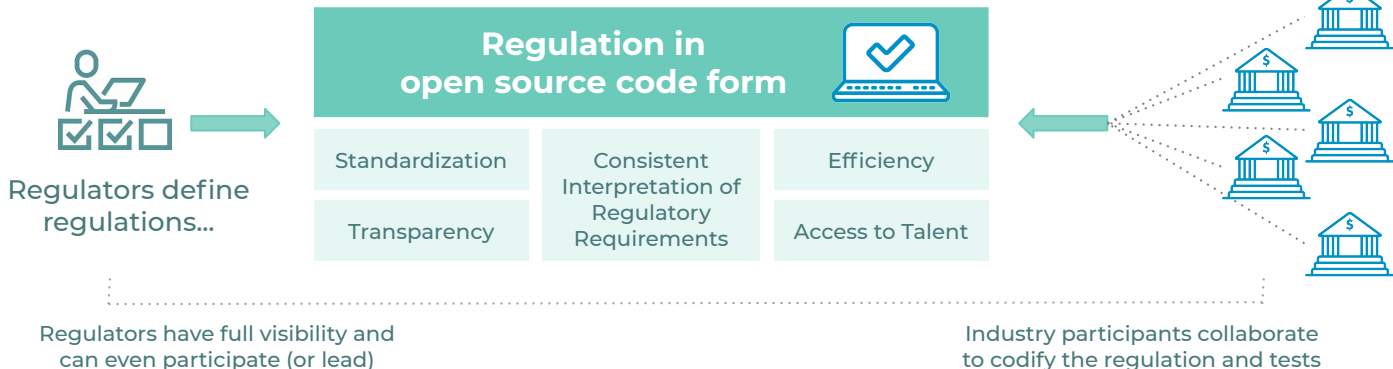
Reference guide to practical compliance information for the most common open source licenses. Great for engineers and compliance staff operationalizing compliance with third-party license.

Our Long Term Vision

TRADITIONAL MODEL



OPEN SOURCE OPPORTUNITY



FINOS Open RegTech Initiative

Strategic Goal

Open source to become a standard for regulation issuance and implementation

Regulators

Regulators to embrace Open Source and to produce their documents and regulations in open source format



Open source

Promote open source software, standards and best practices among financial regulators



Financial Institutions

Financial Institutions to adopt open source as a way to implement and meet regulatory requirements



2020 Key Results

Awareness

- Webinars
- Virtual meetings
- OSSE & other conferences
- Blog posts
- White papers
- Case studies

