Project Proposal for Innovation Fund

earnEasy : A Mobile Crowdsourcing Based Application

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Executive Summary

The goal of our project is to help the companies and government to get the opinion of the crowd with a simple , reliable and trustworthy method. We will provide the solution with the use of mobile crowdsourcing . Mobile crowdsourcing is a term that describes crowdsourcing activities that are processed on smartphones or other mobile devices. Thanks to the improved, technological smartphone features, including reliable GPS, very good cameras, and the easy availability of smartphones users can work on crowdsourcing tasks without any further difficulties. The companies can provide any task that needs genuine user feedback or simple tasks that can help with the company's growth , prestige , popularity or profit to the users of the application . The users will complete the task to earn the financial benefits that the companies offer . It will create a large body of working people and help mitigate the problem of unemployment in our country . In the era of Digital Bangladesh this project can become the gateway that connects both the companies and people . This way the companies and the users both can gain benefits through a mutual win-win situation.

Introduction

This project is aimed to use Mobile crowdsourcing for providing financial benefits to end users and at the same time participating companies or organisations can benefit by seeking knowledge, goods, or services from a large body of people . EarnEasy is a software that will create an efficient , simple and reliable platform to connect the companies and people .

Crowdsourcing is the generalized act of outsourcing tasks, traditionally performed by employees or contractors, to a large group of Internet population (the wise crowd) by means of an open call. With the great development of smartphones with rich built-in sensors and ratio interfaces, mixing smartphone-based mobile technologies and crowd sourcing offers vast computing resources, and leads to a new paradigm called Mobile Crowdsourcing (MCS) [1][2]. It involves obtaining work, information, or opinions from a large group of people who submit their data via the Internet, social media, and smartphone apps . It allows companies to farm out work to people anywhere in the country or around the world, which lets businesses tap into a vast array of skills and expertise without incurring the normal overhead costs of in-house employees. As an alternative to traditional financing options, crowdsourcing taps into the shared interest of a group, bypassing the conventional gatekeepers and intermediaries required to raise capital.[3]

MCS has many applications in the real world . Some of the popular examples are Uber , Pathao , Food Panda , Duolingo , Google Maps review system and so on . Even some of these popular apps rely on the practical use of MCS to provide crowd knowledge and crowd wisdom .

Smartphones are one of the most useful daily necessities in this modern world . Bangladesh alone has more than 5 million smartphone users in 2020 . Most of that population spends on average 4 hours of their time looking at smartphone screens . They are all part of the Mobile crowd workforce . Bangladesh has an unemployment rate of 4.4% of its total population . That's roughly 7 million people . This platform will help these people to mitigate their financial problems. EarnEasy will use MCS to provide companies a platform to assign tasks to users . Here , the companies can get genuine user reactions , experience , expectations and suggestions with simple tasks . And the users are getting paid for doing some work that is neither costly or labourious . They can go out for a walk around their home , do some simple tasks , upload the images or answer surveys and get paid .

The advantages of mobile crowdsourcing includes cost savings, speed, and the ability to work with people who have skills that an in-house team may not have. If a task typically takes one

employee a week to perform, a business can cut the turnaround time to a matter of hours by breaking the job up into many smaller parts and giving those segments to a crowd of workers.

Imagine a simple situation , Mr. X went to a grocery shop to buy some groceries for his family . He opened the EarnEasy app to check the tasks available in the area . He can accept tasks that require him to take some pictures of a particular product or talk to the shop employee about its price or other qualities . After doing some task he can upload the photos to the task provider via EarnEasy or answer a simple survey to best describe his experience . This way Mr. X earns some money in the midst of doing groceries .This is just one of the uses of mobile crowdsourcing . As the use of smartphones is becoming more and more popular, the practical use of mobile crowdsourcing becomes more apparent .

Apps like Pathao , Shohoz , FoodPanda are using this very concept of mobile crowdsourcing . They are using crowdsourcing to do specific works like ride sharing or food delivery . But there are a lot more areas where we can implement this game changing concept . In an advancing and populated country like Bangladesh this is just the tip of the iceberg . To efficiently use this huge untapped potential in the perspective of Digital Bangladesh we need adequate research and products .

EarnEasy will work as a bridge between the companies and users that will solve both parties' needs . It can at least provide some earning opportunities for general people . Like a second job it can help people of all stages and make a way for them to earn money .

