Department of Electronics & Information Technology
Ministry of communications Information Technology
Government of India

Digital India
Power To Empower

NeGD
National e-Governance Division

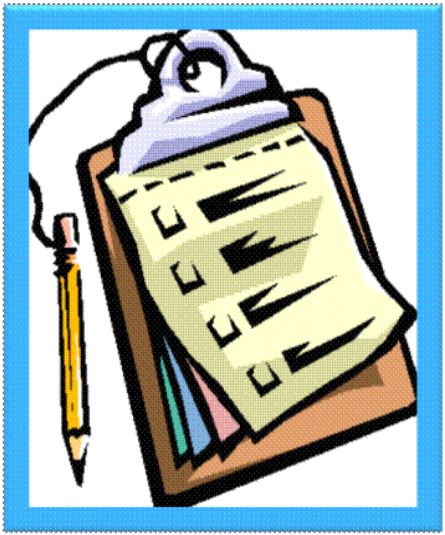
Expression of Interest & Request for Proposal Preparation

Request for Proposal for e-Governance Projects

niSg
Architecting e-Government

Agenda

- Difference between Request for Proposal (RFP) and EoI
- Functional Requirements Specification
- COTS vs. Custom Development vs. Cloud / SAAS
- Hardware Requirements
- Technical Requirements
- Deployment architecture
- Implementation plan



About Expression of Interest

- There are certain circumstances when Government does not know its requirements well
- For example, in emerging areas as such as the UID, item code classification and State of the Art e-Payment solutions
- To firm up its requirements, Government prepare a set of questions (areas where it is not clear) and seek information from qualified players in the market. This document is referred to as Expression of Interest (EoI)
- Pre-qualification criteria is usually set
- Agencies operating in the space would then provide their response to the EoI
- The responses will be studied by the Government and presentations are usually made by the participants

About Expression of Interest

- Short-listing of vendors is also done at end of this process. Usually, those complying with the qualification requirements are qualified
  - This short-listing is a form of pre-qualification procedure
- The RFP documents are subsequently finalized
  - Inputs provided by those responding to EoI are considered to finalize the requirements in RFP
- Requirements herein need not be only functional or technical in nature
  - It could also be related to payment terms or business model or service levels

4

About Expression of Interest

- The finalized RFP will be issued to the short-listed bidders (i.e. if short-listing was done) for bidding
- Short-listed bidders may or may not choose to bid in response to the RFP. It is their discretion
- Pre-bid procedure follows just as it is with the standard tendering process
- Bids are received and evaluated just as it is with the standard tendering process

Differences between RFP and EOI

- Number of stages
  - RFP: One stage (i.e. it could be single cover or two cover or three cover, regardless, bidders will submit their responses and their responses evaluated at once)
  - EOI: Two stages (First stage is where bidders provide their suggestions to government on the requirements and Second stage in the bidding stage)
- Requirements
  - RFP: Presumably known
  - EOI: Presumably not known during the first stage

Differences between RFP and EOI

- Time taken
  - RFP: Usually shorter than EoI
  - EoI: It is a prolonged process
- Restriction in bidding
  - RFP: Restricted bidding is adopted if pre-qualification or empanelment procedure was followed earlier
  - EoI: Second stage bidding is usually restricted

EOI in e-Governance Example

- Problem Statement:
  - High percentage errors were reported in reconciliation of bid security and tender processing fee payments in e-Procurement project
- Level of Knowledge
  - Many Banks had visited the e-Procurement office as part of their marketing efforts and explained about various solutions available with them to address reconciliation issues
  - e-Procurement cell broadly understood that there are solutions available to minimize reconciliation errors

EOI in e-Governance Example

- EoI Published
  - An open EOI was published stating our problems and seeking information about solutions available in the market. Also, information was sought about possible payment models
  - Pre-qualification criteria were specified
- Response
  - Many Banks attended the pre-bid meeting for EoI and few submitted their response
  - A round of interactions were held with the bidders as part of processing the EOI response

