

PENSION FUND REGULATORY AND DEVELOPMENT AUTHORITY

EXPOSURE DRAFT

Report of the Group to identify areas under NPS which could utilize FinTech through Regulatory Sandbox

Issued on: 23rd April, 2019

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In order to speed up the development of the NPS market and for improving the ease of doing business in relation to NPS, PFRDA is in the process of undertaking steps to identify the areas under NPS which could utilise the financial technologies (FinTech) using the regulatory sandbox approach for the benefit of subscribers and NPS as a whole.

Accordingly, PFRDA constituted a Group to identify areas under NPS which could utilize financial technologies (FinTech) through Regulatory Sandbox and the committee has submitted its report on 3rd April 2019.

Keeping the above in perspective, the report on the subject matter is provided herewith for comments and feedback from the public and all concerned. Comments/Feedback may be forwarded by email to the e-mail id fsdc.fslrc@pfrda.org.in latest by 21.05.2019.

Comments should be given in the following format:

Name of entity/ person			
Sr.No.	Pertains to which Section/sub-section and Page number	Proposed/ suggested changes	Rationale

Written comments in the above format may be addressed to:

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New Delhi – 110016*

**Report of the Group to identify areas under NPS which could utilize
FinTech through Regulatory Sandbox**



April 2019

PENSION FUND REGULATORY AND DEVELOPMENT AUTHORITY

NEW DELHI



LETTER OF TRANSMITTAL

Shri Hemant G. Contractor
Chairman
Pension Fund Regulatory and Development Authority
New Delhi

Dear Sir,

Report of the Group to identify areas under NPS which could utilize FinTech through Regulatory Sandbox

The Pension Fund Regulatory and Development Authority constituted a Group to identify areas under NPS which could utilize FinTech through Regulatory Sandbox vide Office Order PFRDA/98/FSLRC/02 dated November 14, 2018. We are pleased to submit the report of the Group.

With kind regards

Yours sincerely

Sumeet Kaur Kapoor
(Chairperson of the Group)

Shri Ashish Kumar
(Member)

Shri Pravesh Kumar
(Member)

Shri Mono M.G. Phukon
(Member)

Shri Vikas Kumar Singh
(Member)

Shri N. Rajendran
(Member)

Shri Vivek Srivastav
(Member)

Shri Dharmesh Parekh
(Member)

Ms. Manju Bhalla
(Convener)

ACKNOWLEDGEMENT

We would like to thank the Chairman, PFRDA, Whole Time Member(Economics), PFRDA and Whole Time Member(Finance), PFRDA for giving an opportunity to this Committee for exploring an important arena of FinTech in order to create an enabling framework for innovation to catalyze orderly growth of National Pension System (NPS). Their overall guidance and specifically in the first meeting of the Group paved the way for further structured deliberations.

The Group would like to thank the FinTech companies for sparing their valuable time and sharing their views and giving a perspective on the issues. We acknowledge the valuable inputs given by Sh. Ranjeet Rane from Reserve Bank IT Pvt. Ltd. during the deliberations.

The Group would like to thank Sh. Vaibhav Nagar, Assistant Manager, PFRDA for providing research and support extended to the Group during the deliberations and in compiling the report.

Regulatory Sandbox being a novel concept which is still being conceptualized, the Group was guided by the experience of various national and international regulators through their reports and websites.



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PFRDA/98/FSLRC/02

14.11.2018

OFFICE ORDER

Subject: Constitution of the Group to identify areas under NPS which could utilize FinTech through Regulatory Sandbox –reg.

There has been a tremendous change in financial sector due to technological advancements and innovations. A "regulatory sandbox" approach could be utilized to experiment upcoming technologies and solutions in order to promote the development of Financial Technology (FinTech) for the pension sector in a safe & controlled environment. In view of the same, PFRDA has decided to constitute a group to identify areas under the National Pension System (NPS) which could utilize FinTech through regulatory sandbox. The group shall comprise of the following officers:

1. Ms. Sumeet Kaur Kapoor, Chief General Manager, PFRDA – **Chairperson**
2. Sh. Pravesh Kumar, General Manager, PFRDA
3. Sh. Vikas Kumar Singh, General Manager, PFRDA
4. Sh. Mono Mohon Gogoi Phukon, General Manager, PFRDA
5. Sh. N. Rajendran, Chief Technology Officer, National Payments Corporation of India Ltd. (NPCI)
6. Sh. Dharmesh Parekh, Chief Technology Officer, NSDL e-Governance Infrastructure Ltd.
7. Sh. Vivek Srivastav, Senior Vice President, Reserve Bank Information Technology Pvt. Ltd.
8. Dr. Purnima Sharma, Deputy General Manager, PFRDA – **Convener**

The group may co-opt any other industry participant including from FinTech firms on need basis for specific meetings.

2. Terms of Reference of the Group:



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- (a) To make recommendations for specific areas where FinTech may be involved for system and process improvement experiments through sandbox.
- (b) To examine the feasibility of introduction of FinTech outcomes and likely impact on existing systems and process with specific emphasis on CRA work.
- (c) To study the international experiences on Regulatory Sandbox such as UK, Singapore etc.
- (d) To study the best practices followed in the financial sector including banking, asset management and insurance.
- (e) To interact with industry participants and draft a consultation paper on Regulatory Sandbox under NPS.
- (f) Any other related matter(s).

3. The Group may meet as often as may be considered necessary. Remote participation, during a meeting, may be carried out using videoconferencing or any other electronic procedure.

4. The minutes of each meeting shall contain a fair and correct summary of the discussion and/or decision(s) arrived at the meeting. The Convener shall send a copy of the minutes by digital or any other electronic means as finalised and approved by the Chairperson or the presiding member, as the case may be, to each of the members for his or her information.

5. Each member of the Group (except members from PFRDA and government officials) shall be entitled to re-imbusement of expenses, sitting fees, incidentals etc. from the Authority for attending the meetings of the Group in accordance with such scales as may be specified from time to time.



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6. No member, other than the Chairperson or a person specifically authorized by him shall give information to the Press, any other public media or persons on matters relating to the decisions taken at the meetings of the Committee or sub-committees.
7. The Group shall submit its report within three months from the date of this order.


(P. Arumugaraajagan)
Deputy General Manager



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OFFICE ORDER


PFRDA/116/FSLRC/03

21 December 2018

Subject: Constitution of the Group to identify areas under NPS which could utilize FinTech through Regulatory Sandbox –reg.

In partial modification of Office Order No. PFRDA/98/FSLRC/02 dated 14.11.2018, the constitution of the captioned Group is modified as under:

1. Ms. Sumeet Kaur Kapoor, Chief General Manager, PFRDA – Chairperson
 2. Sh. Ashish Kumar, General Manager, PFRDA
 3. Sh. Pravesh Kumar, General Manager, PFRDA
 4. Sh. Vikas Kumar Singh, General Manager, PFRDA
 5. Sh. Mono Mohon Gogoi Phukon, General Manager, PFRDA
 6. Sh. N. Rajendran, Chief Technology Officer, National Payments Corporation of India Ltd. (NPCI)
 7. Sh. Dharmesh Parekh, Chief Technology Officer, NSDL e-Governance Infrastructure Ltd.
 8. Sh. Vivek Srivastav, Senior Vice President, Reserve Bank Information Technology Pvt. Ltd.
 9. Ms. Manju Bhalla, Deputy General Manager, PFRDA – Convener
2. All other terms and conditions shall remain unchanged.


(P. Arumugarangarajan)
Deputy General Manager

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Executive Summary

Background

The World is rapidly evolving and importance of technology has grown astronomically for any industry. Digital innovation has helped the financial sector to grow rapidly and the participation of non-financial providers has transformed the way financial services are delivered. There is an increasing blurring of the division between traditional financial companies and technology players.

The Indian financial sector has undergone significant transformation over the last few years and has witnessed tremendous growth of new age FinTech firms, and corresponding investments in such firms. However, as the involvement of FinTech in banking sector matures, innovators are seeking to disrupt other financial services, and pension is viewed by many as the next great opportunity for investment.

Innovative applications of technology for financial services are being used across the financial sector and pensions is no exception. The National Pension System (NPS) utilizes a completely digital architecture with Pension Funds, Custodian of securities, Central Recordkeeping Agencies, Points of Presence and Government Nodal Offices among other intermediaries which are continuously engaged with the System in terms of data/information as well as money flow. FinTech has a great potential to help improve communication with subscribers, engagement with the broader public, make internal processes of intermediaries more efficient, improve their risk management and regulatory compliance processes. Nonetheless, increasing reliance on technology has presented itself with different challenges of cyber security and consumer protection.

Considering the enormous potential of FinTech innovations and today's rapid pace of change, regulations will also need to evolve in order to ensure subscriber protection without inadvertently stifling innovation. In order to nurture such innovations, while simultaneously safeguarding subscriber interests, several regulators across the world have precisely done this--

taken a variety of regulatory and supervisory initiatives such as regulatory sandboxes, innovation hubs, incubators etc.

With this context, a Group to identify areas under NPS which could utilize FinTech through Regulatory Sandbox was constituted at the instance of the Authority in November 2018.

The Group was addressed by Sh. Hemant G. Contractor, Chairman, PFRDA in its first meeting. The Group was oriented to follow a problem solving approach wherein firstly the problems or areas of improvement which could benefit from FinTech could be identified.

The Group was guided by the Terms of Reference it was provided and the overall direction provided to it by the Chairman, PFRDA in the first meeting of the group. The Group submits its report to the Authority after holding three meetings in totality, however member from NPCI could not attend any of the meeting. The Group also interacted with a few FinTech firms to gauge their view and opinion.

The Group also studied domestic and international scenario with respect to regulatory sandbox models and experimentation.

Pension Fund Regulatory and Development Authority(PFRDA) has been playing an active role in understanding FinTech and how it can serve subscriber's needs and improve experience. This report will be another step in the direction of promoting innovation in industry across the entire value chain.

Recommendations in brief

The major recommendations of the group are as under:

- a) The vision of the PFRDA is “To provide a conducive environment for FinTech innovations to make NPS value chain more effective and efficient in terms of availability, accuracy, cost and transparency in the best interest of the subscribers while preserving safety and soundness of the NPS architecture”

The Fintech applications may be useful in the following areas of NPS:-

- I. Onboarding process- paperless pension account generation, compliance to Know Your Customer/Due Diligence and Prevention of Money Laundering
- II. Financial Inclusion
- III. Transactions- flow of contributions from subscriber through banking channels to Pension Funds, subsequent investments and credit in pension account near to real time. Execution of subscriber instructions in real time
- IV. Investments- Robo Advisory/Artificial Intelligence for enabling informed choices by subscribers (fund manager/assets/swiches) as per risk appetite/profile. Adoption of Algorithm trading by Pension Funds, real time settlement of trades, market valuation of investments etc.
- V. Areas of Recordkeeping such as change in subscriber data, recording payment of contribution and unitization (exploring use of block chain/distributed ledger) Subscriber servicing process viz. change in subscriber data, payment of contribution and unitization.
- VI. Mechanism of Grievance Resolution – Robust mechanism with zero tolerance limit and resolution in near to real time using DMAIC (Define-Measure-Analyse-Improve-Control)
- VII. Withdrawals/Exit process/Maturity viz. transition from accumulation to decumulation phase; seamless funds outflow and integration with Annuity Service Providers.

