LUCY FREW'S FINTECH COLUMN: APRIL 2017

Lucy Frew is a Partner in Walkers' Regulatory practice. Lucy shares her views on topical FinTech issues with our subscribers.

In this edition of her column, Lucy considers FinTech in the investment management sector and comments, among other things on the regulatory implications associated with the emergence of solutions that use artificial intelligence and distributed ledger technology (DLT).

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This column looks at FinTech in the investment management sector. To date, much of the regulatory interest has been on FinTech at the retail end of the investment sector, where automated digital investment firms, often referred to as robo-advisors, have rapidly gained traction in the lower end of the market. Examples such as Wealthfront and Betterment in the US and Nutmeg in the UK are commonly cited examples. There has been less regulatory focus, however, on FinTech in the non-retail segment of the investment sector, which includes institutional, family office, sovereign and ultra high net worth investors.

The impact of FinTech on investment management falls into three areas: *investor relations*, *investment strategy* and *investment process and infrastructure*, which I consider below along with some thoughts on the *regulatory issues* that arise from the use of new technologies.

INVESTOR RELATIONS

FinTech has already had a transformational impact on the way in which investment products are sold to retail investors. Automated investment managers enable investors to complete a simple profile and risk tolerance questionnaire online and receive a portfolio intended to meet their needs within moments. They often provide basic elements of advice and education together with very simple language and user interfaces and mobile accessibility.

Beyond the retail segment, however, FinTech has had less impact on investor relations. Institutional, family office, sovereign and ultra high net worth investors pick managers and strategies following intensive due diligence and detailed legal documentation. This process takes time and involves a strong human component. There is increasing interest in the potential use of distributed ledger technology (DLT) to digitise the issue, the holding and the transfer of interests in investment funds, with investors potentially being issued with tokens and receiving investor communications using mobile or digital channels. It will be interesting to see how this develops and how regulators approach these innovations.

INVESTMENT STRATEGY

In the retail segment, algorithms are central to automated investment firms' investment process. However, the underlying strategies are relatively basic, with automated investment firms typically offering portfolios comprised of managed exchange traded funds (ETFs) and direct indexing investment that provide asset diversification with low pricing.

In the non-retail segment, FinTech is being applied across a range of strategies. Venture capital and private equity funds have invested hundreds of millions of dollars into FinTech targets, foreseeing profit from a predicted steep growth curve of millennial assets. Hedge funds are innovative by nature and have often been early adopters of technology. Algorithmic and high-frequency trading (HFT) strategies have existed for some time and have attracted a relatively high degree of regulatory focus, notably in the form of the incoming MiFID II Directive (*2014/65/EU)* and the Markets in Financial Instruments Regulation (*Regulation 600/2014*) (MiFIR) (see *Practice note, Hot topics: UK implementation of MiFID II: Algorithmic and high frequency trading*). Sophisticated data science techniques can already analyse billions of historical records and detect patterns and trends more quickly and efficiently than humans. Algorithms can be used to replicate trading strategies at low cost.

Perhaps the biggest potential game-changer is artificial intelligence, which is beginning to be considered by investment managers as part of their investment strategies. Artificial intelligence (alongside the use of big data analytics) is significantly different to strategies involving automated investment transactions, which can be conducted without human knowledge but do not involve genuine autonomy.

PROCESS AND INFRASTRUCTURE

DLT is seen as potentially offering significant gains to investment managers but these are often not yet a reality. Events related to the management and administration of investment funds could be taken into account automatically. One of the purported advantages of DLT is its ability to assign a record (for example, of a transaction or investment) to an investor's identity at a very granular level of detail and keep this detail throughout that record's lifecycle. For example, when investing in an investment fund, a retail investor might instruct an independent financial adviser, who purchases shares in a fund on that investor's behalf through a platform, which in turn uses an order management system to place orders with the fund manager. The fund manager might then use administrators or custodians to maintain and reconcile investor records. In this scenario, potentially every time the record changes hands, its format has to be updated to reflect the system of the record's holder. Additionally, sales of funds may be aggregated at platform level with the effect that granularity of beneficial ownership is lost. DLT might offer the ability to represent or create proof of ownership when the investor places an order at both the investor level and at the fund level simultaneously, giving the fund a more transparent view.

DLT may support automated reporting to investors and regulators with increased reliability at a reduced cost. DLT might enable a report to be generated at the same time as an order is placed. This might help firms to mitigate the potential operational risk of multiple legacy systems interacting with each other.