EOI in e-Governance Example

- Key Learnings
  - Usually, service charges for the net banking aggregator solution is offered as a percentage of the transaction amount (1-2%). However, “Flat Fee model” was just introduced by one of the vendors in the market.
  - Clarity on service levels emerged. For example, by which day Banks will be able to credit the amount in Bank account after the date of transaction (T) was known for the various payment types
  - The concept of virtual account was well understood
- Banks short-listed
  - Three Banks were short-listed, who met the pre-qualification criteria specified in the EoI

EOI in e-Governance Example

- RFP published
  - A detailed RFP was prepared and published incorporating the key learnings
- Tender evaluation
  - Technical proposals submitted by bidders were evaluated and clarifications on the same were sought
  - All the bidders made a detailed demonstration of their proposed solution

EOI in e-Governance Example

- Tender results
  - Flat fee business model for Net Banking aggregator worked out very well. Helped save significant amount of money for suppliers and indirectly for Government. Such low fee will help enhance use of Internet Banking, where reconciliation errors will be less
  - Virtual account concept was firmly incorporated as a requirement in the RFP
  - Workable service levels were defined
  - The process took a while, but definitely the process helped in defining a suitable solution

About Request for Proposal (RFP)

- A RFP needs to provide Clarity on:
- On the scope of work
- Vendor's capabilities required to deliver solution
- Measuring solution and services delivered by vendor (i.e. Key Performance Indicators and Service Level Agreement)
- Investments needed in project lifecycle (i.e. payment schedule & business model)
- The efforts needed to delivery solution (i.e. work plan / implementation schedule)

About Request for Proposal (RFP)

- A badly drafted RFP could cause:
- Selection of a unqualified vendor
- Conflict in understanding on the scope of work between government and vendor on account of ambiguous requirements; causing delays and termination
- Delay in finalizing selection of the vendor
- Government agency to procure goods/services not inline with the business requirements
- Overshooting of budget of both vendor and the Government
- Confusion in SLA administration due to ill-defined Service Level Requirements (SLR) leading to delays in payment
- Government to levy penalties leading to delays/terminations
- Litigations/court cases by vendors or government

About Request for Proposal (RFP)

- A Request for Proposal (RFP) is an invitation for suppliers, often through a bidding process, to submit a proposal on a specific commodity or service. This document contains:
- Project requirements including
  - Vision, Service levels, Implementation plan, Functional & Technical and Hardware requirements
- Terms and conditions governing vendor selection
  - Proposal evaluation methodology and selection method
- Business model
- Legal terms governing the contract between procurement entity and the selected vendor
- Forms to be used by bidders to submit their responses

About Request for Proposal (RFP)

- Request for Proposal (RFP) is usually structured in 3 Volumes, wherein one Volume is assigned to dedicatedly address the requirements listed below:
- Technical and Functional Requirements
- Bid Process and Commercial Specifications
- Contractual and Legal Specifications

About Request for Proposal (RFP)

- Contents of Volume I: Functional and Technical Requirements
- Introduction & Detailed Background of the Project
- Project Vision, Mission and Objectives
- Services Definition
- Detailed Scope of Work for the Vendor
- Functional Architecture & Requirements
- Technical Architecture & Requirements (including Security Requirements)
- Other Requirements (e.g. Data Migration, Digitization etc)
- Timelines for implementation of the Project
- Project Deliverables

Illustrative

About Request for Proposal (RFP)

- Contents of Volume 2: Bid Process & Commercial Specifications
- Bidding Terms and Conditions (Guidelines for preparing proposal)
- Pre-qualification Criteria
- Technical Evaluation Criteria
- Bid Opening and Evaluation Process
- Evaluation of Commercial Bids
- Negotiations, Contract Finalization and Award
- Formats for providing bid response
  - Pre-qualification
  - Technical and
  - Commercial

Illustrative

About Request for Proposal (RFP)

- Contents of Volume 3: Contractual and Legal Specifications
- Roles and Responsibilities of Stakeholders
- Service Level Agreement
- Master Service Agreement
  - Scope of Services under the Contract
  - Breach, Rectification and Termination
  - Intellectual Property Rights
  - Disputes & Amendments
  - Change Control Schedule
  - Exit Management
  - Program Governance Structure & Schedule
  - Payment Terms and Schedule
  - Implementation Schedule

