



Digital Sandbox

Supporting innovation in financial services

Identifying sustainability use cases
methodology and insights report
July 2021



“Our vision is for a more open, greener, and more technologically advanced financial services sector. The UK is already known for being at the forefront of innovation, but we need to go further...And if we can capture the extraordinary potential of technology, we’ll cement the UK’s position as the world’s pre-eminent financial centre.”

The Rt Hon Rishi Sunak MP, Chancellor of the Exchequer¹

“UK financial services businesses are ready to mobilise and scale up sustainable finance in the UK and across the world, driving forward the transition to a greener, more sustainable future.”

Alderman William Russell (Rt Hon Lord Mayor of the City of London) and Catherine McGuinness (Policy Chair of the City of London)²



¹ <https://eandt.theiet.org/content/articles/2021/04/taskforce-to-explore-creation-of-british-digital-currency/>

² <https://www.theglobalcity.uk/championing-sustainable-finance>



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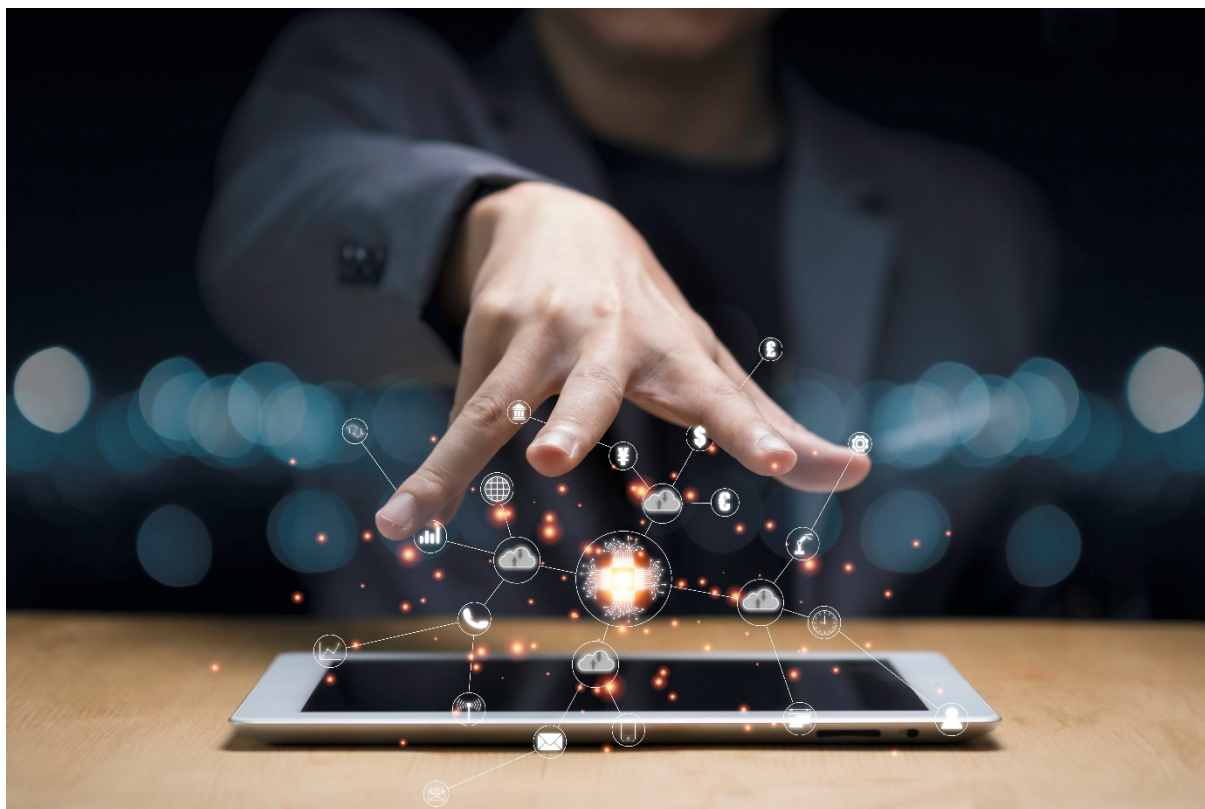
What is the Digital Sandbox?

The City of London Corporation and the Financial Conduct Authority are collaborating on a second phase of the Digital Sandbox to support testing and development of new fintech products.