Benefits may also be gained where there are large groups or networks of firms using the same information. A good example of this is investor due diligence or anti-money laundering (AML) checking. Currently firms operate in silos, whether performing all such checks themselves or outsourcing checks to a third party. Operating on a group DLT network could enable more effective transaction monitoring. The ability of DLT to replace paper trails with easily-auditable, digital ones may facilitate regulatory compliance.

Some firms have proposed using smart contracts to reduce certain prudential requirements by automating the calculation and exchange of collateral.

DLT potentially offers a variety of cyber security benefits as cryptographic encryption is in-built into every record on the network. Additionally, when using a consensus mechanism, if one node's record is compromised, for example, by a cyber attack from a malicious third party, the consensus process should ensure that this record is rejected by other nodes.

Business continuity in the event of a system failure often involves having a second back-up system in place, which can be complex and costly. DLT is different in that multiple nodes contain the same record, all of which operate simultaneously. In the event of one node failing, the others would still be able to continue operating.

DLT could also be used to track and manage asset re-hypothecation, including real-time reporting of asset history and enforcement of regulatory limits and investment restrictions. DLT could provide for secure, real-time transaction matching, with automatic delivery versus payment (DvP) on the distributed ledger.

In reality, DLT is yet to make any meaningful impact on investment management and many of the potential use cases for DLT generally are theoretical. However, this could be set to change as some large financial institutions have invested increased resources in DLT and concrete examples of relevance to investment management are emerging. For example, in February 2017, Northern Trust announced that, in collaboration with IBM, it has launched the first commercial deployment of blockchain technology for the private equity market by building a distributed ledger solution for managing the administration of a Guernsey-based private equity fund managed by a Switzerland-based manager. This is intended to provide real-time transparency to the fund managers and investors as well as allowing regulatory access when required.

REGULATORY ISSUES

Concepts such as investor protection, conduct risk and financial stability are all familiar concepts to regulators and a technology-neutral regulatory approach means ensuring that the same activity is subject to the same regulation irrespective of the way the service is delivered. This ensures that innovation is enabled and a level-playing field preserved. However, some FinTech advances such as artificial intelligence and DLT create some genuinely new challenges for regulators.

With this in mind it is worth considering the *European Commission's consultation paper, FinTech: a more competitive and innovative European financial sector*, which was published on 23 March 2017. The consultation seeks input from stakeholders to further develop the Commission's policy approach towards technological innovation in financial services.

Regulation of artificial intelligence

The Commission rightly recognises that:

> "artificial intelligence raise[s] the issue of liability allocation in case of economic damage, as it may be challenging to identify the liable actor and to establish what went wrong".

This is getting at the legal issues that will arise around whether there is an agreement or certainty in a transaction concluded between two artificial intellects. Artificial intellects are not currently regarded as having legal personality and, as such, cannot be permitted by law to act either as principal or as agent for a manager.

Moreover, arguably developments in the autonomy and capabilities of artificial intellects will make it increasingly difficult to attribute their actions to the managers that use them. For example, the manager of an investment fund may use artificial intelligence to assist with making investment decisions. In what circumstances would the manager be permitted to override decisions made by the artificial intellect? Could a manager be liable for failure to comply with the artificial intelligence strategy investors have signed up for? When could failure to intervene in that strategy expose the manager to liability?

However, regulators and courts may simply decide as a matter of policy to hold a firm responsible for the consequences of employing a particular method of doing business (namely artificial intelligence). This would be in line with regulators' approach to outsourcing, where the regulated firm remains ultimately responsible for functions outsourced to a third party provider (see *Practice note, Outsourcing in the financial services sector*). Regulatory penalties would be useless against artificial intellects, which have no resources to meet any fines or judgments that might be made against them. It is too early to say how regulators and insurers might approach the extension of professional indemnity policies and regulatory capital buffers to firms' use of alternative intellects.

The Commission asks:

> "Is enhanced oversight of the use of artificial intelligence (and its underpinning algorithmic infrastructure) required? For instance, should a system of initial and ongoing review of the technological architecture, including transparency and reliability of the algorithms, be put in place? What could be effective alternatives to such a system?".

In practice, regulators' resources are finite and any oversight of artificial intelligence by regulators would likely require significant expenditure on expert technology resources. Perhaps more likely is that firms would be required to establish, implement and maintain policies and procedures for the use of artificial intelligence.

Regulation of outsourcing

While some investment managers are able to develop propriety financial technology, there is increasing outsourcing throughout the financial sector generally to external FinTech providers. Many of these providers do not currently need to be regulated as they do not themselves carry on regulated activities but, rather, enhance the operations of the regulated firm. The Commission is considering whether the current regime strikes the right balance between allowing for such co-operation, while sufficiently managing the additional risks it may introduce. The Commission considers that:

> "a certain level of standardisation and interoperability will be required before financial service providers would be able to reap the full benefits that outsourcing can deliver. In terms of risks, increased outsourcing may make the monitoring and management of these processes more challenging, with potential prudential and market oversight implications".