Illustrative

About Request for Proposal (RFP)

Key Activities Related to RFP Preparation and RFP Processing

RFP Preparation and Publishing

Bidding Process

Bid Evaluation Process

Activities Preceding RFP Preparation

- e-Governance Project Strategy including
  - Define Vision and Objectives for the project
  - Define funding requirements for implementation of the project
  - Prepare Detailed Project Report (DPR); applicable when funding has to be provided by a 3rd party
- Current state assessment including
  - National and international best practices pertaining to the project
  - Readiness of IT infrastructure and network connectivity in the department(s) where the project will be implemented
  - Study of business processes to be covered under the e-Governance project and identification of pain points in the project scope
  - Training and capacity building requirements (i.e. basic IT training and specialized project specific training)
  - Capture measurable baseline data on the extent of efficiency in the pre-existing method of functioning

Activities Preceding RFP Preparation

- Future state definition including
  - TO BE process definitions (i.e. desired state after implementation of the envisaged e-Governance system)
  - Business Process Reengineering (BPR) requirements, where reform initiatives to be taken by procurement entity to realize full potential of the project will be specified
  - Training and capacity building plan to upgrade skill set of government officials and other stakeholders in the project
  - Gaps in IT infrastructure and network connectivity to be addressed for implementation of the project
  - Legal and regulatory requirements (i.e.) amendments to existing rules and regulations required to enable implementation of the envisaged project

Activities Subsequent to Vendor Selection

- Award of contract procedure
  - Issuance of Letter of Intent (LoI) by procurement entity
  - Letter of Acceptance by the selected vendor
  - Signing of legal agreement between procurement entity and the selected vendor
  - Submission of Performance Bank Guarantee (PBG)

Activities Subsequent to Vendor Selection

- Contract execution
  - Selected vendor will conduct detailed study of the requirements and prepare project design and Software Requirements Specification (SRS)
  - Vendor will
    - Develop / customize the software to address project requirements stated in RFP
    - Deploy server side infrastructure (e.g. servers and storage) as required in the RFP and as per the vendor's technical proposal
    - Deliver and install end user infrastructure (i.e. computers, printers, scanners etc.) as required in the RFP
    - Test and then deploy the software in production environment
    - Maintain the software and hardware in accordance with service levels defined in the RFP

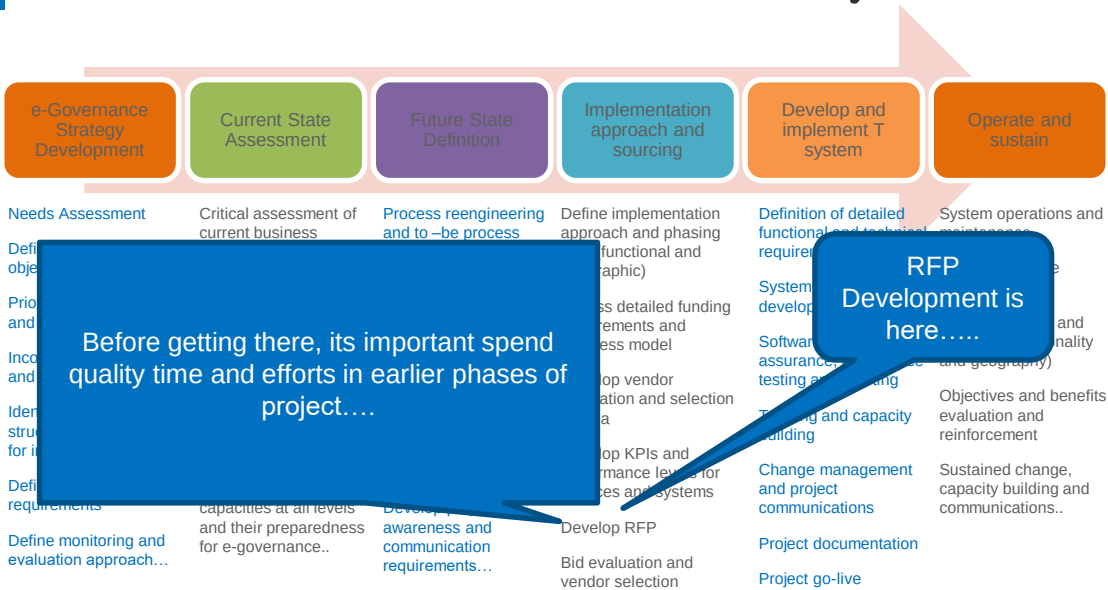
Activities Subsequent to Vendor Selection