- VIII. Enabling subscriber to make informed choices viz. Robo Advisory for exercising the choices available; switching of PF, allocation of investments, analyzing the portfolio for retirement planning, selection of annuity plan etc.
 - IX. Compliance of PFRDA's Act and Regulations (RegTech)
 - X. Supervision of intermediaries and Analytics (SupTech)
- b) Only those fintech applications that fall solely within the remit of PFRDA shall be allowed to apply. Inter regulatory applications shall be kept out of the purview unless the requisite permissions from other regulators are already in place.
 - c) Based on the discussions of the Committee it was recommended that the cohort approach to PFRDA Regulatory Sandbox may be followed with a focus on the areas which have been delineated., which allowings flexibility to the applicants and case to case analysis by the Regulator for selecting applications prudently.
 - d) The report may be placed in the Public Domain for comments, from the market participants and other stakeholders.
 - e) Guidelines/ Regulations, which may be in the nature of "Light Touch Regulations/Guidelines" may be framed based on the feed back received and shall be got approved from the Authority.
 - f) Sand Box Regulations/Guidelines may also allow for suitable relaxations in other Regulations/ Guidelines/ internal orders etc. for a limited period for the sole purpose of the Sandbox with approval of competent authority. It may be noted that no statute / Act can be allowed to be waived.
 - g) A three tier Governance structure is recommended- Board, PFRDA Sandbox Implementation & Evaluation committee and Regulatory Sandbox department.
 - h) Appointment of Chief Innovation Officer/ FinTech Officer is recommended.
 - i) The Sandbox may run through the following phases- Application, evaluation of application, Testing period, Exit and Post Testing Evaluation.
 - j) Three Sandbox tools are recommended- limited registration, Waivers , Non Enforcement letters and Steering & Guidance.

- k) It is important to create a buzz around the regulatory sandbox for its success. Hence, the Authority may like to publicise the launching of sandbox activity at each stage through social media and other platforms.
- l) A website for the Regulatory Sandbox may be launched or a separate section may be created on the existing PFRDA website
- m) The Authority may coordinate with Nasscom and the 10,000 start up programme for tapping into the Information Technology startups and draw their attention to PFRDA Sandbox for effective participation.
- n) The Authority may share findings from the test with the financial services industry and regulators, while ensuring that no confidential information such as consumer data or proprietary information is disclosed. These findings may provide details on overview of the test, results and recommendation on regulatory change.
- o) Inter Regulatory Sandbox-PFRDA may endeavor to participate in the Inter regulatory sandbox as the Subscribers do not recognize financial sector silos and the financial transactions and experiences transverse the various financial sector space. These Inter regulatory sandboxes may be set up under the aegis of the FSDC.
- p) International Cooperation- A lot of jurisdictions have already entered into MOUs with other jurisdictions / Regulators for coordination and exchange of information on Regulatory Sandbox. PFRDA may also endeavor for technical assistance or MOU with countries which already have sandbox in place.
- q) Global Sandbox- Many jurisdictions including FCA, UK have been deliberating on the idea of having a Global sandbox providing a setting for regulators to collaborate on common challenges or policy questions firms face in different jurisdictions. A wide range of topics and subject matters may be highlighted, particularly those with notable cross-border application. Among issues highlighted were artificial intelligence, distributed ledger technology, data protection, regulation of securities and Initial Coin Offerings (ICOs), know your customer (KYC) and anti-money laundering (AML), which may be tested in the global sandbox in collaboration with other jurisdictions. one of the main

advantages for the global sandbox may be reducing the time it takes to bring ideas to new international markets.

Chapter 1: Introduction

The speed and the diversity of global financial innovation have accelerated in the past few years, often spurred by technological developments and the rise of FinTech, RegTech and SupTech. Given the potential benefits and risks of innovation, financial regulatory and supervisory authorities (hereafter “authorities”) have not been mere spectators. Many authorities have assumed an active role in making the regulatory framework more attractive for innovators, and taking additional steps to encourage innovation. The ultimate goal is to balance and advance the authorities’ statutory objectives, which may go beyond promoting safety and soundness of financial institutions and financial stability, to combating financial crime, promoting financial inclusion, increasing the efficiency of financial systems, promoting competition and protecting financial consumers.

The Basel Committee on Banking Supervision (BCBS) has recognized the need to balance competing objectives, recommending that authorities minimize the risk of inhibiting beneficial innovation and learn from each other’s approaches to interacting with innovative players.

Fintech Innovations in Pensions systems

Technology is rapidly transforming the way that the financial sector is operating, and pension sector is no exception. Innovative applications of technology for financial services, or FinTech, are already being used to improve communication with consumers and their engagement with their pension plans. FinTech also has great potential to help pension systems make their internal processes more efficient and improve their risk management. Financial technology (“FinTech”) and related technological developments such as RegTech (using technology to facilitate regulatory compliance) have the potential to reshape private pension design and delivery. Individuals are increasingly required to make complex choices about their pension finances, and consumer engagement with financial services in general is becoming more digital. FinTech can improve the ways in which pension providers interact with individual members: enhanced communication techniques can encourage greater engagement; digital disclosure can reduce compliance costs; roboadvice can make financial planning more accessible. New

technologies are also relevant to pension systems' internal processes, including product design, transaction processing, risk management and compliance.

The improvements in efficiency that technology allows can also translate into lower costs both for pension systems and for members. The possibilities that new technologies offer are driving changes in business models and the way in which financial products are delivered to consumers. These changes can lead to increased consumer benefit through lower costs and increased accessibility of pensions.

Reliance on technology can also create new risks.

Workers at the bottom of the pyramid might be excluded from technological progress because they cannot or will not engage with new methods of communicating. Non-regulated entities from other sectors might cherry-pick some aspects of pension provision, leaving traditional players with less profitable businesses and creating regulatory risks. There are also concerns over data protection and data security as well as consumer protection issues relating to the suitability of the services and products offered.

While regulators are keen to promote innovative ideas that can lead to consumer benefit, they also have to proceed with caution to ensure that consumer protection is not overlooked. Hence, Regulation must achieve a balance between the objective of encouraging the development of FinTech-enabled solutions to benefit consumers and that of ensuring adequate protection against the potential risks to consumers. Regulation of FinTech has to strike a balance between encouraging innovation in order to reap the potential benefits of lower costs, improved transparency and higher consumer engagement, providing space for the evolution of business models, and ensuring that consumers are protected and incumbents are not faced with unfair competition from nonregulated entities. It also needs to be adaptive in order to accommodate the impacts of future, unanticipated technological developments and encourage knowledge-sharing between regulators, supervisors, incumbents and potential new entrants to the pensions industry.

Regulatory and Government approaches to encourage FinTech

Many jurisdictions are dedicating significant resources to keep up with the rapid technologically-driven changes so that the regulation can strike a balance that is both adequate and appropriate in this new environment. Government sponsored programmes to support innovations in the provision of financial services have been implemented in numerous jurisdictions. The ultimate objective of these programmes is to ensure that innovation is encouraged, that these developments are in consumers' interests, and finally that any consumer risks resulting from these innovations are adequately mitigated and financial consumer protection ensured. These programmes can intervene in various stages of an idea's development, from the initial brainstorming phase to the implementation or even expansion of the resulting product or service. These stages of development are not necessarily chronological and the programmes offered may span several stages of development

a) *Idea stage:* to promote the generation of ideas to improve the provision of financial services and benefit consumers.

- These initiatives typically take the form of a network or community which facilitates the exchange of ideas (both funded and non funded).
- The Hong Kong Monetary Authority has created a FinTech Facilitation Office, which includes a dedicated platform to liaise and research with the FinTech sector.
- The Belgium government sponsors the “B-hive”, a platform intended to facilitate innovation.
- FCA UK have established dedicated support for businesses to bring solutions to solve particular market challenges and benefit consumers.
- Another emerging trend is to host FinTech competitions, commonly referred to as “hackathons”, to generate ideas for solving specific challenges presented in financial markets, including those related to financial consumer protection.

- The Canadian securities regulator sponsored a hackathon for FinTech applications for regulatory compliance, Know-Your- Customer requirements and improving financial literacy.
- The United Arab Emirates has sponsored a virtual hackathon for applications of blockchain technology, with one objective being the reduction of financial fraud and cybercrimes.

b) Compliance stage: to facilitate the identification of applicable regulations and the process of compliance.

- The goal is to help FinTech companies understand how the regulation applies to their ideas and to facilitate the registration or licensing process, which can significantly reduce start-up costs and time-to-market through “innovation hubs”, FinTech incubators or FinTech accelerators eg Australia, Canada, United Kingdom
- The Innovation Hub in UK goes so far as to provide qualified applicants with a dedicated advisor who sees them through the compliance process, identifying the relevant aspects of the regulatory regime, facilitating the application for authorisation, and providing support for up to a year following authorisation.
- In Abu Dhabi, Australia, Brazil, Canada, France, Hong Kong, China, Indonesia, and the Netherlands, for example at least provide a service to help aspiring innovators to understand the applicable regulations.

c) Financing stage: to facilitate the raising of capital to fund the implementation of the project. governments may also provide assistance for innovators to raise capital or cover the costs for the development of their projects, with the end-goal that these projects will ultimately benefits consumers.

- The B-hive platform in Belgium, for example, facilitates the creation of partnerships between start-ups and traditional market players to help the business concepts scale-up their idea.

- The programme 10,000 Startups in India, supported by the government, helps innovators by providing direct access to venture capital and angel investors.
- In France, innovators can have access to government grants or contracts which will help to ensure future revenues. The French government may also help with operational costs by providing office space, for example.
- The Abu Dhabi Global Market assists start-ups connect with potential investors and helps them with logistical resources.

d) *Implementation stage*: to provide a controlled and safe environment for testing the idea in the market and to use the feedback and information learned to adapt product offering or regulation which may be inadequate or inappropriately constrictive commonly known as a regulatory sandbox.

- Jurisdictions which have implemented a sandbox-type approach (date of launch in parentheses) include Australia (Dec. 2016), Bahrain (June 2017), Canada (Oct. 2016), Hong Kong, China (Sept. 2016), Indonesia (Nov. 2016), Iran (Dec. 2016), Malaysia (Oct. 2016), the Netherlands (Jan. 2017), Thailand (Oct. 2016), Singapore (Nov. 2016), United Arab Emirates (Nov. 2016) and the United Kingdom (May 2016). China has also announced that it will launch a regulatory sandbox.
- Details about Regulatory sandbox are provided in the next chapter.

e) *Expansion stage*: to facilitate the exportation of the idea to other markets and allow consumers to benefit more rapidly . Governments are increasingly putting agreements in place which facilitate the expansion of innovative and successful ideas that benefit consumers into new markets. These may take the form of agreements to fast-track the application process to participate in the innovation hubs of other jurisdictions or platforms to facilitate the exchange of information or ideas across jurisdictions.

Conclusion

The way in which pensions are set up, managed and delivered to consumers is transforming with the increased use and applications of technology. FinTech applications are increasing the accessibility of investing in pensions to a broader consumer base and making communications with pension savers more effective. FinTech is also increasing the efficiency of the operation of pension schemes through risk management applications, the automation of investment processes and the facilitation of regulatory compliance. Government / Regulators supported programmes to support innovations in the provision of financial services have been implemented in numerous jurisdictions. The ultimate objective of these programmes is to ensure that innovation is encouraged, that these developments are in improving cost efficiency, process efficiency, consumers' interests, and finally that any consumer risks resulting from these innovations are adequately mitigated and financial consumer protection ensured.