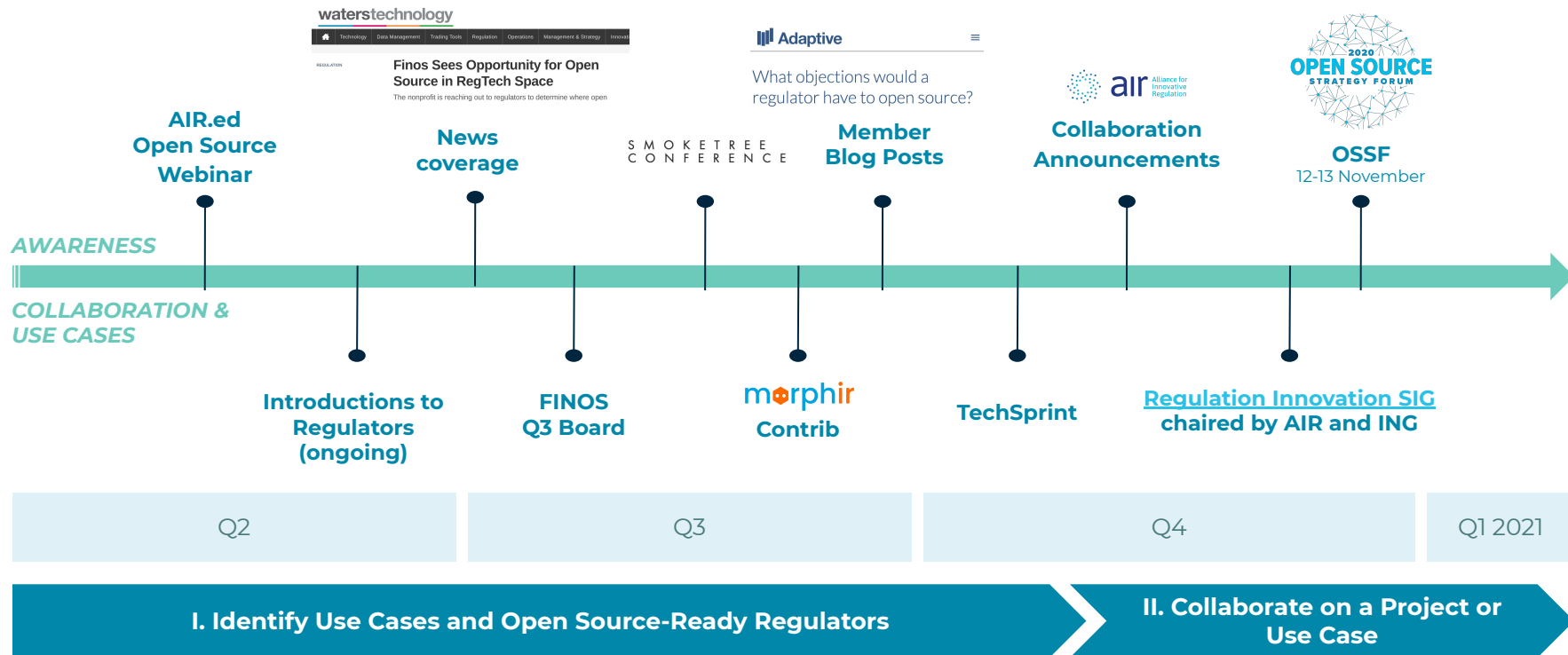
Collaboration

- Tech Sprints
- FINOS projects
- Associate Membership
- Roundtables
- Discussions

Activities

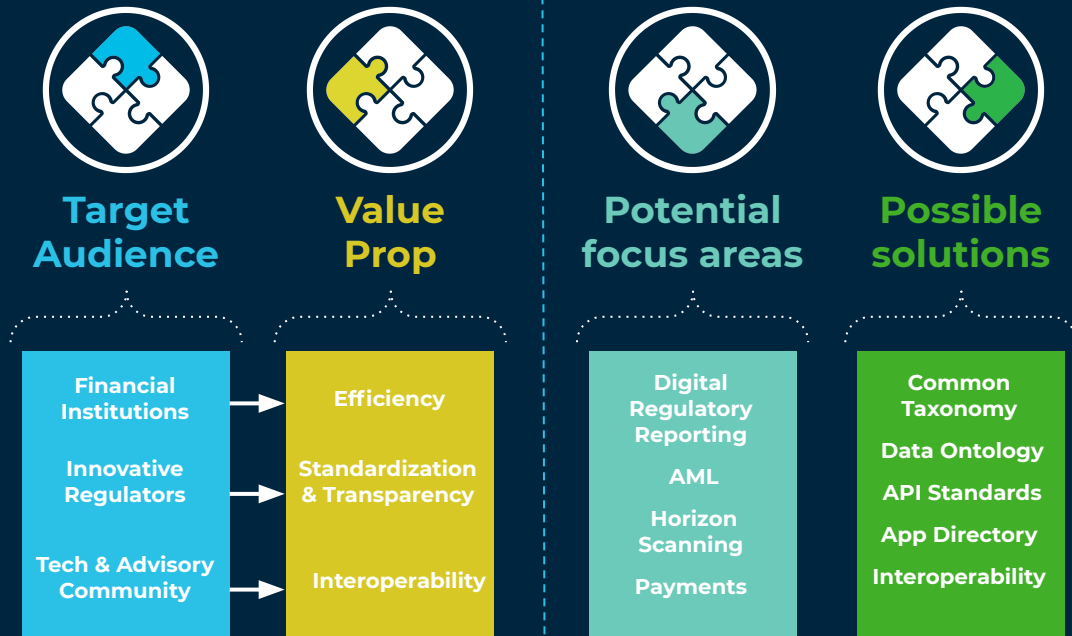
For more information, visit finos.org/open-regtech

Open RegTech: Tentative Timeline



Regulation Innovation SIG

The Regulation Innovation SIG brings together a **community of people interested in creating open source solutions for regulatory and compliance issues**. Creating open source solutions to regulatory compliance is particularly important because the **market is currently using custom-built, one-off solutions, that are expensive, inefficient, and costly to manage and update over time.**



Learn more & get involved at github.com/finos/open-regtech

FINOS Projects with Reg Potential



Waltz, contributed by Deutsche Bank, allows you to visualize and define your organisation's technology landscape. Think of it like a structured Wiki for your architecture.

