

TECHNOLOGY TRANSFORMATION AND POLICY IMPLICATIONS



PETRA HIELKEMA

Chairperson - European Insurance and Occupational Pensions Authority (EIOPA)

Harnessing the benefits and managing the risks of digitalisation in insurance

The digital transformation in the insurance and pensions sector cannot be ignored. It can have a positive impact on (re)insurers, consumers, as well as for supervisors. But it also brings new or increased risks. As supervisors, our job is to make sure that we can harness the benefits while managing the risks.

New actors, including InsurTech start-ups and BigTech companies, are already entering the insurance market, both as competitors and as cooperation partners. At the same time, insurers' reliance on third-party ICT providers and contractors has accelerated across the value chain. Access to new technologies and the emergence of new business models likewise appear to accelerate.

We are seeing an increase in automated distribution, that is the Application Programming Interfaces (APIs) used to distribute insurance products via platforms, embedded alongside other financial and non-financial services. Ecosystems grow more complex, yet they can provide seamless consumer experiences. This can change the extent and nature of conduct and prudential risks, while Decentralised Finance (DeFi) and Peer-to-Peer (P2P) insurance using digital platforms promise to raise new challenges around resilience, mutualisation, accountability and transparency.

On an important but more evolutionary level, innovative ICT solutions can allow undertakings to implement significantly more efficient processes, reduce operational costs, and open the door to new products and services that may have been uneconomical in the past.

However, the risk of ICT security incidents, including cyberattacks, is also greater due to increased use and complexity of technology. This can have a considerable impact on the operational functioning of undertakings. Moreover, dependency on larger ICT service providers could also lead to concentration and contagion risks.

Innovation is in constant state of evolution, led by a cycle of hype: The metaverse and Web3 were trending topics last year, raising questions on potential implications for insurance, for example, through cyber insurance coverage on intangible assets. This year new Large Language Models have taken centre stage. Here, impacts along the insurance and pensions value chains can be readily seen in areas including communications, marketing, advice, claims management, and

process automation. ChatGPT-like tools can also potentially be used to support the work of supervisory authorities.

There has also been an uptick in potential regulatory change. The AI Act aside, earlier this summer the European Commission published a legislative proposal on a Framework for Financial Data Access (FIDA), which aims to establish clear rights and obligations to enable customer-led data sharing beyond payment accounts, including in insurance and pensions. This may form the foundation for new data-driven financial and information products and services.

In this changing environment, supervisors must work harder to understand today's innovation and technology—both its impacts on new business models and consumers, and its potential benefits for supervisory processes.

EIOPA aims to support this supervisory work: for instance, by launching a public consultation on an insurance dashboard use case to bring technical considerations to the discussion on open insurance. We also support National Competent Authorities in scanning the innovation horizon. Through a Digitalisation Market Monitoring Survey, EIOPA is gathering input on insurers' digital transformation strategies to better understand how undertakings use or plan to use innovative business models (such as digital distribution and communication channels, as well as insurers' partnerships with start-ups and BigTechs) and technologies (for example blockchain and artificial intelligence).

Supervisory skills need to be enhanced to face challenges raised by digitalisation and understand new forms of risk. Cooperation is a great enabler of this, allowing not only the building of knowledge, but also the exchange of experience. Last year the European Commission, together with the European Supervisory Authorities and the Florence School of Banking and Finance, launched a new EU Supervisory Digital Finance Academy, aiming to share and grow knowledge and expertise on financial innovation. This is one step towards supporting a European supervisory community that is better able to adapt and respond to changes stemming from innovation.

EIOPA's key priority is to support the supervisory community and the industry to mitigate the risks and seize the opportunities of the digital transformation, including by further promoting a data-driven culture.



SARAH PRITCHARD

Executive Director, Markets and International -
Financial Conduct Authority (FCA)

The UK's regulatory approach to growing digitalisation of financial services

The digitalisation of financial services is changing the way consumers use services and make decisions, and how markets operate. At the FCA we are developing new regulatory frameworks, and supporting innovative solutions through our Regulatory and Digital Sandboxes, to enable the benefits from digitisation to be captured, while ensuring that harms and risks are addressed.

Rapid technological innovation and increased demand for immediately accessible, mobile and intuitive financial services has resulted in increased complexity and dependency on IT in financial services. Risk of operational disruption and potential harm to consumers and market integrity have consequently increased. This is why, as of March 2022, the UK introduced an operational resilience policy to enable the financial sector to better prevent, adapt, respond to, recover, and learn from operational disruptions.

