Effective Call-in at Interviews using HD-W60-75-Based Electronic System

[1]**Aiyelabowo O Peter,** [2]**Kuponiyi D. Sunday**

[1,2]Department of Electrical/Electronic Engineering, The Federal Polytechnic, Ilaro, Ogun State, Nigeria

Abstract - **Man communicates with each other to transmit information for one action or the other. Information dissemination is a very important activity in human lives. It is carried out via several means. At interviews, interviewees are invited in at different times for the interview. In most cases an attendant is hired to do the call-in, this poses stress. In this paper a system that calls in remotely at interviews is presented. It is built on the HD-W60-75 controller, a special controller for LED displays. The LED display implemented in this work is a P10 LED display. Communication between the input module (mobile phone) and the system is made possible by the LedArt app. Through the LedArt App, information to be disseminated is typed in and displayed for viewing. Mr Philip come in was typed in to invite Mr Philip into the interview arena and was displayed for viewing.**

Keywords: Interview, P10 LED display, controller, user-equipment and wifi.

I. INTRODUCTION

Information desemination is a vital activity that is important to human life, as information such as instruction are required for the achievement of specific tasks [1][2]. The urge to deseminate information has prompted some many methods, these includes oral and visual communications, which were the first modes of information dissemination used by humans, followed by written communication.

The two broad channels through which humans disseminate information in modern society are traditional and social media [3]. Phones, television, oral communication, and print publications are examples of traditional media. Text messages, micro blogs, and online news outlets are all examples of social media.

Traditional media, while slower, is still an effective means of communicating [4]. For instance oral communication, a type of traditional media, physical contact is required, this results in stress. In the conduct of interview for employment, the applicants are assembled at a location and are called in one after the other. This requires the service of an attendant or applicants name are shouted in other cases.

The idea of phone calls has proved to be expensive due to high call rates and maintenance. Phone call has proven to be a form of noise and distraction.

In this paper an electronic calling machine is presented. The system displays the name of the candidate to be attended to in full.

Therefore, an electronic calling system [5] is needed and can be utilized at interview settings for offices at educational levels and various organizational levels. In place of phone call, radio transmission, attendant call; information dissemination is done through the electronic calling system without the various problem listed above.

Human communication can be classified into several types: Intrapersonal communication (talking to one-self), this fundamental form of information serves as the standard and foundation for all communications. This communication with ourselves demonstrates how we think about our previous and ongoing actions as well as what we choose to understand from other types of communication and events. Our intrapersonal communication can be demonstrated and expressed to the others through simple gestures and expressions in response to specific outcomes. Call-in at interviews is done through and attendant going out to call in interviewers. This is tasking and time wasting. In this work a system is designed which calls in interviews remotely.

II. DIFFERENT WAYS OF CALLING IN HUMAN SOCIETY

Humans have communicatory abilities other animals do not. For example, we are able to communicate about time and place as though they are solid objects. Humans communicate to request help, to inform others, and to share attitudes for bonding. Communication is a joint activity largely dependent on the ability to maintain common attention. We share relevant background knowledge and joint experience in order to communicate content and coherence in exchanges.

In modern day cases, calling in organizational setting is more convenient due to the use of modern day technologies. For example, calling machine is used in place of attendant to

call in visitors. It is easily controlled and can be manipulated at any point in time.

Most people think about speech when they think about communication but there are many other ways we can also use to communicate with each other.

III. METHODOLOGY
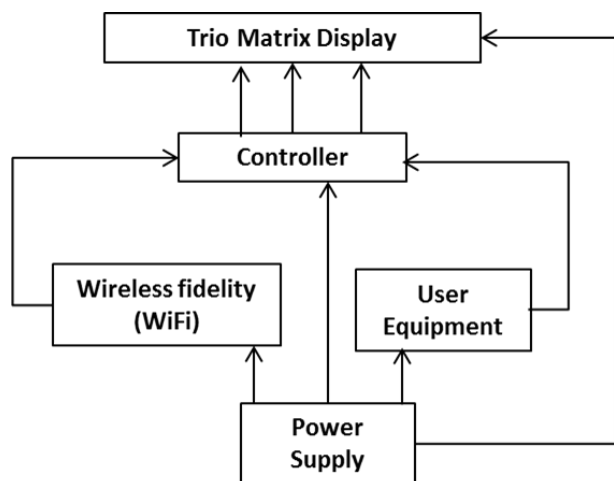
The system model diagram is shown in Fig. 1.

Figure 1: Call-in system block diagram

It consists of the following units;