The Sandbox is a space where innovators can access tools to help them develop and test their proofs of concept. Access to data in the quantity and quality needed to train algorithms is a huge challenge to tech development today. The tools in the Sandbox are designed to tackle challenges such as this and to drive tech activity to market faster.

The Sandbox also acts as a wider space to bring together the financial services ecosystem. Current innovation across sectors is fragmented and in silos. Problem statements do not match solutions, and this leads to frustration by users. This results in a less open and more risk-averse attitude towards digital transformation. The Digital Sandbox's features are designed to encourage collaboration and mentorship, to tackle this silo approach and encourage the implementation of new ideas and a seamless consumer experience.

In short, the Sandbox inspires entirely new intellectual property and ideas, using technology in novel ways to drive the market. It provides a safe space for industry to collaborate and guide solutions so that they are of a higher quality, and more scalable, than otherwise possible.



The Sustainability Cohort

A key element of this year's Digital Sandbox programme is a sustainability cohort. This cohort builds on learnings from the Digital Sandbox Pilot³, and is aimed at solutions that can accelerate the transition to a Net Zero economy.

In this model, teams will progress through the Sandbox over a period of 4 months, to tackle market led challenges. Participants will work on developing their solutions using the Sandbox's tools and will showcase their work at a mid-point and final demo day. They will be encouraged to collaborate with their fellow cohort to ensure interoperability of solutions, and with the wider ecosystem through seeking mentorship.

It is hoped that at the end of the cohort, teams will have a validated proof of concept, and a path to demonstrate proof of value and launch a minimum viable product with customers.



³ The Digital Sandbox Pilot welcomed a cohort of 28 organisations creating proofs of concept for financial services. The pilot explored three broad themes – preventing fraud and scams, improving financial resilience of vulnerable consumers, and assisting SME lending. Each theme posed three use cases. Applications were evaluated on the solution's application to one of the use cases, its report evaluating the pilot and lessons learnt has been published here: <https://www.cityoflondon.gov.uk/supporting-businesses/economic-research/research-publications/digital-sandbox-pilot>.



The importance of sustainable finance

“The sustainability cohort will work against the backdrop of COP26 and the UK's increasing strength in green finance. This will further mainstream sustainable finance as a core UK offer. It will also further underpin sustainability and technology in the financial services ecosystem.” Damian Nussbaum, Director of Innovation and Growth at the City of London Corporation

Limiting the effects of climate change is increasingly important. Major events that jeopardise our resilience are becoming more frequent and threatening biodiversity, ways of living, and individual lives. At some point this change will be irreversible.

The world is presently on track to exceed thresholds in the Paris Agreement.⁴ We will continue this path unless business, government, and individuals collaborate.

The UK has the chance to show global leadership, particularly considering its presidency at COP26. Mobilising finance is one of four goals on the agenda. The entire financial services ecosystem must be involved to effect change at the scale required and to fund the infrastructure, activities, and innovations that can do it.

“The scale and speed of the changes we need to make will require all forms of finance:

1. Public finance for the development of infrastructure we need to transition to a greener and more climate-resilient economy.
2. Private finance to fund technology and innovation, and to help turn the billions of public money into trillions of total climate investment.”⁵

Trillions in private finance must be unleashed. Every financial decision must consider climate:

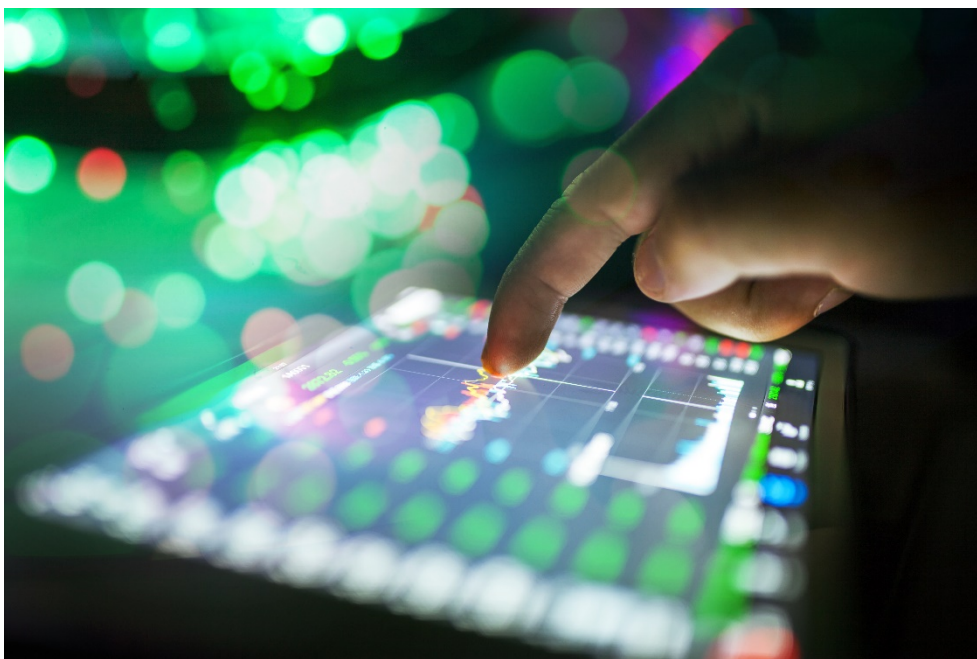
1. “This includes all private investment decisions, but also all spending decisions that countries and international financial institutions are making as they roll out stimulus packages to rebuild economies from the pandemic.
2. Companies need to be transparent about the risks and opportunities that climate change, and the shift to a Net Zero economy pose to their business.
3. Central banks and regulators need to make sure that our financial systems can withstand the impacts of climate change and support the transition to Net Zero.

