REVIEW OF E-BALL TECHNOLOGY: FEATURES AND CHALLENGES

M.Kavi priya
Department of Information Technology
Sri Shakthi Institute of Engineering and Technology, Coimbatore, Tamilnadu, India

K.Priyanka
Department of Information Technology
Sri Shakthi Institute of Engineering and Technology, Coimbatore, Tamilnadu, India

S.Reshma
Department of Information Technology
Sri Shakthi Institute of Engineering and Technology, Coimbatore, Tamilnadu, India

V.Praveena
Department of Information Technology
Sri Shakthi Institute of Engineering and Technology, Coimbatore, Tamilnadu, India

ABSTRACT:

We all are familiar with the word computer we all know that earlier computer was huge in size. Day by day the size of computer reduces and now a new concept of PC is introduced that is E- Ball concept PC. The E-BALL concept PC is the smallest design among all the laptops and desktops. E- Ball has been designed by the 31-year- old Macedonian product designer "Apostol Tnokovski." He had replaced the old PC with its newly designed spherical shape from the squares and rectangular forms. According to the Apostle, it is the best form in nature and attracts the attention of everyone. It's the smallest computer ever built. The size of E- Ball is like a ball; we can stay in our pocket and move from place to place. This PC concept includes all traditional elements such as mouse, keyboard, big screen, DVD recorder, speaker, etc. It has not yet been launched on the market. The research in this field is still going on.

Keywords: Processor; Projector; RAM; Virtual keyboard

1. INTRODUCTION:

E-Ball computer is designed by Apostol Tnokovski who is a Macedonian product designer. It is spherical in shape and smallest one among laptops and desktops. Due to small in size it is easy to operate handle and movable. The diameter of this computer is 6 inches only which also make it very attractive and unique.

Only Microsoft Windows operating system is compatible with this E-Ball computer. The E- Ball computer is designed to be placed on two stands, open at night by pressing two buttons on each side of the computer at the same time. The concept E- Ball uses a virtual keyboard that is activated by pressing a specific button. After the E- Ball computer is opened, the optical mouse can be removed from the body of the E- Ball computer by pressing and removing the button of the mouse. This computer has no external display unit. It uses a projector for display purposes that simply pops up when you press and hold the button. The software interface of this computer is iconic unique and user friendly. This computer can be used to in suitable place like home, office.

Figure 1: E-Ball

Figure 3: processor

.2. RAM:

RAM is random memory access stands. It gets the word random because it can be accessed in a non- sequential way. Although the data itself is stored, the amount of RAM could be anywhere. RAM is measured with "bits" and 8 bits with 1 byte. One kilobyte is 1024 bits, and one megabyte is 1024 kilobytes. The E- ball PC uses RAM 2 GB.
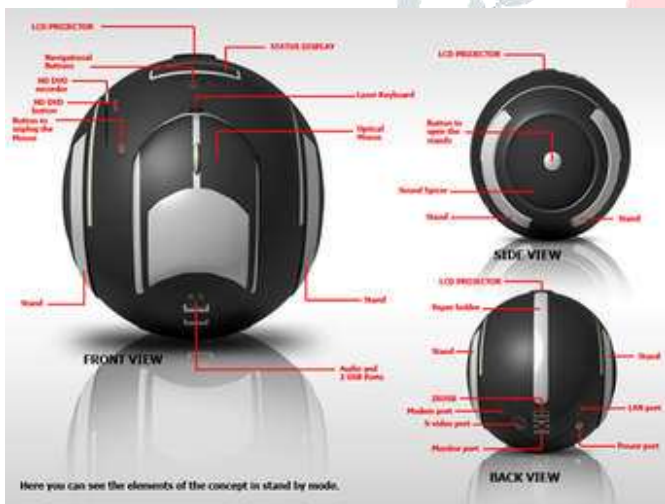
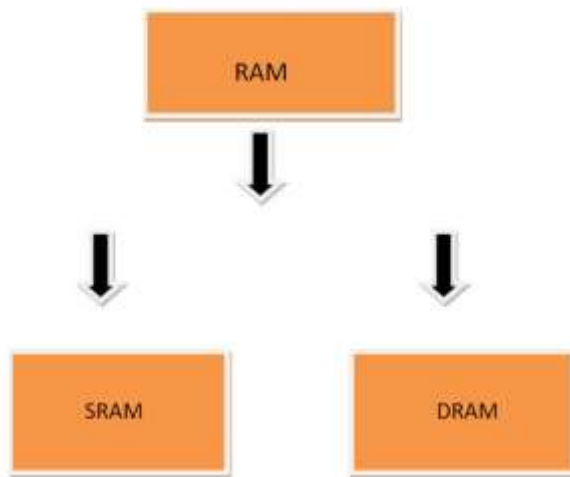## 2. COMPONENTS OF E-BALL:

Figure 2: Components of E-ball

Figure 4: RAM

It contains 2 RAM types. It is SRAM and DRAM.

  a) SRAM demands no external refresh circuitry.

  b) SRAM much more fast than DRAM.

  c) SRAM becomes more powerful when idle.

  d) SRAM is more costly than DRAM quite a few times recently.

1.3. Hard Drive:

Hard disk is a storage device. Drive is inherently non- volatile. It is made of oxide- covered metal plate, which can be magnetized to represent data. Date can be accessed directly from the hard drive. The E- Ball PC consists mainly of 350- 500 GB hard disk drive.

1.1. Processor:

Intel core is a brand name that is used in a variety of mid- ranges for high end consumer and business microprocessors. The new core processors consist of the following processors:

  a) Intel call i7 Intel core i5

  b) Intel core i3 Intel Core

  c) Intel Core Intel Core 2 duo

  d) Intel core 2 solo Intel core 2 quad.

  e) The E-Ball PC basically uses Intel Core 2 duo processor

1.4. Graphic & Sound Card:

An expansion card that generates output images on the display is a video card, display card, graphics card and graphics adapter. Most video cards offer a variety of functions, such as accelerated 3D scene and 2D graphics rendering, MPEG 2/MPEG-4 decoding, output or multiple mobile connectivity. Other current high- performance video cards, such as PC games, are also used for more graphical purposes. Video hardware is often integrated with other boards, all modern motherboards provide expansion ports that can be attached to a video card. In this design, the video controller, video card, graphics card or graphics adapter is sometimes referred to as an expansion card controller.

Figure 5: Graphics card

1.5. Optical Mouse:

It is a wireless device that uses the light emission diode to track optical mouse movement. It correctly completes the E- Ball computer requirement. It can easily be transported from place to place.

Figure 6: Optical Mouse

1.6. Paper Sheet Holder:

If there is no wall for computer screen projection, we use paper sheet as a screen. This sheet of paper is kept in the paper holder on the back of the computer E- Ball. It is opened when its lower part is pressed.

Figure 7: paper Screen

1.7. LCD Projector:

The LCD projector is a liquid crystal display projector type that can display images, data or video on the screen or on the flat screen. Transmissive technology works with an LCD projector. LCD projectors are more popular than many other alternatives because they are less expensive to produce and have excellent color reproduction. They are used frequently in meetings, presentations and seminars. A LCD projector enables the source light to pass through the three colored display panels of liquid crystal. The panels allow certain colors to pass through and block certain colors from the pictures on the screen.
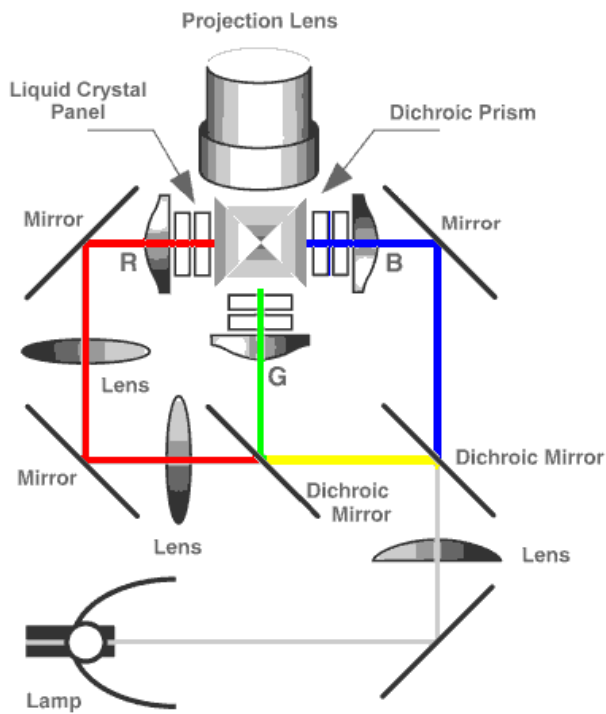
Figure 8: LCD Projector