Open RegTech Use Case

- Standardize data taxonomies and regulatory reporting interfaces
- Produce tools to map legal and regulatory data taxonomies (e.g. compliance with GDPR, SOX, BCBS 239)



Legend is a data modeling language and environment contributed to FINOS by Goldman Sachs. Check out the Legend project site [here](#).

Open RegTech Use Case

- Describe and connect data in business terms to create data models.
- Standardize terms and relationships across organizations to foster consistent data vocabulary.
- Explore data from various data stores



Morphir, developed by Morgan Stanley, is a multi-language system built on a data format that captures an application's domain model and business logic in a technology agnostic manner.

Open RegTech Use Case

- Codify regulations in a declarative model that can be cross-compiled to run in different execution contexts. [US Liquidity Coverage Ratio Regulation](#)

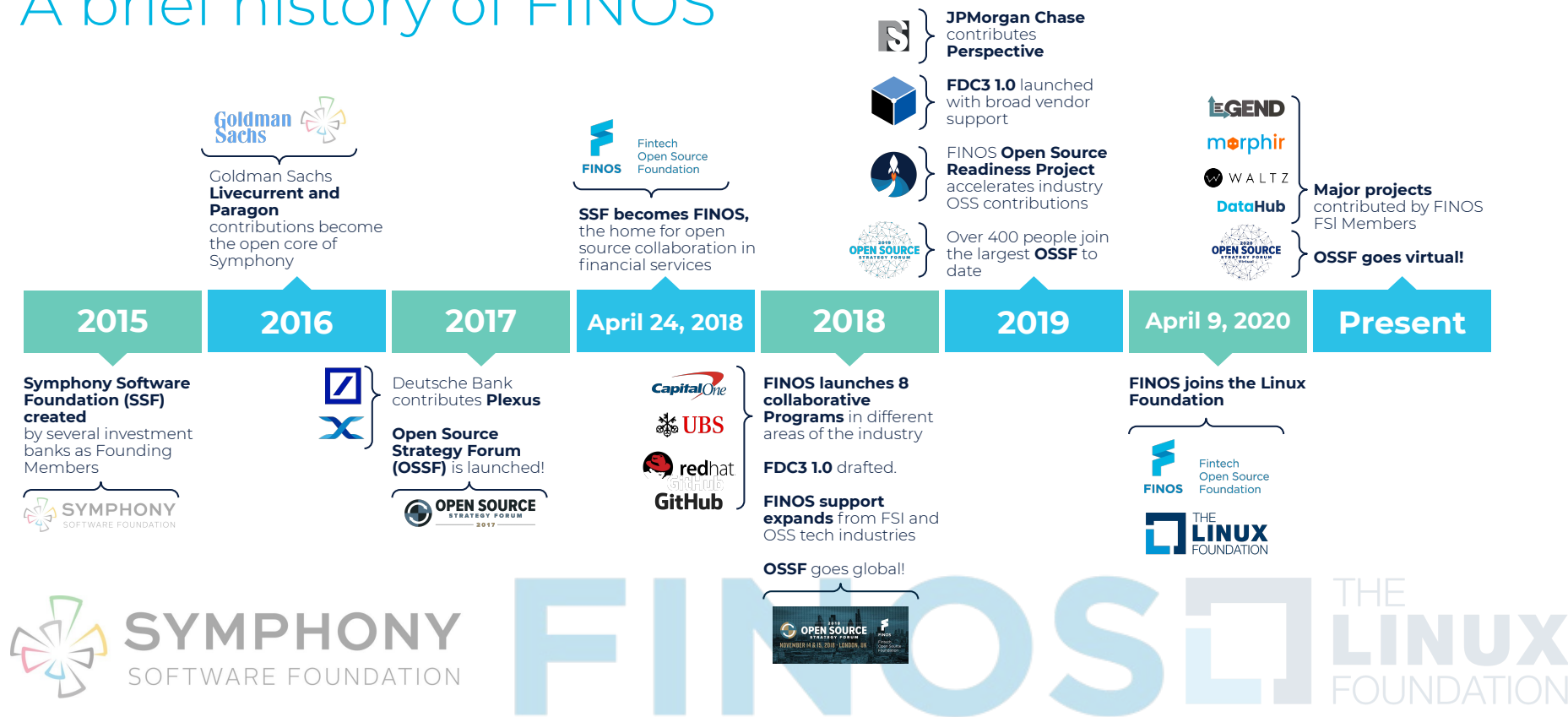
Call to action

- 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



Appendix

A brief history of FINOS



The Five Stages of Community Engagement

EVALUATE

What the Foundation offers the FinServ developer

CONSUME

The [Foundation's open source software and open standards](#)

