

Use of Mobile Applications for Managing Complaint and Field Service in Small Businesses

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Abstract

Mobile technologies enable field support engineers to be seamlessly integrated into business systems, leading in new modes of engineer-to- customer contact. In this study, we discuss the requirements for deploying a mobile application in the areas of field service and complaint management, based on the results of our survey. We give the conclusions of our usability assessment after a brief overview of the issues that these sorts of apps face, as well as a synopsis of the design of the service management system that was employed.

Keywords: *Mobile application, Small-scale Business, Field service*

INTRODUCTION

Small-scale enterprises encounter a variety of obstacles in the realm of field service and complaint management, including changing market situations and technology. When new technology isn't put to use at the ground level, for example:

Competition would aggravate cost pressure on service units. As a result, corporate activities must be conducted more efficiently and effectively.

Industrial goods and solutions have gotten increasingly difficult and expensive as a result of many technological breakthroughs such as downsizing, wireless technology, and huge volumes of embedded software. Which will lead to the expansion of service-oriented industries?

After-sales support connections will grow, implying that some service tasks will be undertaken by people from outside the

organisation. Because they may not be familiar with the items deployed, oriented data will have to be provided on an as-needed basis to complete service-related duties.

Most small enterprises in industry are currently finding it challenging to appropriately manage their field personnel's work schedules. As a result, it has an impact on customer services, which may be delayed as a result of miscommunication with clients about service and product delivery. However, it is critical for all small firms to prioritise field people and their responsibilities in order to maintain a smooth flow of company and customer services. To boost field personnel performance, proper administration of their tasks is required, as well as an attempt to schedule them online. However, certain specialised software is required to methodically regulate the tasks of field personnel.

UTILIZING MOBILE APPLICATIONS IN FIELD SERVICE

In the initial phase of our project, we obtained significant specifications for a mobile application used to improve industrial service processes. We will focus on the basic requirements examined in our study below and ignore quality

characteristics that many industrial applications, such as reliability and protection, must cover. Issues including the capacity to work both online and offline, the entry of large amounts of data, and the representation of data collected from various information systems from past service report information were all of great importance.

As a result, we choose to focus on a mobile application and software that can be used in our study on any smartphone, tablet PC, or even regular laptop, as these devices fully support the required input and output capabilities.

In the second step, we looked at existing commercial field service apps to see whether they met our broad needs. On the basis of this evaluation, we agreed to take a closer look at a number of them.

CHALLENGING NEEDS OF USERS

Small-scale enterprises, such as electronics services, are all around us (AC Service, Refrigerator Repair, Network Service). Server inverters, UPS, Networking Consultants, and other small B2B enterprises (with AMC) that require frequent visits.

They presently keep books or, in the best-case scenario, spreadsheets, which is inconvenient for both customers and enterprises. The engineer/service person may overlook/forget the task at times (one or two locations to visit). Most significantly, they spend a significant amount of time each day scheduling repeated calls that can simply be automated. For both business owners and customers, there is less transparency.

Currently, several humans are required to execute a service call, which raises the cost of operation and results in hefty service rates.

Instead our projected solution:

We have reduced the number of staff required to execute a service call, resulting in lower operating costs and more efficient task execution.

