

Research and innovation for UK FinTech

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Summary Paper



This paper and the research behind it, brings perspective, insight and a specific focus to the role of Research and Innovation (R&I) to drive an acceleration of fintech progression in the UK.

The paper complements the HM Treasury (HMT) FinTech Sector Review¹ (FSR) which is considering the broader opportunity across financial services to support the ongoing success of the UK FinTech.

We use the examples of Scotland and Wales to examine FinTech and the connection to research and innovation, and provide recommendations aimed at optimising the way the UK innovates in FinTech to bring opportunity and added protection, growth and resilience to the UK economy.

We would like to acknowledge all those who contributed to this work, including the FCA, University of Edinburgh, University of Cardiff, University of Strathclyde, as well as Cardiff City Region, Scottish Enterprise and the FinTech Cluster businesses and partners in both Scotland and Wales.

**This paper acts as an executive summary.
The full version of the paper is also available.**

The full version contains more detailed information on the research completed and proposals and strategy suggested as part of this work, along with full detail of the material referenced along the way. It is available to download from:

[FinTech Scotland](#)

[FinTech Wales](#)

[Connect & Convey](#)

¹ [HMT - Fintech review ToRs June 2020](#)

Foreword

Fintech, or the application of new technologies and data to the financial services sector, is already transforming financial transactions across our personal and working lives.

These transformations offer the opportunity to enable, sustainable and inclusive innovations such as green finance, prevention of fraud, or offer better choice in managing money and debt, as a step towards eliminating poverty.

These changes are significant for the UK's financial services sector and the wider digitally-driven economy and society. FinTech has already become a global movement and is evolving at rapid pace as technology and data capabilities enable innovation at scale. The rise of FinTech-enabled economies around the world are presenting competition to the standing of the UK's financial services. Growth of FinTech in the UK is therefore, important for securing future sustainable economic growth, skilled employment and improved productivity, as well as maintaining our position as a leader in the global digital economy.

The combination of a respected and robust financial services sector, an innovative and entrepreneurial tech sector and respected regulators and business laws, has enabled record levels of investment in new financial innovations. However, progress could be accelerated by unleashing collaborative innovation and research opportunities, as observed in other sectors of the economy such as aerospace, life sciences and engineering.

For the UK financial services sector to retain its coveted status as a world leading centre and adapt to a post-Brexit and post-Covid-19 environment, a paradigm shift is required. This will include adoption of FinTech innovation across the whole financial services sector, the broader economy and society. A more strategic and systematic approach to research and development (R&D) is also required, to drive cross-industry collaboration, inclusive citizen participation and academic engagement.

FinTech Innovation provides the opportunity for the UK to leverage the capabilities and expertise that exists across the UK regions and devolved nations, and ensure the benefits are embraced beyond London.

This paper demonstrates the imperative to act and to ensure the UK, as a whole, embraces Fintech innovation across the financial services sector and the broader economy; leveraging regional skills and expertise to execute a unified strategy and unleash the full potential of all nations and regions within the UK.

Ian Campbell
Innovate UK CEO (Interim)
November 2020

Key messages

- FinTech innovation is a significant disruptive force both economically, across the wider and emerging digital economy, and socially helping progress better financial inclusion.
- We are just starting to understand the impact FinTech will have across all sectors of the economy with new opportunities in retail, manufacturing, the energy sectors, the future of oil and gas, and 'cleantech', agriculture, as well as a significant progress in 'green' and climate finance.
- Collaboration and focused effort are needed to build the infrastructure, interoperability, relationships and resources needed to scale the opportunity and realise the ambition.
- Global comparisons show we need to act now to protect our vital industries in the face of stiff FinTech competition from the rest of the world. The UK must transform the environment for Research & Innovation (R&I) in financial services and FinTech, to enable it to remain a top player in the global market post Covid19 and Brexit.
- A FinTech R&I strategy and a UK implementation vehicle is essential, building leadership and strategic collaboration across key stakeholders, enabled by the experience and expertise of bodies such as UKRI and Innovate UK, and driven through regional contribution for the good of the UK as a whole.
- Regional backing will leverage UK regional capabilities in FinTech and support the levelling up and place agendas. Pragmatic but strategic action will drive greater inclusion and diversity, and a data driven approach will enable agility, planning and an effective roadmap.
- A step change is needed to fulfil the FinTech R&I ambition for the UK.
- An R&I pilot specific to fintech innovation will act as an enabler to assess and test ways of regional and national working with stakeholders, providing learning and positioning in preparation for follow on interventions.
- By supporting a UK FinTech R&I pilot and delivery implementation vehicle, bodies such as Innovate UK and other key stakeholders would help create the foundations and learning needed for future success.