Chapter 2: Regulatory Sandbox

In the Information Technology field, Sandbox is a closed testing environment designed for experimenting safely with web or software projects. The concept of Sandbox is also being used in the financial service sector and is referred to as Regulatory Sandbox. Regulatory Sandbox provides testing ground for new business models and applications that are not necessarily covered by or compliant to current regulations.

A regulatory sandbox environment would provide a safe and secure test environment for FinTech companies to execute their ideas and their innovations. It is a 'safe space' in which businesses can test innovative products, services, business models and delivery mechanisms which may not have been possible to achieve outside this sandbox due to regulatory considerations. The sandbox environment would provide suitable safeguards to ensure the experiment is limited and does not result in an industry-wide contagion.

A Fintech regulatory sandbox can be defined as "A framework set up by a financial sector regulator to allow small-scale, live testing of innovations by private firms in a controlled environment (operating under a special exemption, allowance, or other limited, time-bound exception) under the regulator's supervision.". Sandboxes can be mutually beneficial for both regulators and firms. Sandbox participants often benefit from certain concessions (such as rule modifications) and regular contact with the regulator. This helps participants to understand how the regulatory framework applies to them, and allows them to come to market much more quickly and at a lower cost than if they had gone through traditional channels.

For regulators, the sandbox affords a valuable learning experience, allowing them to keep pace with technological advancements and new business models that may not conveniently fit into the existing regulatory framework.

Why Regulatory Sandbox?

To introduce a 'test and learn' approach that helps

- a. Encourage innovation that benefits the customer
- b. Provide a regulatory environment that is conducive to use of new technology

Advantages of Regulatory Sandbox

Regulatory Sandbox helps the regulator in developing guidelines for newer technologies to promote innovation and experimentation in order to benefit end customers. FinTech companies can focus more on the technology implementation and business model rest assured that they are compliant with the rules of the sandbox. This fosters collaboration furthers interests of all stakeholders.

The potential benefits of a regulatory sandbox could be significant from:

- Best in class service to end customers: Provide solutions to customers in new and emerging risks; newer channels of engagement and distribution; faster and enhanced customer experience. This will also encourage and enable more preventive approach in managing everyday risks.
- Reduced time-to-market at potentially lower cost: Delays driven by regulatory uncertainty disproportionately affect first-movers & discourage innovators. This may be addressed through the sandbox as users of a sandbox can test the product's viability without the need for a larger and more expensive roll out.
- Better access to finance: Financial innovation relies on investment, much of it through equity funding. Regulatory uncertainty at a crucial growth stage means that FinTech firms find it harder to raise funds & achieve lower valuations as investors try to factor in risks that they are not well placed to assess
- More innovative products reaching the market: Due to regulatory uncertainty, some innovations are abandoned at an early stage & never even tested. As the sandbox framework enables firms to manage regulatory risks during the testing stage, more solutions may be tried & if successful, introduced in the broader market.
- Regulatory Clarity: Regulatory sandbox allows the innovator and regulator to discuss various outcomes of the sandbox experiment. This helps both regulators as well as innovator to get a better understanding of potential future changes in regulations.

- Limited failure consequences: The protected sandbox environment allows the innovator to test out its product whilst making sure the impact of product/service failure is minimal on the financial system. Customer protection also ensures that no contagion happens during the testing phase.

PFRDA is planning to promote progress by supporting such digital innovation. The sandbox may enable the PFRDA to work with innovators to ensure that appropriate subscriber protection safeguards are built into new products and services delivered by intermediaries before these reach mass market as detailed in the subsequent chapters.

Chapter 3: International Regulatory Sandbox

Across the globe, technology is being employed for establishing personalized, customer friendly pension systems. Jurisdictions which have implemented a sandbox-type approach (date of launch in parentheses) include Australia (Dec. 2016), Bahrain (June 2017), Canada (Oct. 2016), Hong Kong, China (Sept. 2016), Indonesia (Nov. 2016), Iran (Dec. 2016), Malaysia (Oct.2016), the Netherlands (Jan. 2017), Thailand (Oct. 2016), Singapore (Nov. 2016), United Arab Emirates (Nov. 2016) and the United Kingdom (May 2016). China has also announced that it will launch a regulatory sandbox. Some of the international case studies have been elaborated below.

Members of the Committee studied the global regulatory sandboxes through Secondary research to understand:

1. What are the services these sandboxes offer?
2. How are risks to consumers and markets contained?
3. Are there any lessons from these sandboxes, in terms of staffing, governance, roadmap, etc. that the PFRDA sandbox could learn from?

1. International case study | United Kingdom

Financial Conduct Authority (FCA) had introduced a regulatory sandbox in June 2016. The sandbox aims to create a 'safe space' in which businesses can test innovative products, services, business models and delivery mechanisms in a live environment without immediately incurring all the normal regulatory consequences of engaging in the activity in question.

The sandbox contributes to achieving the FCA's competition objective by lowering barriers to entry (e.g. reducing time-to-market for innovative ideas), enabling greater access to finance for innovators, and enabling more products to be tested and potentially introduced to the market. Currently the FCA sandbox is running on a cohort approach and the Regulatory sandbox of The Financial Conduct Authority (FCA) is in its fifth iteration now. The sandbox seeks to provide firms with:

- the ability to test products and services in a controlled environment

- reduced time-to-market at potentially lower cost
- support in identifying appropriate consumer protection safeguards to build into new products and services
- better access to finance

Sandbox tests are expected to have a clear objective (e.g. reducing costs to consumers) and to be conducted on a small scale, so firms will test their innovation for limited duration with a limited number of customers.

The selection process is a competitive process. Based on the eligibility criteria, FCA may select the appropriate firms to join the sandbox. After a firm is chosen to enter the sandbox, FCA would work on a detailed testing proposal and the issuance of one or more of the tools the sandbox offers. Currently there are no extra charges or fees for firms which want to use the sandbox. Standard fees however might apply for the authorisation process.

Deposit taking is excluded from the sandbox proposal and restricted authorisation option is not available to firms looking for a banking license. The sandbox may be useful for firms who are not currently authorised that need to become authorised before being able to test their innovation in a live environment.

1.1 Eligibility criteria for Sandbox

The key requirement for applying to the sandbox is that the applicant has a genuine innovation that addresses a consumer need. To conduct a regulated activity in the UK, the firm must be authorised or registered by the FCA, unless certain exemptions apply. Firms who are accepted into a cohort will need to apply for the relevant authorisation or registration in order to be able to test. The FCA has set up a tailored authorisation process to work closely with firms accepted into the sandbox to enable them to meet these requirements. Any authorisation or registration will be restricted to allow firms to test only their ideas as agreed with the FCA. The process should make it easier for firms to meet their requirements and reduce the cost and time to get the test up and running.

The evaluation criteria by FCA for FinTech entities are as under:

- i. Is the firm looking to deliver innovation which is either regulated business or supports regulated business in the UK financial services market?
- ii. Does the firm have a UK nexus and is it related to financial services?
- iii. Is it a genuine innovation? Is the innovation ground-breaking or constitutes a significantly different offering in the marketplace?
- iv. Is there consumer benefit? Does the innovation offer a good prospect of identifiable benefit to consumers?
- v. Is there a need for a sandbox?
- vi. Does the business have a genuine need to test the innovation on real customers and in the FCA sandbox? Which tool is suitable for testing and why?
- vii. Is the firm ready for testing? Is the business ready to test their innovation in a live environment?

1.2 FCA's Role:

The FCA Sandbox offers four different tools to create the safe space for firms as listed under:

- i. Restricted authorization
- ii. Individual guidance
- iii. Waivers or modifications to rules
- iv. No enforcement action letters

For non-FCA authorized firms, FCA has set up a limited authorization process that allows firms to meet the requirements necessary for sandbox purposes only. Upon successful completion of the sandbox, such firms can apply to have their limited FCA authorizations converted into full authorizations. Technology businesses that seek to provide services to FCA authorized firms can also apply for the sandbox and the above tools if they need clarity around applicable rules before testing.

1.3 Consumer Protection

Safeguards exist against potential customer detriment when innovative financial products or services are tested in real life situations. Approaches taken to protect consumers include:

- Customers give informed consent to be included in testing, and they are notified of the potential risks and available compensation
- FCA agrees on a case-by-case basis the disclosure, protection and compensation appropriate to the testing activity
- Customers have the same rights as customers who engage with other authorised firms
- Businesses undertaking sandbox trials are required to compensate any losses to customers and must demonstrate that they have the resources (capital) to do that
- Consumers will have Financial Ombudsman Service (FOS) and Financial Services Compensation Scheme (FSCS) protection provided that the tested solutions fall within their jurisdiction.
- The parameters for sandbox activities will have to take into account that testing should not cause risks to the financial system (i.e. the scale of testing has to be limited).
- FCA may consider propositions where they are satisfied that there is a prospective direct or indirect consumer benefit
- Every sandbox firm is required to have a fair exit strategy for consumers.

1.4 International co-operation/MOU and agreement

FCA Innovation Hub has an innovation hub agreement with the ASIC, Australia Innovation Hub during March 2016. The UK (HM Treasury and the FCA) and Singapore (MAS) concluded a “FinTech Bridge” agreement. The agreement will enable the regulators to “refer” FinTech firms to each other. According to the FCA and the MAS, the agreement also sets out how the regulators plan to share and use information on financial services innovation in their respective markets.

2. International case study | Singapore

Monetary Authority of Singapore (MAS) is encouraging more FinTech experimentation so that promising innovations can be tested in the market and have a chance for wider adoption, in Singapore and abroad. MAS introduced a regulatory sandbox during June 2016 and published its final “regulatory sandbox” guidelines during November 16, 2016 to encourage and enable experimentation of solutions that utilise technology innovatively to deliver financial products or

services. The Sandbox is deployed and operated by the applicant, with MAS providing the appropriate regulatory support by relaxing specific legal and regulatory requirements, which the applicant would otherwise be subject to, for the duration of the Sandbox. The guidelines aim to improve the clarity, flexibility and transparency of the regulatory sandbox.

The regulatory sandbox enables FIs as well as FinTech players to experiment with innovative financial products or services in the production environment but within a well-defined space and duration. It also includes appropriate safeguards to contain the consequences of failure and maintain the overall safety and soundness of the financial system.

In 2017, MAS received 30 applications with 1 firm graduating from the Sandbox and another firm still experimenting till 2018. Approval process for entry into Sandbox has been slow.

MAS in November 2018 released a consultation paper on the creation of pre-defined sandboxes, known as Sandbox Express, to complement the existing FinTech Regulatory Sandbox that was launched in 2016. The aim is to enable firms which intend to conduct regulated activities to embark on experiments more quickly, without needing to go through the existing bespoke sandbox application and approval process. Each pre-defined sandbox will have its boundaries, expectations and regulatory reliefs pre-determined. The applicant must declare that it is able to fully comply with all expectations of the pre-defined sandbox that it has applied for, which includes providing clear disclosure and obtaining an acknowledgement from the user before the user can be on-boarded as a customer. MAS will assess applications based only on two criteria – (i) technological innovativeness of the financial service, and (ii) fitness and propriety of the applicant's key stakeholders. The applications will be fast-tracked, with approval decisions granted within 21 days. An approved pre-defined sandbox entity will be required to submit periodic progress reports to MAS as well as ensure that the pre-defined sandbox expectations are adhered to.