1.7.1. Benefits of LCD Projector:

- It's got low prices.
- It can also provide higher luminosity with less energy consumption.
- These projectors are not affected by rainbow and dithering.
- It provides greater zoom enhancement.

1.7.2. Drawback of LCD Projector:

1. If an LCD projector is used frequently over a long period of time, it is possible to degrade the image and also heat up faster than DLP projectors.

2. The LCD panel life is limited.

3. They aren't high in contrast

1.8. DLP Projector:

DLP (Digital Light Processing) technology uses micro- mirrors for projecting large- screen images from monitor. DLP can be seen in standalone projection units, rear projection TVs and most digital film projections.
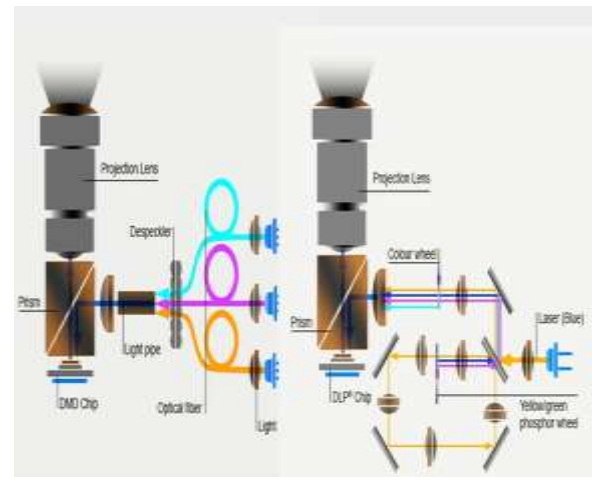

Figure 9: DLP projector

1.8.1. Benefit of DLP Projector:

1. DLP projectors require less maintenance than LCD projectors because they are designed with a filter- free and sealed chip, which means that dust, cannot settle on the chip and cause an image spot.

2. They are not subject to any misalignment in LCD projectors.

1.8.2. Drawbacks of DLP Projectors:

1. It offers less zooming so that it is best suited for small environments.

2. It's a high price compared to the LCD projector.

1.9. VIRTUAL KEYBOARD:

As the name suggests, it's not a physical device. It appears simply on a flat surface (which is considered good for virtual keys). It is started by pressing and using laser ray technology for use. When the user touches the virtual key on the E- Ball computer, the optical device detects stroke and sends it to the E- ball computer. Virtual keyboards offer many advantages. Text entry, for example, is quick, no external hardware and safer, etc.

Figure 10: Virtual Keyboard

Three virtual keyboard components are:

1.9.1. IR- Light source: The main purpose of IR- Light is to emit infrarouge rays that overlap with a virtual keyboard area. Such rays cannot be detected by naked eyes.

Figure 11: IR Light source

1.9.2. Sensor module:

The module sensor acts as the eye of the keyboard perception technology. It is used to detect the user's pressed key.

Figure 11: Sensor module

1.9.3. Pattern projector:

It's just used to display virtual keys on the flat surface. Virtual keyboard is just a real QWERTY keyboard image.

Figure 12: Pattern Projector

1.10. WORKING OF E-BALL:

E- Ball is designed to be fixed on two booths. E-Ball has two buttons on each side and users can simply open and hold this pc at once. When you open the stand and turn the E- Ball on, you can simply connect the optical mouse to the body of the E- Ball by pressing the mouse button. This technology has a button that enables you to activate your laser keyboard.

