

Multimodal customer information system

Terms of reference

Introduction

Providing easy-to-use customer information is a critical component of efforts to increase the use of public transport in [CITY]. The IMPLEMENTING AGENCY (IMPLEMENTING AGENCY) aims to create robust systems to expand access to information, including a website, call centre, and improved signage. The information portal will deliver customised multimodal trip planning information via SMS, website, and over the phone. These services will also disseminate basic system information including routes, timings, and fares. These systems will rely on an up-to-date central database with information from all transport providers in the city. Information on the city's public transport system gathered as part of this project will be made available to the public to facilitate the development of innovative services by third party developers.

Summary of tasks

IMPLEMENTING AGENCY seeks interested parties to design, implement, and operate a comprehensive user information system for the [CITY] public transport system. The entire project is divided into the following components:

1. Data collection
2. Database development
3. Website development
4. Smartphone app
5. Call/SMS centre development
6. Signage and way finding guidelines
7. Complaint redressal system development
8. Information system operations

Detailed description of tasks

Data collection

The consultant will develop a database containing service information for the following agencies/systems:

1. [CITY] Metro Rail Limited.
2. _____Transport Corporation: bus services.

3. _____Railways: suburban services in the [CITY] Metropolitan Area and Mass Rapid Transit System.
4. Corporation of [CITY]: on-street parking services.

The consultant will gather the data from each public transport agency:

- List of stops.
- Routes and their respective stated schedules.
- Assessment of delays vis-a-vis the stated schedule during peak periods on major corridors.
- Ticket fare and pass schedules and policies.

For the parking system, the consultant will gather the following:

- Location of on- and-off-street parking areas and number of parking units available.
- Parking fees and policies.

Database development

The database will have the following components

- Consolidated list of bus stops, bus terminals, metro stations, and suburban rail stations. For each facility, the database should record key data including but not limited to the following:
 - Unique identification number
 - Unique name
 - Geographic location in latitude/longitude coordinates of the main facility and all sub-stops
 - List of all train and bus routes passing through the facility
 - List of passenger amenities available at the facility
 - Transfer time between different locations in the facility (used to create itineraries through the trip planning functions, described below)
- Descriptions of all bus and train services operated, including but not limited to the following:
 - Route definition of the service
 - Arrival and departure time at each stop
- Parking information:

- Geographic location in latitude/longitude coordinates of all public parking facilities and information on whether the facility is paid
- Parking fees and policies

The database will have the following features:

- Interface with IMPLEMENTING AGENCY member agencies and ability to accept frequent updates.
- Security features to prevent unauthorised modification of data.
- Ability to generate a wide range of reports.
- Direct interface with web portals and call/SMS centre to provide trip planning data.
- Ability to store and serve real-time information as and when it becomes available for various modes.

The consultant will develop a workflow for updating the database.

Website development

The consultant will design and operate a customer information website to disseminate information on public transport services in [CITY]. The website will be linked to the database discussed in the previous section to facilitate rapid updates of service information.

The website will have the following sections and features:

1. Interactive trip planning section
 - a. Incorporation of multiple modes. The user must be able to plan trip using various modes & different agencies like Metro/ Suburban rail / city buses / Monorail / Feeder buses etc.
 - b. Intuitive entry of place names. The portal will have the capability of interpreting a wide range of colloquial and abbreviated place names and suggesting matches or nearby alternatives in the list of official stop names. The user must be able to plan to switch the origin and destination.
 - c. Time Planner. The user should have the ability to plan the trip based on the arrival or departure time of his/her choice.
 - d. Transfer Option. In case a direct connectivity does not exist, the user must be able to examine multiple transfer locations based on frequency / connectivity etc.
 - e. Real-time Position. The user must be able to see the real-time position of all the buses on the website, at least to the extent of the ones with GPS installed in them. For the others schedule information should be available.

