



**National Bank of Oman - Information
Technology Department**

Request for Proposal (RFP)

**NBO Cloud Strategy Roadmap preparation
Project**

1 Introduction & Background

National Bank of Oman the first local bank was founded in 1973 and is today one of the largest banks in Oman. NBO invites proposals to help in preparing enterprise-wide cloud adoption strategy roadmap after comprehensive assessment of current IT landscape, business imperatives and security and compliance requirements.

2 Services Requirements:

NBO currently has over 103 applications hosted in its on-premises Production, DR & UAE Data Centers, as well as our website hosted on third party IAAS platform. NBO requires the assistance of a BFSI service provider with expertise in cloud services to execute an enterprise-wide cloud strategy and implementation roadmap after comprehensive assessment of our current IT landscape, business requirements, security, and compliance requirements. NBO is targeting primarily this exercise on less critical production applications nondependent on core systems, entire test & development infrastructure and our UAE datacentre hosting UAE operations.

The service provider expected to evaluate hosted IAAS, SAAS and PAAS options available **in this region** and perform TCO analysis against the public cloud options specific to services like email, SQL, IIS etc. The evaluation of existing network architecture, communication links gap assessment against proposed hybrid cloud approach, possibility of extending the SDWAN solution under evaluation to proposed landing zone of public cloud provider should be included as part of the exercise.

3 High Level Scope

The service provider is expected to draw a detailed cloud implementation plan, frameworks, guidelines, TCO analysis and all necessary artifacts, helping the bank in implementing the roadmap. The assessment should cover,

- Cloud Readiness Assessment, the assessment of technology landscape, application and network architecture.
- High level assessment on entire 103 applications to identify the suitable candidates for PAAS, IAAS and SAAS
- Test & Development IAAS & PAAS, Offsite private cloud option evaluations.
- Relocation, Colocation, Managed private cloud & public cloud evaluation for UAE operations.
- Identify appropriate cloud deployment for a set of applications to be migrated based on control, latency, security, regulation concern etc.

- Comprehensive Cloud Policy, Compliance, Frameworks, Checklists, and guidelines.

4 Compliance Guidelines for the discovery and assessment:

- Selected Vendor should propose targeted approach meeting regulatory constraints in respect of CBO & CB UAE compliance & Data Confidentiality and cloud framework requirements.
- Proposed Cloud Platform design must adhere to best practice /security design principles for cloud and must comply with standards ISO27001, PCI-DSS, CENTRAL BANK OF OMAN, Central bank of UAE.
- Applications to be migrated must be grouped based on the interdependencies and priorities derived from risks associated with existing (on-premises) hardware end-of-life/end-of-support situation.
- Review existing network bandwidth consumption and advice of upgrades and/or new links to be added if deemed necessary, and the justification thereof.

5 Scoping Details /Guidelines

Following guidelines is meant to assist on the expectations, however your final proposal shouldn't be limited with the below information. Consultant should make sure all necessary information is obtained before final submission through RFP additional information requests and clarifications if required.

5.1 Existing Onprem Application & Infrastructure overview

Item	Role	Quantity
Business & Infra applications	Total Number of applications hosted	110
Number of physical Servers	Backend infrastructure	100 +
Number of Virtual Machines	PRD,DR & UAE virtual infra	700
OS	AIX,Redhat Linux & Windows server	NA
DB Clusters	Microsoft SQL, Oracle & MYSQL	25
Server Virtualization	Vmware,IBM Power VM	
Database Technologies	Oracle, Microsoft SQL, MongoDB & MYSQL	
IT Applications	105+ vendor based and in-house developed (.net & Java based.	

