TECHNICAL & FINANCIAL PROPOSAL

FOR

Business Process Automation of

LGED Kalyan Samabay Samity (LKSS)
&
LKSS-Human Resource Centre (LKSS-HRC)

Submitted By,

PRIME TECH SOLUTINOS LTD.
THE DOOR TO APPROPRIATE TECHNOLOGY

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10th September 2018

To,
Md. Shahjahan Mollah
Superintending Engineer (SE) - Admin
LGED Bhaban, Agargaon, Dhaka

Subject: Technical & Financial Proposal for
        a) Automation of LGED Kalyan Samabay Samity (LKSS) and
        b) Automation of LKSS-Human Resource Centre (LKSS-HRC)

Dear Sir,
It is our pleasure to submit herewith the technical & financial proposal for upper mentioned subject automation projects. Prime Tech Solutions Ltd., one of the prominent information technology company of Bangladesh offers broad continuum of service portfolio in the domain of Software development, IT consultancy, Mobile apps development, Enterprise application development, Industry level process automation, e-Governance and outsourcing to help its clients of national and international to improve their overall business performance.

Since its inception, Prime Tech has established itself as one of the recognized leaders in both private and public sector in the field of overall Business Process Automation, Management Information System, e-Commerce Development, Financial Information Management, Geographic Information System and Mobile Games Development through its robust and dynamic desktop and web based solution to meet client's requirements and objectives.

During its journey, Prime Tech has numeric number of successful projects in Government sector **like GIS Based Road Survey and Geo-tagging Scheme Monitoring Mobile App, Development of Progress Monitoring System for GSIDP , IRIDP 2, PEDP, IUITP2, GCCP-3, GMRIDP and IPCP** for **LGED, Development of EPS-TOPIK EBT Online Registration Software, and Online Registration System for stuffing in Malaysia** for **Bangladesh Overseas Employment & Services Ltd. (BOESL) as** well as strong distinction in private sector including national and international like **Banglalink Digital Communications Limited, Grameen Phone Limited., Robi Axiata Limited, Lanka Bangla Finance Limited, The City Bank, Lanka Bangla Securities Ltd., PHONIX Securities Ltd., Travel Curve Inc (Ontario, Canada), De Gournay (London, UK), London Flying SCHOOL (UK), UK-Bangle Trading Corporation (UK), WA Cabes Pty. Ltd., www.swiftbeds.com, Advance Pro Technologies (Canada) and COWATER International**. Apart from that, Prime Tech has wide range of expertise development team whose are engaged on development of **Online Web Portal, CMS, GIS, MIS, Mobile Apps & Games, CDM, Kios and Industry Level Process Automation** and **Network Infrastructure & Data Center** and has certified expert professionals for implementation of those solution into both national and international organizations.

Prime Tech Solutions Ltd. is pleased for the opportunity to participate in this procurement process and looking forward to submit this proposal in this aspect. If you have any question, please don't hesitate to get in contact with me directly.

Yours sincerely,

Mohammad Ifteraz Hafez
Project Manager

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1. Introduction

LGED Kalyan Samabay Samity (LKSS) has been developed as an effective socio-economic and profiteering organization to meet the welfare of the employees and officers of LGED by dint of sincere efforts and untiring labor of each of its members. Now, LKSS is intends to automate its current manual business process for faster decision making as well as quick support to its members and stakeholders.

In the alignment of aim of LKSS management, Prime Tech Solutions Ltd. is expressing interest to provide a fully web based integrated solution for getting information on hand as and when required. The list of benefits which will gain by LKSS, LKSS-HRC by this automation has described below for better understanding,

Serial	What Benefits	How it will gain
01	Availability of member's information	Member's information will share to related community
02	Online admission from anywhere across the country	Easy to get admission from online form by using e-Commerce facility
03	Centralized financial accounting system	This will controls all relevant records like budgets, accounts receivables, account payable, expenditures, incomes and other transactions' records from one place.
04	Centralized budget management	Centralized budget allocation and monitor it's expense resultant reduce wastage and over demand etc.
05	Centralized payroll management	Centralize payroll processor make process and distribution faster resultant save time and operational cost
06	Centralized FDR management	As common database, modules access same data from the central database which will facilitate to upper management for getting information about FDR maturity, total interest etc. from one board
07	Centralized LKSS unit management	All LKSS units can communicate through one common communication channel
08	Centralized CV bank	Quick find out any resource as need basis according to skill matrix
09	Quick calculation of dividend after declaration and easy disbursement	Hassle free dividend calculation
10	Facilitate to easy share transfer/purchase/ redemption procedure	As automated system, it reduces paper works and save time & operational cost
11	Get necessary reports as and when need basis	As common database, upper management can get any report as need basis from anywhere
12	Reliable information access	Common DBMS, consistent and accurate data, improved reports
13	Avoid data and operation redundancy	Modules access same data from the central database, avoids multiple data input and update operations
14	Operation cost reduction and improve scalability	Time savings, improved control by enterprise-wide analysis of management decisions.
15	Global accessibility using secured credential resultant increase member satisfaction	Internet access and information accessibility anytime and anywhere

2. Silent Features/Modules of the LKSS Automation Solutions

Initially following modules are identified for LKSS automation,

- Member Information Management
- Financial Accounting Information Management
- Budget Information Management
- Share, Audit Information Management
- Staff Information, Attendance & Payroll Management
- Unit Information Management
- Admin Control Panel, Member Wise Dashboard Management and
- Operating User Management

2.1 Member Information Management

- New member registration/admission with fee submission
- Generate saving or FDR account
- Monthly or yearly money deposit into saving account
- Money deposit into FDR account
- Share purchase and receive dividend (cash & share)
- Report generation

2.2 Financial Accounting Information Management

- Chart of Account creation (Bangla Language)
- Opening balance posting with verification
- Financial year creation
- Voucher posting (debit, credit & journal)
- Voucher correction until approval
- Voucher approval system/workflow
- Integration with Budget Information Management System
- Bank reconciliation
- Various reports like balance sheet, trail balance, income statement, cash flow statement, journal statement, asset schedule, budget variance etc.

