



**GFiN**

GLOBAL FINANCIAL INNOVATION NETWORK

# The Global Financial Innovation Network Network Cross-Border Testing Initiative: Cohort 1.0

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# Acknowledgement

- 1.1 We would like to extend our thanks and gratitude to all the participating regulators and workstream members involved in the cross-border testing initiative. In particular, we would like to thank the lead regulators, Bank of Lithuania and Ontario Securities Commission for their valuable engagement and detailed contribution to this report.

# Executive Summary

- 2.1 The Global Financial Innovation Network (“GFIN”) was created to provide a more efficient way for innovative firms to interact with regulators, helping them navigate between countries as they look to scale and test new ideas.
- 2.2 One area of focus for the GFIN has been to explore the concept of cross-border testing (CBT), also known as the ‘global sandbox’, and to create an environment that allows firms to consecutively or concurrently trial and scale new technologies, products, or business models in multiple jurisdictions.
- 2.3 In January 2019, the GFIN launched a cross-border testing pilot to explore how regulators could collaborate and facilitate cross-border experimentation in multiple jurisdictions in real time. 17 regulators participated in the pilot and a total of 44 applications were received from firms interested in participating in the initiative, with eight firms progressing through to the testing plan development stage. The GFIN subsequently published a [lessons learned report](#) in January 2020, detailing the achievements and challenges of the pilot.
- 2.4 Building upon the experience of the pilot, the GFIN launched its first official CBT Cohort 1.0 in October 2020 with 23 regulators across eight regions participating in the initiative. A total of 38 applications were received from firms interested in testing their products and ideas, with two firms successfully taking forward their propositions to the live testing phase.
- 2.5 In July 2021, live tests began which led to GFIN’s first ever cross-border tests that successfully provided firms and regulators with real-time insights into how a product or service can operate in multiple markets. The opening of domestic and international dialogue between innovative firms and regulators across multiple jurisdictions has also further fostered collaboration in this space with these relationships continuing beyond the CBT initiative.
- 2.6 CBT Cohort 1.0 consisted of four key stages that are covered in this report and the summaries of the key findings for each are detailed below:

- 1. Application**
- 2. Assessment**
- 3. Testing plan development**
- 4. Testing**

## CBT Cohort 1.0 tools



### 23 Regulators in CBT Cohort 1.0

In the 2019 pilot 17 regulators participated in the CBT workstream. Since then, the work stream has grown to 23 regulators.



### Regulatory Compendium

Introduced in CBT Cohort 1.0, this provided information on each of the regulators' area of expertise and 'sandbox' capabilities, making it easier for firms to navigate through various jurisdictions and permissions.



### Lead Regulator appointment

In CBT Cohort 1.0, lead regulators were appointed to provide a single point of contact, supporting co-ordination effort between participating regulators and firms.



### Single application form

CBT Cohort 1.0 introduced the digital GFIN single application form. This allowed firms to submit applications to multiple regulators via one single consolidated form.



### Individual regulatory assessment

A total of 38 applications were received from firms across all participating regulators. Each regulator assessed and considered each firm's application based on their own eligibility criteria.

## CBT Cohort 1.0 Timeline

### October 2020

- Application window for first official cross-border testing cohort opens.
- GFIN website goes live to support firms (eg updated regulatory compendium and FAQs document).

### January 2021

- Application assessment phase begins.
- Workstream Chair coordinates initial round of regulators' feedback.
- One lead regulator appointed for each firm to help coordinate and manage the engagement between the relevant participating regulators and firms involved.

### April - December 2021

- Testing plan development phase starts from April 2021 until July 2021.
- Individual regulators progress governance and sign-off processes.
- Following Development of successful testing plans, live tests begin from July 2021.
- CBT test phase closed in December 2021.

### December 2020

- Applications window closes.
- 38 applications received across 23 participating members.

### March 2021

- Regulators make final decision on which firms to progress to testing plan development phase.



