Star TECH

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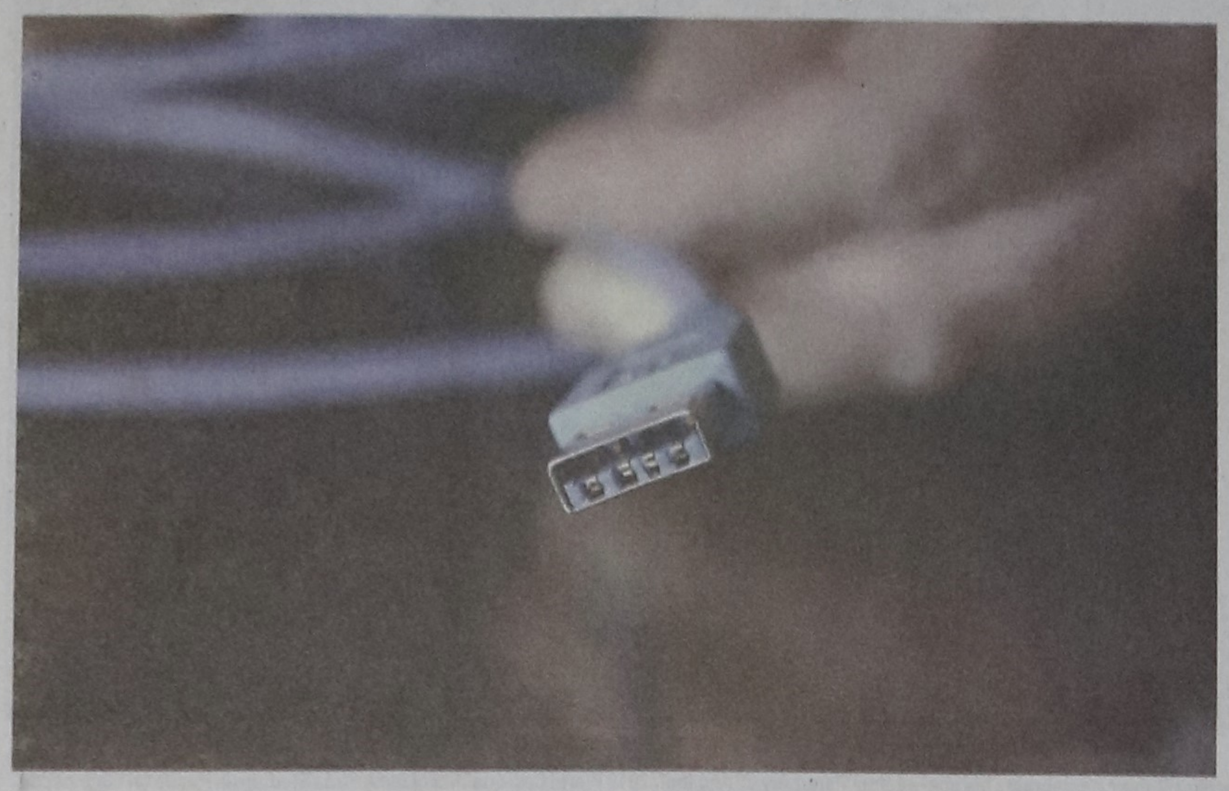
Universal Serial Bus

Universal Serial Bus (USB) is a serial bus standard to connect devices to a host computer. USB was designed to allow many peripherals to be connected using a single standardized interface socket and to improve plug and play capabilities by allowing hot swapping without rebooting the computer or turning off the device. The design of USB is standardized by the USB Implementers Forum (USB-IF), an industry standards body incorporating leading companies from the computer and electronics industries. Notable members are Apple Inc., Hewlett-Packard, Intel, Microsoft and NEC.

TECHSPOTLIGHT

The USB story



MAHDIN MAHBOOB

MANY of us have recently seen the Intel's TV advertisement which shows Ajay Bhatt, the co-inventor of the USB, aptly termed as *our rockstars aren't like your rockstars* walking and moving like a celebrity would. Interesting advertisement, to say the least. To those of you are thinking that this article is about Intel or the advertisement industry in general, behold! It's about neither and is about the Universal Serial Bus or USB in short.

For most of us using personal computers in our day-to-day lives, whether it be for office or college work or simply checking emails and facebooking, the USB port is a common device about which we barely ever think about.