1 The UK's FinTech opportunity

There are over 1600 FinTech SME's across the UK, generating yearly revenues of circ. £11bn and employing 76,500. Financial Services (FS) is also critical to the UK economy, contributing £132bn in 2018, (6.9% of total economic output).

With worldwide advances in FinTech and global competition we are at a point where the adoption of FinTech to the UK economy is not an either-or choice. Analysis by Strathclyde business school points to a potential upside UK opportunity of up to £20bn GVA and 230,000 jobs, if the speed of FinTech development and adoption is rapid. By contrast slow adoption could amount to losses of 212,000 jobs and circa £18.4bn GVA.

Historically, the risk averse FS sector has faced difficult barriers to entry. It has led to a culture that has limited ways of disruption and the status quo has remained relatively unchanged over the decades.

However, the scale of the ambition for innovation in FS is limitless. Innovations in this sector can facilitate significant positive economic change by advancing strategic disintermediation, revolutionising products and services and providing new openings for entrepreneurship. In addition, advances across the world are showing how innovation in FS is helping address financial inclusion and democratise access to financial services. This changing landscape however, will not come without the need for broader considerations involving a wide range of stakeholders and creating regulatory, policy, and other challenges.

The UK has work to do to help this sector realise the opportunities. The Research and Innovation (R&I) environment for FS and subsequently FinTech, is significantly less mature here when compared with other economic sectors. The necessary mechanisms to encourage collaborative R&I ideas and see them through to exploitation is missing, current efforts are often reactive rather than proactive, and FS is a relatively new landscape for universities and research.

Progress has started to drive change with changes in regulation and policy helping to reduce barriers to entry and improve competition. However, given the significant worldwide attention on FinTech innovation a focus on FinTech R&D is imperative for the UK to secure future sustainable economic growth, improved productivity, social inclusion as well as being a global digital economy leader.

Experience and expertise are needed, to create an efficient and effective environment with suitable mechanisms for innovation, that enable strategic progress and a culture across the FS sector that creates and supports diffusion of R&I. It is vital that diffusion is considered in initial designs of interventions to maximise its later potential and multiplier effects on Return on Investment (RoI). It is this that will enable FinTech in the UK to thrive and reach its full potential.