Application stage



Assessment stage



Testing plan & development stage



Testing phase

# Executive Summary

## Application stage

- 2.7 The application window for firms to submit their proposals for CBT Cohort 1.0 was open from 28 October 2020 until 31 December 2020 and was open to all qualifying innovative financial products or solutions.
- 2.8 Based on lessons learned from the 2019 pilot, participating regulators made a number of changes to improve the application stage of the CBT process for Cohort 1.0. These included:
- Agreeing upon a common understanding of the concept of CBT (“an initiative to test innovative financial products, services or business models across more than one country or jurisdiction”) and issuing additional guidance to firms. This provided firms with greater clarity on what CBT was and how it would work in practice.
  - Developing a digital GFIN Single Application Form to allow firms to submit their applications to multiple regulators using one form. This significantly reduced the burden on firms by avoiding the duplication of effort and also meant that the participating regulators were able to review and assess applications in a more efficient and effective manner.
  - Creating **regulatory compendium** documents to provide details of each regulator’s jurisdiction, the types of innovation services it offers and its requirements for cross-border testing. These provided firms with the relevant key information in one easy to access document to help them identify the most appropriate regulator to collaborate with on their propositions.

## Assessment stage

- 2.9 The assessment stage ran from January 2021 to March 2021, during which each participating regulator assessed the applications they had received against their respective eligibility criteria. Similar to the 2019 pilot, applicant firms were required to meet all eligibility criteria for each jurisdiction to which they had applied in order to participate in the CBT initiative.

# Executive Summary

- 2.10 As part of the assessment process, a lead regulator was appointed for each firm to help coordinate and manage the engagement between the various participating regulators and firms involved. The lead regulator therefore acted as the main point of contact for firms and liaised with both parties to resolve any issues or queries that arose throughout the assessment phase.
- 2.11 This 'hub and spoke' model provided a number of advantages as it meant that the process was more efficient and streamlined which made interaction with the regulators easier for firms by providing them with a single point of contact to engage with during this process.
- 2.12 In addition to the efficiencies that were gained during the assessment stage, there were also a number of challenges. As part of the assessment stage, firms had to demonstrate that they were able to meet the eligibility criteria of each of the regulators within the jurisdictions that they were proposing to test their product or services in. Prior to launching CBT Cohort 1.0, the participating regulators had made clear that this process would not be a regulatory harmonisation exercise and that firms would need to be able to navigate across multiple regulatory frameworks.
- 2.13 However, as the eligibility criteria of the participating regulators varied quite widely, this created a significant challenge for many firms as they were unable to demonstrate they could meet all of the eligibility criteria of the various relevant regulators which was a requirement of progressing through to the next stage of the CBT process.
- 2.14 The concept of CBT was also interpreted and understood differently across the participating jurisdictions which subsequently resulted in a large variation of applications being submitted to the GFIN. Some firms presented very early-stage initial concepts that were either not ready or suitable for testing, while others had more mature products or services that were suitable to proceed to the testing phase. Although the participating regulators had agreed from the outset to not limit the types of applications that could be submitted, on reflection some additional clarity on the types of applications that were appropriate would have been helpful for firms.

# Executive Summary

- 2.15 A significant resource burden was also placed upon the lead regulators as they were responsible for the management and coordination of the 38 applications and 23 participating regulators. Substantial effort and resource commitments were required by them to ensure that queries on both the firm and regulator side were resolved and that applications were progressed and assessed appropriately and on time.

## **Testing plan development stage**

- 2.16 Nine firms were successful in the assessment stage, and these progressed to the testing development phase.
- 2.17 During this phase, lead regulators coordinated with the participating regulators and the nine firms to collaborate on a detailed set of test plans and data requirements to identify potential risks, mitigation strategies, safeguards, and success measures.
- 2.18 As with the assessment stage, the appointment of a lead regulator to co-ordinate the development of testing plans provided a number of benefits in making the interactions between the firm and the participating regulators easier and streamlined the overall process by establishing a single point of contact.
- 2.19 The GFIN developed a new 'joint testing plan' form with a testing template that allowed firms to complete a single testing plan across the various jurisdictions that they were looking to test their product/service in. This led to greater consistency and improved efficiency for firms when developing their testing plans, enabling the participating regulators to work more effectively by providing a single view of the firm's proposed test that could be examined and discussed in unison.

## **Testing stage**

- 2.20 Two firms, Bedrock AI and Business Reporting - Advisory Group (BR-AG) were successful in progressing to live testing.
- 2.21 Bedrock AI's proposition was focused on developing a tool for the Canadian market that could identify potential signs of corporate crisis. The participating regulators were able to test the tool, gain insight into its functionality, and utilise it to help them successfully identify corporate crisis through various indications of red flags in sample disclosure documents.