- Controller
- Display
- Power supply
- Wi-Fi Module
- User equipment

The user equipment, which connects to the system through wifi, is indoor equipment while the system is outdoor (at the sight of candidates).

3.1 Controller

The controller unit is built on HD-W60-75 [6], a low cost, cost-effective simple software interface, easy to operate better display information control system which supports tricolor Wi-Fi control card.

It has the following features;

- FLASH Capacity 8M Byte
- Communication Port U-Disk, Wi-Fi
- Display: Sequence display, button switch, remote control
- Communication distance: 10 to 30 meter.
- Rated voltage (V) 5.0

The HD-W60-75 is a compact microcontroller designed to control the functions of embedded systems in office machines, robots, home appliances, motor vehicles, and a variety of other devices. A microcontroller is made up of several components, including memory, peripherals, and, most importantly, a processor. Its two main components are the Arithmetic Logic Unit (ALU), which performs arithmetic and logical operations, and the Control Unit (CU), which handles all of the processor's instruction executions. The image of the controller is as shown in Fig. 2.
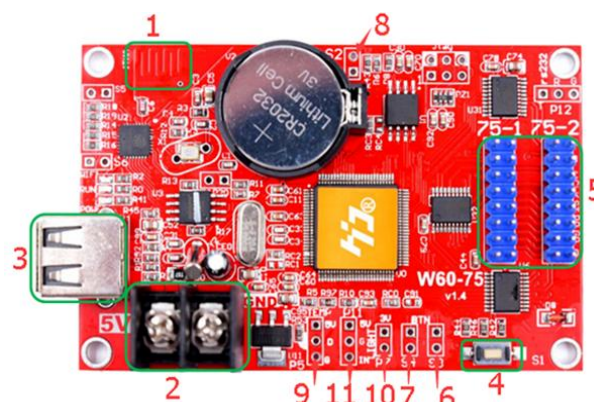

Figure 2: Image of HD-W60_75 [6]

HD-W60-75 has 11 functional pins that are used as described below:

Table 1: HD-W60-75 functional pins configuration

Pins	Function(s)/Usage
1.	Connect the computer through Wi-Fi to send parameters and programs
2.	Power connector, connect 5V power supply
3.	USB ports, Updated program by U-disk
4.	Test button, click to switch screen test status
5.	2 HUB75E, connect the display
6.	S3, Connect the point switch, switch the previous program, timer reset, count down
7.	S4, Connect the point switch, program control, timing pause, count reset
8.	S2, Connect the point switch, switch to the next program, the timer starts, count
9.	P5, Connect the temperature/humidity sensor
10.	P7, Connect the brightness sensor
11.	P11, Connect the IR, by remote control

3.2 User equipment (UE)/LedArt App

The UE is a mobile phone (smart phone) to be used as input to the system. This unit is responsible for the typing of the name of the applicant to be called in. The UE communicates with the system via wifi. The information of the UE is relayed to the system through Smartphone software called LedArt Software. It is installed on the phone. Figures 3 and 4 present the smart phone (UE) and the LedArt software.