- Contract execution (cont'd)
  - Government will
    - Set-up a Project Management Unit (PMU) to deliver on its roles and responsibilities as per the RFP and specifically to
      - Review and provide feedback on detailed design and process documents and SRS submitted by the selected vendor
      - Convene meetings with stakeholders / committees constituted to monitor and take decisions related to the project
      - Manage and monitor delivery of the project as per implementation timelines and service levels specified in the RFP
      - Manage day to day project operations (including project and payment management) in coordination with the selected vendor

Activities Subsequent to Vendor Selection

- Contract execution (cont'd)
  - Government will
    - Engage services of a 3rd party audit agency to conduct Final Acceptance Testing of the system set-up by the vendor
    - Create awareness and capacity building amongst prospective users and key stakeholders about the project
    - Assess effectiveness of the project by measuring the envisaged project outcomes (captured during pre-RFP stage) with the actual project outcomes
    - Plan for Exit management at end of the vendor's contract period

RFP in e-Governance Life Cycle



Project Requirements: FRS

- The software to be developed in a project is defined in detail in Functional Requirements Specification (FRS) section of the RFP
- FRS is typically derived from the Future State definition (i.e.) TO BE processes prepared during activities preceding RFP preparation
- Typically, a software is conceptually sub-divided into multiple modules and functional requirements are defined module-wise
- Care has to be taken to ensure that all requirements of a project are correctly defined in FRS. Else, the (inadvertently) left out requirements may have to go through a cumbersome change management procedure before it gets implemented

Project Requirements: FRS

- Don't define requirements beyond what is required
  - FRS compliance statement will be prepared subsequently as part of Final Acceptance Testing
  - Then, arguments have to be presented as to why certain requirements originally envisaged in RFP could not be implemented
- Remember:
  - Though it is detailed, FRS defines the requirement in abstract format
  - Often, few of the envisaged requirements defined in RFP cannot be implemented in software pending further clarity
  - Selected vendor is often required to develop software to address functionality not originally envisaged in RFP, but quite essential for implementation of the project

Project Requirements: FRS

- Where implementation of the system is sought as Commercial Off the Shelf (COTS) deployment, care should be taken to ensure that FRS is drawn directly from the Future State definition and it is vendor neutral

Commercial Off the Shelf Software (COTS)

- Ready made software
- IP belongs to vendor owning the software
- Software is licensed
- User based licensing / Enterprise licensing
- Product owner does not typically implement software
- System Integrator required to deploy COTS software
- Microsoft, Oracle etc. have COTS products
- Product fitment
  - If good, deployment will be fast
- Number of installations indicate how good the product is
- Generally bug free and robust
- COTS will have what we ask and many more as well

Custom Developed Software

- IPR belongs to purchaser / government
- Application takes time to develop and stabilize
- Error prone especially initially:
  - It is part of the software development process
  - Many errors are logical errors and not software errors; software behaves as per the coding logic correctly
- More management effort from Government
- No licensing hassles
- Code can be modified as per Government requirements
  - COTS products will have certain restrictions at some point

Cloud / SAAS (Software as a Service)

- Both COTS and custom developed software are deployed in customer specific hardware
  - Web, application, database server, firewall, load balancer, Intrusion prevention system, physical servers, redundancy, data center rental costs & power costs
- Application is already installed and ready for use
  - A new customer is created as a user in the system, a la, Gmail e-mail account; a bit more complex though
  - Solution hosted in a centralized set of servers
  - All user agencies are logically separated, thus privacy and security are ensured
  - Set-up can be very fast
  - Data center can be anywhere in the World
  - Downtime will be minimal; heavily backed up infrastructure
  - Less control with Government