- f. Lowest Cost / Time indicator. If multiple options of connectivity exist, the user must be able to plan the travel based on the filters such as ‘lowest cost’ or ‘fastest time.’”
 - g. Output formats. The final output trip map should have the trip description both in the map graphic and in text form. It should be in printer friendly alignment. The user must be able to send/ save the trip plans by PDF, SMS, or email.
 - h. Traffic delay. Trip planner results should reflect the additional travel time during peak periods due to traffic delay.
2. Service information
- a. Schedules. The website must offer timetables and route-specific maps for each public transport route showing all services operated in tabular form. Separate timetables should be provided to reflect any variation in schedules or itineraries at different times of the week (i.e. separate weekday and weekend schedules). The timetables should be available in an HTML version for viewing in a web browser and a PDF download formatted for printing on an A4 sheet.
 - b. Terminals, stations, and other facilities. The website will include a section with information about all stations and terminals in the [CITY] public transport system. For each station/terminal, the website should include a list of the list of facilities available at the station/terminal (such as toilets, elevator / disabled access, ticket sales booth, and hours of operation), a list of routes that operate from the terminal, and a map of the station/terminal area precinct.
 - c. Fares. The website will display the fare structures for respective agencies.
3. Services downtime section
- a. All the agencies providing services in [CITY] shall be able to update to the public about their planned service disruptions like road cuts / processions / power outage / planned maintenance / etc. The agency must be able to update the location(s) in the backend by keying in the service disruption area and the same shall reflect spatially in the front end.
 - b. The user will have the ability to request alerts, about the change in schedule and frequency of any desired bus route number.
4. Corporate information
- a. About IMPLEMENTING AGENCY. The portal will include a page outlining the background, responsibilities, and members of IMPLEMENTING AGENCY.
 - b. Agency websites. The website will provide a brief description of the partner agencies and a link to their respective websites.

- c. Ability for users to provide ratings and feedback on the quality of the experience using the site.
5. Open data portal
 - a. Provide public download access to service information for all public transport modes. This information will be updated at least monthly.

The website should satisfy the following standards:

1. **Multilingual Support.** All features in the website should be available in Tamil and English. This functionality should be provided through Unicode so that the user need not download special fonts.
2. **Compatibility.** The website should be compatible with all standard browsers (e.g. Firefox, Safari, Internet Explorer, and Chrome).
3. **Mobile device friendly.** The consultant will create a separate interface for the website that is usable on smart phones and tablets and multiple operating systems (iOS, Android, Windows).
4. **Universal accessibility.** The site must be accessible by the visually challenged. The site design shall incorporate all the principles in accordance with Web AIM initiative of the web design code. The alternatives shall be bilingual.
5. **Speed.** The site should be optimized for faster loading incorporating the best W3C practices.
6. **Server Uptime.** The provider shall guarantee an uptime of 99.9%. <more specs to come> The server shall be designed for a peak load of 5,000 page views per minute.

Call and SMS service

The consultant will design and operate a call and SMS centre to disseminate information on public transport services in [CITY].

The call centre will have the following capabilities:

- Identify the services and their destinations from a particular stop/station/terminal
- Identify the services available between a specified origin and destination.
- Provide information on fare structures and tickets.

The SMS centre will have the following capabilities:

- Provide a list of services and their destinations from a stop/station/terminal for which the user has entered an ID number.

The call and SMS centre will have the following functionality;

- Ability to handle 500 calls per hour

- Ability to handle 5,000 SMSs per hour
- The provider shall adequately test the functionality across service providers.

Signage and way finding systems

The Consultant will develop a comprehensive signage and way finding system for the _____ bus system, Metro, MRTS, and parking system. The consultant will create signage design guidelines, prepare signage location maps for representative public transport facility types, and prepare a detailed terms of reference for implementation.

The signage design activity will comprise the following activities:

- Analysis of customer needs:
 - Conduct an audit of existing signage and customer information systems at bus stops and MRTS stations.
 - Identification of key user groups and their respective needs.
- Preparation of draft signage design guidelines:
 - Signage layouts for typical bus stops and station configurations: e.g. bus stops with single shelter, bus stop with 2-4 shelters, bus stops with over 4 shelters, MRTS station.
 - Guidelines on signage content. Required content is as follows:
 - MRTS stations. Signage indicating train destinations, timings, route maps, transfer options (e.g. nearby bus stops with available routes, destinations, and timings and paratransit stands), fares, station way finding.
 - Bus stops. Bus routes, bus destinations, timings, system route map, fares and passes, customer care information, and for large stops and terminals, a local area map, and bus stop way finding.
 - Buses. Route information.
 - Guidelines on signage appearance, including size, color, typeface, type size, lighting, material, hardware, etc.
 - Timeline for phased implementation, taking into account bus stop condition and schedule for replacement.
- User audit:
 - Design and install signage prototypes in one medium sized bus stop and one MRTS station. The prototypes should be based on the design guidelines.
 - Conduct a public open house to gather feedback on the prototype systems.