# Executive Summary

- 2.22 The tests allowed the tool to successfully determine probable indicators that may be predictive of issues such as malfeasance or other crises and capture key information in a consolidate form that was easy for regulators to navigate. Furthermore, the test also brought to light the possibilities for regulators to adapt the tool and utilise it across a wider range of financial services markets.
- 2.23 As a result of the live test and regulator feedback, Bedrock AI were able to start development on a SupTech solution that provides a significant opportunity for the OSC to utilise the tool for broader supervisory work and reduce the regulatory burden within its capital markets.
- Bedrock's dashboard helpfully captured consolidated information in one place and this made it easy to navigate.
  - The tool was successful in achieving in seconds a task that would take an expert forensic analyst several hours.
- 2.24 BR-AG's cross-border test was seeking to develop a sustainability reporting template that could allow regulators to monitor how financial market entities manage sustainability related risks and to perform climate change related data analysis.
- 2.25 The cross-border tests were a valuable learning and knowledge gaining experience that provided a unique opportunity for regulators and innovators to collaborate.
- 2.26 BR-AG's proposition was focused on developing a proof-of concept sustainability reporting template, allowing regulators to monitor how financial market entities manage sustainability-related risks and perform climate change-related data analysis.
- 2.27 During the test phase BR-AG's proposition enabled the participating regulators to better understand the scope and capability of the product. In particular, the regulators were able to explore the ESG risk mitigation methodologies and sustainability reporting requirements in greater detail and were subsequently able to successfully develop three versions of the reporting model for covering banking, investment, and insurance sectors.

# Executive Summary

2.28 Following the live test, further work is being planned to refine BR-AG's tool and build on its initial ESG risk mitigation methodologies in order for it to be applied across specific jurisdictions and markets.

## **Conclusion**

2.29 Both the firms and regulators involved in CBT Cohort 1.0, noted a number of key benefits, these include:

1. Firms being given the opportunity to collaborate directly with participating regulators and gain an in-depth understanding of the regulatory frameworks and jurisdictions that they were interested in operating within through detailed feedback, allowing them to refine their proposed products and solutions.
2. For the participating regulators, CBT Cohort 1.0 enabled them to access new innovative technologies as well as the unique opportunity to partake in the test planning and actual testing phases to meet specific or multiple jurisdictional requirements. This type of access has enabled regulators to consider innovations and the adoption of new technologies as a way to enhance and streamline their regulatory activities.
3. The majority of the participating regulators in the test phase have also been able to continue to engage beyond the CBT process. For example, through engagement with Bedrock AI, the Canadian regulators have been able to develop and further adapt the proposition to provide innovative solutions within the SupTech space allowing existing supervisory processes to be streamlined and enhanced.

2.30 As part of GFIN's commitment to having an open dialogue with industry and regulators, the GFIN has prepared this report to reflect on the experiences of the Network's first official CBT initiative.

# Application stage

## Introduction

- 3.1 The first phase of CBT Cohort 1.0 involved an application process in which firms that were interested in testing their propositions across multiple jurisdictions were able to submit their proposals to the relevant regulators for consideration.
- 3.2 GFIN Members participating in this initiative (“participating regulators”) subsequently assessed the firm’s eligibility against their own domestic sandbox criteria. Firms that were deemed to have met the relevant eligibility criteria were then invited to work with their chosen jurisdictions in the next stage of the CBT to develop and discuss their ideas with the relevant regulators.
- 3.3 The 2019 CBT pilot (“**the pilot**”) highlighted a number of challenges at the application stage that related to the definition of “cross-border testing” and the ways in which applications were submitted to participating regulators. As a result, for CBT Cohort 1.0 the participating regulators focused on updating the definition of ‘CBT’ to provide greater clarity to firms and also introduced several new tools to assist firms. These are covered in further detail below.

## Cross-border testing definition

- 3.4 Ahead of launching the pilot in 2019, the participating regulators had not established an agreed definition for ‘cross-border testing’ (CBT). This led to firms interpreting the concept of CBT in many ways and resulted in a wide range of applications being received, varying from firms looking to conduct a genuine cross-border activity (i.e. a financial services activity taking place between two jurisdictions) to firms looking to one regulator to provide an introduction to another regulator in order to explore market entry.
- 3.5 Therefore, for CBT Cohort 1.0 the participating regulators agreed upon a common understanding of the concept of CBT (“*an initiative to test innovative financial products, services or business models across more than one country or jurisdiction*”) and issued additional guidance to provide firms with greater clarity on what CBT was and how it would work in practice.