It therefore asks:

> "Are the existing outsourcing requirements in financial services legislation sufficient? Who is responsible for the activity of external providers and how are they supervised?".

To date, regulators may be said to have outsourced their supervision of outsourcing by making regulated firms ultimately responsible for outsourced functions, therefore adding a regulatory imperative for firms to monitor and supervise external providers. Investment managers can probably expect an increased focus on outsourcing, not only in the context of increased reliance on external FinTech providers, but also in the context of Brexit. This is because ESMA will likely be watching national EU regulators to see whether there is competition to offer the most market-friendly outsourcing and delegation regimes (in other words, with least requirement for local substance) to attract firms wishing to establish a minimal presence and then outsource back to the UK.

International investment fund jurisdictions are exploring what solutions they can offer in the FinTech sector, including assessing the benefits of hosting and processing data and providing support for managers seeking to implement FinTech strategies.

Regulation of DLT

The Commission also considers there to be:

> "jurisdictional issues as regards the law applicable to distributed ledgers, as well as liability issues as regards the ultimate responsibility for events taking place on the ledger. There is also the question of legal recognition that distributed ledger data is true and accurate, and has legal value. The same applies to the legal validity of documents produced/stored on the ledger, including smart contracts. These are all issues that are yet to be resolved and tested in real-life legal systems".

ESMA published a *report* in February 2017 on the DLT applied to securities markets, reviewing its possible applications, benefits, risks and how it maps to existing EU regulation. ESMA's position is that regulatory action is premature, as technology is still in the early stages of development.

The FCA explores the new challenges DLT presents for regulators in a *discussion paper* on DLT (DP17/3), published on 10 April 2017. This is driven by the FCA's recognition that industry efforts to investigate DLT have become especially concentrated in the last 24 months and because, in the second half of 2017 into 2018, the FCA expects to see more movement from "proof of concept" to "real-world" deployments.

Nevertheless, the FCA considers there to be uncertainty as to the future likely breadth and depth of market adoption. Firms have told the FCA that adoption of DLT will have to be in areas where the advantages in relation to efficiency are large enough to outweigh the risks of technology transformation and the high costs of implementation. Since the arrival of DLT, however, market participants have started making large shifts towards close collaboration and using shared networks that they collectively manage. Consortia such as R3 CEV or B3i are good examples of this.

The FCA, similarly to the Commission, is interested in how regulated firms allocate responsibilities for systems shared among them, but notes that matters such as the conflict of laws issues regarding contracts executed on a DLT platform across multiple jurisdictions simultaneously are ones for the courts to decide, rather than being part of the FCA's remit. In shared networks, particularly in a "trustless" environment (that is, without a single controlling entity) it is not always clear who is responsible for what, including from a regulatory perspective. One advantage of centralised systems is that there is a clear nexus of control. To take stock market trading as an example, while multiple firms may be able to see and act on the same record (that is, the order book), ultimately the system underpinning this is likely to be an operator of a regulated market or multilateral trading facility (MTF). These are regulated entities, with significant obligations for ensuring that the trading venues they provide are robust, reliable and have adequate systems, controls and governance in place. By contrast, a trustless DLT network may not have any such central point of control with a regulatory nexus.

There are also implications for firms regarding their third party service providers in a DLT context. For example, if a regulated firm using a DLT platform relies on third parties to add, validate, safeguard and preserve transactions, does it have sufficient oversight of these activities to fulfil its regulatory obligations around having appropriate systems, governance and controls?

The FCA generally takes a technology neutral approach to regulating financial services and is interested in considering whether there is anything distinctive about DLT that would require it to take a different approach. The FCA says that it is "aware that exponents of new technologies, particularly vendors, will often hype or oversell new technologies". For the FCA, the question remains as to the extent to which DLT itself is actually essential to any of these potential market developments. Its view is that many appear to be equally achievable through more traditional technology. At this stage, the FCA does not see a clear need for changes to be implemented to its regulatory framework for DLT solutions, but wants to explore emerging business models and how they operate in the context of the regulatory framework. The FCA's view is that as DLT is a combination of existing technology types, it is likely to present similar challenges, risks and benefits to other types of technology currently being used today.

FINAL THOUGHTS

The application of FinTech to investment management is a growing trend that can be expected to continue as algorithms, DLT, artificial intelligence, and data driven technologies develop. These are exciting opportunities and it will be interesting to see what changes may take place over the next few years and how regulators respond to them.