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University of Bahrain

College of Information Technology

Department of Computer Science

ITSE 305: Software engineering project  
BSc in Software Engineering

**Balagh System**

**Project**

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# Introduction

Balagh is an application designed to help citizens and residents report problems or errors that may occur, as well as to provide inquiries and suggestions. To use the application, users must register with a CPR and then submit their complaints or invitations. The complaints are then sorted by the number of employees in each ministry, so they can be responded to by the most suitable person. This system will provide users with contact information to follow up on their demands, and employees with a content management system (report management) to manage user complaints, inquiries, and suggestions. The main components of the system are Accounts, Services, Contact, and Report Management. The application will have a huge effect on different sectors by reducing costs.

Balagh System is an ambitious project that aims to provide better connectivity between the user and the system. The project will be implemented in collaboration with the manager and other team members and will involve gathering requirements through interviewing, brainstorming, observation, workshops, questionnaires, and surveys. The project has a budget of 100,000 USD, and the app is set to run on both IOS and Android OS. The development will be done using native languages for each platform to achieve high compatibility and efficiency. All stakeholders must provide signatures for the project charter to ensure that everyone agrees. Therefore, a management strategy must concern all stakeholders. The scope statement must be followed carefully, and any deviation from it must be approved by the manager/sponsor. Additionally, the duration of each activity and the start and finish date must be specified, to avoid any delays in the project submission. MS and WhatsApp tools will be used to manage the tasks, and the team members must be trained to ensure that the system is easy to use and has good usability.

# Pre-initiation and initiation

## 2.1 Introduction

Pre-initiation is task that we will lay groundwork and it’s had several steps starts from it including the following:

* Determine the scope, time, cost estimate for our project.
* Identify project sponsor.
* Identify project manager.
* Develop a business case for our project.
* Meet the project manager to negotiate the process and expectations for our project.
* Identify whether our project should be divided into smaller projects or not.

The initiation phase of the project includes holding a kick-off meeting to negotiate expectations and outputs for the project, as well as developing a stakeholders registration charter that contain the names and contact information of the stakeholders. Additionally, the initiation phase involved developing a management strategy, which would outline the roles and responsibilities of each of the stakeholders, as well as the processes and procedures to be followed.