Project Requirements: Hardware

- As hardware specifications tend to continuously evolve, one needs to keep up with the market to know the current trending specification
- Hardware vendors tend to differentiate their products by offering a unique combination of hardware specifications, as against the competition. For example
  - Vendor A would offer duplex printer with Automatic Document feeder at 24 PPM
  - Vendor B would offer duplex printer at 24 PPM but with scanning capabilities

Project Requirements: Hardware

- It will be best and non-controversial if specifications could be defined directly based on requirements
  - Vendors will tend to seek changes to specifications as pre-bid clarifications, so they can offer a equipment exactly matching the specifications specified in RFP
  - Procurement entity can evaluate such requests and take a decision on whether to dilute/modify the specifications based on their requirement
- Often, procurement entity will have to establish the equivalence of competing products. For example
  - Whether the twelve-core AMD Opteron 6100 and six-core Xeon 5600 perform more or less the same

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Project Requirements: Technical

- Typically, certain standard technical requirements are specified in the RFP such as:
  - Application should be designed as n-tiered architecture
  - Application should be accessible over the Internet
  - The software installation should comply with security guidelines laid down by Government of India and international standards such as ISO 27001
    - In this regard, it needs to be noted that adhering to security guidelines is different from obtaining security certification such as ISO 27001. The latter requires engaging a 3rd party agency and exhaustive documentation
  - Audit trails of all key activities shall be logged and this log data shall be shipped to an environment under the direct control of procurement entity
  - The system should be designed such that it works in a load balanced mode, to address scalability requirements of the project

Project Requirements: Technical

- The exact technical architecture & solution design is typically left to the bidding entity to determine; as long as the design meets the standard technical requirements specified in the RFP
- The tendency typically is to specify project requirements and leave the solutioning to the bidding agencies
- The RFP should ideally specify the load the envisaged system is expected to handle, so as to enable the bidders to design the system and estimate the server side infrastructure requirements

Project Requirements: Technical

- As part of the solutioning, typically bidding entities select the programming language, Operating System, Database etc. considering the solution design & project costing
- It is quite common nowadays for bidding entities to use Open Source Software (OSS) in their technical proposal. In such cases, the RFP should seek compulsory purchase of support for the OSS proposed. The availability of such support will facilitate timely resolution of critical and non-critical faults caused on account of the OSS
  - If support were not purchased, the development team will need to rely on the Open Source Community for support. The response from the community would not be as reliable as it is with professional support

Project Requirements: Technical

- Especially with development of State Data Center, vendors are asked to use the server side infrastructure (e.g. anti-virus, firewall and intrusion prevention system) already available with the Government as shared infrastructure
  - The list of such items provided by procurement entity has to be clearly specified in RFP, so costing for the same is excluded by all the participating bidders
- It will be simpler to monitor conformance of the system to Service Levels specified in RFP if certain software tools are used to monitor and report service levels. Robust tools are available in the market under the category Enterprise Management System (EMS) / Network Management System (NMS)
  - A full-fledged EMS/NMS can be quite expensive

Project Requirements: Implementation Plan

- The sequence of events and timelines by which key activities in the project have to be completed is specified in the implementation plan
- Timelines specified in the RFP should be realistic
  - Time should be provided for mobilization of resources
  - Workability of timelines has to be thought through well
  - Bidders tend to underestimate the effort required for implementation of the project when timelines envisaged are aggressive. Project delivery in such cases gets adversely impacted
  - The time by which Government will approve deliverables submitted by the vendor has to be indicated
  - When project is not delivered within unrealistic timelines, procurement entity is often required to apply penalties causing administrative burden

Project Requirements: Implementation Plan

- Phased deployment of system is recommended
  - Pilot phase
    - Implement software in a small sub set of users
  - Roll out phase
    - Expand usage of system across all users in a phased manner
- The project start date (“T”) is often a bone of contention
  - Is it date of issuance of Letter of Intent (LoI) or Date of signing of contract ?
  - Vendors prefer “T” to be the latter, since it gives them some time to mobilize resources for the project and makes it easier for them to book cost of the project in a dedicated project account.
  - Procurement entity prefers “T” to be the former, so the project would start immediately upon issuance of the LoI