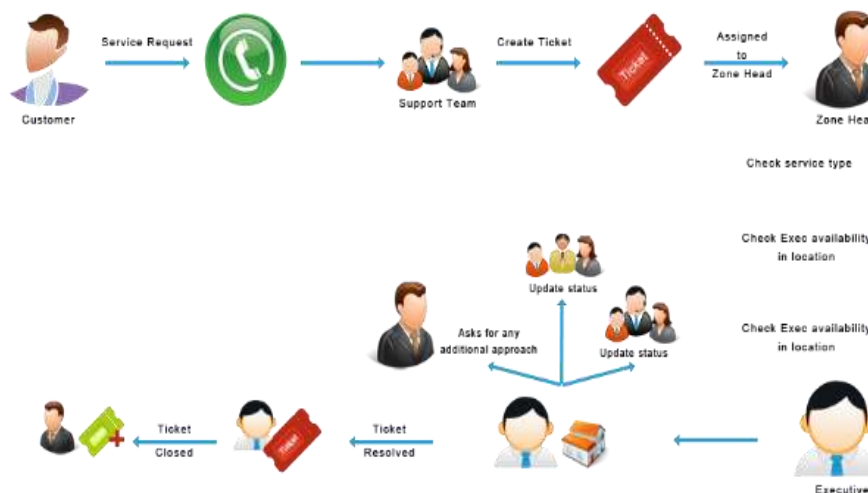


Figure 1: Field service flow

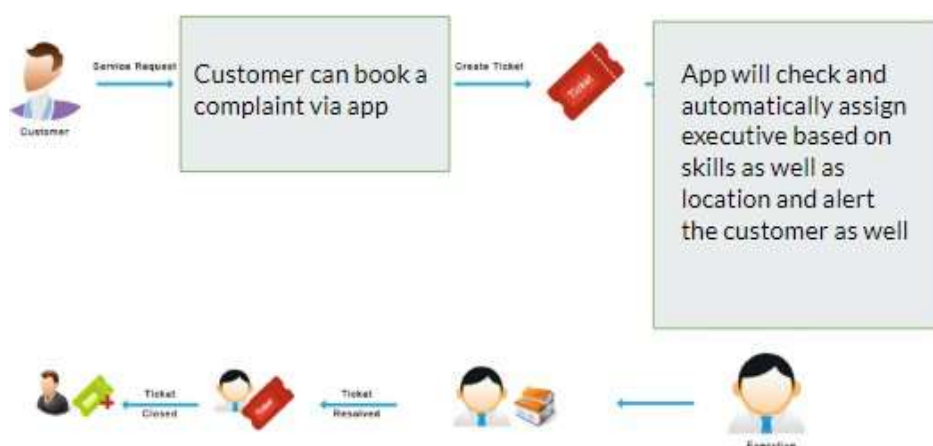


Figure 2: Flow of Service call

PROPOSED METHODOLOGY

1. Architecture

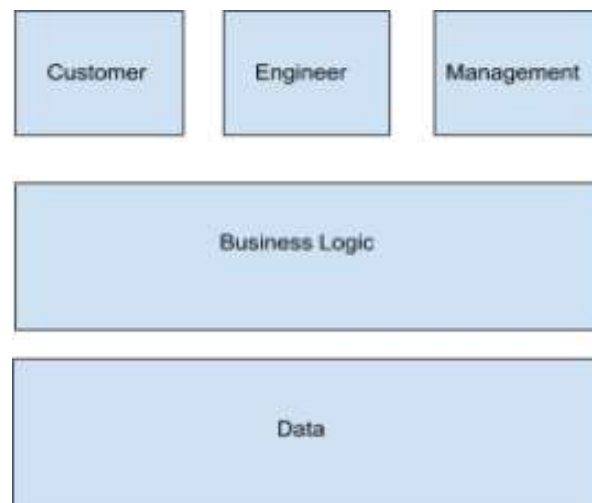


Figure 3: Architecture of proposed method

The usage of a mobile application provides an opportunity to meet the needs of a service process while also improving the integration of field service engineers into the service chain. The device architecture of the Mobile Service system is built on a 3-tier design that includes a client tier, a business logic layer, and a data tier.

On the client level, there are three categories of client applications:

- Customers can use their smartphones, tablets, or any computer with a browser to access the client application.
- Engineers can use their cellphones, tablets, or PCs to update their status and check the timetable and route immediately with this app.

- Also included is an application for the customer interaction centre (CIC) agents and the management service planner / dispatcher.

The application server for the mobile server is part of the business logic tier. It offers the necessary functionality for the planner and allows data to be shared between the mobile client applications and the data layer.