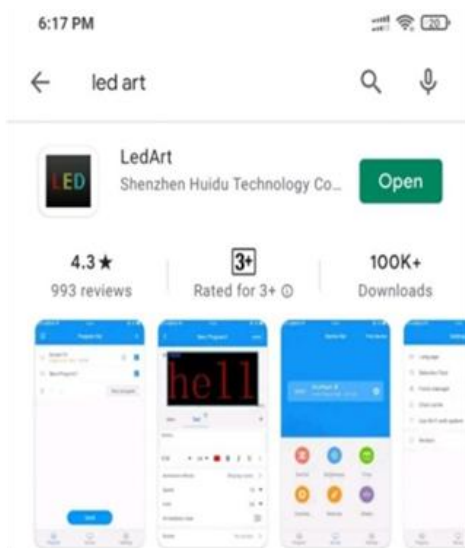**Figure 3: Smartphone (UE)**

Figure 4: LedArt Software Interface

The LedArt is an application which makes control of LED/LCD displays possible through wi-fi by a mobile phone. Thus the mobile phone communicates directly with the display.

3.3 Display

The display unit is a P10 LED display. P10 LED display module finds application in the design of various sizes of outdoor and indoor LED display for information dissemination.

Best results display is provided by its 512 high brightness LEDs, laid on a plastic housing. The 512 numbers of LED in each module unit is achieved in a matrix of 16 LEDs per column and 32 LEDs per row. Rows and column combinations are possible for attractive LED signboard.

The display screen has a waterproof rating of IP65 that guards it against rain damage. It has the following features;

- Brightness: 3500-4500nits
- Max Power Consumption: 20W
- Voltage Input: DC 5V
- IP65 Waterproof
- 1W Pixel Configuration
- High Viewing Angle
- High Contrast Ratio

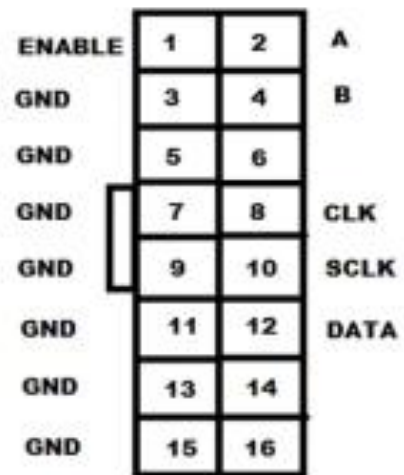The displays pin configuration is as shown in Fig. 5.

Figure 5: P10 display pin configuration
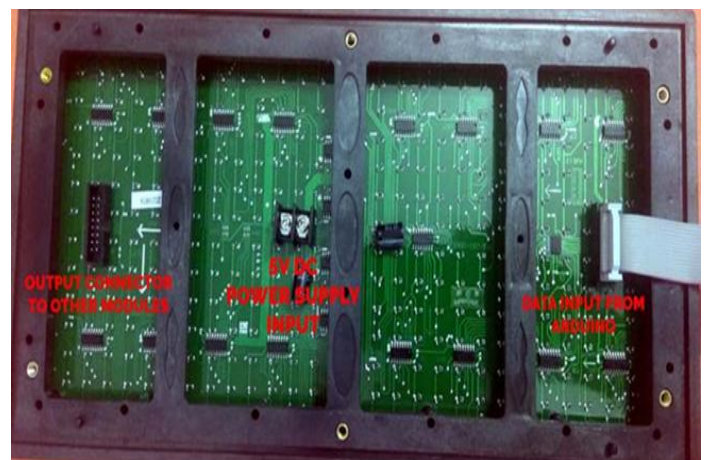
P10 LED display [7][8] image is shown in Fig. 6.

