Digital Jewellery: A Review

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Abstract— **Mobile computing is beginning to break the chains that tie us to our desks, but many of today's mobile devices can still be a bit awkward to carry around. In the next age of computing, there will be an explosion of computer parts across our bodies, rather than across our desktops. Basically, jewellery adorns the body, and has very little practical purpose. . The combination of microcomputer devices and increasing computer power has allowed several companies to begin producing fashion jewellery with embedded intelligence i.e., Digital jewellery. Digital jewellery can best be defined as wireless, wearable computers that allow you to communicate by ways of email, voicemail, and voice communication. This paper enlightens on how various computerized jewellery (like earrings, necklace, ring, bracelet, etc.,) will work with mobile embedded intelligence. It seems that everything we access today is under lock and key. Even the devices we use are protected by passwords. It can be frustrating trying to keep with all of the passwords and keys needed to access any door or computer program. This paper discusses about a new Java-based, computerized ring that will automatically unlock doors and log on to computers.**

Keywords— **Digital Jewellery, Portable Devices, Wearable Computer, Java Ring**

I. INTRODUCTION

The Latest computer craze has been to be able to wear wireless computers. The Computer Fashion Wave, "Digital Jewellery" looks to be the next sizzling fashion trend of the technological wave.

The combination of shrinking computer devices and increasing computer power has allowed several companies to begin producing fashion jewellery with embedded intelligence.

II. WHAT IS DIGITAL JEWELLERY

Digital jewellery is the fashion jewellery with embedded intelligence. "Digital jewellery" can help you solve problems like forgotten password and security badges. "Digital jewellery" is a nascent catchphrase for wearable ID devices that contain personal information like passwords, identification, and account information.

They have the potential to be all-in-one replacements for yours driver's license, key chain business cards, credit cards, health insurance card, corporate security badges, and loose cash. They can also solve a common dilemma of today's wired world – the forgotten password.

III. DIGITAL JEWELLERY AND COMPONENTS

Cell phones will take a totally new form,appearing to have no form at all. Instead of one single device, cell phones will be broken up into their basic components and packaged as various pieces of digital jewellery. Each piece of jewellery will contain a fraction of the components found in a conventional mobile phone. The digital-jewellery cell phone should work just like a conventional cell phone.

The various components that are inside a cell phone:

Microphones, Receiver, Touch pad, Display, Circuit board, Antenna, Battery, IBM has developed a prototype of a cell phone that consist of several pieces of digital jewellery that will work together wirelessly, possibly with Bluetooth wireless technology, to perform the functions of the above components.

Fig 1

Here are the pieces of computerized jewellery phone and their functions:

- *Earrings:* Speakers embedded into these earrings will be the phone's receiver.
- *Necklace:* Users will talk into the necklaces embedded microphones. They transfer the information in the forms of signals.
- *Bracelet:* Equipped with a video graphics array display, this wrist display could also be used as a caller identifier that flashes the name and phone number of the caller.

Fig 2

In addition to changing the way we make phone calls, digital jewellery will also affect how we deal with the ever-increasing bombardment of e-mail. Imagine that the same ring that flashes for phone calls could also inform you that e-mail is piling up in your inbox. This flashing alert could also indicate the urgency of the e-mail. Two of the most identifiable components of a personal computer are the mouse and monitor. These devices are as familiar to us today as a television.

Track Point technology to wirelessly move the cursor on a computer monitor display. IBM researchers have transferred Track Point technology to a ring, which looks something black pearl ring. On top of the ring is a little black ball that users will swivel to move the cursor, in the same way that the track point button on a laptop is used.

Charmed Technology is already marketing its digital jewellery, including a futuristic-looking eyepiece display. The eyepiece is the display component of the company's Charmed Communicator, a wearable, wireless, broadband-Internet device that can be controlled by voice, pen or handheld keypad. The communicator can be used as an MP3 player, video player and cell phone. The communicator runs on the company's Linux-based Nanix operating system.

IV. OTHER DESIGNS AVAILABLE:

A. GARNET-RING

The picture above is of a ring containing a microprocessor. It vibrates to let you know that you have received a message from someone.

B. GARNET BROACH

Above is a picture of a garnet containing a micro phone. This enables you to record a messages just by pressing a small button on the side.

C. RED RUBY NECKLACE

The necklace to the left would have a microphone built in. All you would need to do to use it press a small button in the back. Then you can proceed to record your message.

Fig. 3

V. JAVA RING

Java Ring used for protecting purpose. It will automatically unlock the doors and log on to the systems. Even the devices we use are protected by passwords.

Fig 3

The java rings given to students are programmed with java applets that communicate with host applications on networked systems. Applets are small applications that are designed to be run within another application. The java ring is snapped into a reader, called a Blue Dot receptor to allow communication between a host system and the Java Ring.

VI. TECHNICAL SPECIFICATION OF DIGITAL JEWELLERY

Digital jewellery devices consist of a screen or display for information, most likely consisting of 7-16 segment, or dot matrix LED'S,LCD's, or other technologies such as electroluminescent material (EL) or others, which could become an optional display. So too, an audio visual or other 'display' could consist of a speaker, a single flashing light, a sensor of some kind or other informational aesthetic.

The display layer sits on a face of the device, which is enclosed in some material such as plastic, metal, crystal, or other material. It has external switches and buttons on its side and a data-port for accessing the programmable electronic circuit inside. A microcontroller that is surface mounted device on a printed circuit board with resistors and capacitors are the internal 'guts' of the jewellery.

VII. DISPLAY TECHNOLOGIES

Digital jewellery can be made with different sizes and shapes with variety of materials like plastic & metal to rubber and glass. It may be in LED 7 segment, 16-segment dot matrix, LED's to LCDs and other displays.

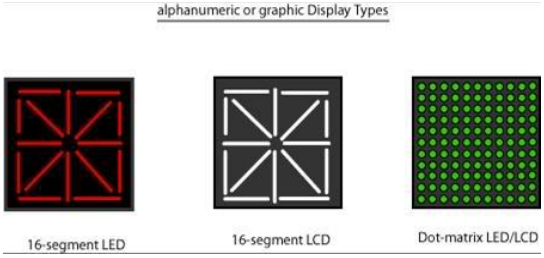

Fig 4

VIII. ADVANTAGES

- Wireless wearable technology.
- Easy to carry everywhere.
- It provides security.
- Natural interaction between the user.

IX. DISADVANTAGES

- Display is very small.

- Rays may be harmful.
- No waterproof care should be taken.
- Very expensive to effort.

X. CONCLUSIONS

The basic idea behind the digital this concept is to have the convenience of wireless, wearable computers while remaining fashionably sound. It is hoped to be marketable soon, however, several bugs remain. Charging capabilities and cost are just a sample of the problems that lurk.

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