# Application stage

## **GFIN Single Application Form**

- 3.6 One of the key challenges for firms and regulators in the pilot was that firms were asked to submit individual applications to all of the regulators that they were interested in conducting a test with. This meant that firms were required to submit numerous applications each, and in some cases needed to file as many as 17 applications in order to present their propositions to the relevant participating regulators.
- 3.7 This resulted in a duplication of work for firms when setting out their business models and proposed innovations and also raised a number of significant logistical challenges for regulators when carrying out their assessments and cross-checking numerous application forms spread across multiple jurisdictions.
- 3.8 To overcome these challenges and reduce the burden on firms for CBT Cohort 1.0 the participating regulators developed a digital GFIN Single Application Form. This new form allowed the participating regulators to gather the necessary information from firms about their proposed product or service in one single consolidated form that firms could complete, and which would subsequently be shared with all participating regulators. This significantly reduced the burden on firms by avoiding the duplication of efforts and also meant that firms could instead focus on the quality of their submissions rather than on the administrative side of the process.
- 3.9 The single application form also provided benefits to the participating regulators by allowing the application process to be automated. During the pilot, applications were received and reviewed manually which resulted in a more labour-intensive and cumbersome process. The automating of the application process for CBT Cohort 1.0 allowed for information to be gathered from firms more easily and subsequently enabled the participating regulators to review and assess applications in a more efficient, consistent, and effective manner.

## **Regulatory compendium**

- 3.10 To further assist firms with their applications, participating regulators also created the **regulatory compendium** comparison table which provided details of each regulator's jurisdiction, the types of innovation services it offers, its specific requirements for cross-border testing as well as key contact information.

# Application stage

- 3.11 In addition to this, each regulator also produced an individual compendium entry, presenting all the relevant information about their respective innovation support services and their scope and remit. These documents were available on the GFIN website, together with the **CBT FAQs**, to facilitate ubiquitous access.
- 3.12 The compendiums helped firms to better understand the support that was available in the jurisdictions that they were seeking to test their products in and provided firms with the relevant key information in one easy to access document to help them identify the most appropriate regulator to collaborate with.

## Application window

- 3.13 The application window for firms to submit their proposals for CBT Cohort 1.0 was open from October 2020 until December 2020, and was open to all qualifying innovative financial products or solutions.
- 3.14 The opening of the application window was advertised by each individual participating regulator using a variety of methods including social media channels, engagement events with industry and firms, and press releases on their websites.
- 3.15 Feedback received from the participating regulators suggested that, on reflection, generating greater awareness of the launching and closing of the application window, as well as publicising these via a greater number of channels, would have been more beneficial as some firms missed the opportunity to participate due to a lack of awareness of the initiative or as a result of missing the deadline to submit their application.

## Challenges

- 3.16 As part of the application stage, firms were required to select the regulators that they wished to collaborate with, and in testing their propositions. In many instances firms selected a large number of regulators in their applications to collaborate with, with some selecting over a dozen different regulators. However, many of these firms had either not adequately prepared for or were practically unable to meet the specific eligibility criteria for each the jurisdictions they had applied to. As a result, the GFIN received a number of unsuitable applications and many firms were subsequently unable to progress to the next stage of the process.

# Application stage

- 3.17 As part of their eligibility criteria, some regulators required firms to either be authorised or to have an authorised business that they could partner and work with before any testing could be done within their jurisdictions. Some of the firms that applied did not have partners secured in the jurisdictions they had submitted applications to which meant that they were unable to continue through the CBT process and test their propositions. In some cases, firms had the misunderstanding that the participating regulators would secure partners for them as part of the CBT process and were not aware that they were required to do this themselves ahead of submitting their applications or the start of the testing phase. Participating regulators recognised that it would have been beneficial to provide further clarification and information regarding the commitment required from firms and, where applicable, the need to secure partners in the jurisdictions firms are applying to in order to allow firms to prepare a thorough and full application.
- 3.18 Participants noted that, on reflection, it would have been beneficial for the GFIN to leverage its communication tools, such as the GFIN and participating regulators' websites and the application process, to ensure that firms fully understood the aims and objectives of cross-border testing.
- 3.19 In order to mitigate against the resourcing challenges that also arose during the application stage, some participating regulators have suggested that for future cohorts' thematic rounds of testing could be adopted. This approach would allow workstream members to plan and allocate resources more effectively and ensure that the propositions being tested were aligned with the GFIN's overall priorities and objectives. A thematic approach would also allow regulators to fully consider the types of firms that they are willing and practically able to support through the workstream.
- 3.20 Overall, the application stage was very insightful and provided the GFIN with intelligence and insights into the types of solutions and ideas that the industry was developing across various jurisdictions and markets, and also signified the great appetite of firms to work across different jurisdictions.