1.1 The threat to UK FinTech

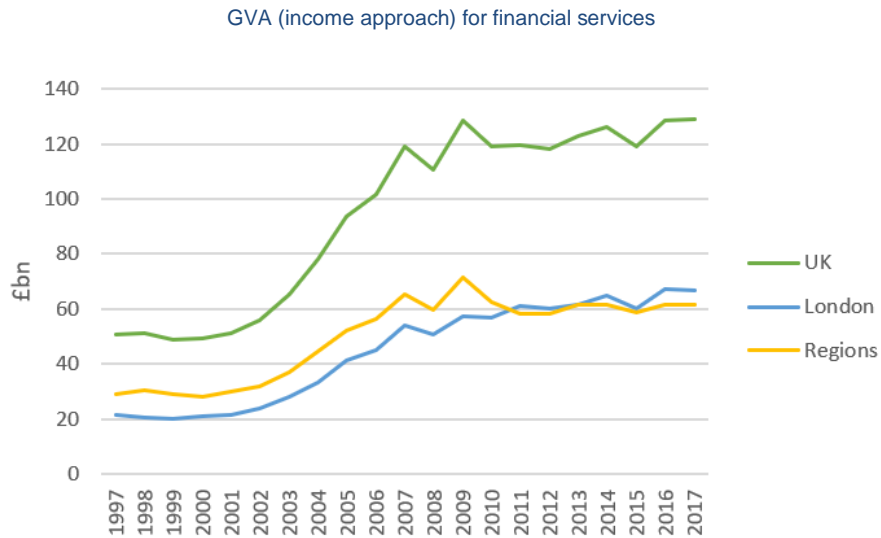
Global analysis shows the time to act is now. When compared internationally the UK and London continue to rank highly. London is currently ranked as the only top global FinTech hub in Europe, where notably FinTech ecosystem development is slower when compared to Asia and North America. However, analysis showed that both London and the UK's standing is fast being challenged by foreign financial centres who are focusing on public sector initiatives to become competitive locations for FS and FinTech innovation. With continuing developments and global competition, we are at a point where the adoption of FinTech to service the UK economy is not an either/or choice, but the speed of adoption is.

1.2 Enabling factors

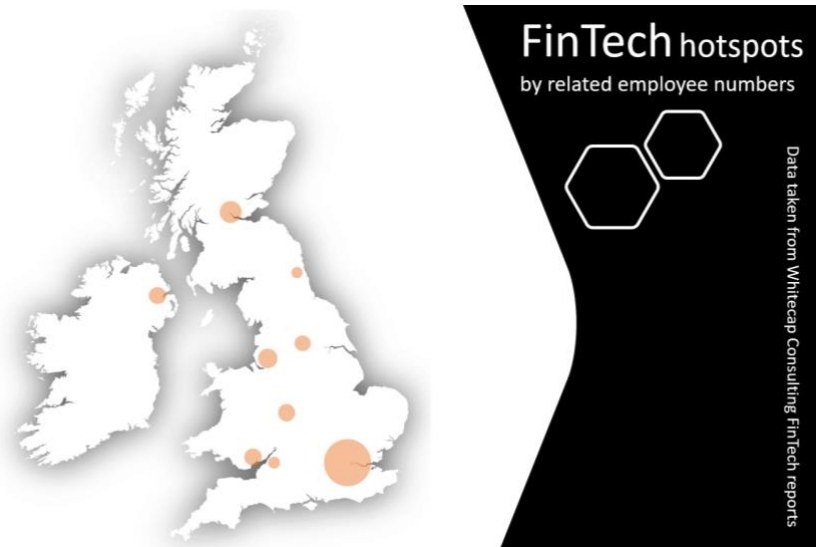
The UK environment has a variety of relevant and enabling elements that align and can support change, de-risking and accelerating progress for UK FinTech.

Regional contribution in levelling up and place

With growing ecosystems and existing connected networks across the UK, the regions are working to provide the focus needed to support economic development.



Collectively the regions provide valuable capabilities, infrastructure and experiences that build real opportunity for FinTech in the UK and provide inclusive growth across the country.



A progressive regulatory environment

The UK regulators continue to push boundaries and lead international developments on the future of innovation, technology and data in Financial Services. With initiatives such as the Regulatory Sandbox, Tech-Sprints and the Global Financial Innovation Network, the UK's Financial Conduct Authority (FCA) has been a global pioneer in its innovation agenda. It is working to further evolve and

enhance its innovation approach and current sandbox, accelerated to support innovations that address challenges caused by the COVID-19 pandemic.

The Bank of England is also looking forward and considering the 'Future of Finance'. In a recent review that summarised the emergence of a new economy, it outlined that regulators and the private sector can collaborate in new ways as technology breaks down barriers. Planned Bank of England (BoE) changes to the payments and settlement infrastructure could enable real time payments as a service with creating new economic opportunities in sectors such as energy, transport, construction and agriculture.