Figure 6: P10 LED display image[9]
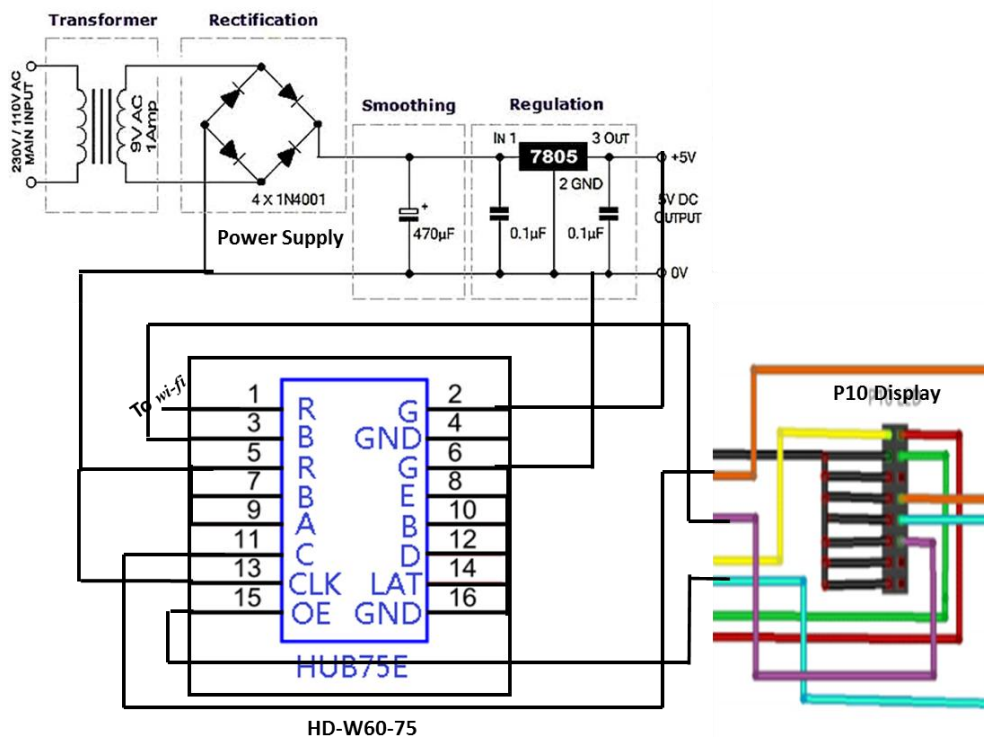
The system's setup diagram is shown in Fig. 7.

Figure 7: System schematic diagram

3.4 Communication procedure

▪ Launching to the mobile phone's settings, locate the wireless signal of the control card (W00_1583579807). This is clicked and password is entered after the connection. The interface is shown in Fig. 8.
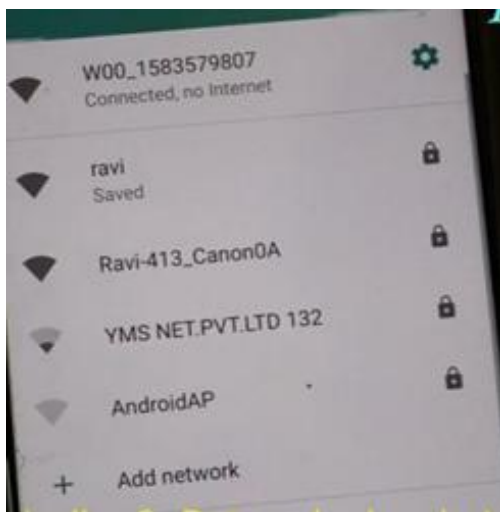

Figure 8: WI-FI Connection

▪ Open "LedArt", select the "Device" module, click "Find Machine", and then connect the corresponding Wi-Fi hotspot. The LedArt setup is shown in Fig. 9.
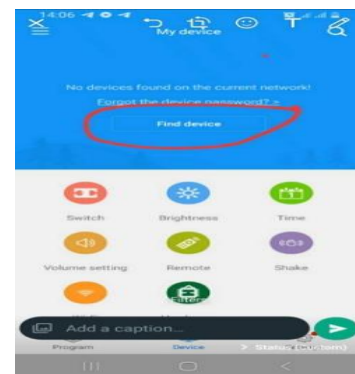

Figure 9: Selection of WI-FI Signal

The software interface includes a device list as well as a function setting area. The function settings include the switching machine, brightness, time correction, remote control, and shakes, among other things as shown in Fig. 10.

Figure 10: Main Interface

Program editor

To edit the last edited screen again, the edit program button is clicked in the function area, or sliding the screen into the "screen edit history list" to select a display screen for editing.

