

People's Republic of Bangladesh

Department of Information & Communication Technology (DOICT)

Agargaon, Dhaka

Project: Development of Training Database platform

Terms of Reference (ToR)

Assignment: Hiring a Team for the Development of Training Database Platform (TDBP)

Version 2 (Web)

Contract Type: Development Agreement

Location: Dhaka, Bangladesh

Duration of the assignment: 75 Man Days

1. Background

Department of ICT under ICT division aims to develop human resource capacity with ICT trainings. To materialize the aim, department of ICT conducting a good number of trainings from Head office to Upazilla level office every year for government employee and public. Department of ICT has already built a centralize DBMS system "Training Database Platform" to track the training activities as well as information. During the implementation phase, Department of ICT gave training for using that application. In that time, from end users, there are lots of feedback and recommendation came to the DoICT authority. In those cases, DoICT wants to revamp TDBP so that this application would be usable more and more to DoICT officers as well as resolve all probable problems raised at training session.

Now it needs to describe TDBP version1, how it works. For the development of the second version, all the codes and database of version1 shall be provided to version 2 development team. Currently it has four types of user. They are a) DoICT Admin b) Section Admin c) Trainee User and d) Trainer User. The features of each users are being given also:

- DoICT admin
 - User management
 - Designation management
 - Specialization management
 - Organization Management
 - Trainer Management
 - Trainee Management
 - Course Management
 - Center Management
 - Fiscal year management
 - Batch management
 - Reports
 - Training Data Import
- Section admin
 - Profile
 - Trainer Management

- Trainee Management
- Course Management
- Center Management
- Batch management
- Reports
- Training Data Import
- Trainee user
 - Profile
 - Training
- Trainer user
 - Profile
 - Training

To understand the current system a user manual as well as SRS (Software Requirement Specification) are attached herewith.

The Key objectives of Training Database Platform Version2 are

- (i) To add dynamic features of developed TDBP V1 that contain integrated information of training course, trainee and trainer's basic information, user information etc.
- (ii) To improve the effectiveness of training activities and management
- (iii) To monitor training activities conducted under DoICT through online.
- (iv) To Generate periodical summary report of training activities
- (v) To analyze data of the database for improving the quality of training activities
- (vi) To support top executive for effective decision making by providing accurate consolidated training related information

2. Objectives

To develop a training database system to store training information

3. Scope of Work

The design & development scope will be limited to the scope of work as identified in the TOR.

The scope of work can be categorized with the following tasks:

1. Conduct a needs assessment in collaboration to DoICT to prepare the precise System Requirement Specification (SRS) for designing and developing Training Database Platform Version2 and Provide concrete development plan in the SRS, which should include context diagram of the proposed system, Sequence Diagram, Use case Diagram, and Process Flow Diagram.
2. Design the solution architecture of the Training Database Platform Framework in a manner for better performance, flexibility, scalability, extensibility and multi tenancy of the system for future expansion.
3. Keep data migration for this newly developed system to make historical data workable from any other sources if applicable.

4. Expected Outputs/Deliverables

1. Software Requirement Specification SRS.
2. Development of an online Training database platform
3. Software Deployment on Live Server. Ensure finest configuration at deployed server so that application works at best level in terms of load.
4. Conduct User Acceptance Test
5. User Manual, API documentation (if any), SOP (Standard Operating Procedure) and MOP (Method of Procedure)
6. Knowledge transfer through Training.
7. Complete Source code & database handover
8. Project Completion report including upcoming challenges if any.

5. Functional requirements

The proposed system should have the following functions (Not limited to)