2.1 Objective of Sandbox

MAS aims to transform Singapore into a smart financial centre by encouraging the adoption of innovative and safe technology in the financial sector. To this end, the sandbox can help to

encourage more FinTech experimentation within a well-defined space and duration where MAS will provide the requisite regulatory support, so as to increase efficiency, manage risks better, create new opportunities and improve people's lives.

2.2 FinTech set up

The MAS formed the FinTech and Innovation Group (FTIG) in August 2015 in order to drive the Smart Financial Centre initiatives. The FTIG is led by a Chief FinTech Officer and consists of three offices, namely Payments & Technology Solutions Office, Technology Infrastructure Office and Technology Innovation Lab. The group is responsible for formulating regulatory policies and developing strategies to facilitate the use of technology and innovation to better manage risks, enhance efficiency, and strengthen competitiveness in the financial sector.

2.3 Criteria for joining the sandbox

The major criteria for evaluation to join the sandbox are as under:

- a. The proposed financial service includes new or emerging technology, or uses existing technology in an innovative way
- b. The proposed financial service addresses a problem, or brings benefits to consumers or the industry
- c. The applicant has the intention and ability to deploy the proposed financial service in Singapore on a broader scale after exiting the sandbox
- d. The test scenarios and expected outcomes of the sandbox experimentation should be clearly defined
- e. The sandbox entity should report to MAS on the test progress based on an agreed schedule.
- f. The appropriate boundary conditions should be clearly defined, for the sandbox to be meaningfully executed while sufficiently protecting the interests of consumers and maintaining the safety and soundness of the industry
- g. Significant risks arising from the proposed financial service should be assessed and mitigated

h. An acceptable exit and transition strategy should be clearly defined

2.4 Time frame for regulatory approval

MAS will review the application and inform the applicant of its potential suitability for a sandbox within 21 working days after receiving the required information.

2.5 Boundary conditions for the sandbox and evaluation criteria

Given that the sandbox would operate in the production environment, it must have a well-defined space and duration for the proposed financial service to be launched, within which the consequences of failure can be contained. The appropriate boundary conditions set by MAS are as under:

- Target customer type
- Limit on the number of customers involved
- Other quantifiable limits such as transaction thresholds or cash holding limits
- Associated risk disclosure for participating in the sandbox

2.6 Exit Strategy

An acceptable exit and transition strategy should be clearly defined in the event that the proposed financial service has to be discontinued, or can proceed to be deployed on a broader scale after exiting the sandbox. There should also be an exit plan to ensure a smooth exit from the market in case sandbox participant fails.

2.7 Consumer protection

The sandbox entity should ensure that any existing obligation to its customers of the financial service under experimentation must be fully fulfilled or addressed before exiting the sandbox or discontinuing the sandbox. Customers need to be informed that the FinTech solution is operating within a Sandbox. For the purpose of transparency and provision of information to customers, relevant information of all approved sandbox applications such as the name of the applicant, and the start and expiry dates of the sandbox experimentation, will be published on MAS' website.

2.8 Agreement with other Regulators

In March 2016 UK (HM Treasury and the FCA) and Singapore (MAS) concluded a “FinTech Bridge” agreement. The agreement will enable the regulators to “refer” FinTech firms to each other. According to the FCA and the MAS, the agreement also sets out how the regulators plan to share and use information on financial services innovation in their respective markets. The MAS has an agreement in place during June 2016 with Australia's ASIC to help innovative businesses expand in each other's market faster.

3. International case study | Australia

Australian Securities and Investments Commission (ASIC) released a detailed regulatory framework during May 2016 on innovation hub/sandbox allowing eligible FinTech businesses to test certain specified services without holding an Australian financial services (AFS) or credit license. This allows eligible businesses to notify the regulator and then commence testing without an individual application process. There are five elements in the said framework as discussed under:

- i. The first element is engagement with other FinTech initiatives, including physical hubs and co working spaces for start ups. ASIC makes senior ASIC staff available from time to time to present information and answer questions.
- ii. The second element is informal guidance from ASIC to help new businesses consider the important regulatory issues. Eligible businesses can request guidance from ASIC through its website. ASIC expects that this guidance will minimise the time and cost of applying for a license or relief from the law(s) which ASIC administers.
- iii. Thirdly, ASIC has established new ‘Innovation Hub’ webpages for innovative businesses to access information and services targeted at them.
- iv. The fourth element is a senior internal taskforce to coordinate the work on new business models. The taskforce draws together learnings and skills from across ASIC.
- v. The final element is the Digital Finance Advisory Committee (DFAC) that meets quarterly, which was established to advise ASIC on its efforts in this area. DFAC

members are drawn from a cross section of the FinTech community, as well as academia and consumer backgrounds. Other financial regulators are observers on DFAC.

The first iteration of the sandbox was revealed by the Australian Securities and Investments Commission (ASIC) in December 2016. By June 2017, only one startup had utilized the sandbox and as a result ASIC in that month released a consultation paper on further measures to improve the sandbox which appears to have informed the draft legislation. The key changes proposed are:

- extending the exemption period from 12 months to 24 months;
- amending regulations to enable ASIC to grant conditional exemptions certain requirements for the purpose of testing financial and credit services and products;
- empowering ASIC to make decisions regarding how the exemption starts and ceases to apply;
- broadening the categories of products and services that may be tested in the sandbox; and
- imposing additional safeguards

The Innovation Hub assists RegTech businesses focused on the delivery of regulatory requirements more efficiently and effectively than existing capabilities. ASIC's regulatory sandbox framework is comprised of three broad options for testing a new product or service without a license. Those options are:

- i. relying on existing statutory exemptions or flexibility in the law – such as by acting on behalf of an existing licensee;
- ii. relying on ASIC's 'fintech licensing exemption' for the testing of certain specified products and services; and
- iii. for other services, relying on individual relief from ASIC.

3.1 Eligibility criteria for Sandbox

The FinTech entities willing to provide financial services are eligible for licensing exemption, provided the entity must not:

- Be banned from engaging in credit activities and/or providing financial services
- Already hold a credit/AFS(Australian Financial Services) license
- Already be a credit/authorized representative of a credit/AFS licensee
- A related body corporate of a credit/AFS licensee

3.2 Boundary conditions

Boundary conditions for participants in the sandbox are:

- Have no more than 100 retail clients (unlimited wholesale clients)
- Plan to test for no more than 12 months
- Have total customer exposure of no more than USD 5 million
- Have a maximum annual rate of interest at 24%
- Have adequate compensation arrangements
- Have dispute resolution processes in place
- Meet disclosure and conduct requirements

3.3 Consumer protection

FinTech entities are required to maintain adequate compensation arrangement and register with an External Dispute Resolution (EDR) scheme in order to provide consumers with an outlet to settle disputes with sandbox business. The entities need to comply with key consumer protection provisions in the financial services and credit laws.

FinTechs are required to tell their clients that:

- a. they do not hold a licence;
- b. the service they will provide is being tested under the FinTech licensing exemption
- c. some of the normal protections associated with receiving services from a licensee will not apply.

3.4 Dispute resolution framework

To rely on the FinTech licensing exemption, FinTechs must also have in place a dispute resolution system that consists of:

- a. Internal dispute resolution (IDR) procedures
- b. Member of one or more ASIC-approved external dispute resolution (EDR) schemes.

3.5 ASIC's Role

ASIC retains the right to refuse or withdraw relief and may give a person a written notice that they cannot rely on the FinTech licensing exemption, due to concerns about poor conduct while relying on the exemption; failure to meet one or more of the conditions of relief; or previous misconduct.

3.6 Next step after the testing period

After the 12-month testing period ends, FinTechs are required to cease their operations, unless granted an AFS or credit licence; or have entered into an arrangement to provide services on behalf of an AFS or credit licensee; given the individual relief extending the testing period. Further, after the end of the testing period, FinTechs will no longer be able to offer financial services or engage in credit activities unless they comply with the law like other businesses.

3.7 International co-operation/MOU and agreement

ASIC has an innovation hub agreement with the UK's FCA Innovation Hub during March 2016. ASIC has also entered into an agreement with Singapore's MAS to help innovative business to expand in each other's market faster during June 2016.

4. International Case Study | Hong Kong

FinTech Supervisory Sandbox (FSS) was launched in September 2016 in order to create a regulatory environment that is conducive to FinTech development. The stated purpose of the Sandbox is to enable banks to conduct pilot trials of their FinTech initiatives in a controlled production environment without the need to achieve full compliance with the Hong Kong Monetary Authority's (HKMA) usual supervisory requirements. So far, two banks have already made use of the Sandbox to conduct pilot trials of their biometric authentication and securities

trading services. The HKMA upgraded the FSS to FSS 2.0. FSS 2.0 has the following new features:

- i. A Fintech Supervisory Chatroom (Chatroom) to provide feedback to banks and tech firms at an early stage of their fintech projects;
- ii. Tech firms can access the Sandbox by seeking feedback from the Chatroom without going through a bank; and
- iii. The sandboxes of the HKMA, the Securities and Futures Commission (SFC) and the Insurance Authority (IA) are linked up so that there is a single point of entry for pilot trials of cross-sector fintech products.

Until the end of February, 46 new technology products have been allowed in the FSS. Out of these cases, 32 pilot trials have been completed, and the products have subsequently been rolled out. Separately, banks have collaborated with tech firms in 20 trial cases.

4.1 Operating principles

The HKMA has adopted the following principles in operating the FSS:

- a. The FSS is available to fintech and other technology initiatives intended to be launched in Hong Kong by banks;
- b. The management of a bank that is allowed to use the FSS should ensure that the following safeguards are in place:
 - i. Boundary – Clear definitions about the scope and phases (if any) of the pilot trial, the timing and termination arrangements;
 - ii. Customer protection measures – Measures for protecting the interests of customers during the trial, which generally cover the selection of customers who understand the associated risks and voluntarily join the trial, complaint handling, compensation of any financial losses by customers, and arrangements for customers to withdraw from the trial;
 - iii. Risk management controls – Compensating controls for mitigating the risks arising from less than full compliance with supervisory requirements and the risks posed to the bank’s production systems and other customers; and

- iv. Readiness and monitoring – Readiness of the systems and processes involved in the trial and close monitoring of the trial.

The FSS should not be used as a means to bypass applicable supervisory requirements

4.2 International cooperation

The Hong Kong Monetary Authority (HKMA) announced recently that it has signed a Memorandum of Understanding (MoU) with the Polish Financial Supervision Authority (KNF) exchanged a Memorandum of Understanding (MoU) to enhance fintech collaboration between the two authorities, with a view to strengthening co-operation between the two places in promoting innovative financial services.

On 1 February 2019, the Global Financial Innovation Network (GFIN), a group of 29 international organisations including the HKMA, invited applications from firms wishing to test innovative financial products, services or business models across more than one jurisdiction.

4.3 Consumer protection

FinTech companies are required to have adequate safeguard in place to protect the interests of customers. The companies should be prepared and have proper resources in place to ensure the same.