## 2.2 Balagh System’s Business Case

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| --- |
| *1.0 Introduction/Background*  Balagh's primary objective is to assist report any issues or errors that may appear in accordance with each ministry and to offer guidance and inquiries. As a result, users will be contacted through the application to handle their proposals, inquiries, and even complaints. This platform will support citizens, resident’s users, and ministry employees. |
| *2.0 Business Objective*  Balagh system's primary strategic goals are to:  -Maintain the client side's ease of use and improve communication with them, as well as the backend side's ability to engage with the system in a convenient manner.  -To increase the effectiveness of management-side activities.  -Assist the business to generate a sizable profit.  Our system's objective is to generate a new application that facilitates citizen and resident services and improves interactions with government entities. By starting to provide the primary firm functionalities of the system inside this mobile application, The Balagh's system will support these objectives. Giving the client access to these functionalities is a significant step toward achieving the first goal, and using the mobile application base would also enable the company to stop spending on outdated standard tools, methods, and frameworks. |
| *3.0 Current Situation and Problem/Opportunity Statement*  Lots of governments do not have a system to deal with citizens and residents’ complaints (report problem). Governments currently use the traditional way for receiving complaints which is the citizens and residents have to go to the ministry if they have and problem, but the government see that it is difficult for citizens and residents of the country when they face any harm or problem to follow the traditional way, and it always takes time spicily we are in the era of speed , or they are hindered from completing their lives or their work. So, it was decided that we needed to develop a new system to report problems or errors that may occur, as well as to provide inquiries and suggestions to make their life easier. |
| *4.0 Critical Assumptions and Constraints*  The proposed system must be an asset for our company and for the government as well. it must pay for itself within one year by increasing profit and generating new business since the government considered as an important and famous client therefore, it is expected that it will attract new customers to us after publishing the application. The Project Management Office manager must lead the effort, and the project team must include participants from several parts of the company, as well as from current client organizations. The new system must run on existing hardware, software, and for IOS and Android as well, it should require minimal technical support. It must be easily accessible by citizens, residents, and ministry employees, and be secure from unauthorized users. |
| *5.0 Analysis of Options and Recommendation*  There are three options for addressing this opportunity:   1. Do nothing. The government's way of reporting problems is doing well, and we can continue without this new project. 2. Contract with a third party to the system – security issue. 3. We need a new project to make the life of a citizen and a resident easier.   Based on discussions with stakeholders, we believe that option 3 is the best option. |
| *6.0 Preliminary Project Requirements*  The main features of Balagh system include the following:   1. Operating System: IOS and Android OS. The system will operate on IOS and Android in the native languages for each platform to achieve high compatibility and efficiency. 2. Users will register and login into the application using their CPRs. And they should provide their emails and phone numbers for necessary contacts. The system will show different windows, one for users and the other for employees. Because of that the app will provide the right services and functionality for each type of user. 3. Users will be able to make complaints, suggestions, and inquiries based on the ministry. The user will be able to submit any suggestions and ideas to any ministry he wants by writing the proposal and specifying the concerned ministry only and then submitting the proposal. And they also will be able to send any inquiries about laws of ministries that are not clear to him regarding violations, awareness campaigns, or if he wants to know more about common violations that have been resolved, and so on. And they also will be able to submit any complaint or report, and if they want attach pictures, videos, or documents that related to the complaint. 4. Users can contact employees from each ministry to follow their demand state. They will be able to communicate with the employee by two ways live chat between the user and the specialized staff appointed by the ministry, or by sending messages by choosing from the side menu contact team then the session will open to the user to message them. Also, the system will provide an audio call to make if needed. 5. Employees will have a content management system called report management to manage the user's complaints, inquiries, and suggestions. The system will provide a separate window for employees only. Therefore, they can use it to accept or reject complaints or even communicate with normal users to inform them of updates.   Other features suggested by users if they add value to the business. |
| *7.0 Budget Estimate and Financial Analysis*  The preliminary estimate cost for the project will be $100,000. The estimation will be based on the project manager that works over 30 hours per week for 6 months and other staff will work of total about 50 hours per week for six months. Our target is to involve consumers in the designing process and will not be paid for their assistance. The project manager will earn $50 per hour. The hourly rate for other team members will be $45 per hour. The initial cost estimate will be $10,000 for getting software licenses and purchasing services from suppliers. After the project completes the maintenance and updating cost of $20,000 will be included in each year. primarily for any changes to the system should be done by one of the experts who worked on the system to prevent errors.  for the government's side, the projected benefits will be based on a reduction of the total cost for each ministry to manage citizens' problems, such as road acceptance, housing problems, and waiting for queues to end ministerial transactions. and increasing overall profits. The projected benefit for our company is selling a license to use Balagh for different governments with $80,000 for each year. if we were able to sell a system license to one government, we can gain $60,000 each year after paying construction dues. A summary of projected costs and benefits is presented in Exhibit A, along with estimates of net present value (NPV), return on investment (ROI), and payback year. This preliminary financial analysis also lists assumptions made. All of the financial estimates are very encouraging. As requested by the sponsor, the payback is estimated to be within three years as minimum. |
| 1. *Schedule Estimate*   The CEO would like to see the project completed within six months,  The system will be working in the coming years with continuous development, and it will also be subject to updates. The system does not have a specific consumption time.  The team members can deliver the product to the customer on time as possible within the approved budget. |
| *9.0 Potential Risks*  This project carries several risks. Since government considered as an important client so the foremost risk is the product cannot be delivered within the approved delivery date, also there are technical risks because the system must develop for both Android and IOS platforms. Scope creep is a risk that any project could be face it and our project is also exposed to this risk. The main business risk is investing the time and money into this project. |
| *10.0 Exhibits*   |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Discount Rate | | | | 8% | | | | | | Assume project done within six months | | | **Year** | | | | | | |  | | 0 | 1 | 2 | 3 | 4 | Total |  | | Costs | | 100,000 | 20,000 | 20,000 | 20,000 | 20,000 |  |  | | Discount factor | | 1 | 0.93 | 0.86 | 0.79 | 0.74 |  |  | | Discount costs | | **100,000** | **18,519** | **17,147** | **15,877** | **14,701** | **166,244** |  | |  | |  |  |  |  |  |  |  | | Benefits | | 0 | 60,000 | 60,000 | 60,000 | 60,000 |  |  | | Discount factor | | 1 | 0.93 | 0.86 | 0.79 | 0.74 |  |  | | Discount benefits | | **0** | **55,556** | **51,440** | **47,630** | **44,102** | **198,728** |  | |  | |  |  |  |  |  |  |  | | Discount benefits - costs | | (100,000) | 37,037 | 34,293 | 31,753 | 29,401 | **32,484** | NVP | | Cumulative benefits - costs | | (100,000) | (62,963) | (28,670) | 3083 | 32,484 |  |  | | Payback in 3 Years | | | | | | | | | | Discount life cycle ROI | | 19.5% | | | | | | | |  | |  | | | | | | | | Assumptions | |  | | | | | | | | Costs | # Hours |  | | | | | | | | PM (720 hours, $50/hour) | 36,000 |  | | | | | | | | Staff (1200 hours, $45/hour) | 54,000 |  | | | | | | | | Outsourced software and services | 10,000 |  | | | | | | | | Total project costs (all applied in year 0) | 100,000 |  | | | | | | | | Benefits |  |  | | | | | | | | # Governments | 1 |  | | | | | | | | Benefits from buying licensee | 80,000 |  | | | | | | | | Total project benefits | 60,000 |  | | | | | | | |