⁴ <https://www.weforum.org/agenda/2020/12/analysis-world-paris-agreement-climate-targets-change-emissions-global-warming/>

⁵ <https://ukcop26.org/cop26-goals/finance/>

4. Banks, insurers, investors and other financial firms need to commit to ensuring their investments and lending is aligned with Net Zero."⁶

We cannot ignore this global call to action. In considering this, it was imperative that the Digital Sandbox focus a cohort on sustainable finance. We need to use all the tools in our toolkit to inspire new ideas and mobilise finance.



Methodology

An essential goal of the Digital Sandbox is to support tech activity that meets industry needs. Priority problem statements identified with industry drive the project and theme the cohorts. This process also helps us solve the challenge around a missing feedback loop between technology and financial services firms.

The importance of identifying use cases with industry is to:

- Strengthen awareness of the Digital Sandbox with industry and encourage their deeper participation throughout the project;
- Ensure there is a pipeline for tech solutions to integrate into wider financial services;
- Spur innovation that progresses financial services as a whole and improves global competitiveness of the sector.

To achieve this, the working group collaborated with industry to identify common blockers and opportunities and reframe these as use cases.

⁶ <https://ukcop26.org/cop26-goals/finance/>

Timeline of Activity

Map Landscape

Map the sustainable finance landscape

1:1

Conversations with experts

Top 3 Themes

Identify top 3 challenging themes facing industry

Test & Explore

Test themes and explore use cases through workshops

Revise

Revise and narrow use cases

Top 10

Test top 10 use cases with industry

Market Test

Market test top 10 use cases with advisory panel

Data

Apply a data overlay to determine what's out there, what is needed, and what is possible

Voting

Refer back to industry for final voting and select priority use cases



During initial engagement, the working group met with representatives from banking, asset management, and relevant trade bodies. These conversations were useful to map sustainable finance challenges with respect to technology and identify areas where market needs were not being met.

Three common themes emerged:

- Environmental, Social and Governance (ESG) Data and Disclosures (access to quality data and timely reporting)
- Voluntary Carbon Markets (scaling high quality, verifiable, and traceable carbon credits)
- Sustainable Debt Instruments (monitoring and pricing new instruments)

Following this exploratory work, we conducted several workshops with the wider ecosystem to gather problem statements, hypothesize solutions, and identify data inputs. The workshops included representatives from banking, asset management, sustainability, fintech, legal, regulators, government, academics, data scientists, and industry bodies.

156 potential use cases were identified during these workshops across the three themes.

Our challenge was to select the use cases which, if solved, would have the most impact on innovation in financial services and address high priority market challenges.

Reflections from industry engagement

Environmental, Social and Governance (ESG) Data and Disclosures

ESG data and disclosures is a broad field. It can include consumer information, data tracking and validation, reporting models, standard setting or policy decisions, and supply chain information. Quality data about a company's environmental, social and governance practices is critical for effective investment analysis.

The International Financial Reporting Standards Foundation has created a sustainability standards board to accelerate convergence on ESG reporting standards and work on technical recommendations. The initiative brings together work from several leading bodies in this field and is anticipated to be a key topic at COP26.