The companies should have an exit strategy for the pilot run if it has to be terminated without success. The companies have to present the strategy to the Authority. The Sandbox is not a means to bypass applicable and related supervisory requirements

Other Considerations - relaxation of supervisory requirements to be discussed on a case to case basis.

Developments in Indian Financial sector

The Reserve Bank of India had set up an inter – Regulatory Working group in July 2018 to study the issues relating to Fin Tech and Digital Banking in India. PFRDA was one also of the member of the group. One of the recommendations of the group was

“ An appropriate framework may be introduced for Regulatory Sandbox/Innovation Hub , for Indian context , similar to other Regulatory Jurisdictions.”

Further, the Household Finance Committee headed by Prof. Tarun Ramadorai Chairman, Imperial College, London had stressed the need for flexible regulatory processes to further encourage financial innovation that will benefit households. Towards this aim, the Committee had proposed the creation of a regulatory sandbox to allow regulators to facilitate small-scale tests by financial technology firms. Further the Committee had also recommended that this issue of raising the cap on management fees be investigated, perhaps using the proposed Regulatory Sandbox as a vehicle for doing so.

IRDAI also set up a Committee to look into the modalities of setting up an individual Regulatory Sandbox. The Committee has already floated a consultation paper. The GOI and Government of Maharashtra have also been engaged with regulators and Industry bodies for setting up the Regulatory sandbox.

Chapter 4: Setting up the regulatory Sandbox at PFRDA

Disrupting pensions through Fintech

FSB definition of FinTech as *“technology-enabled innovation in financial services that could result in new business models, applications, processes or products with an associated material effect on the provision of financial services”*.

There are various ways in which technology is disrupting pensions viz

- a) FinTech applications are increasing the accessibility of investing in pensions to a broader consumer base (Coverage) through easier connectivity and simpler onboarding processes.
- b) Fintech is making communications with pension savers more effective.
- c) FinTech is increasing the efficiency of the operation of pension schemes through risk management applications,
- d) automation of investment processes and
- e) facilitation of regulatory compliance.(Reg tech and Sup tech)

Blue Print for the SandBox

Based on the consultations within the Committee and study of the International Regulatory sandboxes as stated above blue print for the Regulatory Sandbox has been laid down below:

Approach:

The Regulatory Sandbox should be able to highlight the regulatory barriers to innovations and enable building a conducive regulatory environment for orderly growth of pension sector in the best interest of the subscribers.

Plan big, start small. The sandbox should be set-up with an ambitious long-term vision but should start small with a narrow focus of specified areas in NPS architecture to avoid goal dilution in the early years. A problem solving approach was followed and in consultation with the FinTech companies specific areas of the NPS architecture were delineated.

Vision and Mission:**Vision**

“To provide a conducive environment for FinTech innovations to make NPS value chain more effective and efficient in terms of availability, accuracy, cost and transparency in the best interest of the subscribers while preserving safety and soundness of the NPS architecture”

Mission

The sandbox will be a platform for contained experimentation to generate empirical evidence for improving regulatory framework for the pension schemes under the Authority.

Scope of Sand Box:

The applicability of the Fintech specifically to NPS was discussed with the Fintech companies invited for the Committee deliberations.

Feedback from FinTech firms

- Onboarding process was identified as the main area for improvement.
- KYC can be an area which may benefit from technology based solutions.
- Paperless solutions could ease the onboarding process and help overcome the initial subscriber inertia to come onboard.
- The solutions have to be within the requirements of the PMLA Rules as laid down by the Government.
- Differentiated KYC approach corresponding to differentiated NPS account(s) may be explored.

- It was felt that the PoPs could act as the single point of contact for the subscriber. After onboarding the subscriber, their PRAN account management, grievance redressal, requests, withdrawals, exits, annuity purchase etc. could be put in one place – website/app of the PoP which could utilize the NPS Architecture at the backend to fetch the information or redirect the subscriber to the relevant platform and facilitate the subscriber. This integrated approach for subscriber interaction and management may be better for overall subscriber experience and an enlarged role of PoPs could incentivize PoPs to engage in promotional and developmental activities with more interest and energy.
- An example of value proposition of PoPs to NPS Corporates could be a “PoP in a box” kind of setup for corporates – facilitating single point of contact for the Corporates.

On further deliberations within the Committee, the utilization of FinTech through regulatory sandbox in NPS may be applied not just in the areas of outreach and onboarding but in the areas of:-

- I. Onboarding process- paperless pension account generation, compliance to Know Your Customer/Due Diligence and Prevention of Money Laundering
- II. Financial Inclusion
- III. Transactions- flow of contributions from subscriber through banking channels to Pension Funds, subsequent investments and credit in pension account near to real time. Execution of subscriber instructions in real time
- IV. Investments- Robo Advisory/Artificial Intelligence for enabling informed choices by subscribers (fund manager/assets/swiches) as per risk appetite/profile. Adoption of Algorithm trading by Pension Funds, real time settlement of trades, market valuation of investments etc.
- V. Areas of Recordkeeping such as change in subscriber data, recording payment of contribution and unitization (exploring use of block chain / distributed ledger)

Subscriber servicing process viz. change in subscriber data, payment of contribution and unitization.

- VI. Mechanism of Grievance Resolution – Robust mechanism with zero tolerance limit and resolution in near to real time using DMAIC (Define-Measure-Analyse-Improve-Control)
- VII. Withdrawals/Exit process/Maturity viz. transition from accumulation to decumulation phase; seamless funds outflow and integration with Annuity Service Providers.
- VIII. Enabling subscriber to make informed choices viz. Robo Advisory for exercising the choices available; switching of PF, allocation of investments, analyzing the portfolio for retirement planning, selection of annuity plan etc.
- IX. Compliance of PFRDA's Act and Regulations (RegTech)
- X. Supervision of intermediaries and Analytics (SupTech)

The above areas are not however exhaustive and may be expanded/reviewed from time to time.

Delineate regulatory boundary

Many FinTech applications span across the domains of multiple regulators – Banking, Insurance, Securities, Pension, Telecom, Corporate Law regulators etc. Rapid developments in new technologies also warrant careful thought in regulatory oversight. As far as applicants to the PFRDA regulatory sandbox are concerned, the applicants need to assess the regulatory boundaries before applying. Only those fintech applications that fall solely within the remit of PFRDA shall be allowed to apply. Inter regulatory applications shall be kept out of the purview unless the requisite permissions from other regulators are already in place. PFRDA will have no role to play whatsoever in facilitating / granting approvals for these. In case of a breach of any of the guidelines laid out by these regulators, same penalties / fines will be applicable as set by these regulators

Cohort Approach

The Committee studied various approaches to Regulatory Sandboxes including the following:

- a) Cohort approach as followed by Financial Conduct Authority, UK. Currently the FCA sandbox is running on a cohort approach and the Regulatory sandbox of The Financial Conduct Authority (FCA) The FCA opens up the applications for Sandbox for a limited period from time to time instead of keeping it open at all times.
- b) Predefined Sandbox approach- Monetary Authority of Singapore (MAS) is following this approach. Initially when the Sandbox was launched in MAS in 2016, the approval process was very slow. However, in 2018 MAS in November 2018 released a consultation paper on the creation of pre-defined sandboxes, known as Sandbox Express, to complement the existing FinTech Regulatory Sandbox that was launched in 2016. The aim is to enable firms which intend to conduct regulated activities to embark on experiments more quickly, without needing to go through the existing bespoke sandbox application and approval process. Each pre-defined sandbox will have its boundaries, expectations and regulatory reliefs pre-determined. The applicant must declare that it is able to fully comply with all expectations of the pre-defined sandbox that it has applied for.
- c) File and Use approach- Australian Securities and Investments Commission (ASIC) released a detailed regulatory framework during May 2016 on innovation hub/sandbox allowing eligible FinTech businesses to test certain specified services without holding an Australian financial services (AFS) or credit license. This allows eligible businesses to notify the regulator and then commence testing without an individual application process.

Based on the discussions of the Committee it was recommended that a Cohort Approach to PFRDA Regulatory Sandbox may be followed with a focus on the areas which have been delineated. allowing flexibility to the applicants and case to case analysis by the Regulator for selecting applications prudently.

Obtaining the Mandate for setting up the Regulatory Sandbox

The report may be placed in the Public Domain for comments, from the market participants and other stakeholders. On receipt of the comments from the stakeholders, the approach suggested in the report may be suitably modified. Guidelines/ Regulations, which may be in the nature of “Light Touch Regulations/Guidelines” may be framed based on the feedback received and shall be got approved from the Authority. While framing the guidelines, aspects such as governance, business continuity planning, customer interface, and Testing reporting requirements are sought to be taken into account. Subscriber interest should be protected through a dedicated grievance redressal mechanism. The guidelines in various scenarios may also need to be reviewed from time to time as it is an evolutionary process.

Sand Box Regulations/Guidelines may also allow for suitable relaxations in other Regulations/ Guidelines/ internal orders etc. for a limited period for the sole purpose of the Sandbox with approval of competent authority. It may be noted that no statute / Act can be allowed to be waived.

Further, Subscriber protection is paramount and existing Subscriber protection norms will prevail during testing in the Sandbox. In case the regulatory modification affects existing rights of the subscriber, additional safeguards will be identified during the test design process. Additionally, the participant will have a fiduciary responsibility to uphold subscriber’s rights, and the Sandbox will monitor this closely.

Governance Structure

A three tier Governance structure is recommended. Each governance tier has distinct roles and responsibilities, ensuring that only the strategic questions or decisions require the attention of the Board and all operational activities or decisions remain in the purview of the Department.

- 1. Board of PFRDA-** To provide overall guidance on strategy, regulations and to provide final approvals , in case waiver/ amendment to Regulations is required

2. PFRDA Sandbox Implementation & Evaluation committee

A standing PFRDA Sandbox implementation and Evaluation Committee may be set up which may comprise the following members:-

- a) Officials from PFRDA
- b) Experts from Fintech Industry
- c) Experts from Regulators (India and/or abroad) having experience in Sandbox
- d) Chief Innovation Officer/FinTech Officer
- e) Any other as deemed fit.

The committee may specify the guiding principles, review and evaluate the sandbox guidelines at appropriate time intervals, and may take appropriate actions to encourage more innovation. Primary role of the sandbox committee may be to monitor, supervise, provide support & advisory and ensure alignment of applications with the guiding principles and make recommendations wherever required.

The Committee may recommend to the Authority relaxing any legal or regulatory requirements (issued through statutory regulations, norms, standing instructions, or administrative orders) for the period of experimentation if required.

The sandbox Committee may meet as and when required.

3. Sandbox department

While the members of the standing Sandbox Committee may meet as per requirements, due to the continuous inflow of applications, coordination for developing the test design , evaluation of the sandbox etc., a separate Sandbox department may be required. The department shall be involved in processing the applications and putting them up to the evaluation committee, coordination with the applicants to help them steer the processes quickly, designing the tests, evaluation of the results in co-ordination with relevant department(s). The department may have a Chief Innovation Officer/FinTech Officer to coordinate on the technology issues. The participants may have a single point of contact with the Nodal officer appointed from sandbox department.

Phases of Implementation of Sandbox

A. Application phase

The application may be made in the form prescribed by the Authority along with the prescribed fee. Nominal fee may be prescribed by Authority to weed out non serious applicants.

