Review on Improving the 5 Pen PC Technology

Monika[1], Yashpal Singh[2]
[1,2]Department of Computer Science &Engineering,
Ganga Institute of Technology and Management,
Kablana, Jhajjar, Haryana, India

Abstract: **"5 pen technology" is a recent discovery in the field of pen computing. Pen computing is a field that outlines computer like user interface that makes use of pen like devices that will be convenient to use in comparison to contemporary systems (such as laptops, desktops etc.).5 Pen PC technology consists of 5 pen like devices which are used for providing functions of a CPU, a projector, a virtual keyboard, a camera, and communication functions of a cellular phone. All the 5 pens are connected to each other via wireless technology preferably Bluetooth i.e. 802.11 BG .The whole set of 5 pen technology is connected to the internet via the cellular phone pen.5 pen PC technology is also known as P-ISM i.e. Pen- style Personal Networking Gadget Package.**

Keywords: P-ISM, Pen Computing, Bluetooth, Virtual Keyboard, CPU Pen

I. INTRODUCTION

The current 21st century is considered to be a new era in the field of technology. In the contemporary world, communication technology is becoming larger. Since the time computer has been invented engineers have been trying to making it more and more compact so that it would become user-friendly. A world where everybody can use modern IT without being an expert was always thought as something unreal. Use of pen and paper to send SMSs, e-mails and surf Internet didn't seem feasible. However, the introduction of Pen-style Personal Networking Gadget i.e. P-ISM has made things easier and convenient. These are computers in the shape of different pens each where-in each has a function of its own, but when combined together, they give us the usage of a complete computer in an easy and compact manner. In other words it is a computer that is broken apart into pieces. Fig.1 shows the prototype of 5 Pen Technology. During the ITU Telecom World exhibition held in 2003, Geneva, the Tokyo-based NEC Corporation presented a conceptual prototype of P-ISM. The 5 Pen PC technologies was designed by Toru Ichihash. It is basically an innovation in the field of computers in association to the communication field. Rest assured, it will have a greater impact in the field of computers. People often tend to make notes of the important things they come across in the most traditional method used and still in use are pen and paper. On similar but more technical terms, the 5 pen pc technology with digital pen makes it possible to obtain a digital copy of handwritten information, and have it transferred to digital devices via wireless technologies like Bluetooth, which operates as the main interconnecting device between different peripherals. The whole set is also coupled to the Internet which makes the easy communication.

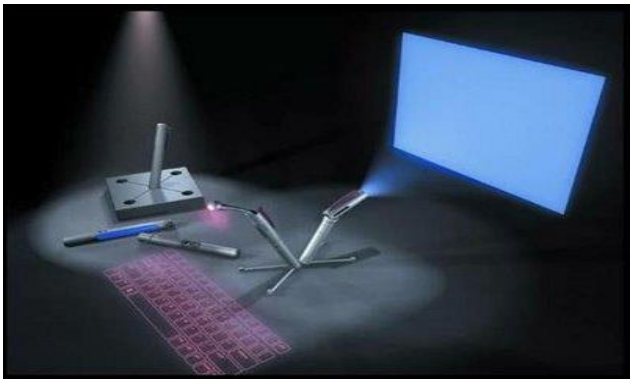

Fig.1 5 Pen PC Technology

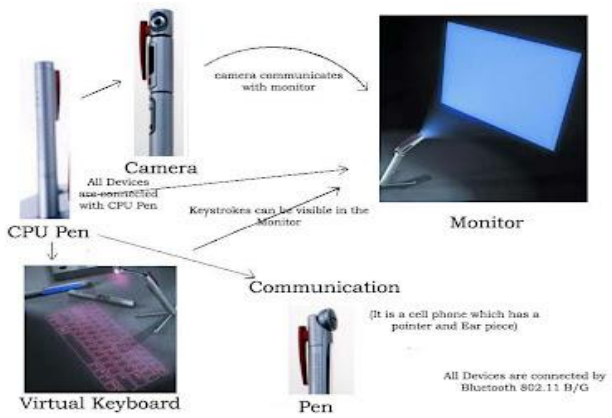

Fig.2 Proposed Working of 5 Pen PC Technology

As shown in Fig.2 the CPU pen is connected to all the other pen devices. The camera pen is capable of capturing images and videos and this data can be communicated with the monitor. The virtual keyboard is used to give input to the monitor. And finally, the communication pen is a pointing device similar to a mouse and it can give feedback to the user via an ear piece. The P-ISM (Pen-style Personal Networking Gadget Package) are made up of a package of 5 Pens, each having unique functions, when combined together, it creates a complete virtual computing experience by bringing forth both monitor and keyboard on any flat

surfaces from where one can perform the functions that one normally does on desktop computer.

II. COMPONENTS

It consists of 5 pens which serve following functions

2.1 CPU Pen: The most fundamental component of this technology is the CPU pen. It acts as a central device which connects all other pen devices. It performs functions similar to the central processing unit of a laptop or a desktop because it is a computation engine which handles all the processing and calculation tasks. OS is already preloaded in this pen and it cannot be altered. It works with Windows OS and is embedded with a dual core micro-processor chip. Whether the CPU pen supports USB is still in doubt.

