



FNALITY GLOBAL PAYMENTS

THE FNALITY
NARRATIVE

THE FNALITY TEAM

JULY 2020

UPDATED APRIL 2021



FINANCIAL MARKETS ARE CHALLENGED

Financial Markets face unprecedented challenges; fragmented and inefficient trade processes, complex and costly risk management, stringent regulatory requirements, liquidity constraints and rapidly reducing margins. Something has to change and financial market infrastructure (FMI) will play a pivotal role.

The evolution of FMI across all parts of the trade and payments lifecycle has been an organic process spanning some 30 years. Its development has been driven both by a need for enhanced automation in trading, clearing and settlement, and since the 2008-09 financial crisis, a regulatory imperative to manage financial stability risk. This has put FMIs at the very centre of the financial services landscape.

However, the growth of FMIs has been a fragmented and uncoordinated one with the emergence of multiple silos both along jurisdictional and product lifecycle lines. This has been compounded by an inconsistent speed of development with settlement largely lagging behind trading in its ability to manage volumes.

The exponential growth of electronic trading for cost and regulatory reasons, such as MIFID I & II across multiple venues has created downstream bottlenecks for post trade activities.

Settlement, payments, and asset servicing processes remain costly, inefficient and high risk. In addition, regional regulation has limited which financial entities can access direct membership of an FMI. These limitations coupled with a lack of interoperability between silos along both product and jurisdictional lines have resulted in an inefficient fragmentation of

liquidity. There is a need for financial entities to hold different pots of liquidity in each market to support their settlement requirements.

This has in turn forced an increased reliance on commercial banks. Banks now take on the role of so-called intermediaries as correspondent and agent banks, to fill the gaps in international funds transfers and securities transactions. At the same time, many banks are pulling away from offering such services due to the high operational credit and regulatory risk not justifying the return. Correspondent Banks have declined by around 20% since 2011.

The response of regulators and central banks to this fragmented and multi-layered landscape has been to insist on forensic reporting, to demand increased prudential and financial market obligations for all parties, and more recently to apply a greater focus on operational resilience throughout the chain.

There has been and continues to be a recognition across the financial services, regulatory and policy making community that the existing model is not sustainable. An efficient, effective competitive financial services industry is critical in supporting the growth of the global economy and its resilience to shocks. A challenge that will only become more important in light of the COVID-19 related downturn.

Innovative technology in the FMI space has a key role to play in this. One such innovation is the introduction of Distributed Ledger Technology (DLT) to create a new type of FMI; a distributed Financial Market Infrastructure (dFMI). Quite literally, a Financial Market Infrastructure based on DLT. This innovation can address many of the issues of operational resilience, transparent risk management and inefficient processes.

Through the adoption of a dFMI infrastructure, assets, both cash and securities can be moved on to a permissioned blockchain, removing third parties, reducing costs, and widening access to markets. A true peer-to-peer marketplace is created.

In many ways, this is a back to the future approach – in the past, peer-to-peer was the way to do business. For example, during the fifteenth century, the Italian banking family Medici opened banks at foreign locations to exchange currencies on behalf of textile merchants. They created the *nostro* (“ours” in Italian) account which contained 2-columned entries showing amounts of foreign and local currencies.

Interestingly, consensus around settlement was originally solved through transparency on the network. The Medici *banchi* in *mercato* or *banchi aperti* (transfer and deposit banks) conducted their business in public squares visible on a table.



Legally, transfer between accounts could only occur when the customers were able to observe the ledger entry. This, however, did not scale and as information became ever concentrated, intermediaries with the necessary centralised technology architecture were needed.

Whilst intermediaries solved the problems of space and time, they also introduced new risks and problems. Transactions were slower and more expensive, and trust became centralised creating single points of failure.

However, the introduction of dFMI with its decentralised architecture brings all the benefits of a peer-to-peer market along with an ability to scale and manage data, with none of the downsides of a centralised intermediary approach.