The application for use of the sandbox may have the following content (PFRDA may request any additional information that it deems necessary for evaluation):

1. A cover letter providing an executive summary of the application
2. Fulfillment of the limited registration criteria. Constitutional documents and other information documents i.e. copies of the Memorandum of Association, Certificate of Incorporation or Registration Permit; Personal declaration forms (to be completed by the respective individuals/company representative) Information on the board of directors, senior management and/or key functionaries
3. Financial statements, capitalization, funding etc.
4. Description of business, overview of the business strategy and plan, including the roadmap to deploy the process, services and delivery mechanisms on a broader scale once the sandbox period is completed
5. Description of the proposed process, service or distribution channel to be offered in the sandbox, including:
 - a. How the sandbox eligibility criteria outlined in the guidelines are met.
 - b. Details of how the process/service or technology applied differs from those already existing in the market
 - c. Benefits that the proposed process/service will have on accuracy, cost and transparency and foreseen risks Alignment with the focus of the Sandbox: The application should provide an overview of the test stating how the proposed test is in alignment with the stated focus of the Sandbox.

6. Potential for impact: The application should highlight the existing gap in the Regulation along with nature of direct benefit for consumers or the market.
7. Additionality of the Sandbox: The application should be able to justify that there is regulatory uncertainty that is preventing the applicant from deploying the process or service offering at scale. This could arise in two situations:
 8. If the applicant believes that there is a pertinent regulatory barrier that prevents deployment of the process or service at scale.
 9. If the applicant is offering a genuinely innovative process or service which is currently outside the purview of the regulation but will be systemically important for the regulator(s) soon.
10. Stage of the process or service: The application should state if the process or service is ready for deployment in the market. If not, then the application should state convincingly, if the process or service will be ready by the time the test is expected to commence.
11. Nature of testing that will be performed during the proof-of-concept stage should include:
 - Intended start and end date of the sandbox (duration)
 - Legal and regulatory requirements that the applicant requests to be modified for the duration of the sandbox
 - Test plan, controls, and scenarios
 - Details of subscribers and counterparties who will be involved and the nature of subscriber protection
 - Critical success factors to monitor and measure progress
 - Monitoring plan to ensure prompt notification of any breach of sandbox conditions
 - Quantification of the maximum loss arising from sandbox activities and risk mitigation to minimise the impact of the loss on participating subscribers

- Intended communication to clients disclosing participation in the sandbox and associated risks
 - Exit/transition plan for customers in the event the sandbox is discontinued
12. Undertaking by the applicant to meet the legal and regulatory requirements that will apply for rolling out the innovation.

Evaluation of the application:

Each application shall be evaluated on case to case basis. However, the sandbox regulations /guidelines may lay down some minimum eligibility criteria for any applicant to be accepted into the sandbox.

These eligibility criteria may inter alia have essentially defined the following:

1. Well defined constitution of the applicant entity. and the applicant may not be limited to a registered entity. The entity may be a) technology based entity b) registered Intermediary c) a technology entity having a tie-up with the registered entity with MOU already in place.
2. Boundary conditions in terms of maximum business garnered & maximum target users, after which experiment may be stop.
3. Suitability of Technology involved
4. Well defined Expected outcome & success criteria of the trial
5. Acceptable Risk management controls
6. Stringent Customer protection
7. Confidentiality of subscriber information
8. Prevention of money laundering and countering the financing of terrorism compliant
9. Demonstrated Resource and readiness of the applicant
10. Fit and proper criteria particularly on honesty and integrity
11. IT audit of system for verification
12. Monitoring plan for the test for outcomes and risks.
 - Monitoring plan for outcomes. The application should state the metrics, threshold of success and reporting requirements for success outcomes identified.

- Monitoring plan for risks. The application should state the metrics, threshold of success and reporting requirements for identified risks to consumers, market, and the test.

13. Knowledge Dissemination Strategy for sharing of findings with the broader ecosystem.

Flexible/Additional Criteria which may also be considered:

- Board composition
- Financial soundness / minimum paid up capital / liquid assets
- Management experience
- Track record / minimum years of operation
- Relative size
- Technology, risk management & outsourcing as per Regulations /guidelines

Guiding Principles for Sandbox

While each case shall be evaluated on case to case basis, in addition to the vision and mission, the following broad guidelines may be followed: Introducing publicly available criteria that need to be met as a prerequisite for entry into the sandbox will help to ensure that Authority treats all businesses fairly and transparently, while also ensuring that Authority focus on propositions that are genuinely of benefit to consumers.

1. Consumer-centric. The projects which lead to better financial services for pension subscribers through improved processes and services. Disruptive innovations that pose new challenges to regulators should form a part of the sandbox in order to create a regulatory infrastructure that can help foster innovation, while protecting the interests of all market participants.
2. Genuineness of innovation.
3. The sandbox will consider processes and services for which there exists a regulatory barrier to deployment in the market.

4. Empirical evidence for regulatory decisions: Experiments conducted in the sandbox to equip the regulator with empirical evidence on potential risks and benefits to subscribers and market from the intended process or service.
5. Agile: The focus of the sandbox should be adapted to reflect the needs of the unbundled NPS architecture,
6. Assess Risk: It may be necessary to assess the systemic risk, risk to the industry to identify the right innovations to be regulated through the sandbox. Risk could be a function of nature of the business model or the scale of the business model. Scale of the business is a function of numbers of customers catered to, volume and value of transactions, and number of providers in the industry. Sandbox should be used to formulate regulations for fledging sub-sectors, wherever required, which have the potential to transform financial service delivery models and have moderate to high risk. Innovations with low risk do not warrant the resources to revise and implement regulatory guidelines as issues can be handled on a case-by-case basis. Additionally, sub-sectors that have already achieved scale should not be subject to regulatory sandboxing. The sandbox approach cannot be a substitute for bypassing regulations.
7. Subscriber protection needs to be assured at all times. Subscriber protection is paramount and existing Subscriber protection norms will prevail during testing in the Sandbox. In case the regulatory modification affects existing rights of the subscriber, additional safeguards will be identified during the test design process. Additionally, the participant will have a fiduciary responsibility to uphold subscriber's rights, and the Sandbox will monitor this closely. Safeguards for consumers and the financial system while testing will be agreed upon between the businesses & the PFRDA on a case-by-case basis. This way it can be ensured that protections are sufficient but at the same time not unnecessarily burdensome on the businesses considering their sandbox activities
8. Data Protection- The applying entities may collect various personal and sensitive information about the customer and become the owners/custodians of such data. Thus,

the onus of subscriber data protection may lie with these entities ranging from data preservation, confidentiality, integrity and availability of the same, irrespective of whether the data is stored/in transit within themselves or with customers or with the third party vendors; The confidentiality of such custodial information should not be compromised at any situation and to this end, suitable systems and processes across the data/information lifecycle need to be put in place by the entities.

9. Adherence to existing applicable laws, which cannot be relaxed or waived.

Given that the sandbox may operate in the production environment, it must have a well-defined space and duration for the proposed financial service to be launched, within which the consequences of failure can be contained. The overall assessment to be based on following considerations:

- Is it firm in scope? Is the planned new solution designed for or does it support the industry?
- Does the applicant have a clear understanding of the principles and objectives of the sandbox?
- Genuine innovation: Is the new proposed solution is significantly different to existing offerings which involves new or emerging technology?
- Subscriber benefit: Does the innovation offer a good prospect of identifiable benefit to consumers? This criterion should continue to be met throughout the period of sandbox testing.
- Need for sandbox: What is the objective of testing? Does the proposed entity have a genuine need for testing within the sandbox framework?
- Background research: Has the proposed entity invested appropriate resources in developing the new solution, understanding the applicable regulations?
- What is the target customer type? Assess the limit on the number of customers involved
- Associated risk disclosures and mitigation measures for participating in the sandbox

- Does the applicant have an intention and does it have ability to deploy the proposed solution in India on a broader scale after exiting the sandbox?
- Are the test scenarios & expected outcomes of the sandbox experimentation clearly defined?
- Is there a possibility of significant risks arising from the proposed solution? Is there a mitigation strategy in place?
- Does the applicant have an acceptable exit & transition strategy clearly defined?

The regulatory sandbox should be flexible. The committee should take a holistic view rather than looking at singular parameters and act as a catalyst for broad based innovation by providing support on all the areas under their purview, and provide a conducive environment for encouraging and enabling wide variety of experimentation, including new processes based on hitherto uncovered macro level risks.

Based on the evaluation of the application, three possibilities can emerge.

- a) First, the Committee feels that the test could provide evidence for modifying or drafting regulations and hence gives a go ahead for next stage.
- b) Second, for those applications, where the Committee feels that there is some regulatory ambiguity but no need for testing, it will provide non-binding regulatory clarification.
- c) Lastly, the Committee may outright reject the application if it does not meet the eligibility criteria.

B. Registration/Limited Registration

Section 27 of the PFRDA Act 2013 states as under:

“27. (1) No intermediary, including a pension fund or a point of presence to the extent regulated under this Act, shall commence any activity relating to a pension fund except under and in accordance with the conditions of a certificate of registration granted by the Authority in accordance with the provisions of this Act and the regulations...”

Being a statutory requirement, this stipulation under the PFRDA Act needs to be followed. However, Regulations/Guidelines can provide for simpler Registration process for the sandbox.

The intermediaries that are already registered need not be registered again for the activity they are already conducting. However, for any other activity under Sandbox they will have to follow all the process as laid down in the Regulatory Sandbox regulations/guidelines.

Non Intermediaries interested in Sandbox experiment, may apply for Registration and the registration process for the same may be tailored and simplified. Sandbox applicants will first be registered with restrictions, allowing them to test their ideas but no more (restricted registration). Once the applicant is able to meet 'full' requirements, restrictions can be lifted.

The limited registration option will allow applicants to become authorised in their own right while only having to meet registration requirements that are proportionate to testing activities. This process should also be quicker than applying for a 'full' registration. This option does have some limitations. Before being able to test, firms still need to become registered & meet relevant requirements, which requires time & resources.

C. Providing Other Sandbox tools

Besides limited registration, the Authority may also put into use other sandbox tools like:

- a) **Waivers:** The firms admitted to sandbox may apply for waivers of certain regulations/guidelines with appropriate reasons for the same. The Authority may grant these waivers provided there are adequate safeguards for Subscriber interest, data protection, systemic stability etc.
- b) **No Enforcement letters-** Intermediaries are liable to penalties, adjudication proceedings and other enforcement letters in case of any violations of the Act, Rules, Regulations or guidelines etc. However, for a limited period, solely for the activity under Sandbox, an assurance may be provided that No enforcement letters may be

issued. However, the Authority shall reserve the right to decide if the case is fit for use of this sandbox tool in a particular violation.

c) Steering & Guidance

D. Testing stage

Testing Duration: Testing duration under sandbox environment is a function of process type, offered services and associated risks. The standard time frame will be of 6 months with an option to extend it further by another 6 months. If an extension is required after 6 months, then the sandbox entity is required to make an application to regulatory body. The reasons and proofs are submitted alongside the application of extension. The regulator on its sole discretion will take the decision on extension.

The Test automatically ends on expiry of the granted period and applicant will exit as per the exit strategy submitted to the Authority.