However, the lack of standardization and transparency in ESG reporting and scoring presents major challenges for investors. ESG reporting is not timely enough for investment decision making. And while third party ESG data providers play an important role, there are limitations with this data – especially in terms of differing methodologies that lead to variance in scores.



Use cases we heard from our engagement included:

- Tech to allow for frequent ESG data updates from companies to inform real-time investment decisions
- Tech to support companies, particularly small and mid-sized enterprises (SMEs), with Task Force on Climate-related Financial Disclosures (TCFD) as they are soon to become mandatory
- Tech to improve reporting on the “S” in ESG
- Tech to facilitate and improve active ownership
- Tech to provide asset owners and their investment managers with consistent, comparable and material ESG information

Carbon Markets

Businesses turn to voluntary carbon markets to compensate or neutralise emissions not yet eliminated. This is because it is either not possible or prohibitively expensive to directly reduce emissions from all activities across their value chains.

While the voluntary carbon credit market is experiencing significant momentum, it is still relatively nascent, set to grow at least 15x by 2030 and 100x by 2050⁷. The Taskforce on Scaling Voluntary Carbon Markets was launched in 2020, to create a blueprint to scale a transparent trading market. The UK Voluntary Carbon Markets Forum is set to implement this framework from a UK perspective. Conversations around emissions trading schemes (carbon markets) is expected to be a major conversation at COP26.

In addition to the work above, there needs to be a step change in the scale of supply and demand of high quality, additional, verifiable and traceable carbon credits. Buyers struggle to navigate various standards and to find high quality carbon credits at a transparent price. Sellers face uncertainty around future demand, low prices, limited access to financing, and long lead times to verify credits.

Use cases we heard from our engagement included:

- Tech to strengthen impact and quality assurance (e.g. around measurement, reporting and verification)
- Tech to create marketplaces to match supply and demand
- Tech to tokenize carbon credits
- Tech to measure a company’s emissions, and which can be used to initiate and execute automated carbon offset transactions

⁷ <https://www.mckinsey.com/business-functions/sustainability/our-insights/a-blueprint-for-scaling-voluntary-carbon-markets-to-meet-the-climate-challenge>

Sustainable Debt Instruments

New debt instruments are critical in helping to bridge the investment gap required to meet Net Zero. They can include, but are not limited to, Green Bonds, Transition Bonds, Sustainable Development Goals (SDG) bonds.

While organisations such as the International Capital Market Association (ICMA) and the Carbon Bonds Initiative (CBI) are working to strengthen the integrity of the green and sustainable bond market significant challenges remain. These include a lack of contractual protection for investors, greenwashing, the quality of reporting metrics and transparency, issuer confusion, and a perceived lack of pricing incentives for issuers.

Use cases we heard from our engagement included:

- Tech to reduce monitoring and reporting costs, and improve transparency in the use of proceeds and market integrity
- Tech to establish the fair value of sustainable instrument and determine the appropriate issuance size according to investor demand
- Tech to improve traceability of issuers commitments and dissemination of better and more timely impact reports (not just once yearly)
- Tech to improve demand discovery, e.g. assess investors interest in bonds
- Tech to facilitate exchange and alignment of data with investor's needs
- Tech to facilitate comparability and provide dynamic insights into ESG performance



Overall Reflections

During engagement we were able to briefly scope the fintech market. Most activity reported appeared to be around ESG data and disclosures, with a focus on how traditional



and alternative data could be used to provide assurance. While there is still a major role for policy and global standards to play, tech development should not be hindered or stifled while waiting for these new requirements. The benefit of algorithms is that they can be adapted to model taxonomies and change as regulatory requirements evolve.

Carbon markets was also identified as an emerging area; however, it became clear the market was very early stage in terms of solution development. The nascent nature of the market could jeopardise the size and success of a sustainability cohort and limit the utility of some of the Digital Sandbox features to potential participants.

Several leading questions emerged in our industry engagement, raised by users across the ecosystem.

While perspectives and positioning within the ecosystem may differ, it is clear there are common challenges financial services is grappling with. These are framed from the user point of view, below.

- How can we support SMEs in understanding requirements such as TCFD and meeting their obligations?
- How can we use alternative data to clarify 'social' responsibility and track impact?
- How can we get assurance that the correct systems and processes are in place to accurately flag greenwashing? How can we raise flags and compare information in the public sphere to tackle it?
- How can we measure impact using different approaches (e.g. 'do no harm' and 'positive impact')?
- How can we capture where data comes from and compare it between jurisdictions, whether to assess regulatory compliance or monitor risk areas?
- How can we track carbon offsets and improve measurement and validation?
- How can we measure the real impact of carbon trading against a Net Zero strategy, or initiate automated offset transactions?
- How can we reliably identify sustainability projects for debt instruments and make this information transparent to the public?
- How can we make commitments more traceable?