2.3 Budget Information Management

- Cost Center creation
- Yearly budget allocation with verification
- Budget ceiling allocation
- Budget transfer within cost center
- Budget re-allocation (If necessary)
- Report generation

2.4 Share & Audit Information Management

- Dividend declaration (share dividend & cash dividend)
- Individual member wise share information management
- Preservation of all audit report
- Integration with Financial Accounting Information Management System for share amount & cash amount

2.5 Staff Information & Payroll Management

- Staff's personal, education, service & skill information preservation and prepare CV Bank
- Staff's payroll information preservation
- Integrate with Member and Financial Accounting Information Management System

2.6 LKSS Unit Information Management

- LKSS covered unit's (Restaurant, Guest House, Others) information with GEO location preservation
- Integration with Financial Accounting Information Management System

2.6 Admin Control Panel and Individual Member wise Dashboard Management

- Individual member will have facility for getting all sorts of related reports from a board
- Integrate with all above mentioned modules for data share and report generation

2.7 Operating User Management

- User management with data accessibility permission

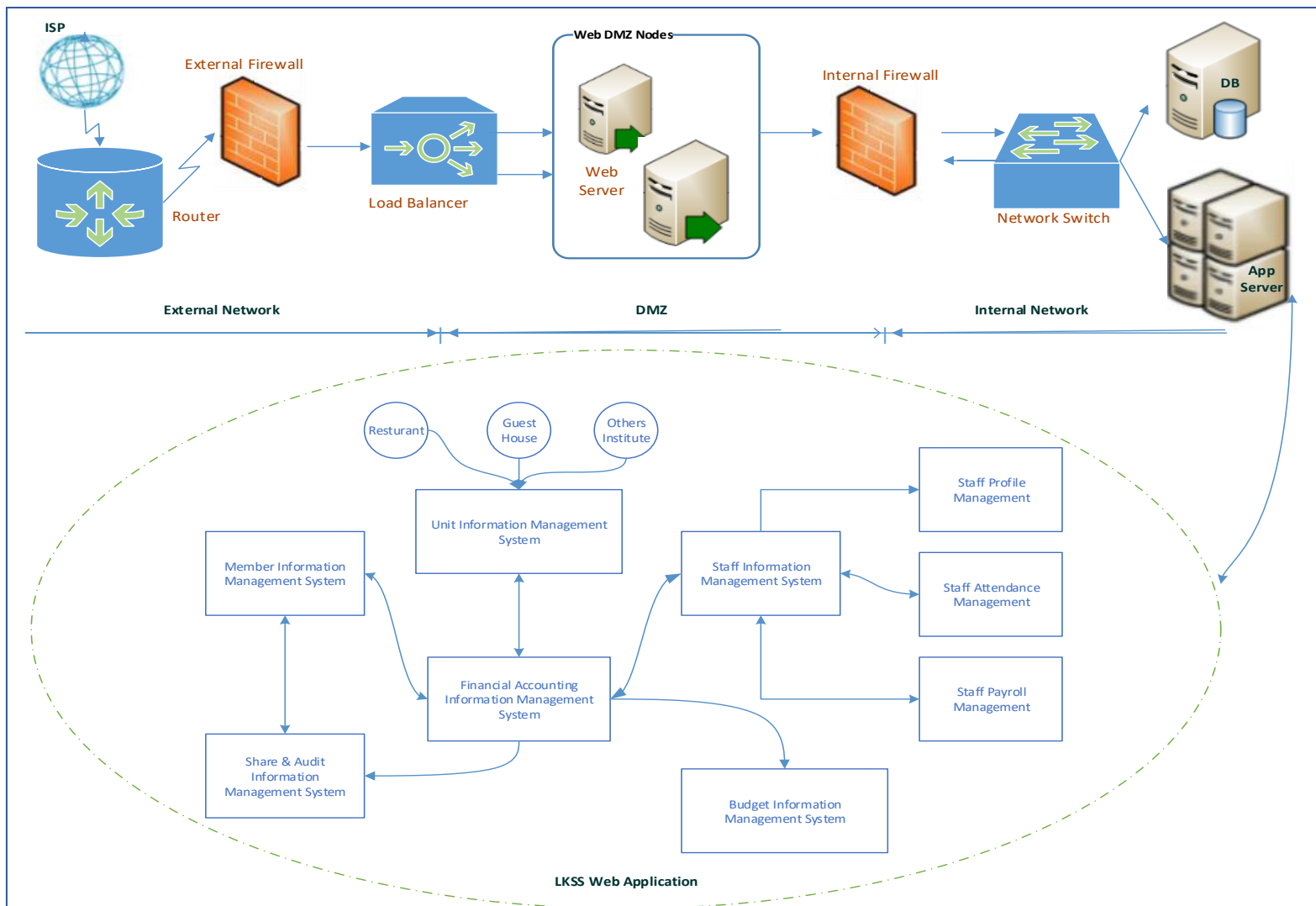## 2.8 Data Migration

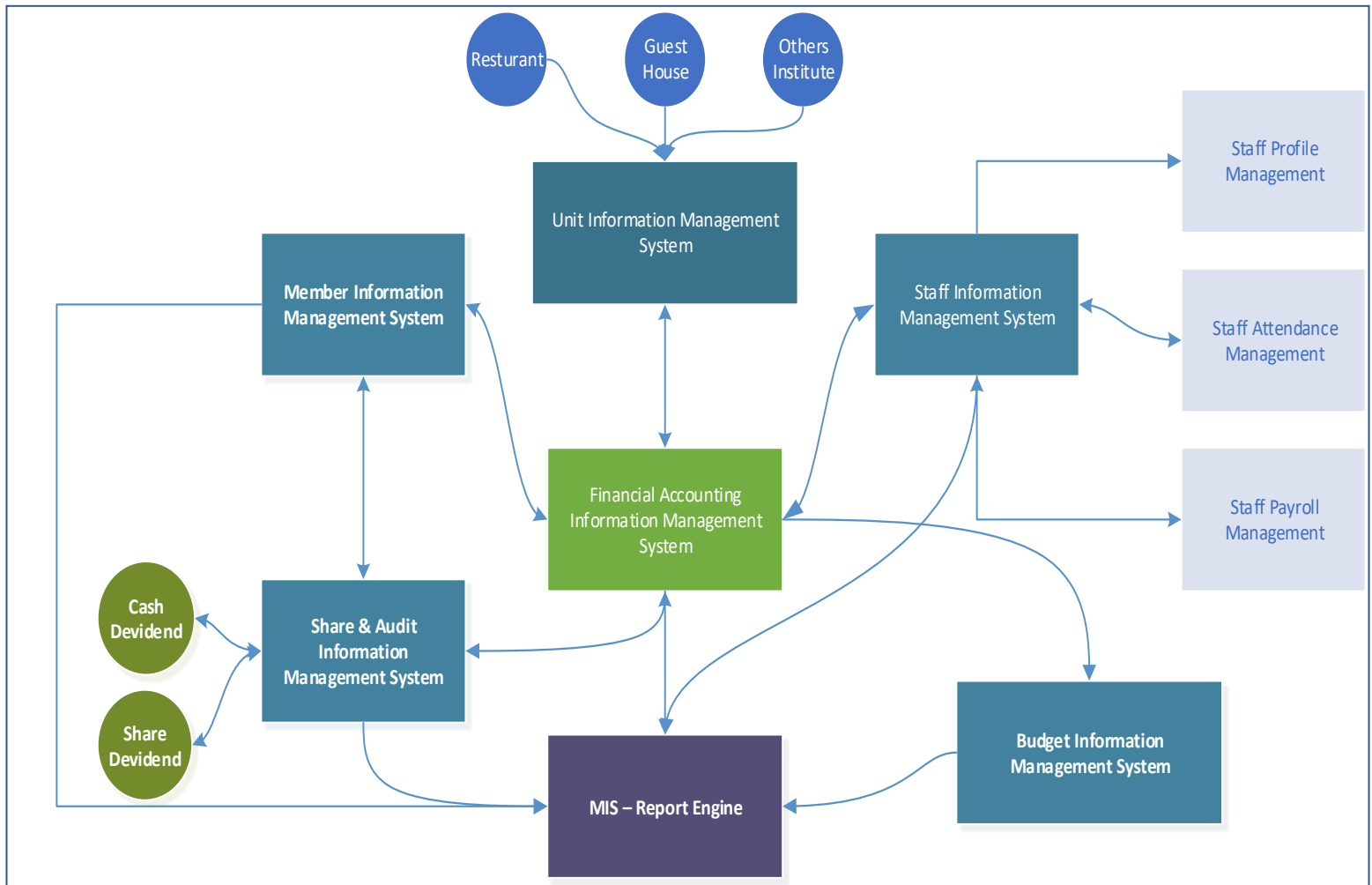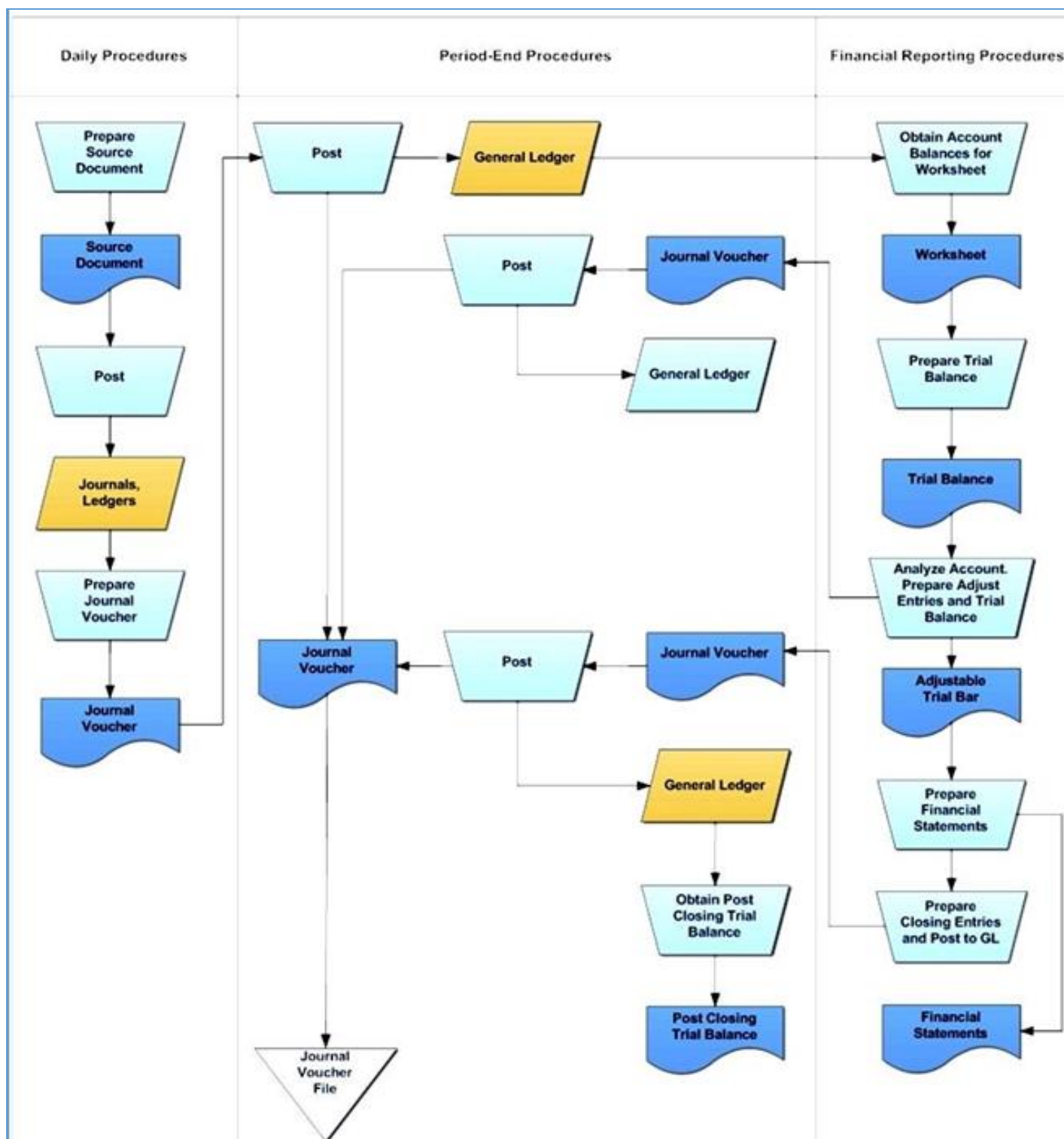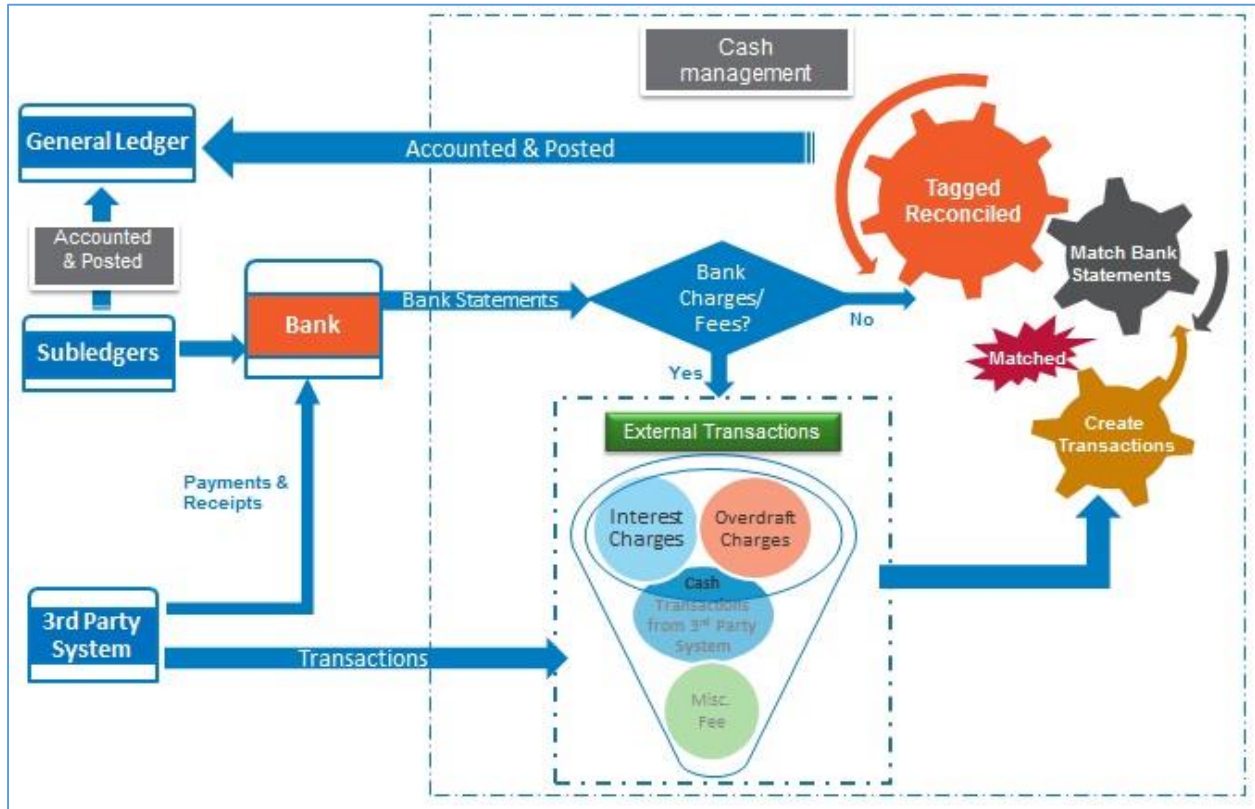- Data Migration of existing LKSS Software