Discontinuance/Revocation: Instances whereby the Authority may choose to discontinue an applicant's participation in the sandbox include:

- The applicant breaching a condition(s) agreed upon at the review stage
- The Authority is not satisfied with the results of the test scenarios as mutually agreed with the applicant and deems the solution being offered to be unviable based on these results
- The Authority becomes aware of a misrepresentation made by the applicant at the application stage which makes it ineligible to use the sandbox
- The Authority or the applicant discover a significant flaw during the proof-of-concept stage whereby the risks posed to the subscribers cannot be adequately addressed; and
- The applicant informs the Authority in writing of its decision to exit the sandbox at its own discretion. Applicant should give at least "one month" notice for discontinuation.

Reporting:

- a. Periodic Reporting - During testing, the participant will be required to submit interim progress reports per an agreed schedule. The department will regularly monitor the developments to assess outcomes achieved, risk mitigation and conformity to test design. The Sandbox Department may carry out appropriate random checks and ask the participant for clarification, if required.
- b. A final consolidated report needs to be submitted within 15 days post-testing phase is completed. The report briefly contains information around:
 - Key outcomes, key performance indicators against agreed measures for the success or failure of the test and findings of the test
 - A full account of all incident reports and resolution of customer complaints
 - In the case of a failed test, lessons learnt from the test

E. Post Testing Stage

The Committee will review the outcome of the test and provide a recommendation report to the regulator. It is suggested that feedback from the related subscriber may also be taken. The Sandbox can make two categories of recommendations:

1. Recommendation for change: If the Committee is satisfied that the test was successful, i.e. all measures of success were achieved, it can make a recommendation with reasons to the regulator for appropriate regulatory change. The regulator will then need to decide if it will approve the suggested changes, within a pre-specified period (suggested time is 6 months).
2. Recommendation for no change: If the Committee assesses that the test is unsuccessful, i.e., the measures of success have not been met, the test will be terminated and no positive recommendation will be made to the regulator. However, the applicant may be given a chance to be heard.

Chapter 5: Other Recommendations

- I. It is important to create a buzz around the regulatory sandbox for its success. Hence, the Authority may like to publicise the launching of sandbox activity at each stage through social media and other platforms.
- II. A website for the Regulatory Sandbox may be launched or a separate section may be created on the existing PFRDA website
- III. The Authority may coordinate with Nasscom and the 10,000 start up programme for tapping into the Information Technology startups and draw their attention to PFRDA Sandbox for effective participation.
- IV. The Authority may share findings from the test with the financial services industry and regulators, while ensuring that no confidential information such as consumer data or proprietary information is disclosed. These findings will provide details on overview of the test, results and recommendation on regulatory change.
- V. Inter Regulatory Sandbox-PFRDA may endeavor to participate in the Inter regulatory sandbox as the Subscribers do not recognize financial sector silos and the financial transactions and experiences transverse the various financial sector space. These Inter regulatory sandboxes could be set up under the aegis of the FSDC.
- VI. International Cooperation- A lot of jurisdictions have already entered into MOUs with other jurisdictions / Regulators for coordination and exchange of information on Regulatory Sandbox. PFRDA may also endeavor for technical assistance or MOU with countries which already have sandbox in place
- VII. Global Sandbox- Many Jurisdictions including FCA, UK have been deliberating on the idea of having a Global sandbox providing a setting for regulators to collaborate on common challenges or policy questions firms face in different jurisdictions. A wide range of topics and subject matters may be highlighted particularly those with notable cross-border application. Among issues highlighted were artificial intelligence, distributed ledger technology, data protection, regulation of securities and Initial Coin Offerings (ICOs), know your customer (KYC) and anti-money laundering (AML), which can be tested in the global sandbox in collaboration with other jurisdictions. one of the main advantages for the global sandbox could be reducing the time it takes to bring ideas to new international markets

Annexures: Minutes of meetings of the Group



PENSION FUND REGULATORY AND DEVELOPMENT AUTHORITY
New Delhi

**1* Meeting of the Group to identify areas under NPS which could utilize FinTech through Regulatory Sandbox
(November 28, 2018)**

January/09/2018

Minutes of the Meeting

The first meeting of the PFRDA Group to identify areas under NPS which could utilize FinTech through Regulatory Sandbox was held on November 28, 2018 at PFRDA, New Delhi. The group was welcomed and addressed by Sh. Hemant G. Contractor, Chairman, PFRDA and the session was attended by Sh. B.S. Bhandari, Whole Time Member (Economics), PFRDA, Sh. S. Bandopadhyay, Whole Time Member (Finance), PFRDA, Sh. Praveen Trivedi, Executive Director, PFRDA, Sh. A.G. Das, Executive Director, PFRDA and Heads of Departments among the members of the group. Details of the attendees from the Group are contained in Annexure 1.

Highlights of the welcome session:

Chairman informed that in the past FSDC meetings, the issue of FinTech and Regulatory Sandbox had been discussed and the Tarun Ramadorai Committee had also deliberated upon Regulatory Sandbox. Chairman informed that RBI had already come out with a report on FinTech and is working on introducing a "regulatory sandbox". Sh. Venkateswarlu Peri, Chief General Manager, PFRDA informed that IRDAI also had recently set up a Committee to develop "regulatory sandbox". Chairman opined that in the future, setting up an Inter Regulatory Forum might be the best approach to leverage FinTech but till that time other regulators may go ahead with their own roadmaps.

An introductory presentation was made to the Group and is contained in Annexure 2.

Sh. Vivek informed that in the UK, the Financial Conduct Authority (FCA) had experimented with Regulatory Sandbox by calling for inputs from the FinTech industry. Sh. Ranjeet informed about the B HIVE model in Belgium where regulations were not relaxed per se but the Government only acted as an enabler.

Dr. Bhandari mentioned about security issues relating to data and money due to private apps operating on Play Store and App Store. Sh. Vivek informed that policy of App Store is more stringent than Play Store in this respect and such fraudulent apps on Play Store can only be brought down after they have been noticed by Google or CERT In.

Chairman mentioned that FinTech firms could possibly come up with a totally new idea or a proposition which could be innovative and would need to be studied well before relaxing regulatory requirements. An example from the Ramadorai Committee was mentioned, where a company wanted to offer mutual funds without KYC requirements.

Sh. Ranjeet suggested that another approach could be to first identify problems related to the product and/or processes and then invite solutions from the market. Those solutions could be checked and if approved, a relaxed environment may be provided to them to solve different sets of problems.

Sh. Phukon inquired about server requirements and which body would provide the technical environment to the firms. Sh. Parekh informed about the Application Programming Interface (API) and suggested that ultimately the solutions may be integrated into the CRA. Chairman opined that the solutions could also be related to recordkeeping in which NSDL operates.

Dr. Bhandari suggested that the Group may invite FinTech firms in the next meeting and brief the firms on the NPS Architecture and then seek the FinTech firms' input on what innovations could be thought of to make the process simple, faster, more transparent and low cost without compromising the security and safety features of the architecture addressing to both customer interface and supervisory practices.

Chairman opined that currently problem solving approach may be better rather than the UK approach which is more diverse. The UK approach could be adopted by the Inter Regulatory Forum, as and when it materializes.

Sh. Vikas mentioned that exit issues, awareness creation and financial literacy could be a few areas which could be explored. Sh. Trivedi mentioned that KYC solutions could also be one of the areas.

Sh. Vivek informed about the innovation cycle which starts from the stage of idea generation. The following stages are evaluation from regulatory standpoint, financing, implementation (which could utilize sandbox) and finally expansion when the product enters the mainstream. Sh. Vivek suggested that setting simple targets first could excite the imagination of start up companies.

Chairman agreed that boundary conditions may limit innovation and perpetuate the existing mindset. He suggested that ultimate focus has to be on the customer which are the subscribers. Idea of innovation hubs and incubators could also be explored later on.

Finally, Chairman suggested that in-house identification of problems is needed and later the Group may meet the existing as well as new organization engaged in FinTech.

The session ended with a vote of thanks to the Chairman and was followed by the Group's meeting.

Highlights of the Group meeting:

Later the members of the group held a meeting.

Sh. Pravesh suggested that first the Group should develop a framework and then proceed accordingly.

Some of the issues discussed are as follows:

- Clarity on usage of Aadhaar
- Document verification issues in online model
- Exit related issues
- Distribution of pension
- Incorrect details like bank a/c
- Annuity related issues
- KYC issues

Further, the extent of regulatory relaxation also needs to be examined.

Sh. Vivek suggested not to go for granular problems and only high level problems and organize workshops where we can invite people and get ideas and let the industry come with solutions. He suggested to first develop a big vision statement before setting objectives like increasing adoption and customer satisfaction. Then a set of principles could be developed. For example, technology led approach may not be correct and the solution should focus on solving issues/problems. Therefore, focused innovation is needed to execute the vision. It was also suggested that branding of NPS could be utilized to create a buzz, which could encourage good quality participation in the exercise.

It was suggested that the vision of the exercise could be correlated to UN's Sustainable Development Goals of reducing poverty through improving coverage. Another area could be ease of doing business where ease of onboarding is being targeted. The main areas to identify issues or problems could be:

1. Financial Inclusion
2. Customer experience
3. Recordkeeping
4. Investments
5. RegTech

It was discussed that NASSCOM, which had 10000 start up programme, could be contacted for referring suitable FinTech companies.

It was also discussed that later, an Evaluation Committee would also be needed to be set up which would evaluate the proposals received from the FinTech firms. The Committee could comprise of policy makers, other regulators and technologists and include

members from bodies like Data Security Council of India (DSCI), NASSCOM, NSDL and ReBIT. ReBIT showed interest in working on international sandbox models.

The meeting ended with a vote of thanks to the Chair.

The actions to be taken are as follows:

1. Finalize the Vision Statement.
2. Finalize the basic guiding principles.
3. Finalize the broad areas to identify issues/problems.
4. Identify and finalize the high level or macro problems for which solutions or products could be developed by FinTech firms.
5. Draft a consultation paper after interaction with FinTech firms and other related persons for:
 - a. Identifying potential solutions/products to the high level problems
 - b. Suggestions on processes to be followed for entry to the proposed Sandbox, duration, exit from the Sandbox etc.
6. Recommendations on creating awareness and buzz around the Sandbox.
7. Study international sandbox models.
8. Recommendations on setting up an Implementation & Evaluation Committee, which will invite applications, design the Sandbox, provide the regulatory relaxation and support, make preliminary and detailed assessments and submit the results of the Sandbox experiments to the Authority.
9. Setting of timelines of activities of the Group.
10. Finalize the report containing all the findings, recommendations and future course of action to the Authority.

Annexure 1

List of participants

Members:

- Ms. Sumeet Kaur Kapoor, Chief General Manager, PFRDA - Chairperson
- Sh. Pravesh Kumar, General Manager, PFRDA
- Sh. Vikas Kumar Singh, General Manager, PFRDA
- Sh. Mono Mohon Gogoi Phukon, General Manager, PFRDA
- Sh. Dharmesh Parekh, CTO, NSDL e-Governance Infrastructure Ltd.
- Sh. Vivek Srivastav, Sr. Vice President, Reserve Bank IT Pvt. Ltd.