Under this new regulatory framework, firms are responsible for identifying their important business services, setting impact tolerances for each of these, and then ensuring that they can operate within these by 2025. If disruption occurs, firms are expected to communicate clearly, for example providing customers with advice about alternative means of accessing the service and providing timely notification to their regulators.

With so many financial services having become reliant upon certain Critical Third Parties (CTPs) to deliver their services for example - as of 2020, nearly two thirds of UK firms used the same few cloud service providers - we must be clear where responsibility lies when things go wrong. Responsibility remains with the firms who use third party services and it is our expectation that those firms identify and mitigate the associated risks. But to further strengthen the regulatory framework, the FCA, alongside the Bank of England and the Prudential Regulation Authority, has recently been given new powers, under the Financial Services and Markets Act 2023, to regulate CTPs to set standards for their services to the UK financial sector.

The use of Artificial Intelligence (AI) and Machine Learning within the UK financial services sector has also grown rapidly in recent years. A 2022 FCA survey conducted jointly with the Bank of England suggests that the trend is expected to more than triple in the next three years. AI in financial services can bring many potential benefits to consumers. For example, the ability to use Generative AI and synthetic data helps to improve financial models and cut crime, and the ability to personalise products and services to people may help financial services to better meet consumer needs.

As a data-led regulator, the FCA is training its staff to make sure they can maximise the benefits from AI. We established

one of the first emerging technology research hubs to monitor trends, have invested in synthetic data capabilities, and have established a Digital Sandbox, the first of its kind used by any global regulator, using real transaction, social media, and other synthetic data to support Fintech and other innovations to develop safely. This is an increasingly important area of research for the FCA. Our Synthetic Data Feedback Statement highlighted industry perspectives and the significant challenges of accessing and sharing data - particularly for smaller firms. However, there is a real potential for synthetic data to help combat fraud and money laundering.

The FCA has also set up the Synthetic Data Expert Group to explore these issues in more detail with stakeholders across industry and academia. Internally, the FCA has also developed its supervision technology using AI for firm segmentation, monitoring of portfolios and to identify risky behaviours.

We cannot tackle the risks and opportunities of innovations and AI as a regulator in isolation.

However, we cannot tackle the risks and opportunities of innovations and AI as a regulator in isolation. It is vital that we have a globally co-ordinated approach. The FCA plays an influential role internationally both bilaterally and within global standard setting bodies. The FCA is a founding member and convenor of the Global Financial Innovation Network and we are also one of four regulators that form the UK Digital Regulation Cooperation Forum, pooling insight and experience on issues such as AI and algorithmic processing. Through this joint work we are collaborating on identifying and understanding how quantum technologies could impact digital markets and consumers. Separately, we are also hosting the global techsprint on the identification of Greenwashing in our Digital Sandbox, and we will be extending this global techsprint approach to include AI risks and innovation opportunities.



MICHAEL WEST

President - Moody's Investors Service

As technology reshapes the credit risk landscape, new policy challenges arise

Rapidly evolving technologies such as artificial intelligence (AI) and distributed ledger technology (DLT) are poised to transform finance as we know it today. These technologies have the potential to bring advantages through increased process efficiency, new products, and economies of scale, but they also bring new policy challenges and risks.

The impact on the credit risk landscape will be determined by the way the costs of and benefits of these technologies are distributed, as well as the speed, direction, and magnitude of change. These trends, in turn, depend on the actions and interactions of consumers, workers, businesses and governments. Below, we outline four key considerations as change unfolds:

Addressing market concentration risks

Innovation can lead to a rapid transformation of entire sectors, potentially changing the rank ordering of companies' credit risk profiles within each sector. For instance, new entrants can dislodge established players if they lack the strategic vision, execution capacity or financial flexibility to invest in new technologies. Over time, depending on competitive dynamics, a few firms could capture a substantial share of the value that new technologies create.

Unchecked, such market concentration could have negative macroeconomic and social consequences, and ultimately thwart the very innovation that created it. Effective regulation, however, can ensure that market concentration risks are avoided.

Keeping 'negative externalities' from digitalization in check

As AI and DLT help businesses and economies reap efficiency advantages, they may also generate negative externalities, such as increased cyber security risks, data privacy concerns, entrenchment of historical bias patterns and the introduction of errors.

Existing regulations may be adequate to keep a check on the extent to which new technologies exacerbate pre-existing risks. But new risks will be introduced, particularly by AI, requiring enhanced governance at the corporate level to limit social, reputational, and legal risks as well as greater vigilance and additional measures from policymakers to ensure that technological progress serves the public good.