Figure: Conceptual Solution Architecture of LKSS Web Application

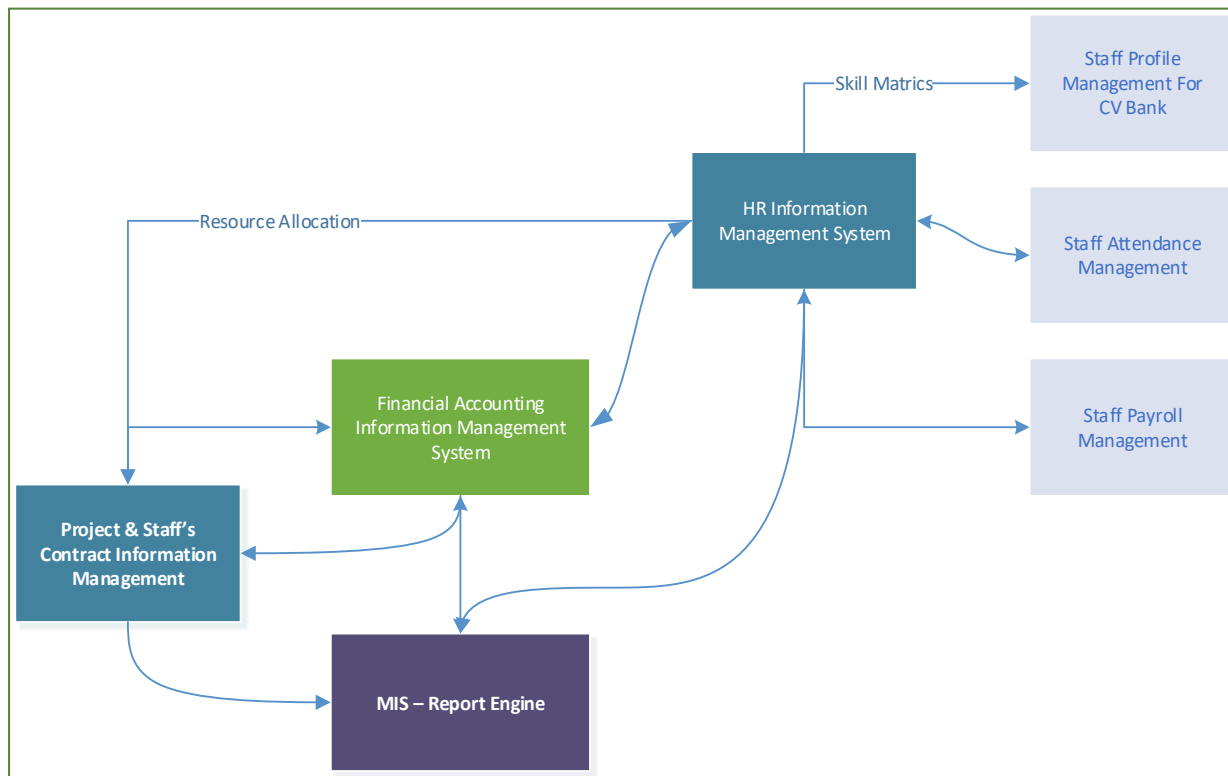**Figure: Conceptual Process Flow of LKSS Web Application**

Figure: Conceptual Financial Accounting Information Process

Figure: Conceptual Reconciliation Process

Figure: Conceptual Process Flow of LKSS-HRC Solution

3. Silent Features/Modules of the LKSS-HRC Automation Solutions

Initially following modules are identified for LKSS-HRC automation,

- Human Resource & Payroll Information Management
- Project Information, Contract & Re-new Management
- Accounting Information Management
- Operating User Management

3.1 HR & Payroll Information Management

- Organization information
- Corporation & department information
- Designation information
- Personal information of official s & employee
- Employee education information
- Employee children information
- Project wise Employee History and allocation
- Employee retirement information
- Increment management
- Attendance & overtime management
- Payroll management
- Report management
- Integrate with Accounting Information Management System

3.2 Project Information, Contract & Re-new Management

- Project information preservation
- HR allocation and preserve contract & re-new information
- Project wise service charge & bill information preservation
- HR outsourcing information preservation
- Integrate with HR & Payroll information management system
- Report management

3.3 Accounting Information Management

- Chart of Account creation (Bangla Language)
- Opening balance posting with verification
- Financial year creation
- Voucher posting (debit, credit & journal)
- Voucher correction until approval
- Voucher approval system/workflow
- Bank reconciliation
- Various reports like balance sheet, trail balance, income statement, journal statement, asset schedule etc.

3.4 Operating User Management

- User management with data accessibility permission
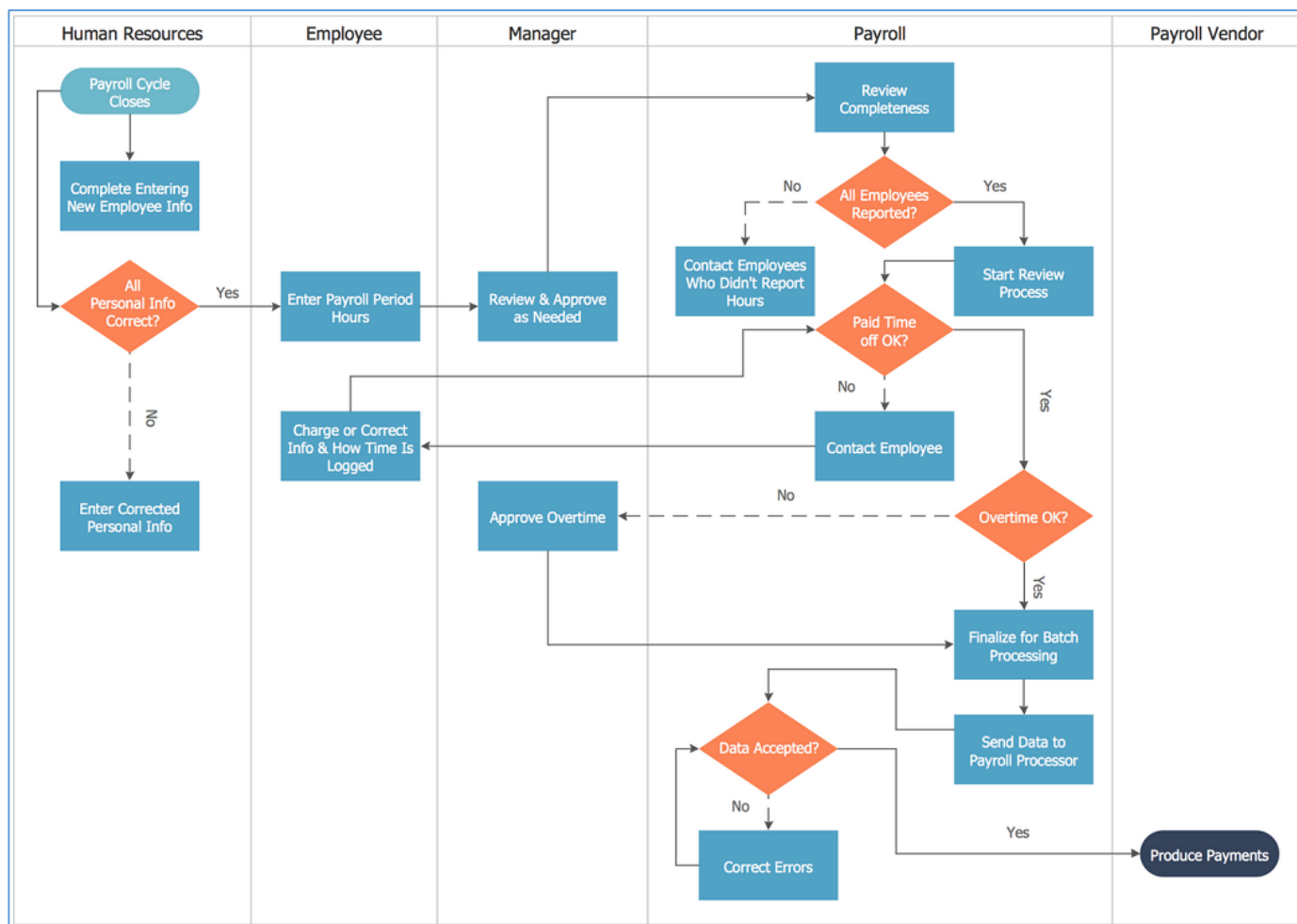
Figure: Conceptual Attendance Based Employee Payroll Process