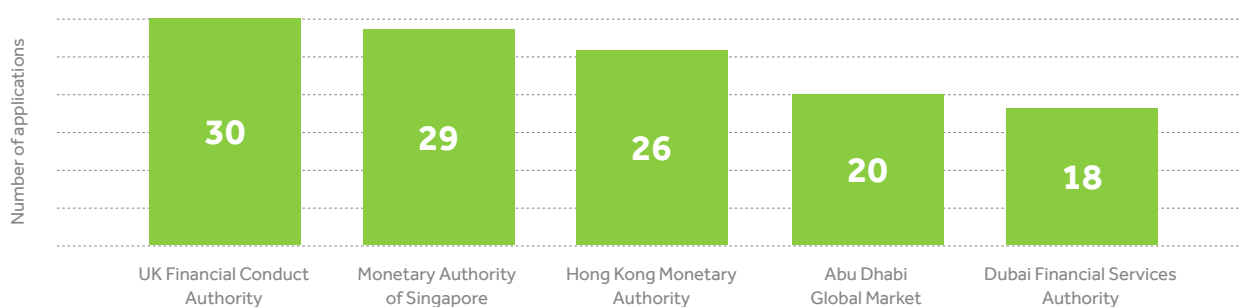
# Assessment stage

## Introduction

- 4.1 Following the submission of applications from firms interested in taking part in cross-border testing, each participating regulator undertook an assessment of the applications they had received based on their respective eligibility criteria. This assessment stage ran from January 2021 to March 2021 and provided regulators with the opportunity to engage with firms regarding their propositions.
- 4.2 This chapter provides further detail on the timelines, types of applications received and the challenges that arose during the assessment stage.

## Types of applications

- 4.3 The 23 participating regulators received a total of 38 applications with the majority being submitted to the UK Financial Conduct Authority, Monetary Authority of Singapore, Hong Kong Monetary Authority, Abu Dhabi Global Markets, and Dubai Financial Services Authority.



- 4.4 For this CBT Cohort 1.0 The GFIN received applications from a wide range of sectors, such as retail lending, wholesale financial markets, retail banking, general insurance and RegTech with different underlying enabling technologies being put forward for potential testing. The majority of applications received were from the RegTech sector. This was unsurprising as many of the participating jurisdictions did not require RegTech firms to be licensed or authorised in order to provide their services, therefore making cross-border testing easier to facilitate for these firms.

# Assessment stage

## Assessment process

- 4.5 As part of the assessment process, one lead regulator was appointed for each firm to help coordinate and manage the engagement between the various participating regulators and the firms involved. The lead regulator therefore acted as the main point of contact for firms and liaised with both parties to resolve any issues or queries that arose.
- 4.6 Although this approach placed a significant resource burden on members that were appointed as lead regulators, it meant that the process as a whole was more efficient and streamlined. For example, it made interaction with the regulators easier for firms as they had a single point of contact to engage with during the assessment phase and were not required to communicate across multiple jurisdictions. This also allowed regulators to have a single, clear view of the various interactions that were taking place between the applicant firms and the other participating regulators.
- 4.7 Each participating regulator thereafter undertook a review of the applications submitted to them and assessed these against their own domestic eligibility criteria. Applications that were deemed to have met the eligibility criteria of more than one regulator were subsequently progressed to the testing plan development stage. In cases where firms did not meet the eligibility criteria, but whose product or service nevertheless demonstrated a potential to deliver benefits to consumer outcomes and the achievement of regulatory objectives, regulators were able to offer bilateral support outside of the CBT Cohort 1.0 initiative. This included access to designated regulatory support services, clinics, innovation labs and sectoral partnership programmes, inclusion in domestic sandbox programmes and other regulatory support initiatives.