Such initiatives from the UK regulators are helping to fuel innovation and build a progressive environment to foster technology application to meet regulatory obligations and advance RegTech, a key aspect of FinTech developments and fundamental for the future of financial services regulation. However, the FCA has also identified that it's not seeing really true disruption at scale. Certain sectors are less likely to use the sandbox and big or mid-sized FS players in the market are not making use of the facility.

The strategic importance of data

Advances through Open Banking generated a series of UK regulatory reforms that introduced a significant change in FinTech and innovators ability to access new data. It has enabled permissioned and secure access to a wide variety of data using a consistent set of technical standards. The combination has the potential to be a powerful change for the industry, enabling R&I.

As the UK's digital economy develops and recovers from the impact of COVID-19 there will be an increasingly greater need to use data to develop finance products that serve the needs of the changing workforce. New products and services that can continuously adapt and bend with new ways of working, changing work patterns and business needs will be vital to people, business, the economy and productivity.

2 The cross-sector significance of FinTech

FinTech is also one of the rare applications of technology that cuts across the UK economy. Regional analysis is starting to uncover the true extent and potential economic breadth for FinTech innovation. Our research looked at a wide range of economic sectors, including energy, transport, aviation, agriculture, construction and healthcare. The results highlight how FinTech could feature in those markets.

Figure 1 summarises our analysis and the opportunity for FinTech as it transitions from being a vertical application in the FS sector, to developing horizontal applications with direct products and services that facilitate new operations and business models. It demonstrates the potential for growth as FinTech becomes understood by the broader economy and integrates into various sectors.

With capabilities such as effective application of technology and data, and intrinsic agility, FinTech innovation is well placed to support the UK in developing the mechanisms and structures needed to address known and emerging challenges, as well as meet the opportunities of an accelerating digital landscape.

FinTech integration will include the use of payments, financial data integration and modelling, blockchain, digital currencies, critical infrastructure security, value exchanges such as crypto-assets and stock trading.