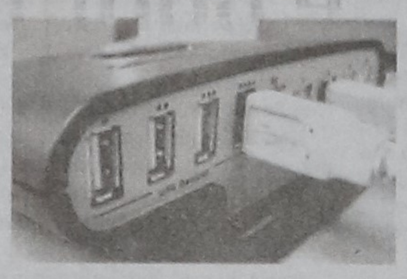
Initially designed to replace the many varieties of serial and parallel ports that were jumbling up our PCs with every new gadget, and thus making the production of standard devices increasingly difficult, it has today become the quintessential bridge to connect computer peripherals like mice, keyboards, PDAs, gamepads and joysticks, scanners, digital cameras, printers, personal media players, flash drives, and external hard drives.

Although it was designed to be used for personal computers, USB has today become commonplace on other devices such as PDAs and video game consoles, and as a power cord between a device and an AC adapter plugged into a wall plug for charging. According to a PC World report published in 2008, there are about 2 billion USB devices sold every year with total about 6 billion sold to date!

The history of the USB dates back to 1994 when the specifications for the first generation of USB or USB 1.0 were introduced. The intention was to replace the multitude of connectors at the back of PCs, as well as to simplify software configuration of communication devices. The original USB 1.0 specification had a data transfer rate of 12 Mbit/s.

The creation of USB was a result of research conducted by a core group of companies that consisted of Intel, Compaq, Microsoft, Digital, IBM, and Northern Telecom. Intel produced the UHCI (Universal Host Controller Interface) host controller and open software stack; Microsoft produced a USB software stack for Windows and co-authored the OHCI host controller specification with National Semiconductor and Compaq; Philips produced early USB-Audio; and TI produced the most widely used hub chips.

Six years later, the USB 2.0 specification was released in April 2000 and was standardized at the end of 2001. Hewlett-Packard, Intel, Lucent Technologies (now Alcatel-Lucent following its merger with Alcatel in 2006), Microsoft, NEC, and Philips jointly led the initiative to develop a higher data



transfer rate, 480 Mbit/s, than the 1.0 specification of 12 Mbit/s.

The latest in line, the third generation of USB, or USB 3.0 specification was released on November 17, 2008 by the USB 3.0 Promoter Group. It has a transfer rate of up to 10 times faster than the USB 2.0 version and has been dubbed the SuperSpeed USB.

The benefit of USB is equipment conforming with any version of the standard will also work with devices designed to any previous specification (a property known as *backward compatibility*).

Every USB system has an asymmetric design, consisting of a host, a multitude of downstream USB ports, and multiple peripheral devices connected in a tiered-star topology. A USB host may have multiple host controllers and each host controller may provide one or more USB ports. Up to 127 devices, including the hub devices may be connected to a single host controller.

USB devices are linked in series through hubs and there always exists one hub known as the root hub, which is built into the host controller. This *sharing hubs*, as they are popularly know to be, allow multiple computers to access the same peripheral device(s), also exist and work by switching access between PCs, either automatically or manually. They are popular in small-office environments.

A physical USB device may consist of several logical sub-devices that are referred to as device functions. A single device may provide several functions, for example, a webcam (video device function) with a built-in microphone (audio device function).

When a USB device is first connected to a USB host, the USB device enumeration process is started. The enumeration starts by sending a reset signal to the USB device. The speed of the USB device is determined during the reset signaling. After reset, the USB device's information is read by the host, then the device is assigned a unique 7-bit address. If the device is supported by the host, the device drivers needed for communicating with the device are loaded and the device is set to a configured state. If the USB host is restarted, the enumeration process is repeated for all connected devices.

The host controller directs traffic flow to devices, so no USB device can transfer any data on the bus without an explicit request from the host controller. In USB 2.0, host controller polls the bus for traffic, usually in a round-robin fashion. In SuperSpeed USB, connected devices can request service from host.

Technical jargon aside, the Universal Serial Bus or USB has come as a blessing for PC users all over the world and in the coming days, it is all set to become even more faster and convenient for the users.

Information Source: The Internet.

TECHINTERVIEW

Nokia plans digital identity for the mass

NAFID IMRAN AHMED

NOKIA, the world's leading mobile phone handset manufacturer, unveiled Ovi Mail in Bangladesh and other emerging markets on May 22, which has the potential to help people have a digital identity.

Researches show half of the people in emerging markets prefer to use a phone instead of PC for Internet. In Bangladesh many people have experienced the Internet for the first time on mobile phone.

Paula Laine, vice president, Entry Category Marketing, Nokia in an exclusive interview told *The Daily Star* about the handset giant's new solutions that will open the door to information, entertainment, family and friends.

