



Digital Transformation Continues Disrupting Banking & Financial Services

Fintech companies are realizing technology is at the heart of their businesses. Open Source is the preferred, modern day, best-of-breed development platform and they need to integrate the same success formulas as large tech enterprises to remain competitive.

Open Source adoption has increased over the last decade and Linux, in particular, has become the engine of innovation across the technology industry. From search engines to eCommerce, from smartphones to connected cars, Linux and Open Source is pervasive.

Traditionally, financial institutions — especially big banks — have protected their technologies — deeming them as Intellectual Property (IP) — and have had in-house development teams build custom software from scratch. But increasing regulatory pressures, demanding customer expectations, evolving technologies and an agile economy are causing banks and financial firms to look for new ways to compete in an aggressive, global, 24/7/365 marketplace.

In addition, financial service organizations have historically looked for ways to derive new insights from their data to improve decision making. What has changed, however, is they are now looking for effective and innovative ways to use data to distinguish themselves from ambitious competitors. They are looking at the best — and most efficient — ways to leverage business data to drive efficiency, grow revenues and improve margins which has led them to adopt Open Source innovation.

Today, Open Source solutions are infiltrating the FinTech industry from — cloud computing and data storage to mandated regulations that require transparency, as well as the implementation of standardized Application Programming Interfaces (APIs) to power basic banking services. Today, Open Source runs ATMs, mobile banking apps, bitcoin, blockchain and an array of additional digital services. Open Source technology solutions have become the norm — the de facto industry standard — and as such, banks and financial companies are no longer defined by their software, but by their execution and differentiation in customer service. As a result, Fintech businesses — of all shapes and sizes worldwide — are turning to Open Source and now accepting it as one of the best ways to level the competitive playing field, while simultaneously allowing them to get products to market faster and lower their overhead expenses.

▶ **A New Generation of Enterprises are Increasing their Engagement & Embracing Open Source**

Many forward-thinking banks and financial firms are incorporating Open Source strategies. Some are starting to prefer Open Source Software (OSS) over proprietary software. Others are contributing to existing Open Source projects. Still others, are beginning to Open Source their own technologies.

The FinTech industry's growing acceptance of Open Source technologies has a lot to do with reducing the management of hundreds of different, disparate systems running throughout their companies. Financial organizations of all types are known for operating thousands of systems, many of which are still running on legacy infrastructure. Banks used to habitually hire tens of thousands of offshore staff to manage each solution. The zero-cost Point of Entry Open Source provides — combined with an open, documented code base — is one compelling argument for OSS adoption. Furthermore, Open Source offers FinTech companies the ability to easily and quickly scale their technology solutions.

- ◆ **Capital One** — Defined Open Source as a core element in their digital transformation journey and began implementing it over the past few years
- ◆ **Dion Global** — Built an Open Source search technology solution which has received several awards
- ◆ **Deutsche Bank** — Began open sourcing several projects, including Plexus Interop (an electronic trading platform) and Waltz (an Information Technology estate management tool)

- ◆ **Erste Group Bank in Austria** — Innovated Open Source technologies to provide transparent data access to consumers
- ◆ **Goldman Sachs** — Decided to Open Source its proprietary data modeling program, Alloy
- ◆ **J.P. Morgan Chase** — Released code on GitHub for multiple Open Source initiatives, including its Quorum blockchain project
- ◆ **Swiss Life France** — Realized it needed a way to query customer records, at scale and speed, in real-time and implemented Open Source solutions

Open Source is Driving a New Wave of Global Banks & Financial Service Firms to Join Open Invention Network

As previously illustrated, the FinTech industry is evolving. It has become more tech-centric and more participative in leveraging Open Source applications to address a wide range of banking and financial services survival needs and growing challenges.

In addition, patent trolls, or Patent Assertion Entity (PAE) activity continues to trend upward in the banking and financial services industry. It makes solid business sense to get in front of these potential exposures by joining Open Invention Network (OIN) and benefiting from our defensive community. In other words, lower patent assertions and lawsuits is only one reason to join. There are many more free membership benefits.

Here are some of our banks and FinTech community members and why they joined OIN.

- ◆ **Ant Financial Services Group (formerly Alipay)** — Dedicated to using technology to bring the world equal opportunities, Ant Financials' services include blockchain, Artificial Intelligence (AI), security, Internet of Things (IoT) and computing. It joined OIN as an advocate of Open Source as it brings more secure, transparent, cost-effective and inclusive financial services to 870 million users worldwide.
- ◆ **Barclays** — This was the 1st major bank headquartered in Europe to join OIN because it has faced rising threats of litigation from patent trolls with the express purpose of monetizing from financial services companies and it is incorporating new Open Source solutions. Barclays joined OIN to reduce their patent risks, as well as gain access to additional support and patent protection as part of their free community membership.
- ◆ **China UnionPay** — Committed to innovation and an open platform that provides integrated payment services with global influence, China UnionPay turned to OIN to help protect its global business and Open Source projects, especially under the frame of legal and regulatory compliance.
- ◆ **Clovyr** — Co-founders of this start up envision an ecosystem of applications and services — almost all Open Source — that empowers teams to experiment and iterate more quickly, bring products to market that will run in a cloud, or in an on-premises environment, and enable new features as customer needs change, driving down costs. Clovyr joined OIN because it is working to bridge 2 worlds — cryptographically-sealed databases and virtual money together.
- ◆ **Ethereum Foundation (Stiftung Ethereum)** — Ethereum is a decentralized, Open Source blockchain featuring smart contract functionality. Ether (ETH) is the native cryptocurrency of the platform. It is currently the 2nd-largest cryptocurrency by market capitalization, after Bitcoin. Ethereum is the most