1. Training Database Platform (TDBP) will store all kind of training information. There will be added training information which are conducted by DoICT (DoICT's finance and non-finance training). There will be also added all type of projects' training information which are implemented by DoICT as well as storing seminar, workshop information in the TDBP.
2. There will have an option to provide trainees' training information to the others external application (Web and Apps) in TDBP such as PDS (Personal Data Sheet).
3. TDBP will link up to NID server for trainees' verification. It will help unique identification for each trainee such as e-Nothi, ibass++ etc. Trainees who have no NID, they will provide birth registration number (trainees below 18 years age) and TDBP is not connected / cannot connect to NID server will be marked, as unverified trainees but still though have to maintain uniqueness of NID. (N.B: Support users can update NID as per user request.).
4. There will have a selection option to select multiple/all trainees at a time for approving trainees from the pending batch in TDBP.
5. There will have an option for registration/sign up process in TDBP as a trainee member. There will have another option for registration/ sign up process for offered some courses who are new comer in TDBP. Otherwise, Existing trainee members will login for enrollment to the offered course.
6. The particular section user will be able to search trainees who were created or uploaded by the particular section in TDBP. Furthermore, there will have an option to search all trainee members in TDBP.
7. Add course by dividing as session. Add option to upload resource related to that course but that resources have to batch specific. It will have option to share these resources to

- batch trainees. Add option to all kind of file resources like word, pdf, ppt, video, audio etc. It may have option to upload training audio/video also.
8. Create schedule as per course session.
 9. Batch attendance upload facility will be there after offline attendance signature.
 10. Batch trainees as well as trainer's honorarium sheet has to be downloadable and unloadable after taking physical signature.
 11. For all training, it will have the opportunity to issue certificate to trainee. It could be as participation only or it could be after final evaluation.
 12. Section Admin:
 - a. Section admin will have the opportunity to manage / see subordinate office user data and/or activities. It is also applicable for training data.
 13. Training Data
 - a. It will have the option to import all training data to this system. TDBP version 1 has this facility but it needs stronger importing tools so that healthy data is stored.
 - b. Avoid wrong data at importing time.
 - c. Facilitate an importing friendly option so that error reduction, already imported data identification, error reporting etc. are managed.
 14. Trainer:
 - a. Tag trainer to specific session. Show trainer count on how many s/he already took session/class on this course or session.
 - b. Notify trainer after adding any session after approval of that batch.
 - c. There will be trainer dashboard by which s/he will be able to see all the training session s/he conducted as well as all other profile related activities like profile name, email, password, picture etc. update.
 - d. It should have option to upload resume of a trainer both at user and admin section.
 - e. Add trainer profile as per expertise so that trainees can take decision on whose training will he/she enrolled.
 15. User Notification:
 - a. This feature will facilitate all type user awareness message to email, mobile and user dashboard and user will confirm to the authority through a message for his/her nomination and selected as a trainer for the particular batch. It will facilitate admin user to send notification as s/he requires.
 16. Common Things
 - a. Organization Management
 - i. It should be able to add DoICT as organization. And after that if some other organization like BCC or DSA or CCA wants to use this application then Super Admin can add that organization as well as do setup data for that organization.
 - b. Organization's Office Management
 - i. Here admin will be able to configure/setup all sections/districts level offices/ Upazilla level office/ Projects/Others if applicable
 - ii. Office profile have to be there as an officer may be added to multiple offices as additional duty.
 - c. Profile management:

- i. In this system, a user may be trainee, trainer, or section admin or doict admin. At the same time, that user may have all the capabilities. That mean a user can be trainee, trainer, section admin and doict admin at time.
- ii. Working Office based Profile. By one user login, s/he will be able to see all role-based area/activities. As example, one user/employee have additional duty to one or more offices. Then a single login will be required and he/she can see other office by changing the office only.
- iii. This feature will facilitate the authorized user to manage the basic information of the employee i.e. Name, Sex, Designation, Section name, Mobile number, E-mail address, NID, Employee Identification Number, grade etc. This management process might include bulk employee import to create employee base.
- iv. It needs to have track on employee promotion data as well as transfer, attachment, additional duty etc.
- d. For any list, latest entry must be at top of the list. Additionally, it will have all table header wise sorting. It will have search field at top right corner of each list by which by any keyword entire list would be searchable.
- e. Reports:
 - i. It may have couple of reports.
 - ii. Reports formats/type of reports shall be defined on SRS discussion.