# Assessment stage

## Challenges

- 4.8 One of the key challenges that the participating regulators faced during this stage was that the propositions of the firms that applied to take part were in some instances novel and required regulatory approvals that did not have a precedent in the jurisdiction that they had applied to. It was therefore difficult for the regulators to fully anticipate the level of resource, regulatory involvement and support that would be required and appropriately factor these into their plans. As a result, this subsequently also raised challenges for the regulators and firms in being able to align to broader CBT timelines and deadlines.
- 4.9 As part of the assessment stage, firms had to demonstrate that they were able to meet the eligibility criteria of each of the regulators within the jurisdictions that they were proposing to test their product or services in. Prior to launching CBT Cohort 1.0, the participating regulators had made it clear that this process would not be a regulatory harmonisation exercise and that firms would need to be able to navigate across multiple regulatory frameworks. Nevertheless, as the eligibility criteria of the participating regulators varied quite widely, this created a significant challenge for many firms as they were unable to demonstrate that they could meet all of the eligibility criteria of the various relevant regulators in order to progress through to the next stage of CBT. An example of this was that while some regulators accepted both authorised and unauthorised firms into their regulatory sandboxes, other regulators required firms to be authorised in order to participate in testing. This therefore meant that firms were in some instances unable to proceed to live testing in the jurisdictions that they were most interested in testing their propositions.
- 4.10 Another significant challenge was the fact that the concept of CBT was interpreted and understood differently across the participating jurisdictions. This resulted in a large variation of applications being submitted to the GFIN with some firms presenting very early-stage initial concepts that were not ready for testing. Others had more mature products or services that were suitable to proceed to the testing phase. Greater communication from the regulators on what the CBT process involves and the requirements for testing may have prevented this challenge from occurring and could have potentially reduced the number of applications from firms that had either misunderstood what they were applying for or whose products and services were not suitable or ready for testing.

# Assessment stage

- 4.11 As detailed earlier in this chapter, another challenge that arose was the significant resource burden placed upon the lead regulators. As these members were responsible for the management and coordination of the 38 applications, as well as engaging with a total of 23 participating regulators to resolve any issues surrounding applications, substantial effort and resource commitments were required from the lead regulators to ensure that applications were progressed and assessed appropriately and on time.

# Testing plan development stage

## Introduction

- 5.1 Nine firms were successful in their initial applications and subsequently progressed to the testing development phase. During this phase, firms were required to demonstrate to the participating regulators that they were ready to start testing in the next quarter and had to provide in-depth details of how their propositions would work in practice.
- 5.2 Lead regulators co-ordinated with the participating regulators and the nine firms to collaborate on a detailed set of test plans and data requirements to identify potential risks, mitigation strategies, safeguards, and success measures. Lead regulators also assisted with establishing timelines for testing cases and co-ordinated decisions with participating regulators to determine whether firms were ready to proceed to the live testing phase.
- 5.3 The appointment of lead regulators to help co-ordinate the development of testing plans provided a number of benefits in making the interactions between the firm and the participating regulators easier and streamlined the overall process by establishing a single point of contact.
- 5.4 The GFIN also designed a template that enabled firms to complete a single testing plan for the various jurisdictions that they were looking to test their propositions in and allowed for greater consistency and improved efficiency in the development of their test proposals. The joint testing plan template also enabled the participating regulators to work more effectively in the development of the testing plans by providing a single view of the firm's proposed test that could be examined and discussed in unison.
- 5.5 Two firms were subsequently deemed to be ready for live testing and were notified formally by the lead regulators that they would be proceeding to the testing phase. The remaining six firms were unable to progress to live testing either as a result of withdrawing from the process or failing to secure agreement from the relevant participating regulators on their testing plans. Firms that were unable to proceed to live testing were provided with constructive feedback and in some cases were also able to receive alternate support from regulators via other means, such as through participation in domestic sandboxes.

