

## Using kiosks as information-delivery channels to apply for Schemes and other government services for Rural India

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**Abstract**—With the advent of Information Technology into almost every aspect of our lives, are we all really able to benefit from it? This paper proposes a way to boost the success of government Schemes for Rural Development using kiosks. In the paper, a solution is discussed that addresses the problem of government schemes not reaching their full potential via awareness among each and everyone, and attempts to resolve it by using kiosk machines, to supply information regarding government schemes. The main purpose is to provide information regarding government schemes to even those rural residents who can barely interact with an electronic device. To do so, a very simple and easily understandable interface has been introduced in the paper. This interface may also provide audio/visual aid. Using this, a person may also get a token, using his/her aadhar card number, to meet with the respective office to proceed for a scheme. In the later versions, feature to transfer a particular page onto the persons mobile phone can also be added.

**Keywords**—Kiosk, Data Mining, Network, Information Delivery Channel.

### I. INTRODUCTION

It is no secret that humans are highly intuitive creatures. We tend to learn and adapt to our surroundings. Until those surroundings are not changed, growth of the human mind is also hindered. Similarly, it is time to bring some changes into the rural landscape to a more technology-suited canvas.

Rural Development is one of the primary concerns for the growth of a developing nation like India that can enormously benefit from Technological solutions. The problem addressed here is that not every rural resident is able to take benefit of different government schemes owing to different problems like:

A general lack of awareness about such Schemes.

Hesitation and lack of faith in the Schemes.

Waiting for review from other applicants/peers.

Unable to correctly address own problems.

Not being able to make up mind about which scheme to choose.

With Indias ever augmenting urban dominance, mostly owing to rapid growth through digital mediums, the same can be applied to rural areas as well.

By the creation of a proper information delivery channel using appropriate technology this gap can easily be bridged. A kiosk machine provides such platform that can be established in the farthest reaches of rural India. For the purpose of spreading the word, conventional methods include advertise-ments in newspapers, mobile phones, websites, etc. A kiosk machine can

also be used to house an infrastructure consisting of a display screen and a computer system which deploys an interface to establish interaction between the rural people and the government. In later versions, more government services can be deployed on the kiosk. The vision behind the proposal is to make each and every individual able to explore on their own and arrive at a decision.

Rural areas face problems more or less the same amount as urban areas such as in the fields of development, funding, education, employment, business, etc. but one of the primary reasons that rural areas are not able to cope up is the lack of resources. However, todays technology is an unbiased resource for the development of the nation as a whole. This is why we see expedited growth in this sector.

Every year the government rolls out multitudes of Schemes for the betterment of its citizens with more focus for those who really need it. Rural areas fall in the latter category, having scarce resources in itself. While a plethora of Rural Development Schemes already exist yet, a cent percent response for them is not always observed.

Therefore, technology is used to bridge this gap between citizens dilemma and choosing the correct Scheme. Rural Development should, theoretically, benefit abundantly from this. Even with low literacy rates in some areas, Rural people are able to use computer based kiosk machines intuitively, without requiring any guidance, as has been shown in studies.

Kiosks are small structures including a computer and a display screen that can be used to display information on it. This medium of supplying information is simple, cost-effective, secure, and easy to setup. Hence, instead of going to government offices to apply for Schemes, Rural people can

simply use such custom designed Kiosk machines to directly apply for the Schemes, or just browse through what the system can bring up to solve their particular troubles. Just like a search engine, the computer systems within the kiosk should work out which Scheme is the most suited to a particular user. To do so, a number of user interfaces are required to take input in stages. Just as an ATM Machine can be used to withdraw money, the kiosk machine can be used to issue a receipt or a token to apply for a scheme. Otherwise, simply the user can browse through the database as need be.

While the government maintains a huge database and deploys various websites and software solutions to access them, this kiosk machine shall be developed with the primary purpose of reaching even those people who are not computer literate, do not own a mobile phone, or are hesitant about applying for a Scheme. The structure of the directory system in the central database for this project hence needs to be as simple as possible.

#### Feature

Graphical user interface uses simple buttons and im-ages to increase appeal to the user.

Audio and visual aids assist the user in taking a decision.

Search option to lookup a scheme. Unique token generation based on Aadhar card identification, which can be submitted to the required government office to apply for the scheme. The token expires after a specified period of time.

Navigation bars on top provided to move to and fro within the system.

Minimalistic GUI to avoid confusion.

## II. APPLICATIONS

The main applications of the project are:

As a one-stop communication channel between the government and the rural areas.

As an unbiased source to apply for a scheme. As an information provider.

As an alternate to official identity verification procedures.