Others:

- Sh. Ranjeet Rane, Manager, Reserve Bank IT Pvt. Ltd.
- Sh. Vaibhav Nagar, Assistant Manager, PFRDA



PENSION FUND REGULATORY AND DEVELOPMENT AUTHORITY
New Delhi

**2nd Meeting of the Group to identify areas under NPS which could utilize FinTech through Regulatory Sandbox
(February 20, 2019)**

March/20/2019

Minutes of the Meeting

The second meeting of the PFRDA Group to identify areas under NPS which could utilize FinTech through Regulatory Sandbox was held on February 20, 2019 at PFRDA, New Delhi. The group was welcomed by Ms. Sumeet Kaur Kapoor, Chief General Manager, PFRDA who chaired the meeting. The meeting was attended by members and other invitees as per **Annexure 1**.

Sh. Parekh delivered a presentation on the National Pension System for the external members and invitees so that a holistic understanding of the system could be developed. The presentation is contained as **Annexure 2**.

Discussion on various aspects and Q&A accompanied the presentation, which was followed by a brief on international experience by Sh. Rane as per the paper prepared by ReBIT contained as **Annexure 3**.

The highlights of discussion are as follows:

- Onboarding process was identified as the main area for improvement.
- KYC can be a major issue which may benefit from technology based solutions.
- Paperless solutions could ease the onboarding process and help overcome the initial subscriber inertia to come onboard.
- The solutions have to be within the requirements of the PMLA Rules as laid down by the Government.

- Differentiated KYC approach corresponding to differentiated NPS account(s) may be explored.
- Development of a matrix of success could be explored which would be utilized to evaluate a firms' performance in Sandbox. The parameters could be – coverage, adequacy, user experience, sustainability.
- It was felt that the PoPs could act as the single point of contact for the subscriber. After onboarding the subscriber, their PRAN account management, grievance redressal, requests, withdrawals, exits, annuity purchase etc. could be put in one place – website/app of the PoP which could utilize the NPS Architecture at the backend to fetch the information or redirect the subscriber to the relevant platform and facilitate the subscriber. This integrated approach for subscriber interaction and management may be better for overall subscriber experience and an enlarged role of PoPs could incentivize PoPs to engage in promotional and developmental activities with more interest and energy.
- An example of value proposition of PoPs to NPS Corporates could be a "PoP in a box" kind of setup for corporates – facilitating single point of contact for the Corporates.
- It was discussed that tapping SMEs and MSMEs would be important since they contribute 70% to GDP and employ a large workforce.
- Concept of Gamification could be utilized to incentivize subscribers to actively engage with their pension accounts.
- It was discussed that a parallel forum for development of relevant FinTech could be promoted and broad industry wide consultations may be undertaken before finalizing a Sandbox.
- The intermediaries could utilize Robo advisors and chat box functionalities by integrating them in their websites/apps.
- It was discussed that to prioritize areas which need solutions and identifying the regulatory concessions vis-à-vis PFRDA Act and Regulations which can be provided.

A few action points from the last meeting were discussed at the end. The following observations were made:

- Deletion of 3.f (speeding up of payments and transactions) since this lies beyond PFRDA's purview and is dependent upon payment gateways.
- Deletion of 4.e (Distribution of pension) since 4.d (Exit and annuity related issues) may suffice.
- Addition of 4.g (Withdrawals) – premature and partial withdrawals especially for less affluent audience.

The meeting ended with a vote of thanks to the Chair.

Further actions to be taken are as follows:

1. Seeking written feedback from participants
2. Finalize the Vision Statement - *"To provide a conducive environment for FinTech innovations to make NPS value chain more effective and efficient in terms of availability, accuracy, cost and transparency in the best interest of the subscribers while preserving safety and soundness of the NPS architecture."*

OR

"To provide a conducive environment for FinTech innovations to use state-of-art technologies and approaches to make NPS value chain more effective and efficient in terms customer experience, ease of operation and provide value for money"

3. Draft a consultation paper after interaction with FinTech firms and other related persons for:
 - a. Identifying potential solutions/products to the high level problems
 - b. Suggestions on processes to be followed for entry to the proposed Sandbox, duration, exit from the Sandbox etc.
4. Recommendations on creating awareness and buzz around the Sandbox.
5. Finalize the report containing all the findings, recommendations and future course of action to the Authority by 15th March 2019.

Annexure 1

List of participants

Members:

- Ms. Sumeet Kaur Kapoor, Chief General Manager, PFRDA – Chairperson
- Sh. Ashish Kumar, Chief General Manager, PFRDA
- Sh. Pravesh Kumar, General Manager, PFRDA
- Sh. Vikas Kumar Singh, General Manager, PFRDA
- Sh. Mono Mohon Gogoi Phukon, General Manager, PFRDA
- Sh. Dharmesh Parekh, CTO, NSDL e-Governance Infrastructure Ltd.
- Sh. Vivek Srivastav, Sr. Vice President, Reserve Bank IT Pvt. Ltd.
- Ms. Manju Bhalla, Deputy General Manager, PFRDA – Convenor

Others:

- Sh. Ranjeet Rane, Manager, Reserve Bank IT Pvt. Ltd.
- Sh. Saurabh Aggarwal, General Manager, Paytm Payments Bank
- Sh. Jateel Tandel, Paytm Payments Bank
- Ms. Manisha Pandita, EasyPlan
- Sh. D. B. Balachandran, Fundsindia
- Sh. Vaibhav Nagar, Assistant Manager, PFRDA



PENSION FUND REGULATORY AND DEVELOPMENT AUTHORITY
New Delhi

3rd Meeting of the Group to identify areas under NPS which could utilize FinTech
through Regulatory Sandbox
(March 27, 2019)

March/27/2019

Minutes of the Meeting

Third meeting of the PFRDA Group to identify areas under NPS which could utilize FinTech through Regulatory Sandbox was held on March 27, 2019 at PFRDA, New Delhi. The group was welcomed by Ms. Sumeet Kaur Kapoor, Chief General Manager, PFRDA who chaired the meeting. The meeting was attended by members and other invitees as per Annexure 1.

Discussion held on draft report covering principles of regulatory sandbox, eligibility, evaluation & regulatory criteria, the recommendation provision of regulatory sandbox and applicable guidelines.

The highlights of discussion are as follows:

- The consultation paper covering what we will provide as a Regulator and what we expect from the Industry to be published along with the Report for stakeholder's feedback.
- Guidelines for Regulatory Sandbox to be prepared after the stakeholder's feedback on Consultation Paper.
- Area of Scope (i.e. Onboarding, Transaction (flow of fund), Investment, Record Keeping, Withdrawal/Exit/Maturity, Grievance Resolution and supervision & monitoring) to be defined in the Consultation Paper to be published.
- Background and Area of expertise i.e. technology or financial background to be considered for the Fintech firms applying for Regulatory Sandbox.
- Recommendation to be made for constitution of Inter-Regulatory Sandbox and Global Sandbox.
- The sandbox to be open to registered firms, unregistered firms that require authorization and technology businesses.

- The firm applying for sandbox should have clearance from other regulators for the proposed innovation on defined scope of project.
- The unregistered firms applying for sandbox in association with existing intermediary are required to sign the MOU to carry out innovations under the Regulatory Sandbox.
- It was discussed that the PoPs & CRA are included for Regulatory Sandbox and TB, PFM and Custodian are kept out of the preview.

-
- IT audit certificate to be mandatorily given by the Firm before exiting from the Sandbox and the same to be included in the report.
 - Exit timeframe to be defined and the same should be the part of eligibility criteria.
 - It was discussed and agreed that 6-month period should be given initially for testing and readiness, further 6 months for implementation and closure from the Sandbox.
 - It was discussed that the subscribers consent should be taken at the time of onboarding by the firm for Sandbox and also at the time of transfer to existing POP at closure of Sandbox to keep in view the subscriber's interest.
 - It was felt that, subscribers exit request before the closure of Sandbox to be deliberated and modalities to be workout in coordination with POP and CRA.
 - It was discussed that the PFRDA will not sponsor the project under Regulatory Sandbox, the firm has to incurred the cost involved in the project. It was also felt that, the provision of taking BG or deposits from the firms can be considered for the benefit of the subscriber due to any violation or Business closure.
 - It was discussed that the firm has to exit from sandbox by implementing the exit plan whether the project is successful or not, further the firm can simultaneously apply for registration as an intermediary for carryout the business of NPS.

Few changes are suggested in draft report and the same is as under:

- Section 6.4.8 -Waiver of report - word guidelines to be added in last line of paragraph ". A waiver or modification would allow what would otherwise be a temporary non-compliance of regulations".
- Section 7, Chapter 1- Deletion Section 14 of the PFRDA Act, 2013.

- Section 7, Chapter 1 - Objective to be reword and same has been highlighted in bold “: The Objective of these Guidelines is to encourage the innovative solution that are relevant to the National Pension System (NPS) in various spheres within a pre-determined business exposure and duration. These Guidelines are envisaged to provide the requisite support to the industry through regulatory facilitations so that the industry can explore new opportunities for orderly growth of Pension Sector.
- Section 6.3.6 - Deletion of Minimum turnover of the company during last X years and minimum profitability of the company during last X years.
- Section 6.3.6 - “IT audit to be conducted “to be added under mandatory criteria.

The meeting ended with a vote of thanks to the Chair.

Further actions to be taken by the committee:

Finalization and submission of report and consultation paper containing all the findings, recommendations and future course of action to the Authority by 31st March 2019.

Annexure I

List of participants

Members:

- Ms. Sumeet Kaur Kapoor, Chief General Manager, PFRDA - Chairperson
- Sh. Ashish Kumar, Chief General Manager, PFRDA
- Sh. Pravesh Kumar, General Manager, PFRDA
- Sh. Vikas Kumar Singh, General Manager, PFRDA
- Sh. Mono Mohon Gogoi Phukon, General Manager, PFRDA
- Sh. Vivek Srivastav, Sr. Vice President, Reserve Bank IT Pvt. Ltd.
- Ms. Manju Bhalla, Deputy General Manager, PFRDA - Convener

Others:

- Ms. Gurminder Kaur, Deputy General Manager, PFRDA
- Ms. Puja Tripathi, Manager, PFRDA
- Sh. Vaibhav Nagar, Assistant Manager, PFRDA

Bibliography

1. OECD (2017), Technology and Pensions: The potential for FinTech to transform the way pensions operate and how governments are supporting its development
2. <https://www.fca.org.uk/firms/regulatory-sandbox>
3. Regulatory sandbox, November 2015- FCA, UK
4. A journey through the FCA regulatory sandbox , The benefits, challenges, and next steps, Brought to you by the Centre's FinTech Team, Deloitte
5. Household Finance Committee, Reserve Bank of India
6. REPORT OF THE COMMITTEE ON REGULATORY SANDBOX IN INSURANCE SECTOR IN INDIA
7. Report of the Working Group on FinTech and Digital Banking, RBI
8. Fintech Regulatory Guidelines, Monetary Authority Singapore,
9. <https://www.hkma.gov.hk/eng/key-functions/international-financial-centre/fintech-supervisory-sandbox.shtml>
10. <https://www.hkma.gov.hk/media/eng/doc/key-information/guidelines-and-circular/2016/20160906e1.pdf>
11. <https://asic.gov.au/for-business/your-business/innovation-hub/regulatory-sandbox/>
12. <http://www.mas.gov.sg/Singapore-Financial-Centre/Smart-Financial-Centre/FinTech-Regulatory-Sandbox.aspx>