A new display screen can be created by clicking the "new screen" button in the lower right corner, entering the display screen's name and resolution. (Note, the display resolution must be in accordance with the program resolution currently set by the control card). An interface of the program edit shown in Fig. 11.
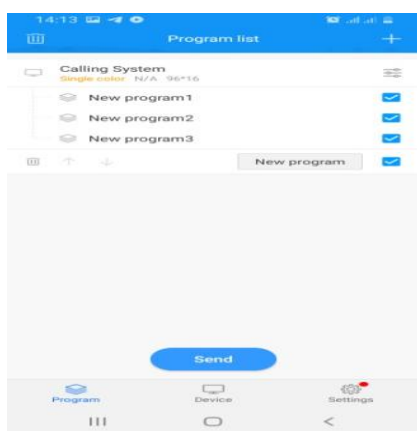

Figure 11: Program Editor

Text editor

Clicking on the lower right corner of the APP program editing interface, to locate then Add Text to enter the text editing interface, enter the text content to be displayed, and set the text color, background color, alignment, font, bold, italic, and other options as presented in Fig. 12.
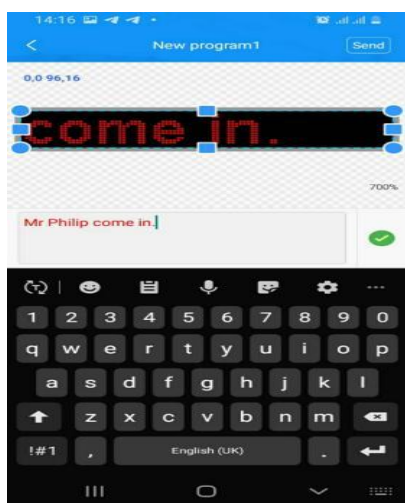

Figure 12: Text Editor

Underline effect

Selecting the text area, and then clicking on the upper right corner to open the text property interface for text's single-line display, multi-line display, and move effects configurations.

Border and program setting

After selecting the text in the APP editing interface, the border type, special effects, and speed are enter by clicking the border setting interface for its configuration, s.ee Fig. 13.

Figure 13: Border Setting Interface

Program setting

Click on the lower right corner of the APP editing interface (cannot select the program area) to enter the program setting interface. The "Program Border" option allows you to customize the type of border, as well as its special effects and speed. Various unit were constructed and assembled. Figure 14 shows the constructed system.
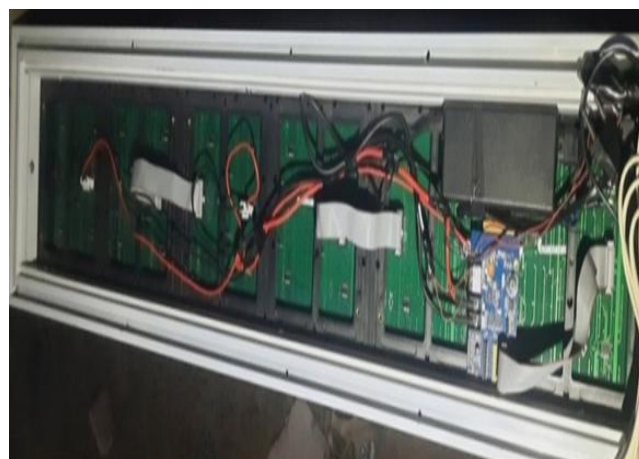

Figure 14: Constructed system

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IV. RESULT AND DISCUSSION

At system power ON, the image in Fig. 15 was displayed.

Figure 15: Power ON display

At call-in of Mr. Philip, the image in Fig. 16 was displayed.

Figure 16: Call-in display

The system was placed at the reception where the invitees were assembled. The electronic calling system intimates them that the interview is about to commence at power ON. At the display of Mr. Philip, he goes into the interview arena.

V. CONCLUSION

The calling system calls in the expected applicant in for interview. This not requires the intervention of man for the calling. Each interviewee is called in intermittently without confusion. This system makes interview effective with less stress of call.

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