Mobile CrowdSourcing

Crowdsourcing is a business model or function that relies on a large group of users as third parties for outsourcing certain tasks. Mobile crowdsourcing is using smartphones as the medium of crowdsourcing strategies . The popular use of the internet makes communication and coordination progressively cheap , tasks that would have been impossible to communicate and coordinate before have become extremely easy to set up and coordinate.[2][3] Crowdsourcing can add significant value to a product or service, and can also generate valuable connections between the users and the company.[4] Crowdsourcing is the practice of engaging a 'crowd' or group for a common goal often innovation, problem solving, or efficiency. Crowdsourcing can take place on many different levels and across various industries.[5]

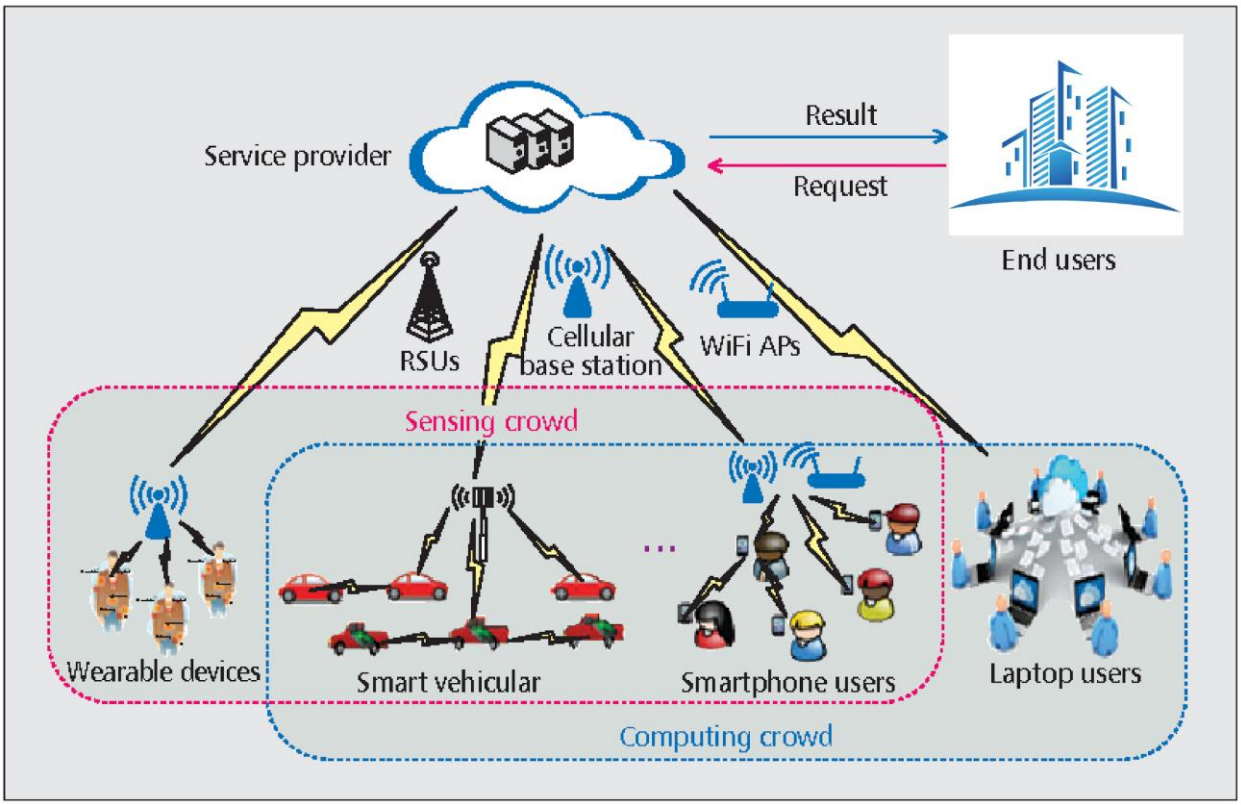

Figure 1 : **Mobile CrowdSourcing**

Thanks to our growing connectivity, it is now easier than ever for individuals to collectively contribute whether with ideas, time, expertise, or funds to a project or cause. This collective mobilization is crowdsourcing.[5][6] This phenomenon can provide organizations with access to new ideas and solutions, deeper consumer engagement, opportunities for co-creation, optimization of tasks, and reduced costs.[7]

The Internet and social media have brought organizations closer to their stakeholders, laying the groundwork for new ways of collaborating and creating value together like never before. Crowdsourcing touches across all social and business interactions.[8] It is changing the way we work, hire, research, make and market. Governments are applying crowdsourcing to empower citizens and give a greater voice to the people. In science and health care, mobile crowdsourcing can democratize problem solving and accelerate innovation.

The most significant benefit of using crowdsourcing is the ability to find unexpected solutions. Also putting a wider pool of people to work can also unlock a greater diversity of thinking, as well as unexpected ideas [7]. With crowdsourcing, a business or organization just sets clear terms and conditions for the exercise, then lets the ideas roll in[9]. Because it's an engaging public spectacle, it can also be a great source of marketing buzz. It can lead to faster and better problem solving [10]. Finally, crowdsourcing also offers businesses and organizations a detailed window into their most dedicated fans and customers.

