



FINAL YEAR PROJECT (Proposal)

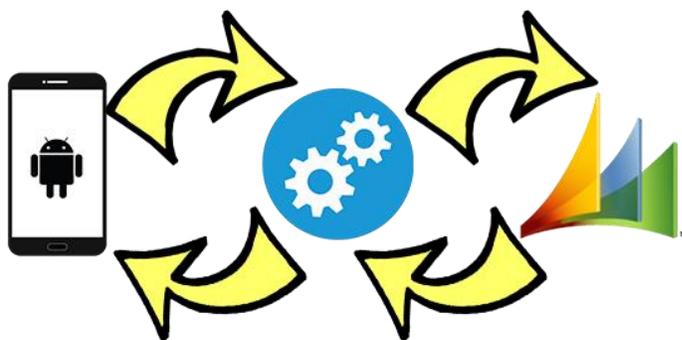
ENTERPISE EXECUTIVE ASSISTANT

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Executive Summary:

In today's fast-paced world, the extensive use of ERP solutions has taken over the Traditional System which was divided into different data marts and decisions were made based on the individual departmental levels but now an integrated set of system is used for business management through the use of more efficient and effective mechanisms to get the right information at the right time.

In our project we cater to the ease of admin approval/rejection permissions for the hierarchical set of workflow. It provides workflow mobility for the companies. Admin doesn't have to go through the hassle of logging in through desktop for reviewing the permissions, easy to use app for smart phones (android) would be enough to get notifications on the right time and on spot approval can be sought.





Project Description:

1. Background and Motivation

The increasing demand of mobile application has proportionally increased the use of ERP on phone and hence this shift must provide an ease to the overall ERP market. The delay in response from the concerned authority for the approval request is one of the problems faced by the ERP users which is the cause of System Immobility. This application will provide work flow mobility to the industries and will help in rapid action and fast decision making with respect to the growing industry. With the use of the application Admin can accept/reject any approval wherever he is and view the information pertained to the request. Moreover Microsoft Dynamics is an increasing feature of today's industry so it's the best solution for the middle layer's access to the enterprise database.

We approached Folio3 for ideas and suggestions regarding our FYP project, after 2-3 meetings and brainstorming sessions Folio3 offered us an industrial project. Enterprise Mobility was a high demand of Microsoft and so they needed a solution to move ERP to android in order to ease the hassle of logging on to desktop and going through the requests every time new requests arrive.

2. Project Goal

- Provide an easy to use application
- Move from desktop to mobile application
- Performance along with precision

3. Project Requirements

a. Functional Requirements

Following are the functional requirements:

- The use of **Android Studio** which is the official IDE for Android application development, based on IntelliJ IDEA.
- Microsoft Dynamic AX is the target ERP solution.
- AIF modules to be used for communication purpose.
- Cloud-based middleware with the advantage of PUSH notification.
- SQL server as the backend database.
- Configure REST and SOAP APIs to manage information sending and retrieval
- Offline mode requests can be send and it will be synced as soon as the user turns to online mode.



b. Constraints

Following are the constraints for the mobile app:

- It is not a multiplatform application.
- Used only for high end devices like (4.2 Jellybeans and above).
- Connectivity is problematic as users might not have 24 hours access to internet services on their phone.
- Requests that are neither rejected/approved will automatically be set to pending.
- Maximum number of requests that the application can store as history depends on the local storage of device.

c. Objectives:

Industrial Objectives:

- To provide ease to the admin in order to review the requests.
- Approval/rejection just a click away.
- Move the ERP solutions to mobile app.
- Enhance efficiency of request transfer.
- Provide ease to the workflow as a whole.

Academic Objectives:

- Learn the functionality of Android studio.
- Study how middle-layer acts dynamically with the back end server.
- Deployment of REST and SOAP services on .Net Framework.
- Properly configure Microsoft Dynamics AX.

4. Validation and Acceptance Tests

- Middleware test case that ensures smooth functionality
- Proper functionality of PULL/PUSH
- UI testing
- What more improvements are needed?
- System testing
- Delays of maximum 2ms while handling transactions



Technical Design:

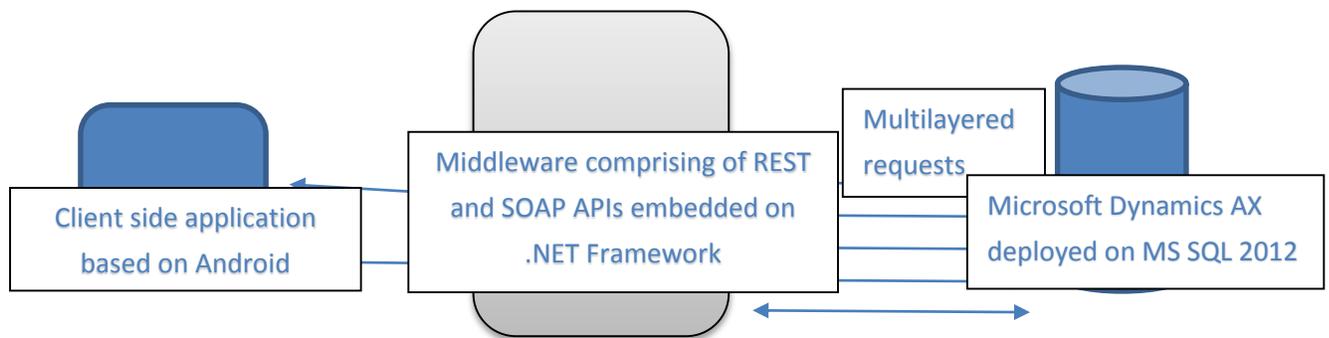
1. Possible Solutions and Design Alternatives

Complexity of the solution varies from stage to stage. In the initial stage, the Android app will be prepared according to the guidelines and wireframes designed earlier. Ports will have to be configured to enable push notifications and pull mechanisms. Everything regarding the app will be done on Android studio.

Development of the middle layer is tricky however. The end that communicates with the app will have a REST API configured to connect and interact with the applications actions. The second end that interacts with Microsoft Dynamics will feature the deployment of the SOAP structure that handles the server's requests. Everything is to be embedded on the .NET framework that maintains a connection with the SQL Server.

2. System Level Overview

The system level overview along with the Work flow of the whole project is illustrated in the diagram below





Work Plan:

1. Feasibility Assessment

a. Skill and Resources

In order to reach the desired results, we must completely have a grasp over the working of the middleware as the entire data flow depends on it. Resource requirement consists of market insight and project cases that will be provided to us by our FYP Supervisors.

Hardware resource is not as such, only a PC with extended RAM is required to setup the server. Wi-Fi/Bluetooth/VPN can be used to connect the mobile device with the setup.

b. Risk Assessment

Our product will not be the first of its kind, therefore there is a lot of risk involved in its selling in the international market. Some of the competitors are

- Oracle Mobile Solutions
- Air Watch by VMWare
- Enterprise Mobility Management by Good
- Enterprise Mobility Services by Citrix
- In-house developed products by private firms

However in the Pakistani market, the odds are in our favor because no such locally prepared solution is available (that we know of). Similar products prepared only feature push notifications but there are no pull services available as yet. Data is only displayed in most scenarios but cannot be manipulated due to security and technical concerns. These concerns are overcome by the inclusion of our middle layer.

Technical risks are always there, software compatibility has to be taken care of and our mobile device should be calibrated perfectly.

Security risks should be taken into consideration as well. Sessions should be recorded and double checks should be there for handling any transactions.