- Final signage design.
 - Proposed response to customer feedback.
 - Revision of draft guidelines.
 - Preparation of signage for all _____ bus stops with shelters (approximately XXX), _____ terminals (XX) and all MRTS stations (XX) as per the final guidelines.
 - Preparation of 1:1 prints of all signs for agency approval.
 - Terms of reference for fabrication and installation of the signage.
 - Site supervision during signage installation.

Complaint redressal service

The main aim of this section is to create a centralized location for users to mail / book in their suggestions and criticisms of services provided by public transport agencies. The consultant will develop procedures to log complaints, assign unique tracking numbers, deliver the complaints to the relevant agency(ies), and deliver a reply to the customer. The complaint redressal system should be accessible through the website, call centre, and via snail mail.

Information system operations

The Party will operate and maintain the complete customer information system (call/SMS centre, website, complaint redressal system) for a period of 3 years.

Timeline

The customer information system will be developed as per the following timeline.

Consultant output	Description	Deadline
<i>Data collection and database development</i>		
Summary of data collected	Description of comprehensive data set from public transport agencies.	4 weeks after signing of contract
Proposed database structure	Proposed database components and maintenance plan.	1 week after approval of data summary
Final database structure	Final description of database structure and maintenance incorporating IMPLEMENTING AGENCY feedback.	1 week after receipt of IMPLEMENTING AGENCY feedback on Proposed database structure

Final database with internal access portal	Intranet allowing IMPLEMENTING AGENCY and other agencies to view and input data.	2 weeks after IMPLEMENTING AGENCY approval of Final database structure.
<i>Website development</i>		
Website structure	Description of page hierarchy, user experience, and layout concept.	2 weeks after signing contract.
Draft version for internal testing	Implementation of full functionality, access for multiple devices, and transport provider data.	6 weeks after approval of website structure.
Final version for internal testing	Fully functional website incorporating feedback from IMPLEMENTING AGENCY.	2 weeks after receipt of IMPLEMENTING AGENCY feedback on draft version.
Beta version for public testing	Fully functional public site with mobile version. Should request for user feedback.	2 weeks after receipt of IMPLEMENTING AGENCY approval on final version.
Site audit	Description of initial user queries, page traffic, and performance. Plan for redressal of identified issues.	2 weeks after launch of beta website.
Full public operations	Full version of the website incorporating feedback from the site audit.	2 weeks after IMPLEMENTING AGENCY approval of response to initial site audit.
<i>Call centre</i>		
Draft protocols	Description of procedures and protocols for customer interaction through the call centre.	3 weeks after signing of contract.
Final protocols	Revision incorporating IMPLEMENTING AGENCY input.	3 weeks after receipt of IMPLEMENTING AGENCY
Call centre beta testing	Call centre functional for preliminary testing.	3 weeks after approval of final protocols.

Call centre audit	Description of initial user queries, page traffic, and performance. Plan for redressal of identified issues.	2 weeks after launch of beta call centre.
Full public operations	Full version of the website incorporating feedback from the site audit.	2 weeks after IMPLEMENTING AGENCY approval of response to initial site audit.
<i>Signage</i>		
Draft design guidelines	Guidelines for signage in bus stops, bus terminals, and MRTS stations including findings from the user needs assessment	4 weeks after signing of contract
Prototypes	Complete signage installation at one medium sized bus stop and one MRTS station	3 weeks after receipt of feedback on draft design guidelines
Final design guidelines	Revised guidelines incorporating IMPLEMENTING AGENCY feedback	3 weeks after receipt of feedback on prototypes.
Sign proofs	1:1 printouts of signs for 1,900 bus stops, 28 terminals, and 17 MRTS stations	4 weeks after IMPLEMENTING AGENCY approval of final design guidelines
RFP for signage installation	Detailed RFP including qualifications and evaluation procedure for signage installation	2 weeks after IMPLEMENTING AGENCY approval of sign proofs
<i>Operations</i>		
Operations of website and call centre	Operations and maintenance activities for the website and call/SMS centre.	Up to 3 years from the signing of contract.
Maintenance of signage	All signage will be reviewed to ensure consistency with current service plans of public transport providers.	Every 6 months after installation of signage, up to 3 years from signing of contract.