PARTICIPATE

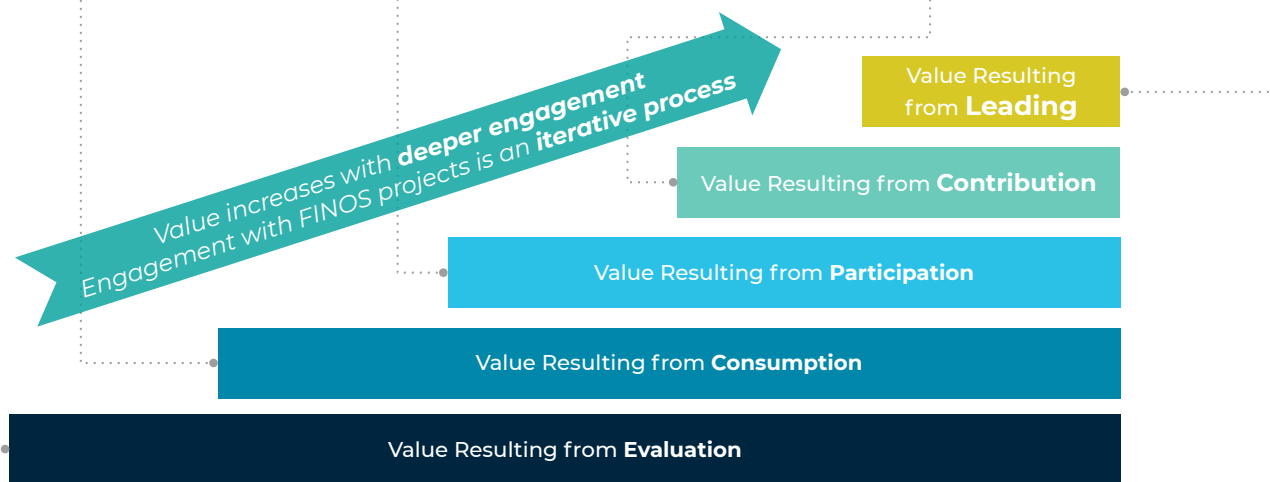
In existing [projects](#), [Special Interest Groups \(SIGs\)](#) or [Events](#) hosted by the Foundation

CONTRIBUTE

A [new project](#) to the Foundation

LEAD

An open source software or open standards [project](#), or a [Special Interest Group \(SIG\)](#)



The Open Fintech Landscape

The FINOS landscape highlights our many projects solving challenges across the financial services industry.

Check back regularly as we continue to map the open fintech landscape.

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Contribute



github.com/finos/finos-landscape



FINOS Software Projects

DATA VISUALIZATION



- **Perspective** is an interactive visualization component for large, real-time datasets, used to build reports, dashboards and more, contributed by JP Morgan.



- **Waltz** allows you to visualize and define your organisation's technology landscape. Think of it like a structured Wiki for your architecture.

DATA MODELING



- **Legend** is a data modeling language and visual modeling environment contributed to FINOS by Goldman Sachs.



- **Morphir** is a multi-language system built on a data format that captures an application's domain model and business logic in a technology agnostic manner

CLOUD



- The **Cloud Service Certification** project, contributed by JPMorgan, is following an open, code-first, collaborative process to mutualize - among FIs and vendors - the cost of cloud control interpretation and implementation.

INTEROPERABILITY



- **FDC3** is an open standard that enables plug-and-play interoperability on the financial desktop.



- **Plexus Interop** aims to define an open standard for desktop application interoperability and provides reference implementation of this standard.