4. Centralize MIS for Management DS (Decision Support)

Management information system, or MIS, broadly refers to a computer-based system that provides managers with the tools to organize evaluate and efficiently manage departments within an organization. In order to provide past, present and prediction information, a management information system can include Software that helps in decision making, data resources such as Databases, the hardware resources of a system, decision support systems, people management and project management applications, and any computerized processes that enable the department to run efficiently. **This MIS will be consist of by combination of both LKSS and LKSS-HRC's managerial related reports**.

An MIS provides the following advantages.

✓ **It Facilitates planning**: MIS improves the quality of plants by providing relevant information for sound decision – making. Due to increase in the size and complexity of organizations, managers have lost personal contact with the scene of operations.

✓ **In Minimizes information overload**: MIS change the larger amount of data in to summarize form and there by avoids the confusion which may arise when managers are flooded with detailed facts.

✓ **MIS Encourages Decentralization**: Decentralization of authority is possibly when there is a system for monitoring operations at lower levels. MIS is successfully used for measuring performance and making necessary change in the organizational plans and procedures.

✓ **It brings Coordination**: MIS facilities integration of specialized activities by keeping each department aware of the problem and requirements of other departments. It connects all decision centers in the organization.

✓ **It makes control easier**: MIS serves as a link between managerial planning and control. It improves the ability of management to evaluate and improve performance. The used computers has increased the data processing and storage capabilities and reduced the cost.

5. Development Methodology

Our aim is to thoroughly analyze and understand your business requirements and build the Web site/application for your company keeping in mind these requirements. Our methodology is based on the idea to leverage your business. The web development processes together with the innovative ideas are the key to success of every project irrespective of its size. The development process can follow a number of standards or company specific plans. Our modern approach and proven methodology ensures that our clients receive amazing results that are particularly designed to fulfill their specific needs. In our proposed solution development, we'll follow an agile methodology based on a declarative and device-independent approach for developing event-driven web applications.
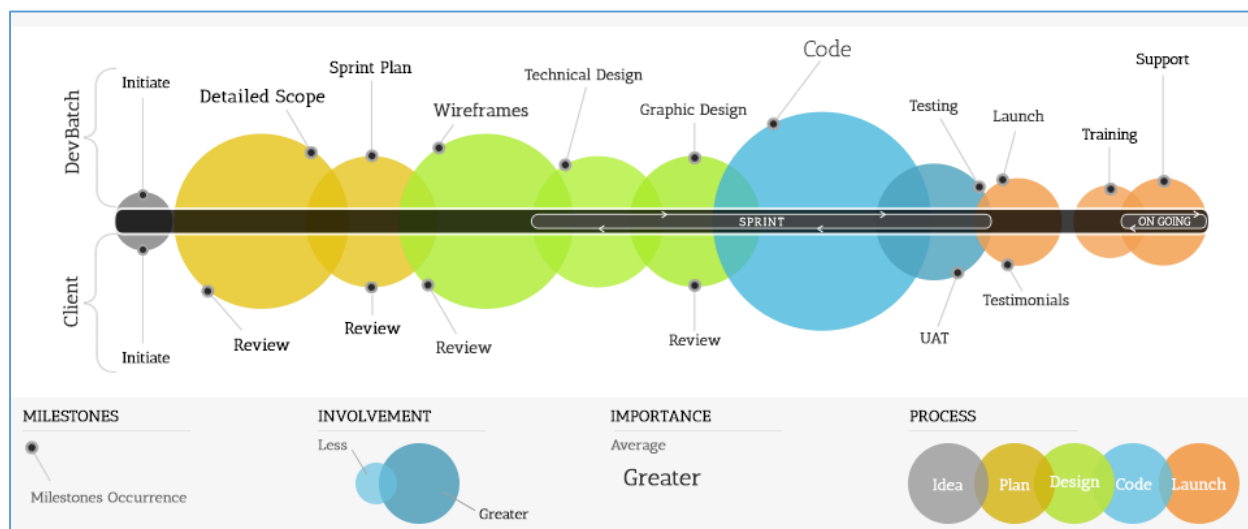

Image: Agile methodology for mobile based application development

The Agile SDLC model which includes programming, development and project management involves breaking down of the software development life cycle into smaller modules. However, integrating documentation and quality testing is involved at every step. To clarify this more let us have a look at the principles which govern agile application development –