# Testing plan development stage

## Challenges

- 5.6 Developing a successful test plan was a crucial element to participating in a cross-border test and a key challenge during this stage of the process was the level of engagement that was required between firms, the participating regulators, and the lead regulators.
- 5.7 As it was the first time the regulators were taking part in such an exercise, it was difficult for them to fully anticipate the level of regulatory involvement and the resourcing commitments that would be required from them in designing testing plans with their respective firms. This subsequently led to delays occurring within this stage of the process as regulators grappled with these issues. Putting in place pre-approved agreements between the participating regulators prior to this stage to cover issues such as terms of engagement, resourcing requirements, and data/confidentiality agreements could have greatly helped to mitigate against this challenge and prevented delays from occurring.
- 5.8 Similar to the assessment phase, another key challenge for the lead regulators was the resource burden that was placed upon them. This was due to them being required to co-ordinate with numerous regulators and firms across various jurisdictions and time-zones, maintaining constant regular touchpoints with all parties to ensure that queries and concerns were addressed effectively, and to help establish robust testing plans that could be taken forward to live testing.
- 5.9 The Covid-19 pandemic also created a number of challenges in how firms and regulators were able to engage with one another during the testing plan development phase. As in person meetings were unable to take place, this at times made it difficult for participating regulators to fully get to grips with firms' propositions and to be able to engage effectively to overcome the complexities involved in developing robust testing plans. These hurdles subsequently increased the time required for participating regulators to suitably analyse firms' propositions and led to delays for the overall CBT timeline.

# Testing phase

## **Introduction**

- 6.1 Two firms, Bedrock AI and Business Reporting - Advisory Group, were successful in progressing to live testing. During this stage of the process, the participating regulators and firms tested the propositions in a live environment with real end users for a period of six months. Further detail of each of the tests is outlined on the following pages.

# Testing phase

## **Bedrock AI**

- 6.2 Bedrock AI is a Canadian company created by a group of natural language processing researchers and Chartered Professional Accountants with a mission to support accountability through information transparency. The team applies natural language processing, machine learning and computational techniques in an attempt to process corporate disclosures to enhance regulators' supervisory processes and assist businesses with corporate risk analysis.
- 6.3 Bedrock AI's proposition was focused on developing a version of their tool for the Canadian market that can identify red flags and potential signs of corporate crisis or malfeasance. The test was carried out in conjunction with the Alberta Securities Commission, the Autorité des Marchés Financiers Quebec, the British Columbia Securities Commission as participate regulators with the Ontario Securities Commission acting as the lead regulator.
- 6.4 During the tests, the participating regulators noted the following as part of the CBT tests and were keen to see this develop further:
- The system was successful in determining probable indicators that may be predictive of issues such as malfeasance or other crises.
  - Bedrock's dashboard helpfully captured consolidated information in one place and this made it easy to navigate.
  - The tool was successful in achieving in seconds a task that would take an expert forensic analyst several hours.
  - The type of reporting could help regulators improve their internal workflows and utilize innovative technologies more effectively.
  - This reporting tool had wider possibilities and could be adapted and used across other markets, some of which the regulators were keen to take forward.

# Testing phase

## **Business Reporting - Advisory Group (BR-AG)**

- 6.5 Business Reporting - Advisory Group (BR- AG) is a Polish company providing regulatory reporting and supervisory technology solutions for the financial institutions and regulators around the world to build trusted data ecosystems.
- 6.6 With the Bank of Lithuania acting as Lead Regulator, the central banks of the United Arab Emirates, Central Bank of Bahrain, Abu Dhabi Global Market, Astana Financial Services Authority (Kazakhstan), and Bermuda Monetary Authority approved BR-AG to test its ATOME: Matter platform in their regulatory sandboxes.
- 6.7 ATOME: Matter is a metadata management platform that maps data requirements into easily understandable data concepts, such as data dictionaries, taxonomies, models and reporting templates, building a common understanding across both IT and business-oriented teams, and enabling to digitise data flows.
- 6.8 The objective of BR-AG's cross-border test was to demonstrate how ATOME supports building a common understanding of data requirements for sustainability disclosures and fosters effective data collection for regulators without inadequate reporting burden for market participants. With ATOME: Matter Platform, BR-AG developed a proof of concept for sustainability reporting including a data model following international standards and guidelines such as TCFD and sustainable data classifications and taxonomies, designing granular data reporting templates to collect and analyse sustainability-related data. Such model will allow regulators to monitor how financial market entities manage sustainability related risks, progress towards sustainability goals like SDGs and to perform climate change risk related and other analyses to green their economies. Examples of sustainability-related data analysis include the assessment of financial assets and portfolio sustainability risks, the carbon footprint in the projects financed by financial market participants and the identification of sectors that can have a significant impact on climate change.