6. Non-functional requirements

1. It might be a module of a DoICT owned central application. Therefore, it has to be built by considering loosely couple module application so that common modules have to same as central application.
2. Maintain and abide by BNDA's all types of design and standards. Impose it to version1 section also if that is not added yet.
3. Design Interface will be more attractive as a professionalism web application and Data validation will be ensured according to the master data while the information will be uploaded or imported from all type excel files. Each page will work as One Stop service so that user is not go to other page in the middle of the work.
4. Training Database Platform (TDP) application will be converted client and server side based application. This application will be applied cookie and session, which will reduce the server loading.
5. Ensure access control, application-level security.
6. Design and develop Role-wise credential system incorporation for better user role management.
7. System shall provide the ability to encrypt user IDs and passwords and impose minimum password lengths along with ability to reset passwords following a standard password strategy.
8. There will be a Dashboard presenting dynamic data in reports in tabular and graphic presentations.
9. The system should have provision for periodical & instant Data Backup & Auto Archiving System.
10. The platform should be cross browser compatible, responsive and graphically attractive.

11. The developed system must support Bengali UNICODE enable font so that Bengali content can be viewed properly from any machine, which support Unicode. The proposed system must facilitate for showing the content both in English and Bengali Language.
12. Team will ensure system to be tested at module integration and load level. All necessary security test at application-level architecture needs to be followed and conducted by the team.
13. Provide all information and help to get certificate by passing SQRTC testing.

5. Technological Specification

1. Need to use Open-Source Development Platform.
2. PHP based platform with tool architecture like Bootstrap, framework like Drupal/CakePhp/Laravel/codeigniter can be used. It is noted that version1 was developed in PHP/Laravel framework.
3. Future technology Change, iterative prototyping and agility in product design are the generic expectation.
4. Technology and all related design/data will be open to Client.
5. The Team should follow any of the industry standard secure development methodology such as (but not limited to) Comprehensive Lightweight Application Security Process (CLASP) by OWASP etc. The Team should consider (but not limited to) common vulnerabilities such as SQL Injection, Cross Site Scripting (XSS) etc. Team will undertake responsibility for Input Validation Controls, Authorization/Authentication Control and other security controls in place in both test and production environment of application.

6. Project Timeline

SN	Activity	Time (Man days)
	Development	
1	Conduct background scoping and research work and finalizing the system requirements	10
2	Development of Training Database Platform to incorporate client requirement as per approved SRS	40
3	1st level feedback collection and incorporation	5
4	Testing, debugging, update	5
5	Delivery of UAT and 2nd level feedback collection	5

6	Knowledge transfer through workshop/training	5
7	Delivery of the final version of the system along with all required documentation including source code, user manual and technical documentation (SRS Final Version)	5
Sub-Total		75 Man Days

7. Supervision and Performance Evaluation.

Awarded Team will be working with DOICT

8. Project Management

The bidders are expected to provide a detailed project plan and an implementation strategy of the project. This plan is expected to include:

1. Information regarding the development process
2. Application development tools, language, and database requirements
3. Maximum lead time for delivery of services.
4. A development method and schedule with indicative timeline (Gantt chart).
5. Risk management strategy and quality control mechanism.
6. Any development tasks or assumptions that may be required to render the solution fit for purpose.
7. Any anticipated integration tasks.
8. Comprehensive contingency plan.

9. Team Qualification

1. Must submit valid Business Documents.
2. Team should have experience similar type of work.
3. Team must demonstrate its management capacity (website link/brochures and other documents describing similar assignments, experience, availability of appropriate professional staff and experience among applicant's staff, resources to carry out the assignment).
4. Team should demonstrate its logistical capability (well-equipped office space at Dhaka with necessary facilities).
5. List (Name, designation, years of experience, number of projects, expertise) of IT personals who can be engaged to perform the assigned task.

10. Special Note:

1. DOICT will preserve full rights to be confirmed security clearance of the personnel [if necessary] who will be working for these assignments through proper agency.

2. Contractor may need to sign separate non-disclosure agreement with DOICT considering data/information sensitivity [if needed].
3. Intellectual Property Right will strictly be controlled under regular state law for IPR protection.
4. Team will have to have clear concept on the expected components before starting work

11. Support/Assistance to be provided by DOICT

1. Training venue will be provided.
2. System design supports.
3. Coordination in hosting in DoICT server.