The companies which follow agile methodologies for web application development provide early and on-going delivery of modules within a few weeks. There is a constant interaction of the web developers with the team or the business owner of the organization for which the app is being made. The client has the flexibility to request modifications even at the later stages of development which is quite important to meet the rapidly changing market demands. This methodology allows breaking down a large number of requirements into manageable chunks and thus enables maximum utilization of resources.
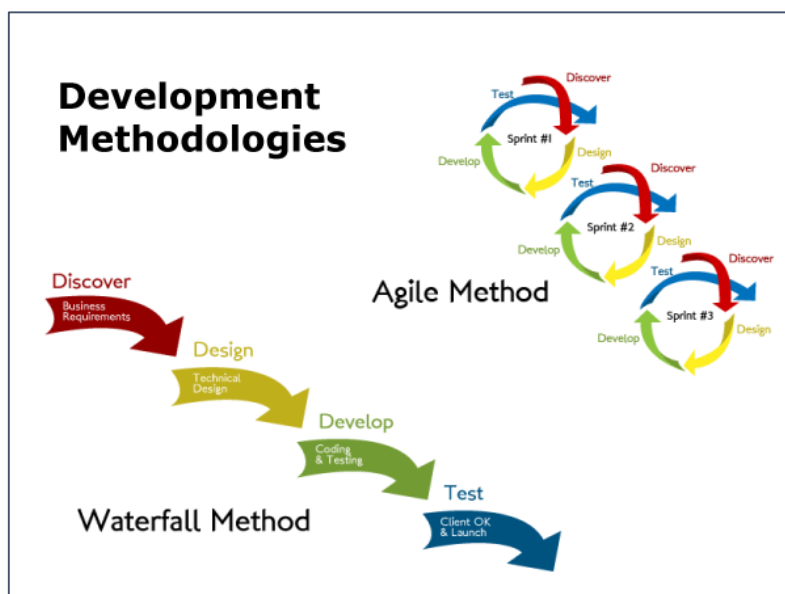
The waterfall methodology involves pre defining the requirements with testing and development being the last step of the SDLC. The testing and documentation phases are the most fundamental part of development hence agile methodologies for mobile application development are more effective and efficient for goal driven apps which require error free delivery of information whenever required. The traditional development methodologies can be put to use in the case of entertainment apps.

Image: Agile & Scrum methodology for mobile apps development

The agile scrum methodology for web application is a type of agile development methodology in which scrum is an agile structure that breaks the process of app development into smaller chunks. Each chunk is called scrum which is managed by an individual project manager called scrum-master. This method helps in keeping the team focused and also involves the maximum utilization of resources.

5.1 Pros of Agile methodology

- It follows a team based approach.
- It allows you to make changes, add new features and keep evolving with the changing trends.
- Testing can be performed at each stage.
- Since testing happens simultaneously hence projects can be launched sooner.
- Customer satisfaction by continuous and rapid delivery of app modules.
- People and interactions are emphasized more than process and tools as the customer, developers and testers are in constant communication with one another

.NET Development Platform
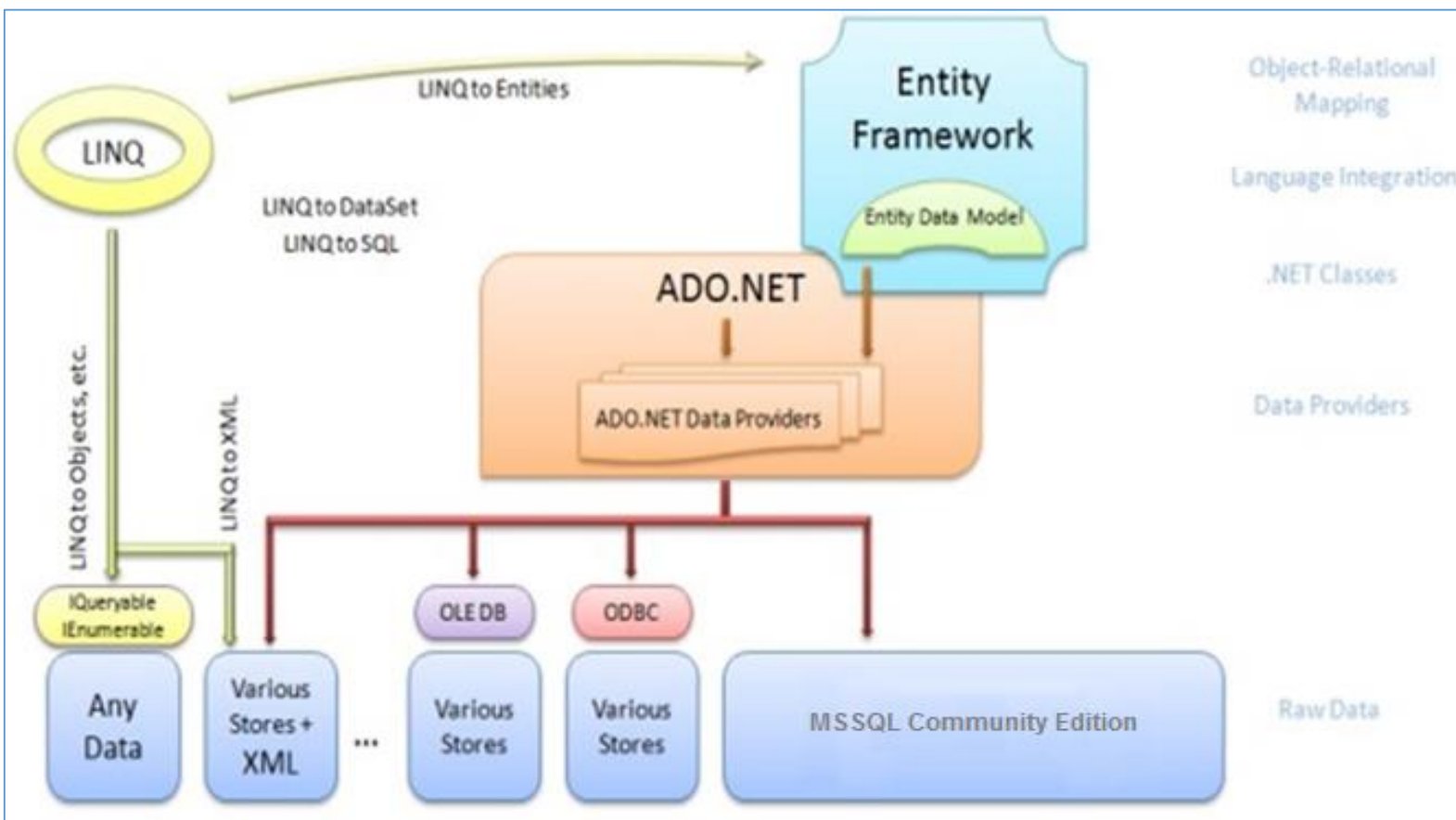
5.2 Proposed Technologies