This becomes even more powerful through the creation of on chain cash which has the characteristics and capabilities of fiat currency; a 'cash asset of the highest order'. This is achieved by "backing" the asset 1-to-1 to central bank fiat currency.

Assets of this nature will enable automated atomic settlement of a transaction; be it payment vs payment or versus a tokenised security. This opens the bottleneck allowing for high speed traffic along the whole value chain, from trade to settlement.

Moreover, by creating interoperability links between DLTs, dFMIs can create cross border and cross product transaction channels that do not currently exist.

The distributed nature of dFMI – nodes are maintained by participants, validation by consensus – adds the benefit of no single point of failure as found in traditional FMI models. Thus, the ability to manage operational and systemic risk is enhanced. This meets the ever-increasing focus of the market on operational resilience and financial stability objectives.

Demonstrating to central banks and regulators both the benefits and resilience of these 'new generation' solutions, is fundamental to achieving the necessary approvals and any required changes to existing policy or legislation to support implementation, thus allowing dFMI to be utilised to maximum effect. Now lies the opportunity to implement tomorrow's market infrastructure to support today's financial services landscape.



SO WHY FNALITY?

Fnality Global Payments (FnGP) is a collection of next generation payment systems enabling on chain wholesale exchange of value; a true example of dFMI. It is a market initiative backed by key market players following several years of research. It has developed broad capabilities in law, new technology, innovative business models and economics. It is not just another blockchain platform.

Fnality International started its life as a pure research project to better understand how DLT could change financial markets. In time, the project grew to include a consortium of financial institutions who wished to explore how Blockchain and Distributed Ledger Technology (DLT) could use tokenised cash assets to settle securities trades.

In so doing it sought to alleviate many of the FMI challenges. The initiative became known as the Utility Settlement Coin (USC) Project, with a core objective; the creation of a peer-to-peer digital cash asset to settle tokenised transactions with finality.

The payment solution needed to be:

- Available in multiple currencies to allow for greater efficiencies in managing fragmented liquidity.
- Capable of inter-operating across multiple business platforms, whether to support PvP or DvP settlement of financial transactions.
- A digital representation of money held in a central bank account to ensure banks could rely upon its value as they would fiat currency.

Having established that these aims were both theoretically and technically possible, the consortium members took a step toward building the system, to enable 'on-chain' payment, by investing in the creation of Fnality International (Fnality).

Fnality now boasts 15 major institutions as shareholders: Banco Santander, BNY Mellon, Barclays, CIBC, Commerzbank, Credit Suisse, ING, KBC Group, Lloyds Banking Group, Mizuho Financial Group, MUFG Bank, Nasdaq, Sumitomo Mitsui Banking Corporation, State Street Corporation, and UBS.