## III. EXISTING SYSTEM

Many systems have been developed over time, each based on a particular application, but in general trying to bridge the gap for rural India through a digital medium. Some are listed below:

Health Management Information System (HMIS)

Appropriate Rural Technology Institute (ARTI)

Mygov app and Website

Government portals each providing a different service

And Many more.. A. Deficiency in existing systems

The existing systems indeed work great and fulfil the needs of the population. However, in the rural scenario these systems do not reach everyone even though compared to contemporary technology the project seems to be a bit outdated:

Many of the rural people arent fluent in using mobile phone services.

Most cannot afford a smartphone, let alone an internet connection.

Rural areas are not that exposed to technology.

Rural areas are not abundantly resourceful and not many alternatives are currently present.

Even if everything is accessible to them, it is not very easy to find the exact solution one is looking for.

## B. User Requirement

No essential requirements. The system shall be designed to be operated on by any kind of user.



Fig. 1. Working Model of Proposed system

The conceptual diagram shows where the system fits into the process of deployment of schemes.

To tackle the problems of corruption, delays, unfair means, identity thefts, etc. the kiosk machine is designed. It shall provide an unbiased alternative to the government offices. As the system is particularly for Rural areas, this is vital to provide another path to opt for a scheme, as well as enrich their minds with knowledge about other schemes as well.

## IV. DESIGN OF THE SYSTEM

Operating the Machine:

- 1) Press the Start button to open a new screen.
- 2) On new screen, voice commands and instructive messages will guide through the pages.
- 3) Select one of the buttons for which you want to browse schemes, say farming, education, banking, etc.

OR

- Select the search bar to lookup a scheme based on name, genre, region, and other factors.
- 4) On selecting a button, the next screen will list down the available schemes in the system.
- 5) A search bar may be used to filter schemes.
- 6) If a particular scheme is pressed from the list, the next screen shows a brief profile of the scheme with its characteristics.
- 7) A receipt generation button will be available to print out a verified token to show in the offices for faster verification.

- 8) On all screens an End Browsing button shall be available to discontinue session with the user.
- 9) If the screen is idle for more than a minute, the session shall be destroyed with an alert.

## V. KIOSK DIAGRAM

Here is a basic representation of the kiosk as envisaged.

**Display Screen:** To display the content to the user. It must be a touch screen interface.

**Start button:** To begin the exploration by the user. Can also be used as the Enter or OK key.

**Fingerprint Scanner:** To take input as fingerprint of current user, and verify it with the Aadhar database, using Aadhar Card number provided by user.

**Input Keyboard:** For the purpose of giving input to the system.

Although keyboard has been provided, still the user interface will be made as interactive as possible because for the rural scenario it must be assumed that proficient use of keyboard cannot be done by everyone.

**Token Collector:** An open slot where the token (if applied for by the user), can be collected.

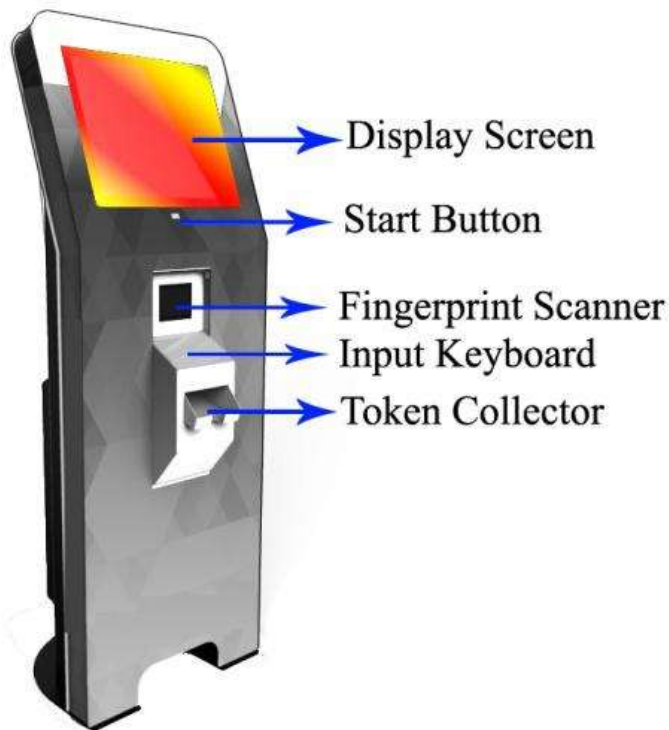


Fig. 2. Model of Proposed system

### A. User interaction explained

In the idle state, the display screen shall be showing a slideshow of the different features installed on the machine.