Bidding process

The bidding process and selection criteria are based on the World Bank’s Quality- and Cost-Based Selection (QCBS) process.¹

Eligibility criteria

The applicant shall meet the following criteria:

- Successful completion of similar services involving the provision of call centres (at least 2 similar projects), websites (at least 2 similar projects), and transport signage (at least 2 similar projects). A certificate from the appropriate authority shall be enclosed to substantiate the fact. Only works performed by the applicant directly for the respective clients shall be considered.
- Consortiums are eligible to apply.

Skill requirements

Given the multiple components of the information system, the consultant will be expected to offer a multidisciplinary team with project experience relevant to the respective project tasks.

Position	Qualifications
Project Lead	Project manager with at least 10 years of experience in managing complex projects including online services, call centres, and information systems.
Web interface designer	Web designer with 8 years of experience in web design. Familiar with interactive websites, content management systems, and mobile interfaces.
Database manager	Information management expert with at least 6 years of experience in creating and maintaining complex databases for logistics applications
Call centre designer	Customer service expert with 8 years of experience in developing protocols and operational systems for call centres.
Operations manager	Customer service expert with 6 years of experience in managing call centre operations.
Signage design manager	Graphic designer with 8 years of experience including experience with public sector signage and way finding systems.

¹ For more information see:
<http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/PROCUREMENT/0,,contentMDK:20060635~menuPK:92323~pagePK:84269~piPK:84286~theSitePK:84266,00.html#2.22>.

Information graphics specialist	Graphic designer with 6 years of experience including experience preparing quantitative data.
GIS specialist	Masters in geography, civil engineering, or relevant fields with at least 7 years of experience in GIS data processing and analysis.

Evaluation procedure

The following table indicates the criteria for the technical scoring of applicants.

Component	Possible points
<i>Experience</i>	
Approach and methodology	20
Experience with similar information design projects	20
Number of projects of similar scale completed to date	15
Number of similar projects completed for government clients	10
<i>Team</i>	
Project Lead	7
Web interface designer	5
Database manager	3
Call centre designer	4
Operations manager	5
Signage design manager	5
Information graphics specialist	3
GIS specialist	3
Total	100

Submission of proposal

The submission envelope must be clearly marked with the following text: “Consulting Services for Non-Motorised Transport Infrastructure Design for the IMPLEMENTING AGENCY.” The Consultant should include two separate envelopes in the main submission envelope: one containing the Technical Bid and another with the Financial Bid. The sub-envelopes must be marked with the project name and the type of bid. The Technical Bid envelope should contain the following information:

- Name, address, and contact details of the Project Lead.
- Company profile.
- List of technical staff employed full time with the applicant (part time staff shall not be considered).
- Detailed CVs of the technical staff.
- Proof of professional affiliations of staff.
- List of facilities (office space, computers, software, printers/scanners etc) available with the firm for performing the activities of the TOR, including an indication of which facilities are available in the [CITY] metropolitan area and other cities in _____ State.
- Description of approach and methodology for the current TOR.
- Portfolio of previous works.

Applicants may be requested to make presentation to the Client indicating the following:

- Experience with similar projects.
- Proposed approach and methodology for the current project.
- The Financial Bid envelope should include the Consultant’s monetary bid for the project.
- Applicants shall submit all materials before date mentioned in the notice.

Financial proposal

Financial Bids of applicants with a total Technical Bid score of 75 and above shall only be opened. For Consultants who do not qualify per the Technical Bid, the Financial Bids shall be returned unopened.

Combined evaluation of technical and financial bids

[Legal terms to be added by IMPLEMENTING AGENCY]

IMPLEMENTING AGENCY reserves the right to reject, at its sole discretion, any or all evaluated Financial Proposals and if necessary, call for submission of new Financial Proposals. In order to allow comparison on a common basis, each proposal will be carefully scrutinised in accordance with the procedure outlined above and technically eligible proposals will be scored on the basis of following formula:

$$\text{Score} = 0.8 T + 0.2 F$$

where T is technical score and F is financial score.

In order to allow comparison on a common basis, each Financial Proposal will be carefully scrutinized in accordance with the procedure outlined in [clauses prepared by the IMPLEMENTING AGENCY]. The score for each Financial Proposal, F, will be computed as follows:

$$F = 100 \times F_m / F_c$$

where F_m is the total price of the lowest Financial Proposal and F_c is the total price of the Financial Proposal under consideration. The lowest Financial Proposal will receive the maximum score of 100 marks.