Check out the full list of FINOS projects on the [FINOS Landscape](#)

Contribute to our [Github organization](#)

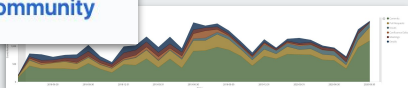
Get in touch with the Community through our [mailing lists](#)

2020 Q3 was our busiest quarter ever!

Our open source project landscape continued to grow...



finos / community



- 4 new projects incubating in Q3
- 2 new SIGs (DevOps and Reg)
- 62% new projects contributed by FSI in 2020
- Steady social and web growth
- Launched FINOS [Community repository](#)
- Web and Github update to reflect new governance and [Associate Membership](#)



Community Spotlight recognizes community contributors (4 editions so far) [in newsletter](#)
Virtual Meetups over 1000+ registered/attended in 2020 (see [archive](#))
FINOS Podcast Steady increase in plays week on week
OSR Guest Speakers & All Community Calls continue to attract new participants

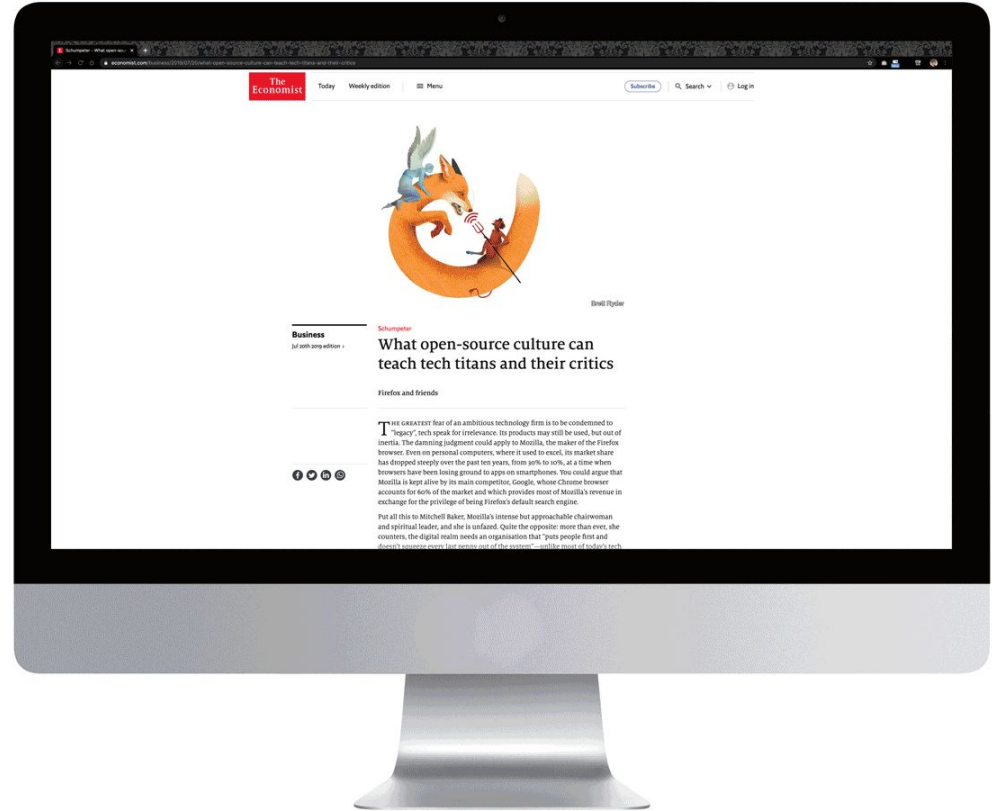


Press Releases promoted new contributions and chair/co-chair; Legend launch (scheduled)
OSSF launched with LF including LF keynote press release, FINOS and LF promotion.
OSS EU - FINOS Mini Summit scheduled leveraging LF events and network
Interviews & presentations for FINOS to speak, including Financial Inclusion & ESG

... and we kept open source in financial services in the news



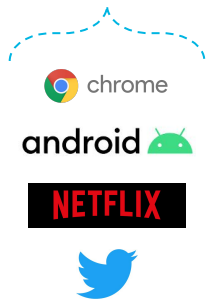
Open Source is becoming mainstream



Who uses Open Source and Open Standards?