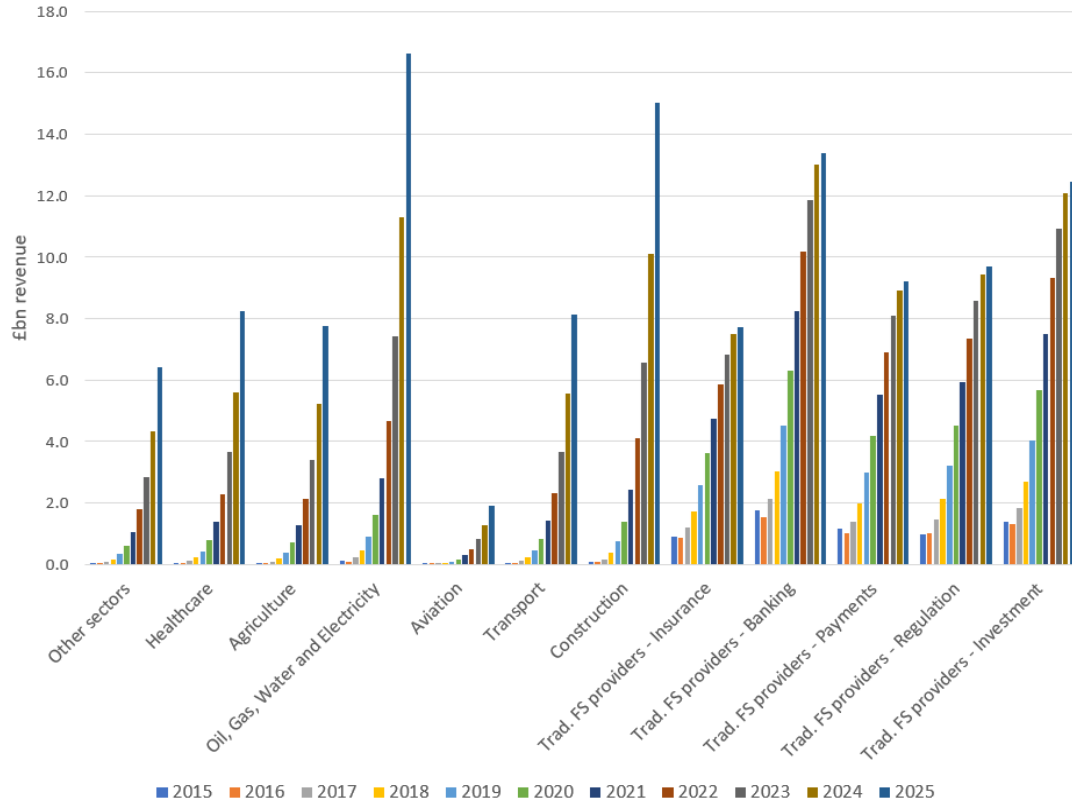


Figure 1 Value of FinTech by sector over time

2.1 Industrial strategy

FinTech is also well placed to find solutions for some of our national issues and we can see opportunities connected to the ageing society, clean growth and the future of mobility challenges in the UK's Industrial Strategy. The ageing population can be better served and prepared by technologies that simplify the pension planning process, clean growth could be enabled via blockchains or micropayments from energy suppliers, or via ESG transparency fintech's that enable investors to understand the environmental and social impact of their spending or investments. In addition new insurance models are being created and tested for autonomous vehicles and the wider gig economy.

All told the opportunity for FinTech across the UK economy is vast. The opportunity presents itself to combine the expertise and strengths across the UK public and business communities to harness and shape this potential and build a FinTech R&I strategy.

3 Building FinTech R&I in the UK

The UK has been successful in other sectors, such as Aerospace, in transforming the R&I approach to operate as a true ecosystem. Leveraging these experiences will help accelerate the work needed to establish the UK FinTech R&I strategy. It will also go some way to building the needed understanding of R&I diffusion in the FS sector and the component parts required for success.

3.1 Components for the UK FinTech R&I strategy

Drawing on experience from R&I in other sectors and knowledge from the FinTech and FS sectors has helped establish the key components for the forward strategy. The fundamentals include:

Inclusive collaboration, data driven and community owned

- The approach will draw in key stakeholders and enable strategic alignment that builds collaboration and a shared agenda. Stakeholders include industry, government, regulators, academia and the public sector.
- It will build community recognising national needs and acknowledging regional strengths, and deliver against both, niche regional and common national challenges.
- A data driven process will identify and address issues of exclusion, while reducing rework and inefficiencies in the system. Furthermore, new capabilities will be generated through sharing of knowledge and skill sets.

Regional contribution

- The regional clusters with their established networks, stakeholders and infrastructures have a valuable role to play in delivering the UK's national FinTech R&I strategy. They have worked to establish connected networks and aligned stakeholders forging the concept of community owned approach.
- Practical local engagement and connection enables focused business-led R&I helping drive economic growth and build greater resilience across the whole of the UK.
- Leveraging and augmenting the regional strengths adds competitive advantage to the UK and provides a practical means for the diffusion of R&I needed for national success.

Aligning to FinTech ways of working and agile innovation

- The forward strategy and its delivery must recognise the new agile ways of working emerging from the tech based and FinTech areas of the UK economy, and must adapt to support this way of working.
- A more iterative approach will support the necessary speed of innovation, provide the right incentives to enable information flow and reduce friction, and enable the UK to remain globally competitive.
- New ways of working should seek to focus on good and agile innovation based on trust and outcomes and explore ways to move beyond typical process and metric driven approaches found in other national R&I settings.

Long term planning, road-mapping & common challenges

- A longer-term plan for FinTech innovations will identify and prioritise common challenges, recognise market disruptors, cross sector opportunities and allow for more revolutionary products and services to be created.

