

SIX DEGREES OF SYMPHONY

The power of open source

with

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One of the most exciting developments in financial technology is open source software. FINOS, Goldman Sachs and Symphony are three key proponents, as Michael Imeson explains.

Open source software has really taken off in financial services, as banks, asset managers, financial market infrastructures and others come to realise its benefits. This type of software – created by individuals, businesses and other organisations, and made available under licence for anyone to view, use, modify and distribute – is accelerating collaboration and innovation in every area of the economy, not just finance.



with Dietmar Fauser

Chief Information Officer
- Symphony

The global co-ordinating body for the adoption of open-source software, standards and best practices in financial services is the FinTech Open Source Foundation (FINOS), the independent non-profit organisation created in 2015. It is based in San Francisco but has a presence in New York, London and other cities. Its more-than-50 member organisations – mainly financial services and technology companies – are working on numerous open-source projects, supported by 1,200-plus contributors



with Gabriele Columbro

Executive Director
- FINOS

Why is open source important for financial services?

Gabriele Columbro, executive director of FINOS, says open source is a way of mutualising technology in non-competitive areas. “Collaborating on software development reduces costs and increases efficiency,” he says. “Most of the disruptive innovations in the last 20 years have come through open source – think about cloud, blockchain and big data.”



with Ffion Acland

Vice President, Global Co-Manager, Data Models and Governance, Engineering
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FINOS was created in 2015 by Symphony, a year after the collaboration platform was launched. In fact, it was known as the Symphony Software Foundation (SSF) until it changed its name to FINOS in 2018. Symphony is still a key member and Dietmar Fauser, Symphony’s chief information officer, sits on FINOS’s Governing Board.



“There are many reasons why open source is good for the financial industry,” says Dietmar. “First and foremost, it helps resolve common problems in areas where firms don’t compete. We see this especially with databases and operating systems, where everyone is using a common layer of the computer stack and they realise it is better to pool their collective resources to solve the same problems rather than go at it alone.

“The aim is to create solutions that can be used by all and are of high quality. Banks and asset management firms don’t usually

compete in areas such as communications standards or the way an asset class is structured, so it makes sense to share best practices. They compete by being faster to the market, having better risk analysis, more talented people and in other areas, but not on things like how a financial instrument is digitised.”



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Buy-side, sell-side, clearing houses and other market participants are constantly exchanging data on research, trading and post-trading services. However, despite advances in communications technology there is still a lot of friction, with high latency levels and too many trade exceptions, because of a lack of standardisation. Open source software is helping to standardise data exchange through common definitions, languages and processes.

Goldman Sachs is a founding member of FINOS and a key proponent of open source. “It helps the financial services industry innovate and change early and often,” says Ffion Acland, Vice President, Global Co-Manager, Data Models and Governance, Engineering at Goldman Sachs. “We’ve helped facilitate collaboration across the industry and drive consensus on industry standards.”



“We are able to involve our clients in big industry initiatives.”

– Ffion Acland, Goldman Sachs

Goals and achievements

“FINOS’s charter is to foster open source collaboration across financial services by providing a neutral arena for it to happen,” says Gabriele. “We are under collective ownership, have a successful governance model through our Governing Body and the FINOS team [executive management], and a strong interest in promoting the adoption of, and contribution towards, open source projects.”

“The goal is for our projects to be the backbone of the next generation of financial services systems. There is a lot of technology that is non-differentiating, where the industry could better spend its efforts collaborating instead of competing in many areas, such as regulatory technology. Our Open RegTech initiative, for instance, has huge potential to deliver value to the entire industry.”

Software creators also benefit from sharing their intellectual property, as Goldman Sachs has found. “For example, we are able to involve our clients in big industry initiatives,” says Ffion, who as well as her role at the bank is co-chair of the Financial Objects Special Interest Group at FINOS. “Open source also helps build the technical ability of our engineers by giving them the opportunity to be involved in the latest software developments.”

The bank’s biggest open source project with FINOS is Legend, its flagship data management and data governance platform. It was released in

October 2020 and recognised by the 2020 American Financial Technology Awards as Best Collaboration Initiative. It addresses the problems of data silos, duplication and complexity by providing efficient and reliable access to accurate, timely and safe data.

“In the 10 months prior to Legend’s release we ran pilots to ensure it was providing the collaborative solution we thought it would,” says Ffion. “We have been developing it for 10 years. At the outset the idea was to build it just for us, but it became evident that there would be a broad industry benefit





if we made it available to everyone else. It went through lots of iterations. First the language behind it, Pure, was developed.

