



**Maldives Pension Administration Office  
Republic of Maldives**

**Pension and Social Protection Administration Project  
IDA Credit No.: 4611-MV  
Date: July 1, 2014**

**Information System Architect**

**International consultant - CMDA (MSE Support)**

**Terms of Reference**

**A. Background**

1. The Maldives Pension Administration Office (MPAO), Government of Maldives has been appointed as the implementing agency for the World Bank financed project to develop the newly established pension system in the Maldives.
2. The project's objectives:
  - Support the implementation of the Recipient's National Pension Act
  - Strengthen the institutional capacity of key agencies responsible for implementing the National Pension Act
  - Develop the process and platforms required for the delivery of social protection programs
3. The project consists of the following components:
  - Part A: Technical assistance and capacity building for the Recipient's New Pension Program.
  - Part B: Public Awareness Campaign.
  - Part C: Public Accounting System
  - Part D: Administration of Health Insurance, Disability, and Targeted Assistance.
  - Part E: Payout of Pension Liabilities.
4. The Capital Market Development Authority (CMDA) is the Authority mandated by the Pension Act (8/2009) with the supervision of the Maldives Retirement Pension Scheme (MRPS) and is funded through Part A of the project.
5. CMDA, established in 2006 following the enactment of the Maldives Securities Act (2/2006) has a mandate to develop and regulate the Maldives capital market. It has statutory powers to license securities market intermediaries, stock exchange and the central depository. In this regard, CMDA has licensed the Maldives Stock Exchange

(MSE) and the Maldives Securities Depository (MSD) – licensed to operate the exchange and the central depository.

6. Under section 16 of the Pension Act (8/2009), the investment of pension contributions within Maldives is limited to banks, investment funds, and securities issued by the government and business entities listed on a licensed stock exchange. The latter is the main conduit through which pension fund investments are channeled to the private sector.
7. The current market statistics and 5 year forecast for the Maldives Stock Exchange (MSE) are as follows:

	<b>2013</b>	<b>Next 5 years</b>
Average trades per day	0.48	100
Average no. of shares traded daily	2,586	10,000
Average daily trading volume (USD)	512	6,500
Market Capitalization (USD)	384 million	1,300 million
Number of listed securities	7	20
Number of dealing companies	2	5

8. Developing the information systems (IT) infrastructure of the MSE and its subsidiary MSD is crucial in the facilitation of acquisition, valuation and sale of pension assets invested in securities listed on the MSE. Moreover, such is necessary to increase market liquidity and encourage more investors and issuers in the market. This is also of importance for the project along the lines of greater diversification for the pension fund.

## **B. Objectives**

The objective of this Terms of Reference (TOR) is to hire an individual (Consultant) to:

- Review the existing systems and processes of the MSE and MSD:
  - Order Management System (OMS)
  - Depository System
  - Clearing and Settlement process
- Provide recommendations on modernization options based on the review.

## **C. Scope of services**

The Consultant shall provide the following services:

1. Conduct preliminary analysis in accordance with the objectives stated in section II. The review shall cover the major segments detailed in section V.
2. Provide specifications of hardware and software requirements based on preliminary analysis as detailed below:
  - a. Specify testbed requirement
  - b. Specify final system requirements
3. Recommendations of IT infrastructure inclusive of:
  - a. Logical software architecture
  - b. Logical hardware architecture

- c. Process diagrams/workflows
- d. Integration design
- e. Implementation roadmap

**D. Schedule of tasks and deliverables**

The main deliverable for this TOR is a report that includes the subcomponents detailed in the following table:

Phase		Deliverable
1.1	Preliminary Analysis	1.1 - Preliminary Analysis Report
	Forecast some of the future requirements	1.2 Future developments
		1.3 Suggest options for developments
1.2	Requirements Specification based on the forecast	2.1 - Software Requirements Specification
		2.2 - Hardware Requirements Specification
2.1	Recommendations based on the forecast	3.1 - Logical Software Architecture
		3.2 - Logical Hardware Architecture
		3.3 - Process Diagrams / Work Flows
		3.4 - Integration Design

Interested individuals are invited to propose a timeline and a quotation for each phase of the project.