most actively used blockchain. Ethereum joined OIN as an Open Source advocate and to support patent non-aggression.

- ◆ **The Fintech Open Source Foundation (FINOS)** — As an independent membership organization, FINOS believes that global financial establishments which embrace Open Source Software (OSS), together with common standards, these firms will be positioned to capture growth opportunities presented by the current technological landscape.
- ◆ **Sumitomo Mitsui Financial Group, Inc. (SMFG)** — One of the largest financial institutions headquartered in Japan, SMFG is focused on digital innovation and harnesses Open Source technology to meet its clients' needs. By joining OIN, SMFG is demonstrating its commitment to patent non-aggression in OSS, a key component in its banking platforms and applications.
- ◆ **TD Bank Group** — The Toronto-Dominion Bank and its subsidiaries — has grown from a single-branch bank serving grain millers and merchants to the 6th largest bank in North America by branches. The 8th largest bank in the United States based on assets, TD Bank has transformed from a finance company into a tech company and managed the cultural shift that occurs with such a transition. Their guiding philosophy to provide "Legendary Customer Service," has led TD Bank to rely on Open Source. They joined OIN to help protect them from increasing patent litigation threats.
- ◆ **Tencent Holdings Limited** — China has retained its position as the world leader in patent applications for years with Chinese companies and individuals submitting 40% of all patent applications in 2019. The business joined OIN to reveal itself as an Open Source advocate and pioneer of innovative, digital-based technology solutions including Weixin / WeChat and QQ. Tencent also contributes to Open Source projects.

WHAT OUR MEMBERS SAY

"OIN has taken a leadership role and worked tirelessly to improve Intellectual Property (IP) protection for Linux system and Open Source Software (OSS). We look forward to continued partnership with OIN and the international Open Source community to foster innovation and reduce IP risks."

– Ant Financial

"Patent Assertion Entity (PAE) activity continues to trend upward in the banking industry. We fully support efforts to limit the very means by which PAEs fuel their claims and extract a tax from operating companies. OIN has done an amazing job of creating an effective PAE freedom to operate zone around the Linux environment. We're delighted to support OIN and its initiative."

– TD Bank

"Innovation is at the heart of Barclays. By fostering a culture of innovation across the financial services ecosystem, we can help protect our future and better serve our clients."

– Barclays

"Under the frame of legal and regulatory compliance, we are pleased to provide service and conduct active cooperation. We look forward to working with OIN and community members to protect our global business and Open Source projects that encourage innovation."

– China UnionPay

► 13 Ways Open Source Benefits FinTech

1. **Offers the Same, or Better Security** — The Open Source community has many more eyes to spot, improve and fix security features
2. **Protects Legal Risks** — Organizations such as Open Invention Network (OIN) — which is free to join — and LOT exist to help companies with patent risks that arise from the activities of Patent Assertion Entities (PAEs), also known as patent trolls
3. **Lowers Costs** — Open Source Software (OSS) development allows banks and financial service businesses to avoid exorbitant annual software license expenses
4. **Streamlines Operations** — Open Source removes the need to manage different, disparate systems run by multiple company divisions and offshore developers
5. **Improves Time-To-Market** — Instead of siloed development teams creating software from nothing, Open Source provides worldwide developers opportunities to build on pre-existing software
6. **Minimizes Commitment** — Open Source helps reduce the risk of vendor lock-in
7. **Reduces Learning Curves** — With access to global talent, junior developers can quickly get up to speed
8. **Public Advocacy** — Open Source is accepted as the new business model for development to innovate, today and tomorrow
9. **Improves Talent Acquisition** — Developers want to work — and seek out — companies relying on Open Source
10. **Promotes Collaboration** — Open Source removes geographic and cultural barriers
11. **Boosts Quality** — Contributors across industries will participate in testing
12. **Expands Transparency** — Participating in Open Source fosters an open ecosystem
13. **Embraces Agile** — Open Source generates flatter organizational structures, creating the ability for rapid changes and easy scalability of solutions

47% of FinTech firms report regular contributions of code upstream and 43% say their organizations have an Open Source program

(Source: The New Stack's 3rd Annual "Open Source Programs in the Enterprise" survey of over 1,000 technologists in June 2020 in partnership with The Linux Foundation's TODO Group)