Final selection - Use Cases

The purpose of the Sandbox is to bring solutions to market that are needed and likely to scale. This furthers the UK's competitiveness as a place to test and develop propositions. Solutions that match a market need are easier to progress and to measure for impact.

Based on the pilot, we learned that cohorts should have a narrower focus to be effective. Selecting one overarching theme and more closely aligned use cases creates space for more sustained engagement from a closer-knit ecosystem. It also requires fewer data assets, which means those developed can have greater depth and granularity, and improved usability.

It was clear from our engagement that the market was most interested in solutions around ESG data and disclosure. In fact, 71% of our engagement base prioritized use cases in this area.

In further refining, we considered:

- Whether the use case would compel ideas with new technology that could have impact and active engagement;
- Whether a use case could be solved in multiple ways;
- Whether data required could be obtained or synthetically created to support the use case;
- Whether there were use cases that aligned such that we could keep a targeted focus.





After evaluating available data assets, survey responses, and current movement in the market, we identified three use cases that would build a compelling story around pain points across the ecosystem. This included how to gather data; how to make data reliable, transparent, and automatically validated; and how to use data in decision making. These use cases are explained in full below.

UC1

How can technology enable transparency in disclosure and reporting on sustainability, especially on the characteristics of corporate assets and the profile of their supply chains? (e.g. open source and eco-friendly decentralised ledgers, centralised platforms)

It is often challenging for companies to produce high quality data on sustainability risks, opportunities and impacts – including the characteristics of their assets and the profile of their ESG supply chains. Companies also often face overlapping reporting requirements from many different sources. It may therefore be difficult for financial services firms to assess the exposures in their lending, insurance and investment portfolios and make informed business, risk and investment decisions. Technology could help provide mechanisms to capture decentralised and geographically dispersed data on asset characteristics and supply chains, as well as analytical tools to interpret, aggregate and manipulate data.

UC2

How can technology be used to automate the assurance of a listed issuer's ESG data and validation of its ESG-labelled corporate bond issuance? (e.g. IoT, decentralised ledgers, centralised platforms, satellite imaging, AI)

A fair and effective market for sustainable finance rests on reliable information along the supply chain, and ultimately on confidence among market participants that ESG-labelled securities will perform as expected. Harnessing technology to support and potentially automate assurance and validation processes can help build that confidence which would in turn reduce financial and reputational risk and enhance market activity.

UC3

How can technology help consumers understand the ESG characteristics of the products and providers they engage with, as well as provide visibility around alternatives aligned with their needs and preferences?

Enhanced accessibility to reliable, comparable and decision-useful information on the ESG credentials and characteristics of financial services firms and the products they offer is key to consumers being able to make informed decisions. This could enable consumers to assess whether the characteristics of products and their providers align with their preferences and increase their awareness of alternatives that are potentially better suited to their needs and preferences.



Next Steps

The Digital Sandbox remains an experiment in accelerating innovation. Applications will open in September to innovators looking to develop their proof of concepts against the backdrop above. In the meantime, we will be creating the data assets and the ecosystem necessary to support these innovators. If you have expertise to share in data science or are willing to act as a mentor to the teams, please get in touch with us.

You can also register to the Digital Sandbox platform as an observer and follow the cohort's progress. Do so by visiting digitalsandboxpilot.co.uk.

Contact

Theresa.yurkewichhoffmann@cityoflondon.gov.uk

digital.sandbox@fca.org.uk

Visit

<https://www.digitalsandboxpilot.co.uk/>

<https://www.cityoflondon.gov.uk/supporting-businesses/business-support-and-advice/digital-sandbox-pilot>

Working Group

The working group is made up of representatives from the Financial Conduct Authority and the City of London Corporation.



About the City of London Corporation:

The City of London Corporation is the governing body of the Square Mile dedicated to a vibrant and thriving City, supporting a diverse and sustainable London within a globally successful UK.

We aim to:

- Contribute to a flourishing society
- Support a thriving economy
- Shape outstanding environments

By strengthening the connections, capacity and character of the City, London and the UK for the benefit of people who live, work and visit here.