Using technologies to tackle public policy challenges and yield 'positive externalities'

Governments too leverage technology in pursuit of public policy aims. Both AI and DLT can offer governments the means

to increase efficiency in the delivery of social services and to expand financial access and inclusion, all of which would likely be positive for sovereign credit profiles.

As an example, new digital assets, including Central Bank Digital Currencies (CBDCs), could foster greater financial inclusion by reducing transaction costs and widening access to financial services. However, digitalization also brings associated privacy and financial stability risks. Here again, policy actions could achieve an inclusive distribution of the benefits of technology that also minimizes unintended negative consequences.

Harnessing economic gains while limiting societal disruption

AI and DLT could undertake tasks ranging from customer service to custodial transaction recording, offering time and cost savings. But some of these gains may be achieved by displacing human labor. On the one hand, this could partly offset the demographic headwinds of aging populations in many countries that will reduce labor supply. On the other hand, the potential for a significant increase in redundant workers or deceleration in incomes poses social risks and policy challenges. For instance, threats to workers from AI have been cited in recent labor strikes by screenwriters and actors in the US.

Additionally, during any technology transformation process there is likely to be a mismatch between the labor skill sets that are required to take advantage of new technologies and those that are available. The wider the gap and the longer it persists, the greater the risk that full productivity gains from

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technology will not be harnessed and that social risks will escalate. Closing this gap will require retraining workers and equipping those entering the workforce with the skills to succeed in the new economy.

In conclusion, in harboring both benefits and risks, AI and DLT are similar to transformative technologies before them. A clear, shared understanding of new technologies' risks and benefits can help us better manage them.



CHRISTIAN EDELMANN

Managing Partner Europe - Oliver Wyman (UK)

AI can transform finance - if firms clear three hurdles

When ChatGPT launched last November, generative AI quickly became of huge public interest. Already, 62% of people across nine nations say they have experimented with generative AI tools in the last three months, according to survey data from the Oliver Wyman Forum.

The excitement is warranted. Generative AI holds the potential to help financial services firms re-imagine their entire businesses around the needs and desires of their customers.

There are at least four areas where generative AI can help firms dramatically improve their operations. In customer service, conversational AI assistants can understand and speak natural language, allowing firms to create customized mass outreach to customers. In marketing and communications, AI can design visual product and brand content for logos and packaging, create website layouts, and write blog posts, articles and social media posts. In tech and IT, AI can help with code generation, reducing the time and resources need for software development, and create synthetic data to train machine learning models or test applications. And in terms of personal productivity, generative AI can create automated notes and summaries of meetings, help people manage priorities and tasks, and assist with scheduling.

But first, firms must clear three short-term hurdles that make it difficult to embed the technology today.

First, generative AI poses unique risks that traditional AI systems don't have to contend with. One is defamation: programs inadvertently producing defamatory content. Another is hallucinations and opaque logic and processing. Generative AI also creates confidentiality concerns such as data leakage and copyright issues. To address these, financial institutions need to beef up their governance, data quality, talent functions and other dimensions.

The second hurdle: regulators. The potential perils of AI span the enterprise, including operations, technology, legal, compliance, process, data, technology and reputational risks. Banks need an enterprise-wide framework to holistically manage these risks. Government bodies have offered guidelines on best practices in the US, the EU, the UK and Hong Kong. When these guidelines turn into hard rules, we estimate fines for lack of governance could approach 6% of the industry's global revenue.

Another hurdle is the technology itself. Today's models lack desires and self-directed learning. They have extensive knowledge of the world, but don't "know what they know," and lack any sense of truth. As for reasoning, models' abilities remain brittle and likely to fail unexpectedly, especially when asked to apply logic and knowledge in new contexts. And they

don't yet offer predictability, with unwanted outputs creeping into models frequently.

As a result, significant productivity improvements from generative AI will take time. Learning curves are steep, there is still insufficient scale of adoption, and model tweaks and redesigns have been slow. Firms must navigate a collision course: In one direction, ongoing advancements are likely to drive more widespread use as tools become integrated into our daily lives, much like the iPhone. In the other direction, regulatory bans could lead to unsupervised and unsafe AI tool usage, and the potential for employee misuse needs to be managed.

Past technologies have overcome such obstacles. It took e-commerce 20 years to reach 10% of retail sales. The personal computer took 10 years to get to 42% usage across US households. Electrification took 40 years to deliver measurable productivity gains across the UK. There is good reason to believe generative AI one day will be ubiquitous in the financial services sector and throughout society.