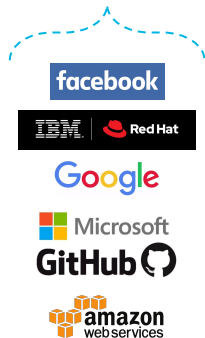
You

Smartphones
Google
Chrome
Twitter
Netflix



Technology

IBM-Red Hat
Microsoft -
GitHub
Facebook
Google
AWS



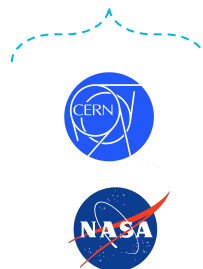
Transportation

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



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

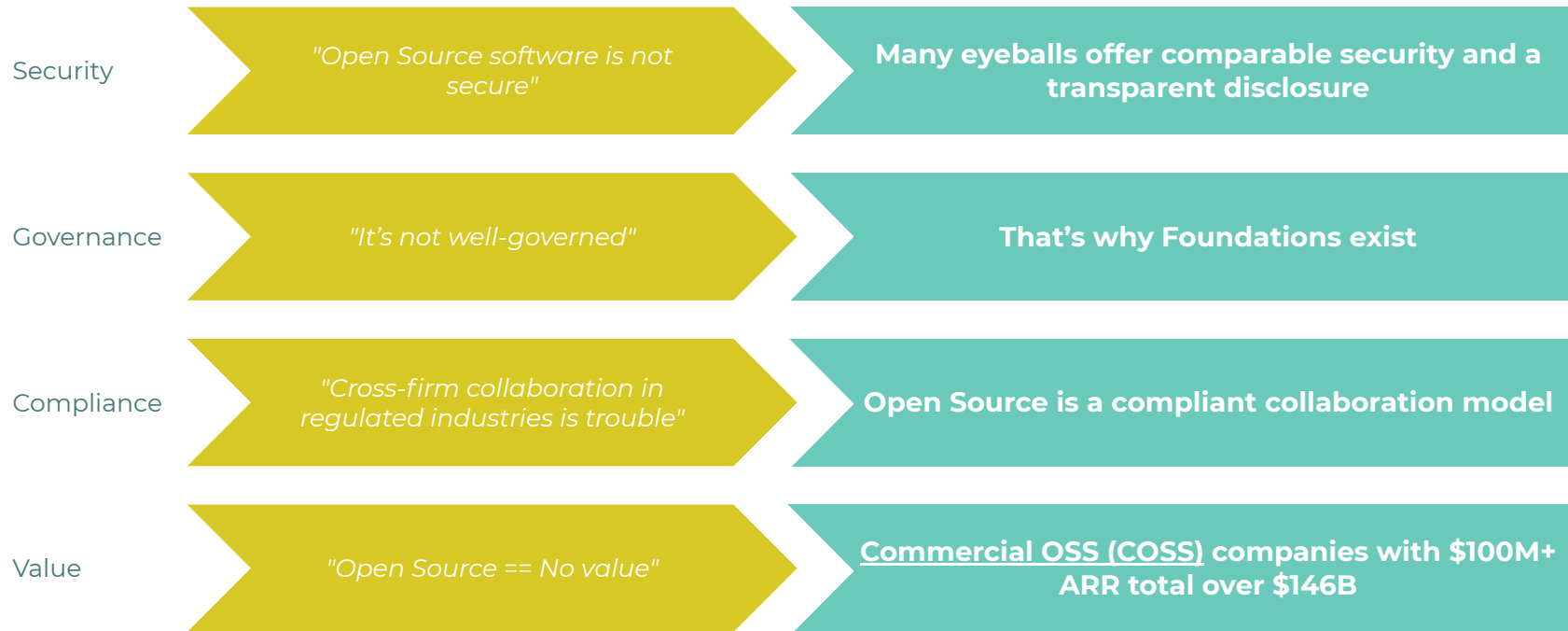
- **Standardization:** common standards used across the industry to meet regulatory requirements

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



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.

Open RegTech in the news

waterstechnology

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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

MARKETS MEDIA

From The Markets > From The Markets | FINOS Launches Open RegTech Initiative

11.13.2020

From The Markets

FINOS Launches Open RegTech Initiative

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Business

FINOS Launches Open Regtech Initiative as It Receives Record High Number of Open Source Contributions

11, 2020, 12:01 AM EST

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News in your inbox

For Finextra's free daily newsletter, breaking news and flashes and watchlist feed

Finos extends open source project to RegTech

13 November 2020



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3
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FINOS

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Questions?

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github.com/finos/open-regtech
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