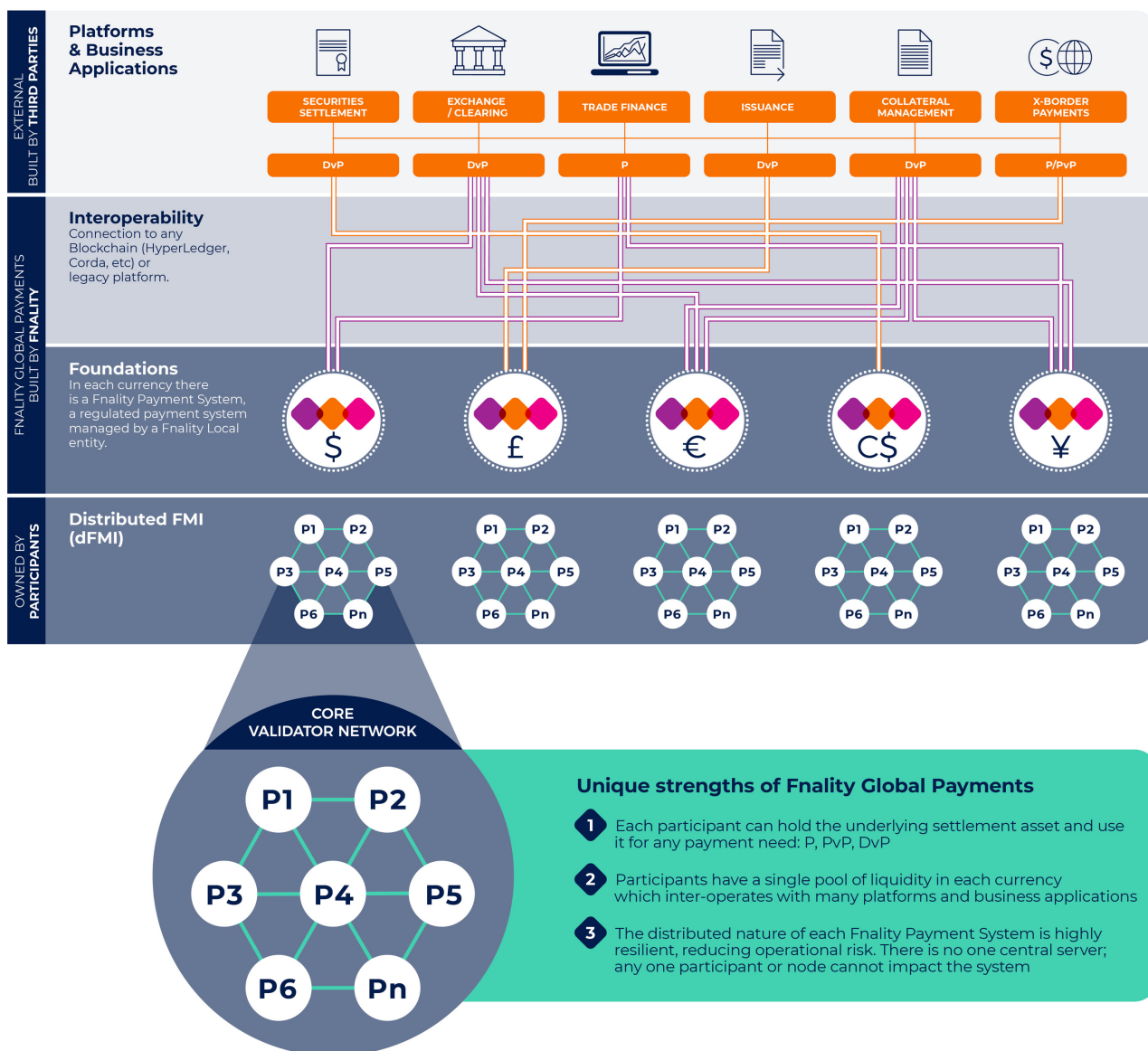
The solution - Fnality Global Payments (FnGP) - will comprise a series of payment systems in each participating jurisdiction or currency area, each overseen by its home central bank.

Each system is termed a Fnality Payment System (FnPS). In FnPS, participants use pre-funded settlement balances to make wholesale payments in real time. The pre-funded settlement balances are “backed”, 1 to 1, by central bank money in the relevant currency, hence giving it credit risk characteristics similar to central bank money. Fnality will start with five currencies: CAD, EUR, GBP, JPY & USD with the aim to continue adding more currencies as it progresses. Through interoperability, FnPS will facilitate Payment vs. Payment (PvP) settlement of foreign exchange transactions, and Delivery vs. Payment (DvP) settlement of other financial transactions (e.g. transfer of securities and/or so called asset tokens) across global markets.

Within dFMI, FnGP has three core components; foundations, interoperability protocol, and business platforms. The foundations are the currencies. An interoperability protocol enables those foundations to connect to many different business platforms. Fnality will build the foundations and the interoperability protocol. Others will build the business platforms.

The 3 components of FnGP within dFMI are underpinned by DLT. The nature of DLT is such that it enables the FnGP to:

- Operate a true peer-to-peer market.
- Allow for immediate settlement.
- Interoperate across business platforms and jurisdictions.