# Testing phase

## **Business Reporting - Advisory Group (BR-AG)**

- 6.9 During the test phase BR-AG's proposition enabled the participating regulators to better understand the scope and capability of the product. In particular, the participants were able to explore data modelling methodologies, existing sustainability reporting and ESG standards and classifications as well as best practices and technology to digitise reporting requirements. Three versions of the reporting model were developed (to cover banks, investment, and insurance sectors), all of which demonstrated how to embed clarity and auditability into the sustainability reports, that would positively influence sustainability reporting in the future and maximise the potential for automated analyses.
  
- 6.10 It was noted that the proposition data model platform presented the information in a structured format, each of the test outcomes were compared against records that had already passed defined data quality checks. The results were promising, and on the work continues to support sustainability reporting frameworks for specific jurisdictions and markets.



# Testing phase

## Lessons learned

- 6.11 A particular challenge of the testing phase was that, as with all tests of this nature, a number of uncertainties arose that impacted the testing plans that had been developed for each of the firms. For example, the setup time or testing itself in some instances took longer than anticipated and live feedback from the regulators and firms alike also resulted in changes needing to be made to the testing plans. For future exercises, extending the test time and building in flexibility on the part of both the participating regulators and the firms during the test period is crucial in order to accommodate any unexpected events that can occur during the live testing of firms' products or services.
- 6.12 Feedback from the participating regulators also highlighted that more comprehensive and detailed discussions on intended outcomes and evaluation criteria during the drafting and finalisation of the testing plan would have been beneficial to the testing phase. This would have allowed for a more streamlined and structured approach to testing to take place and for the parties to fully establish objective internal evaluation criteria and success measures prior to beginning testing. An example of this challenge occurring was in the Bedrock AI test where further detailed conversations around the evaluation criteria identified the need to transform the firm's proposition into a SupTech solution with clear success measures. The commitment and collaborative effort from the participating regulators and firm were crucial in allowing this change to take place and allowed for the testing of the proposition to continue.
- 6.13 Participating regulators also noted that the lack of specialist resource and support (such as IT experts, data analysts and market participants) at times created significant challenges in conducting the tests. This issue was partly overcome by lead regulators providing additional support and resources to ensure that the impact on the live tests was minimal; however, this consequently placed further burdens on the lead regulators themselves.

# Conclusion

- 7.1 CBT Cohort 1.0 provided both GFIN members and firms with valuable insight, intelligence, and first-hand experience of how regulators and firms can successfully collaborate and facilitate cross-border experimentation in multiple jurisdictions in real time.
- 7.2 Both the firms and regulators involved in the initiative noted a number of key benefits. For example, firms were able to benefit from direct interactions with participating regulators and gain a more in-depth understanding of the regulatory frameworks and jurisdictions that they were interested in operating within. Similarly, firms that were not able to proceed to live testing were also provided with detailed feedback and were able to benefit from having access to a variety of alternative methods of regulatory support.
- 7.3 The initiative also allowed firms, through detailed feedback from regulators, to gain a better understanding of how their solutions could operate in different markets, and therefore in some instances be able to further refine their products and solutions to be a more effective overall product.
- 7.4 For the participating regulators, the initiative provided opportunities for them to better understand the practicalities of working across borders and the improvements that need to be made in this area, such as the level of resource and expertise required across each of the key stages of the CBT process.
- 7.5 Regulators were also able to take key learnings and insights to help improve their own domestic sandboxes and to cater these for future international collaborations, as well as implementing some of the lessons learned for any future CBT.
- 7.6 The participating regulators also acknowledged the opportunity that CBT provided in terms of providing them with access to new innovative technologies, seeing these tested first-hand, and being given the unique opportunity to provide detailed regulatory feedback at crucial stages of the development process.

# Conclusion

- 7.7 The majority of the participating regulators have also been able to continue to engage beyond the CBT process in order to further refine the innovative products and services within their own respective jurisdictions and markets. This has also led to new avenues of collaboration arising; for example, through engagement with the Australian Securities and Investments Commission (ASIC), Bedrock AI had developed its RegTech capability to be well positioned to apply for an Australian Government RegTech grant and was successful in obtaining this grant. Bedrock AI has now since worked with ASIC in further developing a RegTech solution to a corporate disclosure supervisory problem and is eligible to apply for a further grant to develop a proof of concept RegTech solution. Similarly, through the sharing of sampled regulatory and corporate data, the Canadian regulators and Bedrock AI were able to develop and further adapt the proposition to provide innovative solutions within the SupTech space, allowing existing supervisory processes to be streamlined and enhanced.

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