How to get there?

In the short term, firms should encourage safe engagement through training and limiting access to safe use cases. Over the longer term, companies will be able to target AI capabilities toward key business pain points, invest in technical training and tailored upskilling to improve usage. Eventually generative AI will drive large-scale organizational transformation, helping companies understand inter-department workflows to integrate technologies across the enterprise and adjust people and processes as needed.

Generative AI holds potential to help financial services firms re-imagine their entire businesses.

The ultimate possibilities lie in AI's ability to help institutions reorganize entire business units based on the wants and needs of their customers. There is little doubt that customer-first platforms, powered by AI and offering rich, flexible user experiences, are the industry's future. The race is on to get there first.

This contribution has been co-written by Sian Townson, David Waller and John Lester.



PHILIPPE LAURENSY

Managing Director, Head of Strategy, Innovation,
Product Developments and M&A - Euroclear S.A.

New technologies in finance: driving towards the unknown with known objectives

Since its creation 55 years ago, Euroclear has always been supportive of the development of new technologies that could make the financial market safer and more efficient. Each time there has been a major technological change, Euroclear has been embracing it and adapted to the new reality. Should it be with the internet revolution, the digitalisation of paper-based securities or the emergence of cloud, Euroclear seized these opportunities for the benefit of the EU securities market. The transactions are today faster, cheaper and safer than they have ever been and those innovations allowed the emergence of new venues, business models and opportunities.

The advent of AI, DLT and other new technologies will be no exception. Euroclear, like many market players, is actively investigating, testing and using those new technologies. For example, we have been experimenting AI for some time to predict settlement fails and facilitate the handling of client queries. When it comes to DLT, after having lead many experiments and studies over the last years, we are about to launch in production our D-FMI with digital securities issuance services (D-SI). This will mark a first major step in Euroclear's transition to a tokenized environment. It is however fair to say that it is still relatively early days and many roadblocks will have to be crossed before they can achieve major scale and have a real impact in the EU securities market.

In the meantime, there is not one technological innovation that will not be investigated and tested by the market to achieve more efficiency, transparency, speed and cost reduction. Taken individually, each of those new technology shows disruptive power. When combined the developments that can come from DLT, CBDCs, Web3, generative AI and Open finance, have an even greater transformation potential.

While our traditional securities market structure and the existing value chain could be disrupted in several ways, any major evolution will have to aim for ultimately benefitting the issuers, the investors and the industry as a whole. To make sure this reshaping brings more benefits than drawbacks, it will be critical for market authorities to carefully follow and guide this transformation. EU regulators will have a crucial role to play by setting the fundamental objectives Their legislative decisions targeting news technologies should follow two main drivers: (i) bring benefits to the EU and its CMU (ii) do not compromise on the safety and stability of the financial system. The EU will achieve its ambitious targets only if it successfully manages to combine these two elements.

While EU authorities already submitted and voted several ambitious legislations to frame this transition, many more legislative actions will need to be taken over the next decade. In doing so, several aspects will need to be looked at:

First, regulatory and supervisory authorities will need monitor and analyse the evolving market dynamics and risks associated with these technologies. Legislative changes can be made only after having performed an in-depth impact analysis of these transformative technologies. Regulating too fast can either stifle innovation by imposing inappropriate (and costly) requirements or bring undue risks in the regulated financial markets.

Second, given the global nature of securities markets, there is a need for international cooperation and harmonization of regulations to avoid regulatory arbitrage, ensure a level playing field and facilitate interoperability.

Third, ensuring investor protection, market integrity and financial stability must remain a paramount objective. Regulators must ensure that the high standards achieved over the last decades are not weakened with the advent of new technologies.

And finally, regulatory authorities should not forget that if the market transformation triggered by new technologies is done without the end-purpose of benefiting the EU capital market as a whole, it could end up reversing many progresses made over the last decades in terms of market fragmentation, competitive dynamics and financial stability risks.

It will be critical for market authorities to carefully follow and guide this transformation.

New technologies will transform the EU capital market, the way it will change remains however uncertain. All we know is that it must lead to an improvement of the current structure and processes. Nobody wants a step backwards or even a status quo in the sense of Prince of Lampedusa's famous quotation "*Everything must change for everything to remain the same*". This enhancement objective will only be reached by having market innovators and legislators supporting each other in their endeavours. New technologies will only truly blossom with the combination of these two forces.