## 2.3 Stakeholders register.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Position | Internal/external | Project Role | Contact Information |
| XXX Company | Manager | External | Sponsor | XXX@gmail.com Information |
| Maha Mohammed | Data Analyst | Internal | PM | Maha@gmail.com |
| Fatema Salman | Software tester | Internal | Team member | Fatema@gmail.com |
| Musherah Moqbel | Programmer | Internal | Team member | Musherah@gmail.com |
| Abdallah Aktham | Software architecture | Internal | Team member | Abdallah@gmail.com |
| Noor Jaafar | Designer | Internal | Team member | Noor@gmail.com |

## 2.4 Stakeholder management strategy

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| --- | --- | --- | --- |
| Name | Level of interest | Level of influence | Potential Management strategies |
| Government | High | Low | The government has a low impact on this project, but it is interested in it because it will solve big problems for it and will save a lot of effort and money for it. |
| Maha Mohammed | High | High | Maha is the essential project manager and the key to its success. She offers guidance and notes at every stage of the project and regularly tracks the project's development, which is shared by many of the participants. She also has a persistent desire to fulfill all tasks within the scope of the project. Since this is her first project as manager and it will have an impact on her resume, she is indeed interested in the project. |
| Musherah Moqbel | High | High | Musherah is excited to execute this project because she believes that this app is different from the other apps that she programs it before, and it will add a new feature for her knowledge. And she is knowledgeable so she will increase the value of the project. |
| Abdallah Aktham | Low | High | Abdallah has a lot of things on his plate, and he does not seem excited about this project. He may be looking at other job opportunities. Show him how this project will help the company and his resume. |

## 2.5 Project-Charter

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Project Charter**   |  | | --- | | **Project Title:** Balagh Application  **Project Start Date:** 27 Feb 2023 **Project Finish Date:** 29 Oct 2023 | | **Budget Information:** The company has allocated 100,000 USD for this project. distributed to several categories. Changes may happen in case the distribution was not efficient for a category. | | **Project Manager:** Maha Mohammed Maha@gmail.com | | **Project Objectives:** Developed a new application that provide facilitate citizen and resident services and better deal with government agencies increase our company profits by selling the license of balagh system. | | **Main Project Success Criteria:**   * Project should complete within 6 months and with budget no more than 100,000 USD. * The project should increase the demand. * Project should pay for his development within 3 years (if only one government bay license). * If the project takes a little longer to complete or costs a little more than planned, the firm will still view it as a success. * System must satisfy the requirements. | | **Approach:**   * A weekly meeting is held to discuss progress of application development. * Survey containing will be conducted and given to all primary stakeholders to gather enough information to develop system functionality. * Involve stakeholders in all project phases. * The data collected during every meeting will be document. * A prototype of the application shall be developed and shown to primary stakeholders to get feedback and discover any additional modifications. * MS project will be used in managing this project. * System will have frequently test to minimize changes and avoid risks. * System must get an overall maintenance every year. | | **Roles and Responsibilities:**   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **Name** | **Position** | **Internal/external** | **Project Role** | **Contact Information** | | XXX Company | Manager | External | Sponsor | XXX@gmail.com Information | | Maha Mohammed | Data Analyst | Internal | PM | Maha@gmail.com | | Fatema Salman | Software tester | Internal | Team member | Fatema@gmail.com | | Musherah Moqbel | Programmer | Internal | Team member | Musherah@gmail.com | | Abdallah Aktham | Software architecture | Internal | Team member | Abdallah@gmail.com | | Noor Jaafar | Designer | Internal | Team member | Noor@gmail.com | | | **Sign-off:** (Signatures of all above stakeholders.) | | **Comments:**  “If anyone has a wonder, do not hesitate to ask.” -Maha Mohammed  “For any technical questions, I’m glad to answer it all.”- Abdullah Aktham  “I would like to focus on quality attributes especially useability” - Fatema Salman | |

## 2.6 Summary

In summary, the initiation phase of the Balagh application included identifying the business case and its classifications, registering stakeholders, and understanding their management strategies, and holding a kick-off meeting. This phase was completed when all the necessary information was gathered, and the second phase of the Balagh application was ready to begin.