**Major segments to be reviewed by the Consultant**

The review conducted by the Consultant shall cover the following segments. (Details of tasks to be completed are listed under section IV ‘Scope of services’).

a. Stock Exchange:

The stock exchange order management system will be aimed for quick execution of trades, high performance matching engine to allow for intra-day trading, timely market data, index computation and trading front-end placed at the dealing companies. The market participants and investors will be provided with direct market access over the internet. The system shall also allow for block trades, trading of various security classes including equities, debt, Shariah compliant securities, and Exchange Traded Funds, These functions are required to enable the stock exchange and securities market regulator to maintain integrity and transparency in the markets, thus ensuring investor confidence and increased participation. The system shall allow real-time monitoring of capital market transactions and complement surveillance activities.

- b. Depository:  
The depository system is aimed to support depository operations including DEMAT/REMAT, immobilization and record-keeping of multiple asset classes, including equities, fixed income instruments, and mutual funds on a single platform. The system shall have functionalities to assign the International Securities Identification Number (ISIN) to securities and opening of escrow accounts for share buyback operations. The depository account holders will be given user logins to access their online depository accounts.
- c. Clearing and settlement:  
The clearing and settlement will be designed to facilitate clearing of diverse asset classes over a single platform and provide choice of settlement venue to market participants, and features to enable connectivity to the national real-time gross settlement (RTGS) network.
- d. Ancillary services:  
MSE and MSD have plans to provide the following ancillary services scheduled in the MSE/MSD Business Plan. The systems shall facilitate and have links to the relevant depository functions to enable provision of these services.

***KYC Registration Service:*** A database of Know Your Client information of Dealing Companies and market participants

***Dividend Distribution/Paying Agent Service:*** As an agent of the listed companies, MSD will make dividend/coupon/interest payments, the details of which will be available to the investors and the companies

***Electronic Voting and Registration at AGM:*** Assisting the listed companies in management of the annual general meetings (AGM) with regard to shareholder registration and conduct of voting.

***Collateral Registry:*** Database of collateral registered with banks and other institutions.

***Academic Credentials Repository:*** Database of academic credentials issued by institutions, available to the students and institutions.

***Central Insurance Repository services:*** Database of insurance policies issued by different insurance companies, available to the companies and the clients

**E. Services and facilities to be provided by the client**

- Workstation with PC, access to internet and telephone
- Access to business documents
- Facilitate meetings with stakeholders
- Other required support services

**F. Supervision and review of the Consultant's work**

The Consultant shall be based MSE or premises identified by the MSE during on-site visits. He/she shall report to the head of MSE and shall work closely with the technical team of MSE. Work shall be reviewed by the management committees of the MSE and CMDA. MSE shall assign a focal point to provide all necessary support to the consultant for the timely completion of the assignment. The assigned focal point shall communicate

progress to the management committee which in turn shall share conclusions with all involved parties.

#### **G. Required Expertise and Qualifications**

1. Masters or higher in the area of Software Engineering or Computer Science
2. Relevant professional qualification in Information Systems for financial sector, or similar technical background, preferably with minimum 5 years' experience in designing systems for financial sector. Highly recommended to have experience and background of development / analyst or design role in a stock exchange.
3. Experience working closely with technology functions throughout the delivery lifecycle to enable a seamless transition to implementation within tight timeframes
4. In-depth experience of key processes (e.g. pricing, trading, market risk, credit risk, clearing, settlement, reference data)
5. In-depth understanding of the pre and post trade transaction value chain together with an appreciation of the threats and opportunities presented by market
6. Key areas of interest include Fixed Income and Equities, Cash and Collateral Management, Clearing and Settlement, Regulatory change and Risk Management including credit, market & operations risk and associated systems
7. In-depth understanding of the key market and regulatory drivers shaping the industry and an ability to articulate these by way of client opportunities
8. Ability to formulate business analysis, requirements definition and system selection support
9. Ability to provide solution architecture, define the application and implement integration and data architectures
10. Clear ability to articulate business requirements to a technical audience
11. Understanding of key issues within information management
12. Experience / knowledge of RTGS Systems
13. Developer level fluency in common technologies being used in the area
14. Knowledge of current trends of solutions and application
15. Experience in developing and deploying "real time" applications and response systems
16. Experience in implementing systems integration and technologies used for the purpose