5.2. Discovery and Assessment scope: Phase1

- The selected Vendor is required Validate the infrastructure for the production applications.
- Understand dependencies and integrations within the application landscape.
- Confirm sizing and utilization of the provisioned infrastructure.
- Identify & confirm cloud-suitable workloads.
- Perform right-sizing of the infrastructure for cloud.
- Identify the applications for which Infrastructure enhancement is required to make it cloud ready such as containerization technology.
- Validate the applications based on the infrastructure inventory and propose a target disposition based on:
 - Rehost: Applications that can be moved to the Cloud maintaining their current technology stack (OS, DBs, etc.). To meet rapid migration requirement, "Rehost" would be preferred.
 - Re-platform: Applications hosted on legacy technology stack and require to be re-platform to a supported OS in the Cloud.
 - Re-factor: applications which have a technical architecture not supported in the selected cloud and required to be re-architected.
 - Retain on Premise: Applications which cannot be migrated to cloud due to Technical, business, legal or any other constraints.
- Assess the existing Identity and Access management processes.
- Introduce a framework and discovery tool, workload management to optimize/automate the existing application and infrastructure in NBO.
- Disaster recovery capabilities and desired standards
- Analysis of existing security systems against proposed hybrid scenarios, comparison study and TCO.
- Options to fully leverage the capabilities of M365 E3 to replace similar functionality solutions from onprem. Analyse existing MDM, MFA, DLP, McAfee AV and proposed data classification solutions and suggest options to replace with M365 E3 (with add on E5 security modules).
- Analyse existing communication links @ DC, branches and offices and proposed bandwidth, express route requirements for hybrid approach, extension of SDWAN to landing zone and TCO.
- Analyse the current backup infrastructure, proposed virtual backup enhancement project and suggest suitable backup solution for hybrid scenarios. Data ingress and Egress costing for backup and restore to cloud setup.
- Analyse existing onprem licenses and it's eligibility to be repurpose in cloud.

5.3 Application, Infrastructure mapping and Assessment-Phase2

1. For selected/shortlisted NBO applications based on the high level analysis of the 103 applications, in concert with key NBO personnel, identify the migration strategy that would yield the highest benefits from a cloud hosting – e.g. SaaS, IaaS or PaaS service models and associated deployment model (private, public, community, etc.).
 - Validate the applications based on the infrastructure inventory and propose a target disposition based on:
 - Rehost: Applications that can be moved to the Cloud maintaining their current technology stack (OS, DBs, etc.). To meet rapid migration requirement, “Rehost” would be preferred.
 - Re-platform: Applications hosted on legacy technology stack and require to be re-platform to a supported OS in the Cloud.
 - Re-factor: applications which have a technical architecture not supported in the selected cloud and required to be re-architected.
 - Retain on Premise: Applications which cannot be migrated to cloud due to Technical, business, legal or any other constraints.
 - Describe any application transformation required to support the recommended cloud model, including, re-engineering of the application or its interfaces/integrations. NBO would like any change to be at a minimum.
 - Denote, as appropriate, situations where quick win can be achieved prior to the optimal cloud architecture taking into account applications’ lifecycle and potential customer impact.
 - Develop documentation supporting the recommendations, and any associated findings that include application rewrite, automated monitoring and scaling of infrastructures and platforms, and disaster recovery strategy that take advantage of flexible billing in the cloud.
2. For selected applications and infrastructure platforms, develop a cost simulation inclusive of all cloud operations costs, including the cloud hosting, cloud management, and NBO internal maintenance & operations. Those costs simulations will be used by NBO for comparison with current operations costs.
3. Create a short list, or heat map, of cloud service providers, including hosting providers and cloud management vendors, best suited to meet NBO’s requirements; work with key NBO personnel to refine the technology requirements such as Oracle, Microsoft SQL Server, NoSQL databases, Queues, schedulers, micro services, etc.

5.4 Migration planning-Phase3

1. In collaboration with key NBO personnel, produce a roadmap inclusive of each NBO application and representing the most effective cloud migration. The road map should take into account the following:
 - NBO's interests in balancing migration and operations costs against application re-engineering cost and COTS (Commercial off the Shelf) licensing cost.
 - Factor in existing applications lifecycle and reengineering plans and priorities.
 - Include in the roadmap any pre-requisites, constraints and inhibitors to NBO, or an application, migration to the cloud.
2. Plan for Compliance ready landing zone(s) including supporting services with TCO.
Such as: (As applicable)
 - WAF solutions
 - SIEM solutions
 - Backup solutions
 - Advanced Firewalls
 - Endpoint security solutions
 - Privilege access management
 - Perform testing for the implemented components and apply remediation wherever required.
3. Identify representative milestones in the roadmap, and for each, simulate the ROI (if any) of the proposed strategy vs. projected status quo cost.