We propose, MSSQL/Oracle & ASP.net for web site development and data sharing as because, it is a complete web based n-tier architecture model built on robust, well tested, highly scalable, business intelligence enabled, cutting-edge technology to leverage the investment including highly optimized database technology and true multithreading, distributed/parallel processing and support for pooling CPU resources of multiple servers to deliver supercomputer-like performance. The tools and technology that are the key components for this proposed solution are given below –

SL	Tools/ Technology	Features
1.	Software Development Methodology	**Agile Scrum**
2.	Application Model	**Web Based** MVC Platform
3.	Operating System/Cloud	Win 2014 Server / Microsoft Azure Cloud
4.	Database Server OS	Ubuntu Linux 16 LTS
5.	Development Language/Tools	ASP.Net, MVC, C#
6.	Front Tools/Browsers	Any
7.	Reporting Format	HTML/RDLC
8.	Protocol	HTTPS/TCP/IP
9.	Data Security	Data Encryption in necessary place
10.	Application Security	GBAC/RBAC (Group/Role Based Access Control), Multilevel (Application/Database/OS)
11.	Database	MSSQL Community Edition

6. Work Plan (Analysis, Development, Testing & Implementation)

6.1 Work Schedule

Target SL	Deliverables	Development Period (Months)				Implementation Period (Months)		Maintenance Period
		1	2	3	4	5	6	Upon Negotiate
T-1	**Preparatory & Requirement Analysis Stage**							
	Mobilization of Team	▓						
	Requirement Analysis & SRS Approval	▓						
	Wireframe Design	▓						
T-2	**Prototype or Demo Development Stage**							
	Setup Environments		▓					
	Develop User Interface		▓					
	Develop Service Layer		▓					
	Develop Data Layer		▓					
	Develop Modules with Web Application's Pages		▓					
	Prototype Delivery		▓					
T-3	**Web Application Development and Ready For Implementation**							
	Develop LKSS With Full Functionality		▓	▓	▓			
	Dashboard Development With MIS Functionality		▓	▓	▓			
	Develop LKSS-HRC With Full Functionality		▓	▓	▓			
	Modules Integrate & System Unit Test					▓		
	Implementation/Deployment					▓		
T-3	**UAT , Training (Acceptance Testing) & Data Migration**							
	Do UAT and Make Changes (If Required)						▓	
	Delivery and User Training						▓	
	Data Migration						▓	

Legend :

Team Mobilization and Structural Task
Intermittent Task
Intermittent Task

7. Financial Budget Estimation (In BDT)

Sl. No.	Proposed Position	No. of Resource	Unit Cost (Monthly)	No. of Months Utilization	Total Cost
	Budget For Development of LKSS Solution				
01	Project Manager	1	1,10,000.00	1.5	1,65,000.00
02	Business Analyst	1	90,000.00	1	90,000.00
03	Sr. Software Engineer/Team Lead	1	80,000.00	1.5	1,20,000.00
04	Software Engineer	2	65,000.00	2	2,60,000.00
05	Software Quality Assurance	1	40,000.00	0.5	20,000.00
06	UI Designer	1	50,000.00	0.5	25,000.00
	Total Cost For LKSS Development				**6,80,000.00**
	Budget For Development of LKSS-HRC Solution				
01	Project Manager	1	1,10,000.00	1.5	1,65,000.00
02	Business Analyst	1	90,000.00	1.5	1,35,000.00
03	Sr. Software Engineer/Team Lead	1	80,000.00	2.5	2,00,000.00
04	Software Engineer	3	65,000.00	2.5	4,87,500.00
05	Software Quality Assurance	1	40,000.00	0.5	20,000.00
06	UI Designer	1	50,000.00	0.5	25,000.00
	Total Cost For LKSS-HRC Development				**10,32,500.00**
	Data Migration of LKSS existing Software				**100000.00**
	Total Cost For LKSS & LKSS-HRC Development				**18,12,500.00**

In Word: Eighteen Lac Twelve Thousand Five Hundred Taka Only
<u>Note:</u>
- The offered estimated budget is including VAT but excluding Tax as per Govt. rules & regulation
- Domain and Hosting Price is included in this financial Offer.
- After final deployment (06) six months free service and maintenance period.

7.1 Resource Allocation (Man Months) Schedule

Sl. No.	Proposed Position of Resource	No. of Resource	No. of Months Utilization
01	Project Manager	1	3
02	Business Analyst	1	2.5
03	Sr. Software Engineer/Team Lead	1	4
04	Software Engineer	3	4.5
05	Software Quality Assurance	1	1
06	UI Designer	1	1
Total Development Time is 6 (Six) Months			

7.2 LKSS and LKSS-HRC Domain and Shared Hosting

Prime Tech will provided first One year domain and hosting price. After Completed One year LKSS will maintain hosting costs.

Hosting Price

45,000.00 (Forty Five thousand taka) per year.

[N.B: Offered hosting price may vary depending on Hosting providers]

Hosting Speciation

Disk Space	20GB
Bandwidth/ yearly	200 GB
Email Account	Unlimited
24/7 Support	Yes
Sub Domain	Unlimited

Server Specification:
- Intel® Xeon® Server
- Server Location: Dallas, Texas, United States
- Uptime Guarantee: 99.9%
- Network Speed: 100Mbps Uplink
- FREE Data Backup