With education, mobile crowdsourcing has the potential to revolutionize the system, just as crowdfunding is currently challenging traditional banking and investing processes.

Proposed Architecture of the Application

This project will explore the huge untapped potential of mobile crowdsourcing in the context of our country . Our objective is to use mobile crowdsourcing to create an application that connects both the users and the companies . We want to create a workable , sustainable and maintainable crowdsourcing platform to create opportunities for both individuals and companies alike to use crowdengine .

The basic architecture of the project .

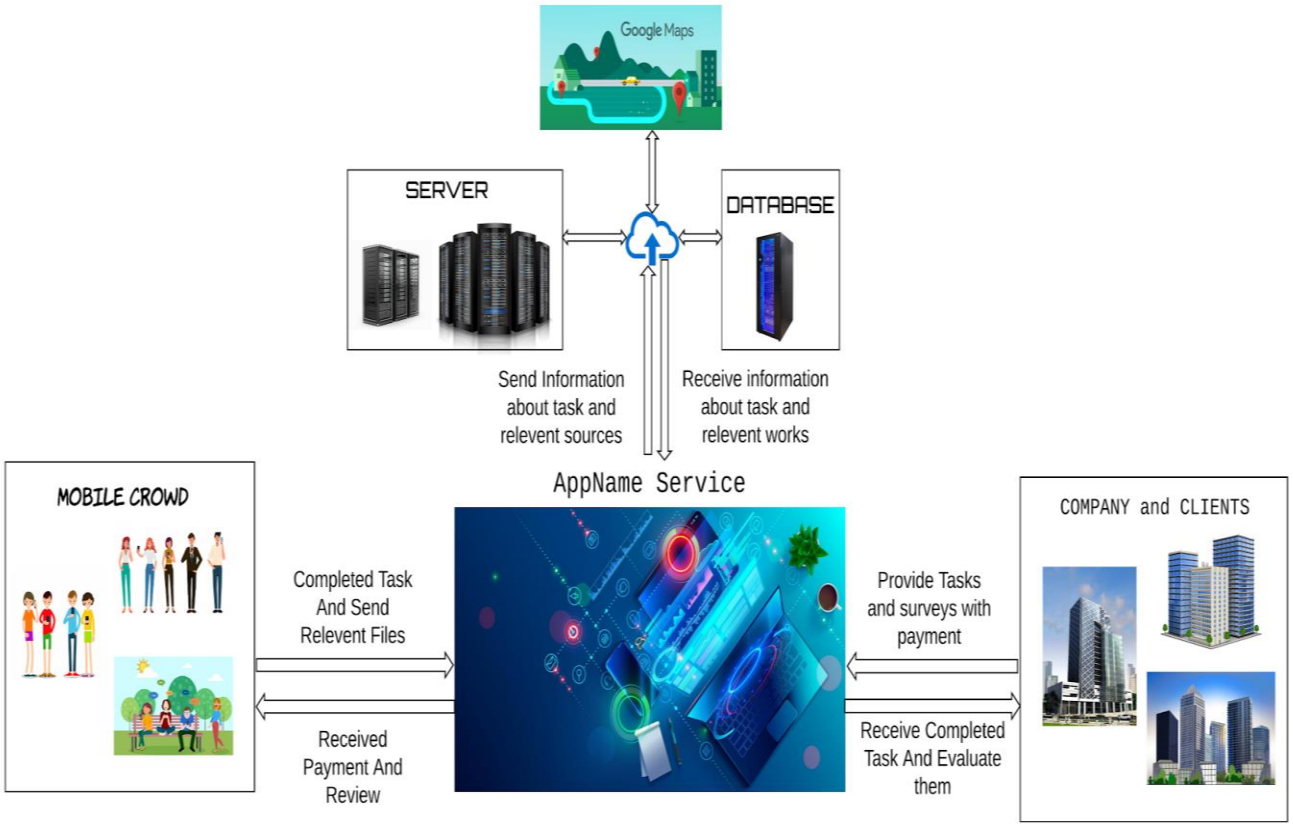

Figure 2 : **Project Architecture of the Application**

EarnEasy will connect the companies and the users . The companies can provide tasks or surveys with adequate payment , work description and location for the task .Through the app the users can search for the available tasks in any area or near their location . The users will need to get to the designated area to accept and start a task . We can see the user location by using the gps of the user . Tasks will be very simple like taking some pictures of some products

or completing a survey and answering some questionnaires . After completing the task the users can send the necessary images via the mobile app . The companies then can compare the documents with their requirements . If okay, the companies can send the money through the payment service of the application . Otherwise they can give further instructions . To maximize data connectivity we will use AWS servers . We will record all transactions to prevent any miscommunications. For better location service we will use Google Maps api . Many services will be provided to the users of the application . There will be two major types of service based on the type of the user.