Figure 13: Working of E-Ball

E- Ball pc has no external display unit, it has a button when this button is pressed, a projector is popping up and the screen is focused on the wall that can be adjusted using navigation keys. When we work in places where there is no projector, we can use a paper sheet as screen. The foil holder is placed in the back panel. You can open the holder by pressing it at the bottom of the pc. The E- Ball pc supports a paper holder and the holder's paper sheet could act like a screen where you can watch films or perform works. E- Ball concept pc has a laser keyboard which can be seen when the pc works.

The keyboard is not physically present and lasers appear after pressing the buttons. This recognizes your

fingers with the help of an IR sender when you type at a specific location.

Figure 14: Scenario of use

The E- Ball concept pc software interface is most stylized with icons that can be easily remembered to support all types of windows operating system. E- Ball pc works very easily while you present video, listen to music, watch movies and chat on the net. There are five simple steps to ON PC that you can use 5 seconds by pressing and holding the power button, adjusting the LCD projector and removing the optical mouse. Activate and do whatever you want the virtual mouse.

1.10.1. There is no Wall:

If you work on an E- Ball, there is no wall, you can use a paper on the screen provided to the PC. When the projector pops out, the paper sheet holder is divided into three parts, like a sunshade, and the desktop can be seen on the paper. You can also watch films; make presentations or anything else on the E- Ball PC paper holder's paper sheet.

Figure 15: Paper Sheet Holder

1.10.1. Advantages of E-ball computer

- Very little in size. It is therefore portable. User-friendly.
- It's extremely flexible, precise and safer than older computers.
- It's very useful and manageable.
- It has large memory for storing large amounts of data.
- Useful for presenting video.
- Supports user- defined layouts of keyboards.
- It's safer than other computers.
- The PC requires no special display and can display any plain wall or sheet

1.10.2. Disadvantages of E-ball computer

- Only the Microsoft Windows operating system on the E- ball computer will be used. There can be no other operating system.
- E- Ball computer cost is very high.
- It's very sophisticated in hardware terms. Even any minor problem can be detected and solved very difficult.

1.11. CONCLUSION AND FUTURE SCOPE:

The technology is beyond our imagination today, and it's at its peak. As the year passes, the computer size is getting smaller and smaller and now the time has come for us to keep the computer in our pocket and move from place to place. E- Ball is like a ball and works as a traditional computer. It's shaped spherically. This electronic ball technology has finally brought computer technology to new horizons. This paper provides a description of the end user technology. Though if E- ball is very attractive, easy to use and handle. Even in the future, it has a moderately high unpredictability. It can be used extensively in a few decades. It will take a bit of time for marketing and general use. Hopefully this Time, in immediate future, it will also satisfy normal human needs and desires. It can be used in high- tech and industrial sectors, also in hospital wards, with smart phones, PDAs, e- mail, word processing and spreadsheet

tasks, PDA input / computer can be. Also in remote control gaming and TV.

1.12. REFERENCES:

[1] Ashish Tanwar and Litty Thomas, "E-Ball Technology" Computer and Science department, Dronacharya Group of Institutions Greater Noida, (India) IJARSE Vol. No.3,Issue No. 10, October 2014.

[2] "Overhead Projectors". National Museum of American History. Retrieved 7 January 2015.

[3] Lawler, Richard (2006). "LG's 100-inch LCD set for mass production", Engadget

[4] http://www.google.co.in/E-BALL

[5] http://www.google.com

[6]http://www.google.co.in/#sclient=psyab&h1=en &site=&source=hp&q=E-BALL 2.

[7]https://www.ebay.com/gds/Understanding-the-Differences-between-LED-LCD-and-DLP-Projectors/10000000177630814/g.html

[8] http://www.google.co.in/EBALL

[9]http://www.electronics.howstuffworks.com

[10] http://www.google.com

[11] http://www.slideshare.net/jominz/e-ball-seminar