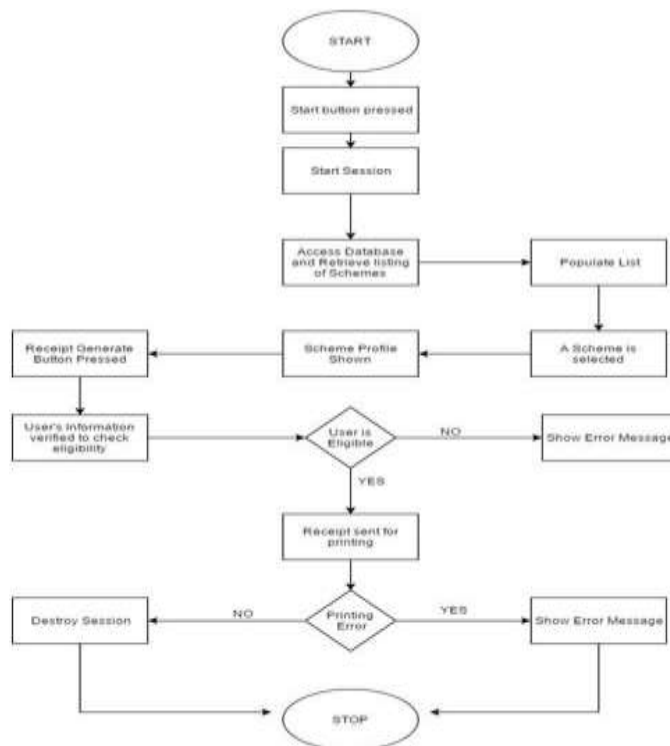


Fig. 3. Working logic of Proposed system

Keep in mind that the entire system is made exclusively to adapt to the rural mind. Therefore, almost every feature is envisaged to be displayed in the natively understandable language. Once a user wants to start using the machine, the user will have to press a start button on the display screen. Thereafter, in the memory, a session is to be started. A second screen comprising of the most popular schemes among the masses, most beneficial schemes, and other schemes grouped according to different parameters like usage, appeal, etc. can be seen, because the user is likely to find his/her desired scheme then and there itself. The user can browse different schemes as long as possible.

However, the navigation bar presents option to switch to a simpler Interface, wherein the schemes shall not be shown, rather the categories (like education, employment, financial, farming, etc.) are shown. This screen shall guide the user to find the appropriate scheme through a series of steps, that involve taking input from the user through a multiple choice answer based questions.

Once a scheme has been selected by the user, the back-end database is accessed to show more information on it, mentioned as Scheme Profile. A Receipt Generation feature is provided if the user is willing to apply for the scheme. To do so, the user just has to enter his/her Aadhar Card number and the users eligibility will be automatically checked by the system. If verified, the user can get a receipt consisting of appropriate fields like Name, Age, Region, etc. along with a unique receipt number. This receipt is special in the sense that it gives the further office procedures a head start as it has been confirmed that the particular registered citizen is willing to apply for the

scheme. If some error occurs, appropriate message shall be displayed on the screen.

If at any point of time, the user wishes to discontinue the usage, he/she can just press the Stop button provided which will destroy the session. For identity protection, every time a receipt is generated, the session is destroyed.

## VI. RECEIPT GENERATION

Follow the process of

- 1) Show this button if and only if Session is going on.
- 2) If the persons information from database shows he/she isn't eligible for the Scheme, show the appropriate message and stop.
- 3) Generate a .pdf File with the users credentials, Timestamp, Deadline, and the chosen schemes Attributes.
- 4) Send the file for printing.
- 5) If Error received from Printer, display appropriate message.
- 6) In case of malfunction of printer, send token number via SMS.

## VII. ADVANTAGE OF PROPOSED SYSTEM

Standalone system for deploying govt schemes.

More of government services can be deployed in later versions.

Easy to grasp and operate.

Can be implemented such that it may accommodate more government services to rural areas in the future versions.

Lessens the number of steps involved in the procedure to apply for a scheme.

Staff for administration is reduced.

Lower maintenance costs.

## VIII. LIMITATIONS OF PROPOSED SYSTEM

The interface might need several tweaks in the initial stages so as to properly adapt to the understanding of the rural people.

Same goes for the directory hierarchy, showing the right information at the right stage.

No congestion control techniques. Can keep the people waiting in queues.

## IX. FUTURE APPLICATIONS

The kiosk provides a platform to deploy a plethora of other features as well. In future versions, the following features shall prove beneficial for the rural areas:

A social networking feature wherein different users can leave messages for the other users to read and comment on, or share.

A knowledge centre feature to supply facts and figures to the user.

A news feature to let the user know about the current news.

A Complaint/Suggestion option for the user to communicate with respective local authorities, for example, complaint against garbage disposal can go to the municipal authorities.

## X. CONCLUSION

A regular rural resident faces problems different from those of an urban resident. Technology is yet to infiltrate the rural scenario. An abrupt transformation in the rural landscape is not possible. There is a need to acquaint the rural areas with different technologies. The proposed kiosk machine shall work as a service deploy agent, and provide one to one communication between the government and the user. Unlike complex processes and steps, the kiosk machine is a technological solution that will be understandable by the layman.

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