Company Features

Companies that use our app will be entitled to many services . Such as -

Privilege of issuing tasks - Companies can issue any task that they want . They can issue the task multiple times in multiple places . They can also choose to restrict the tasks according to the level of workers .
Count workers in a given area - The companies can not see the location of an individual worker but can see the number of workers in a given area .
Task rights - Companies retain the rights to change , stop , delete or invalidate any task that they have issued.
Rate Worker Performance - They can rate the worker based on their task completion.

Member Features

Normal users or members will be entitled to many services . Such as -
Accept any task - Members can accept any task according to their choice.
Sort tasks - Members can sort tasks according to payment, area, difficulty, distance etc.
Anonymity - Members are anonymous to the companies . The companies can only see the level and rating of the members. Their personal information will be hidden.
Rate task - The users can also rate task after completing it.

Required Technologies

This project is based on mobile crowdsourcing. Therefore, to implement the main theme of the project we have chosen one of the most used communication mediums of the world, smartphone. Smartphones are now a part of daily life in our generation. The large availability, mobility and easy to use features of smartphones can not be replicated by any other media.

Of the smartphone industry the most common two operating systems are ios of apple and android of google. To make this app available to both operating systems this app will be developed in flutter .

Flutter is an open-source UI software development kit created by Google. It is used to develop applications for Android, iOS, Windows, Mac, Linux and the web. We will use flutter to create an app that supports both IOS and android .

Android Studio is the official integrated development environment (IDE) for Google's Android operating system, built on JetBrains' IntelliJ IDEA software and designed specifically for Android development. It is available for download on Windows, macOS and Linux based operating systems. It is a replacement for the Eclipse Android Development Tools (ADT) as the primary IDE for native Android application development.

.NET Framework (pronounced as "*dot net*") is a software framework developed by Microsoft that runs primarily on Microsoft Windows. It includes a large class library named as Framework Class Library (FCL) and provides language interoperability (each language can use code written in other languages) across several programming languages. Programs written for .NET Framework execute in a software environment (in contrast to a hardware environment) named the Common Language Runtime (CLR). The CLR is an application virtual machine that provides services such as security, memory management, and exception handling. As such, computer code written using .NET Framework is called "managed code". FCL and CLR together constitute the .NET Framework. We will use DotNet to build the background capabilities of our app .

Amazon Web Services (AWS) is a subsidiary of Amazon that provides on-demand cloud computing platforms and APIs to individuals, companies, and governments, on a metered pay-as-you-go basis. In aggregate, these cloud computing web services provide a set of primitive abstract technical infrastructure and distributed computing building blocks and tools. One of these services is Amazon Elastic Compute Cloud, which allows users to have at their disposal a virtual cluster of computers, available all the time, through the Internet. AWS's version of virtual computers emulate most of the attributes of a real computer, including hardware central processing units (CPUs) and graphics processing units (GPUs) for processing; local/RAM memory; hard-disk/SSD storage; a choice of operating systems; networking; and pre-loaded

application software such as web servers, databases, and customer relationship management (CRM).

Google Maps is a web mapping service developed by Google. It offers satellite imagery, aerial photography, street maps, 360° interactive panoramic views of streets (Street View), real-time traffic conditions, and route planning for traveling by foot, car, bicycle and air (in beta), or public transportation. In 2020, Google Maps was used by over 1 billion people every month.[11]

Firebase is a mobile and web application development platform developed by Firebase, Inc. in 2011, then acquired by Google in 2014.[12] As of October 2018, the Firebase platform has 18 products,[13] which are used by 1.5 million apps.

This app will also use many advanced technologies such as retrofit and server capabilities .

Work Plan

This project will span over 12 months .
The time schedule for the project is given below -

Schedule of Project	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12
Planning and Requirement Analysis												
Prioritising Requirements												
Designing Architecture												
Developing Project												
Testing												
Review and Retune												
Deployment												

Conclusion

This project will try to use the huge potential of mobile crowdsourcing. It will create opportunities for a person to gain financial benefits that fits his/her area of expertise and preferred choice. The main thing to consider is the freedom of choice for both the companies to provide tasks and the general user to select tasks. This in turn can help companies to trust the people more and save money by outsourcing tasks . This way companies can more efficiently distribute their workload and users can gain financial benefits by doing the tasks.
This way our economy can grow and we can alleviate the unemployment problem in our country.

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