Different data frameworks supply and keep data that is to be communicated between administration, engineer, and customer at the information level.

CUSTOMER APPLICATION

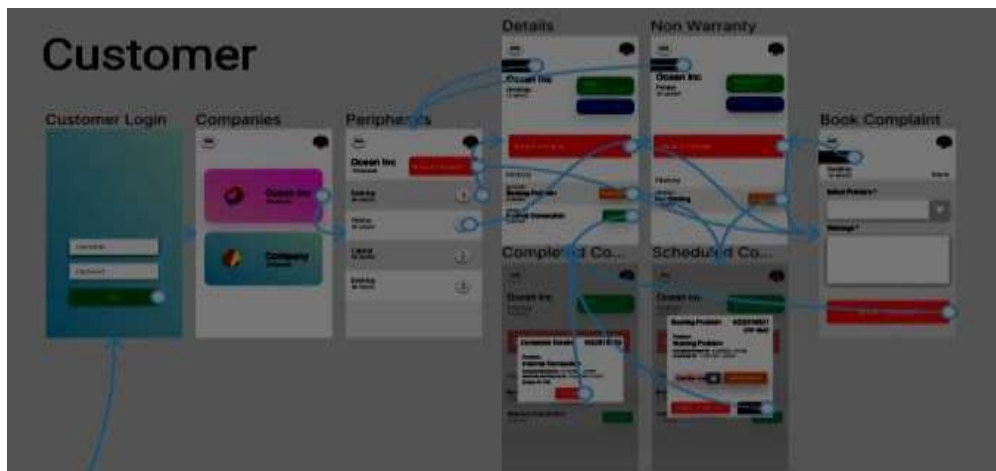


Figure 4: User interface for Customer application

A customer application can be used to schedule a complaint view of all of the peripherals/devices that the user has, as well as to identify service providers near them. It is designed to be simple, quick, and efficient such that the user perceives that booking a ticket via mobile application is easier than calling.

Engineer Application

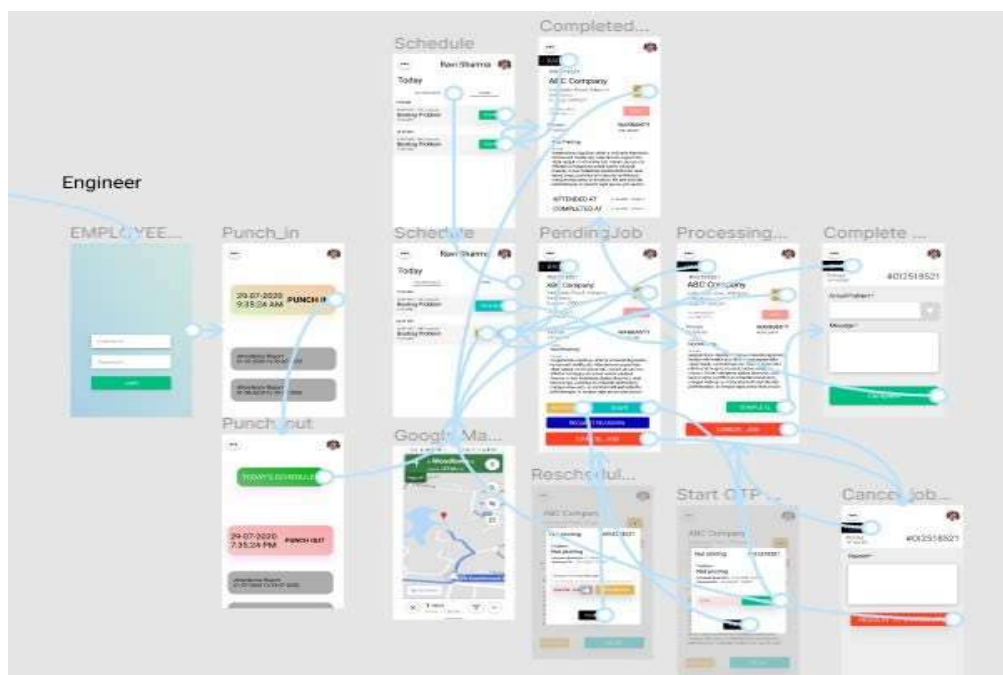


Figure 5: User interface for Engineer application

Engineer application gives engineers a timetable and alerts them when a task is added to their list.