The benefits of the above are:

- Reduced counter-party and credit risk
- Reduced operational risk
- Efficient liquidity management
- An ability to move resources from risk mitigation to business growth

A fifth additional benefit is the reduction in systemic risk; a key focus for central banks globally. Finality has been architected along the lines of the specific PFMI requirements; operational resilience and capability, the functionality and transparency for financial institutions to manage their risk – all pointing towards enhanced financial stability and market efficiency.



FNALITY WAYS OF WORKING

As a company, Fnality is very much at the intersection of Finance (Fin) and Technology (Tech).

It has its genesis firmly in the wholesale banking side of “Fin”; the founding shareholders are all major financial institutions with a shared objective to develop a payment infrastructure solution for today’s and tomorrow’s financial markets. Collaborative execution both within Fnality and externally with Fnality partners is core to achieving this outcome in a rapidly evolving market.

On the “Tech” side, Fnality is a systems integrator (SI). The underlying software is based on the Ethereum Protocol. Fnality is working jointly with best-in-class partners to deliver key components of the tech stack in an open source environment; Blockchain protocols, software development and testing, SWIFT Bureau capabilities, and technical assurance.

To support delivery, Fnality has embraced a fully Agile outcomes-driven model ensuring the organisation can execute in a nimble and adaptable way through rapid iteration. All activities are carried out and decisions taken in a decentralised manner but anchored to a clear vision. Teams are multi-skilled, cross-functional and diverse in every sense of the word. Fnality remains at its heart; a lean and efficient organisation perfectly aligned to the distributed, effective and low-cost solution that it is delivering to the market.

Collaborative execution is and will remain at the core of everything Fnality does.



FNALITY'S FOCUS

As of April 2021 Fnality has 3 main areas of focus:

- **CENTRAL BANK ACCOUNTS**

FnGP requires a central bank account for each currency to enable payment-on-chain, within and between markets. It is this central bank account which participants of each Fnality Payment System will fund and de-fund to use the payments capability of FnPS.

Fnality continues to progress account opening applications at the central banks of the 5 initial currencies. Advancement has been gradual but positive. Fnality is working closely with these institutions to navigate new policies and processes as yet unexplored.

Fnality anticipates a successful account opening with the first central bank in early to mid 2022.

- **FNALITY EXECUTION**

The first product release, Hello World, enabling participant access, has been made available.

Participants are now actively testing the technology and their ability to take software. This crucial first phase has been delivered on time and is a critical step towards the full roll out of the system. The next phase will be to commence testing of payments across the distributed architecture between bank participants.

- **USE CASES**

Fnality is focussing on 5 currency agnostic use cases. The first two enable single currency payments within a single jurisdiction Fnality payment system. These will act as building blocks to demonstrate the capability of the system to make wholesale payments on a 24/7/365-day basis. One covers inter-bank payments, the other inter-company payments.

Across the five initial targeted jurisdictions, there are approximately 196 million domestic wholesale payments carried out between market participants every year. Fnality is working with its participant banks in identifying all their inter-bank payments and understanding the liquidity and cost benefits that real time, 24/7 processing can bring to them.

Testing of identified flows will commence in due course, to allow a controlled ramp up of live transactions as soon as central bank approval is received. Assuming central bank approval to schedule, Fnality anticipates supporting a market share of approximately 35% across the five markets by end 2024. The inter-company scenario exists where a financial institution has many subsidiaries and branches within its overall entity structure and is required to fund required currencies for each, carefully managing overdrafts and compliance with prudential regulation such as the Large Exposures Regime. Each entity will often use external correspondent banks to manage its requirements and therefore create unnecessary costs and counter-party risks. By accessing FnPS, a financial institution's cash management team can move funds real time bi-laterally to the entities that need it.