6 Deliverables

Produce a comprehensive summary report based on the evaluation done in the first three phases that includes,

- NBO's IT challenges as it relates to migration and operations of applications in the cloud
- The heat map produced in phase 2, along with a recommendations and/or pro & cons for cloud hosted vendor(s).
- Application migration roadmap developed on phase 2 & 3
- TCO analysis against the public cloud options specific to services and hosted IAAS and PAAS options available in this region.

In addition deliverables should cover,

- Gap Identification report
- Cloud Service Requirements
- Frameworks, Cloud Policies
- Checklists, Cloud Engagement Model, Capacity Requirements and respective TCO.
- Guidelines, Cloud Implementation Plan

Mandatory items in the deliverables section

Key Deliverables	Description
Updated Inventory	Inventory document capturing the as-is details on the applications, instances, services, integrations, components, application owners and third-party connections of NBO
Migration Phase/Wave Plan	The document should clearly depict the applications covered under each phase and its target state, along with all dependencies on other applications
Project Plan for Migration	Overall Migration project plan with detail activities, dependencies, risks and timelines per phase.
Licensing Requirements	All licenses required for cloud migration. It should clearly include which of the existing licenses can be reused.
High and low Level Design for Target Cloud Architecture	Document to describe the high-level and low-level Cloud Architecture /Design across the selected Cloud Provider(s), including the DR setup.
Low Level Design for Network Architecture	Document to provide low level design detail on the implementation of the Network Cloud architecture environment to support the cloud journey at NBO
Low Level Design for Security Architecture	Document to provide low level design detail on the implementation of the Security measures for Cloud Platform/ environment.
Migration Strategy	Define strategy for each application's migration to the cloud, including any upgrades (if required), dependencies with other applications, firewall rules, application owners, pre-requisites etc.
TCO	Detailed TCO analysis report has to be provided against each strategy recommendation as part of the evaluation. TCO analysis against the proposed public cloud options and hosted IAAS and PAAS options (private cloud offerings from providers) available in this region.

7 Submission of Responses to this RFP

The commercial proposal should be sent in encrypted format to Mr Srinivas Lingeri (SrinivasL@nbo.co.om) and must meet the following minimum requirements:

- The proposal must be sent with references to only the above given e-mail addresses.
- The RFP Response documents must be duly authorised and submitted in PDF format.
- The RFP Response documents must be password protected; and passwords must be shared only upon email request subsequently.
- The deadline for submission of RFP Response is **2PM on Monday, Aug 21, 2023**

8 Proposal Requirements:

- List the technology expert details proposed for the engagement mentioning relevant experience and skillset along with references of IT engagement for financial institutions.
- Consult details for each domain along with skillset and experience should be included.
- Commercials
- Planning along with costing is part of the scope, proposal should cover the partner strength on implementation capabilities.
- Project Approach and Plan along with target timelines.
- Mention the industry best practices and frameworks, capability maturity models used for benchmarking.
- Provide at least three references from financial institutions that have previously engaged them for similar work and share their gap analysis sample report.

9 Time Line:

- RFP release date: [26/07/2023]
- Deadline for vendor questions: [14/08/2023]
- Proposal submission deadline: [21/08/2023]

10 Evaluation Criteria:

- Vendor's experience and expertise in conducting similar reviews for financial institutions.
- Quality of proposed approach and methodology.
- Clarity and completeness of proposed deliverables, including recommendations, cost estimates, and implementation plans.
- Cost competitiveness of the proposal.
- Review of all scope areas will be evaluated, once finalised project might be awarded based on proposal evaluations and management approvals.

11 Disclaimer:

- Vendor's name, address, and contact information.
- A brief overview of the vendor's experience and qualifications related to the scope of work.

- Proposed approach and methodology, including timelines and resource requirements.

The bank reserves the right to reject any and all proposals received in response to this RFP and to waive any minor irregularities or technicalities in the proposals received. The bank also reserves the right to terminate the contract at any time if the vendor fails to meet the terms and conditions of the contract.