- Experience shows the impact in the mid to long term will also be seen across skills, products and services.
- This planning approach supports the transition needed for FinTech R&I in the UK to move from reactive to proactive, creating a keen selling point for the UK in attracting inward investment and identifying resource needs.

Early indications of common challenges

Acceleration of the required planning process is helped by knowledge from the regional clusters, and by utilising the existing analysis from regulators, the UK industry, and global competition. Common themes emerging by analysis from UK regulators, that could be useful for future innovation challenges include:

- FinTech innovations and regulatory technology that could help overcome regulatory challenges and drive efficiency
- Critical digital infrastructure to support Interoperability
- FinTech innovations that support the UK in the move to a greener economy
- 'Socio-focused' research including the technology impact on consumers and society
- Central backed digital currencies and the technologies needed to enable any developments to be resilient, fast, efficient and scalable
- R&I to help make advances in combating financial crime

A shared governance approach that works nationally and regionally

- Achieving the UK's FinTech potential needs a unified means and delivery vehicle for national governance with regional representations embedded at decision making level, protecting the needs of regional communities and levelling up agenda.
- A unified approach will build greater understanding of the regional and national strengths helping to address existing and emerging gaps and identify opportunities. It will also provide a means to implement consistent new ways of working that align to FinTech innovation.
- A formal national vehicle is needed to enable greater inclusion and reduce friction.

Experience in other sectors shows that implementing these component parts will go a long way in establishing a successful R&I environment for FinTech, but it needs collective effort and a positive cultural intent to work in new ways.

4 Recommended actions to realise the FinTech R&I opportunity

Intervention and collaboration are required to transition the current R&I environment for UK FinTech to protect and grow existing activity, while adding resilience.

Progressive action that enables the ability to work across stakeholders, learn, iterate and evolve will help establish the foundations needed for future development in FinTech R&I.

The recommended next steps, driven by the philosophy of progressive action and have been developed to encourage support from bodies such as Innovate UK, include;

1. Working in collaboration with the FinTech community and regions to conduct a pilot that builds real insights and works in a practical way to:

- Test ways for key stakeholders to collaborate, align and agree on challenge priorities;
 - Allow ways of working to be assessed in preparation for more agile innovation;
 - Support a number of UK FinTech R&I challenge competitions at both a regional and national level; and
 - Enable lessons learned to be based on demonstrable experience.
2. In step with testing the above, regions (Scotland and Wales initially) will also complete an assessment of the current and future landscape for FinTech R&I capability requirements. This analysis will be used to build a fintech R&I roadmap informing further next steps and used as the basis for future impact assessment analysis, helping measure future performance and progress.
 3. The final recommendation is to use lessons from the pilot exercise, experiences from the regional FinTech clusters and UK regulators to define a longer-term plan for a UK's FinTech R&I strategy.

We recommend that formal pilot planning starts in January 2021, to:

1. Identify the regional and national R&I priorities that will form the pilot challenge competitions;
2. Finalise the timeframe and ways of working to build stakeholder alignment for the full pilot programme, and create a framework to enable industry, regulators, researchers, Governments and the regions to work together; and
3. Complete the initial design of the pilot programme documents and ways of working, including applications, monitoring and impact assessments

5 Summary

The financial services sector is vital to the UK economy and FinTech innovation will shape the future of this vital industry.

The time to act on how we perform FinTech R&I in the UK is now, and the risks of not taking action could be significantly detrimental to the UK. It could see current R&I activity move to other jurisdictions; new services arrive from global competitors and over time see financial services businesses drift from the UK.

Success will come through an energised approach to ignite FinTech R&I. We welcome the opportunity to work and collaborate with bodies such as Innovate UK on the developing the pilot and R&I in UK financial services. We also look forward to further regional and industry engagement on this imperative opportunity for the future of FinTech.