Several of the Fnality shareholder banks are currently analysing inter-company flows with the intention to commence testing shortly. The third, PvP settlement, will enable the settlement of foreign currency tractions among participants of interoperating pairs of FnPSs. Fnality sees this as a crucial use case demonstrating the benefits of peer-to-peer real-time cross border payments, eliminating settlement and counter-party risks as well as significantly reducing costs by eliminating intermediaries. There are approximately 190 million wholesale FX transactions across the five target currency pairs on an annual basis. Assuming imminent central banks' approval, Fnality anticipates achieving a market share of approximately 20% by end 2024.

The fourth, DvP settlement, will prove atomic settlement between blockchains which will be vital for supporting tokenised markets in the future. Although there is still a lack of clarity on how and when tokenised markets will become mainstream, it is generally agreed within financial services that it is a matter of when not if. A World Economic Forum survey in 2015 suggested that 10% of global GDP could be tokenised by 2027, with a tipping point having occurred by 2025. By providing the payment leg of a tokenised security settlement transaction, Fnality will be well placed to support this anticipated growth in a new but important market through its early engagement and testing with business platforms offering tokenised asset capabilities.

The last use case explores the possibility of using the Fnality digital cash asset as margin for cleared and uncleared derivatives, an ongoing area of focus for banks and regulators alike. Assuming a Level 1 HQLA classification, the Fnality cash asset can be a crucial part of the financial services collateral pool of the future. It can be settled real time, cross border and form part of a derivatives smart contract.



FNALITY'S FUTURE

As Fnality continues to mature over the coming years, its natural growth plan will entail;

- Significantly increasing volume and values of transactions year on year
- adding currencies beyond the initial five to expand the PvP and DvP landscape,
- Attracting participants from different parts of the financial services ecosystem such as buy side and corporates
- Developing a network of business partners to support cross DLT transactions and offering enhanced services in such areas of liquidity management, KYC and reporting

On a broader industry basis, we see tokenised and digital markets growing even faster than envisaged, and Fnality being a core product in supporting this growth.

Post COVID-19 recovery will see corporates across the spectrum looking to raise funds through share issuance on both listed and private markets. Issuing, trading and settling digital assets will be a key means of raising cash in a quick and cost-effective manner.

The ability to handle on chain payment legs versus digital asset transfer is why Fnality was created.

COVID-19 crisis post-mortems are already highlighting previously unforeseen stresses within financial markets, which will need addressing. Sell offs in government bonds in return for cash were the order of the day – a 'dash for cash'. Understanding how to address such liquidity stresses will be key. One thing is certain, fiat currency, the highest form of HQLA remains at the centre of the system.

Finality with its 1-to-1 backing to fiat currency will provide a further liquidity tool in the future for the wholesale market.

The ever-increasing drive for efficiency, transparency and cost reduction is seeing tokenisation emerging as a key theme in derivatives markets, property, art, commodities, green finance etc. Regardless of the underlying asset, where there is a token transaction, an on-chain payment will be required. Finality is well placed to provide this payment leg.

With increasing levels of trade barriers in recent years, trade finance continues to invest in DLT as a possible way to manage the delivery of goods versus payment in the most efficient and transparent way possible. Finality cash asset could be used for the payment leg in such transactions.

There is a growing recognition across the central bank community of the benefits that distributed digital currency could bring to financial markets. Many central banks believe the right way to develop such currency solutions is via public-private partnerships.

At Finality, we continue to actively engage with central banks working together on solutions for wholesale markets.

Finality is set to grow exponentially over the coming years. The initial focus of the organisation lies within the tokenised asset market. The future however lays open the opportunity for infrastructure growth into any peer-to-peer market, regardless of industry.

Furthermore, the interoperability capability of Finality will enable integration with applications that service institutions further up and down the value chain thereby benefitting larger organisations seeking cost reducing and more efficient processes as well as enabling smaller, nimble innovative market players.

Having successfully executed on its initial foundational deliverables following Series A funding, Finality will embark on a second funding round to continue its strong growth trajectory in due course.





WOULD YOU LIKE TO KNOW
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