2.2 Communication Pen: As the name suggests this component facilitates communication between all the pens. This pen has inbuilt cellular phone function which enables it to connect the entire set with the Internet, and therefore it is capable of performing all the web-related tasks. It is a pointing device that will provide functions similar to a mouse. This pen will help the user to interact with information that is projected by the projector pen. The communication pen is shown in Fig. 3.

Fig 3: Communication Pen

2.3 Projector Pen : This projector pen works as a conventional projector. Its maximum display resolution is 1024x768 pixels which will provide high quality picture. It should be projected on a flat surface for better user experience and its clarity depends on the distance between the projector pen and the projected surface. Greater the distance between the two, less will be its clarity. It works in combination with communication pen and camera pen. Projector pen can be attached to a small stand for steady projection on any flat surface as shown in the Fig. 4.

Fig 4: Steady projector

2.4 Digital Camera Pen : This pen has an inbuilt digital camera which helps in capturing images and videos. Apart from that, it can also function as a web cam which can be used for web related applications such as video conferencing, Skype etc... Also, it can be used for facial recognition. The motion sensors embedded in the pen assists the camera to automatically adjust, since the camera can rotate 360 degrees. The Digital Camera Pen is shown in Fig. 5.

Fig 5: Digital Camera Pen

2.5 Virtual Keyboard (VKB) Pen : This pen functions similar to the LED projector pen. The laser pen emits a laser keyboard on a flat surface which looks like the keyboard is having an arrangement of QWERTY. The input is recognized by the device when the keys are typed on the laser keyboard. Its functions are almost similar to those of the computer keyboard or the on-screen keyboard. The Virtual keyboard pen is shown in Fig. 6.

Fig 6: Virtual keyboard pen

It has following features

1. Timeouts: Co-ordinated timeouts to conserve the VKB's battery life.

2. Sensitivity: Sensitivity of the VKB can be adjusted.

3. Auto-repeat: Allows the VKB to automatically suggest a key based on some parameters.

4. Controllable Virtual Keyboard sound effects (key clicks) 5. Intensity: Intensity of the projected Virtual Keyboard.

6. VKB settings can be changed by sound.

III. REMARKS

Every new technology has its pros and cons, so does this technology.

3.1 Advantages

- It is convenient to use because of its portability (small and compact)
- It supports wireless technologies.
- Excellent battery life (up to 2 weeks)

3.2 Disadvantages

- It works on wireless technologies and therefore it has limitations of range
- It is exorbitantly expensive.
- One of the components can be easily misplaced.
- Projection surface should be flat for optimum usage.

IV. CONCLUSION

Continuous advancement in technologies has brought about many changes in the field of computing and communication. The connection between the latest technology and human has been visualized in the form of a pen. The design concept here makes use of five different pens to create a computer. One pen functions as a camera, another as a CPU pen, one projects the visual output including the display, another one creates a virtual keyboard and the fifth pen is a communicator which functions as a cellular phone. This entire set of pens rests in a holding block which recharges the batteries and holds the mass storage and these pens communicate wirelessly through Bluetooth. Thus, P-ISM provides a good overview of what the future holds in the field of technology.

V. FUTURE SCOPE

The 5 Pen Pc Technology project started in the year 2003.However, the information about its release is not yet made public. Whether it will be available for the public use is still a question, because of its excessive price of 30,000$. The prototype developed by the company proves that the creation of such complex technology is feasible, but because of lack of information about its recent developments, it is unclear what the company's intentions are about this technology.

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REFERENCES

[1]. Rahul Sharad Kale, Dr.S.R.Gupta (2013), 5 Pen PC Technology, International Journal Of Computer Science And Applications Vol. 6, No.2 275-278
[2]. Mrunal Shidurkar, Mohammad Usman (2013), 5 Pen PC Technology, International Journal of Scientific & Engineering Research, Vol. 4 166-173
[3]. Pen Computing 2007 http://en. wikipedia.org/wiki/
[4]. Pen_computing What is Pen Computing? <http:// www.wisegeek.com/what-is- pen-computing.htm Pen
[5]. PC Technology 201http://seminarprojects.com/Thread-5- pen-pc-technology--41404
[6]. Pen PC Technology http:// www. scribd.com/ doc/67990223/Report -on-5-Pen-Pc-Technology
[7]. Chadwick, D., and Mundy, D. 2004. The Secure Electronic Transfer of Prescriptions.
[8]. http://www.healthinformatics.org/hc2004/Chadwick%20Invited%20Paper.pdf, 2004.
[9]. Daconta, M., Obrst, L. & Smith, K., The semantic web. Indianapolis: John Wiley & Sons. 2003.
[10]. Gruber, Thomas R. Toward principles for the design of ontologies used for knowl-edge sharing. Padua workshop on Formal Ontology., 1993
[11]. Harold, E. and Scott Means W., XML in a Nutshell. O'Reilly & Associates, 2002.
[12]. Jung, F., XML-based prescription drug database helps pharmacists advise their customers.
[13]. http://www.softwareag.com(xml/aplications/sanacorp.htm, 2006