Management Application

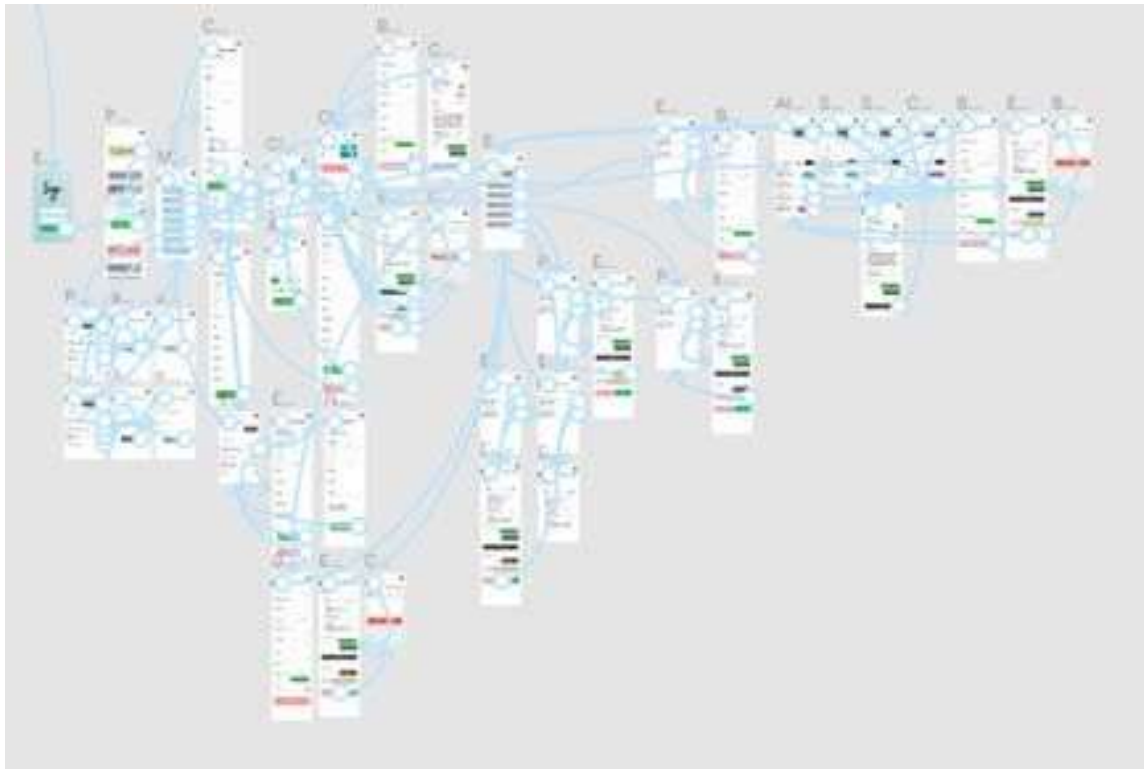


Figure 6: User interface for Management application

Business owners and managers can use the management level application to assign disputed tickets and generate reports.

Business Logic

When a ticket is created, it is automatically assigned to an engineer based on the engineer's location expertise and ratings.

CONCLUSION

According to the conclusions of our analysis, a small business application can have a significant impact on the on-field service domain. The proposed method will be able to meet one significant industrial need, namely stability. According to the

results of our survey, most users tend to employ the same input techniques in order to complete their activities efficiently. As a result, persuading later users to achieve effective use and utilisation of the mobile application is one of the most significant success criteria. The results of this research are being utilised to create and analyse some novel visualisation tactics for a future edition of the application.

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