“Then it developed into the user interface you see today – with the user-friendly drag-and-drop style – which we created by connecting the engineers to the business people.”

Symphony has embarked on a new strategy called Prime Cube, the aim of which is to expand its positioning from being a secure communication platform to becoming a key financial market infrastructure that

collaborates with firms to help them streamline their processes and be more efficient. It is called Prime Cube because of the three teams – or “powers” – within Symphony that will make it happen: Product Management, Engineering and Solutions.



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– Dietmar Fauser, Symphony

“Another good example of collaboration is the Financial Desktop Connectivity and Collaboration Platform (FDC3), founded in 2017 by OpenFin and contributed to FINOS, which has created open standards for the financial desktop,” explains Dietmar. “FDC3 allows different applications on the same desktop to be interoperable. It ‘glues’ the apps together, making it easier for traders to pass information around. We use these interoperability standards to connect applications of all kinds, whether on the same desktop or not, over the Symphony platform.”



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– Dietmar Fauser, Symphony

Maintaining control over open source projects

An open source project will typically have five participants: creators of the software; owners of the software (who may be the same people as the authors); maintainers, who control and further develop the software; contributors, who add to the software project by reviewing and changing it; and users, who can also provide feedback on its various features and faults.

“A contributor can acquire open-source software for free, change it in whatever way they want, and use it for their own purpose, but the maintainer still has control over its overall evolution,” says Dietmar. The changes made by the contributor are not necessarily accepted by FINOS for wider use.

“The maintainer ensures that it remains general purpose software that can be used by everyone. If a contributor added a feature that was specific only to its internal applications, FINOS would not accept it as a contribution to the public software repository”.

Obviously, there are many reasons why developers will not want to make their software available to all and sundry. “Companies develop many applications which they see as valuable assets and do not want to make them freely available for the common good,” says Dietmar. “If an application gives the creator a significant operational advantage, generates revenues, includes trade secrets, it will not go into open source.

“In our case, the fundamental mechanism we use to ensure that data flowing through our platform is highly encrypted, so we don’t put it into open source.”

Problem solving

Open source is not without its challenges. “The main difficulty is to get people fully immersed in contributing to open source” says Goldman Sachs’ Ffion Acland. “That’s how you get the benefits. As you start to contribute you reap the benefits and encourage other people to contribute.” Another challenge, she says, is to encourage people to actually use open source software. “We can create it, but until it’s used there is no benefit.”



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Gabriele adds that it can be hard to convince firms to make their intellectual property freely available. “They might be worried about potential legal problems, so we work hard with firms’ legal departments to deal with these issues,” he says.



“Another challenge is to improve the strategic understanding of open source at the executive level, so we published a white paper on its business value. The c-level people on our board are powerful advocates in these conversations, but there is still a long way to go.”

The work of FINOS is never complete



FINOS may have more than 50 members, including bulge bracket banks like Goldman Sachs, Citigroup and Nomura, and technology firms like Symphony and Tradeweb, but Gabriele is looking to add to that impressive list. “We want to grow our membership because it accelerates our projects, evolution and trajectory,” he says. “But you don’t need to be a member to contribute to the foundation.

Its annual conference, the Open Source Strategy Forum (OSSF), is the main networking event for both members and non-members. It became virtual in 2020

because of the pandemic, but returned to a physical conference in London on 5 October and New York on 10 November.

“A lot of our events will be virtual but we’ll always hold physical ones because we see magic things happen when people meet which would take months to happen online,” he says. New York and London are the main locations for in-person events, but there is a possibility that the 2022 OSSF will be in an Asian city.



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FINOS used to operate as an independent entity until July 2020 when it joined the Linux Foundation, the non-profit consortium created to encourage the growth of Linux, the family of open source operating systems. “We are the financial services vertical within the foundation, benefiting from a set of shared services and experience in areas such as legal, events, training and certification,” says Gabriele.

New software is constantly being developed, much of it open source. For as long as that continues to be the case, FINOS will have a major role to play in financial technology. Some open source software will eventually reach the end of its useful life, of course. “One of the roles of the Governing Board is to monitor software and check if there is enough activity,” says Dietmar. “If people are no longer contributing to it in a meaningful way, then it is our duty to defocus and to stop the support of the community. The software is of course still available and can be changed, but not anymore with the support and coordination from FINOS.”

But with the growing evolution and importance of technology in financial services, there are more than enough open source applications being created to keep the FINOS community busy.

Six Degrees of Symphony

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