"When you buy an N-Series or E-Series device, it does offer you the full Internet experiecne on a mobile device but today we are bringing the key internet capabilities in the entry devices. We are not just unveiling a device, but also a service for the emerging markets," said Paula.

The Ovi Mail is an email service from Nokia that can be set up and used directly from the affordable Nokia phone without having a PC touched.

"There are less than a million people in Bangladesh connected to the Internet with 45 million people having mobile phone set. So potentially there are over 40 million people in Bangladesh who could have their first Internet experiecne on their mobile phone, which is the ideal platform for services like the Ovi Mail," she added.

According to Paula, there are huge amount of benefits of Ovi Mail and it is the best way to communicate, it is very cost efficient, compared to the amount one would spend on SMSs or talking on the phone, for the same amount more texts can be sent via email.

It is a new way to communicate; it enables picture communications, supports attachments such as images and one can participate in large number of distribution lists for relevant information such as job postings.

"It creates a digital identity for you for the digital world and a door to more Ovi services, as we go along," said Paula.

According to Prem Chand, managing director of Nokia EA, in terms of accessibility, the mobile device provides the best solution based on the present scenario of low internet penetration and scarcity of fixed lines in Bangladesh.

"In terms of ease of setup, only three clicks are required and you have your first digital ID," said Prem.

"All you need to do is choose a username, password and hit go. Email is a cost effective solution, in terms of content it's cheaper. Ovi Mail is also available in local language," he added.

Nokia plans to launch Ovi Mail through more than 200 retail outlets and in each of those outlets they plan to have a dedicated promoter who will assist the consumer in setting up the email account as well as helping them to teach the basic email functionalities. Nokia wants to take Ovi Mail in rural areas of Bangladesh.

"We are giving the opportunity for the South East Asia Pacific countries to establish themselves globally as leader in mobile email adaptation," said Paula.

Paula also introduced three new phones, which are Internet-ready and work with Ovi Mail, giving the first-time email users the opportunity to set up and start using an email account directly on their mobile phone.

The Nokia 2323 classic and Nokia 2330 classic will be available in stores from June 2009 whilst the Nokia 2730 classic will be available during the 3rd quarter this year.

In emerging Asia markets 2730 Classic will be Nokia's most affordable 3G device with approximately 110 USD retail price. It will be available during the third quarter of 2009 in alignment with 3G deployment in the area.

With a choice of colours (black and dark blue) the user-friendly Nokia 2323 Classic will retail for approximately UD$ 60 while the Nokia 2330 Classic is a low cost camera phone with a contemporary design and enhanced features, including a VGA Camera, BT and Stereo FM radio and radio recording, and support for MP3 ring tones. It comes in black or deep red and will retail for approximately US$ 50.

Paula Laine, vice president, Entry Category Marketing, Nokia, speaks at the Ovi Mail launch in Dhaka.

TECHNEWS

Laptop fair woos many in Ctg

STARTECH DESK

WITH the slogan "Making Notebook PCs affordable for the middle and lower-middle class", a three-day laptop fair was recently held at the port city of Chittagong.

Maker Communication, an event management company, organised the fair titled "Laptop Fair Chittagong 2009", providing loan facilities to purchase laptops for first time, at the Institution of Engineers Bangladesh (IEB) Chittagong Centre.

A number of renowned laptop brands, including Asus, BenQ, Posh.Book, Compaq, Apple, Dell, HP, Gigabyte, Toshiba, Acer, Great Wall and Deluxe, participated in the fair.

The official sponsors of the fair were brands like BenQ, Asus and Poshbook.

Radio Foorti, Bdnews24.com, Bdjobs.com, The Daily Azadi, Nescafe, wheelsbd.com and Hotel Tower Inn were the partners of the event.

Bank Asia offered loans to the customers for buying laptops at the venue. Different kinds of game shows, fashion shows and quiz competitions were also held.

Chittagong City Corporation Mayor ABM Mohiuddin Chowdhury inaugurated the fair as the chief guest, where Chittagong University Vice-Chancellor Professor Abu Yusuf and Bangladesh Computer Association President Mostafa Jabbar were present as special guest and guest, respectively.

PHOTOSPOT

ROBO CAR Z

An employee of Japan's robot venture ZMP shows off a 1/10-scale platform for automobile reseach and development "RoboCar Z" during a press conference in Tokyo on June 9. The small vehicle with many sensors was made for research and development of autonomic driving, safety technology and energy-saving technology and for education of engineers. ZMP will start selling from the end of June at UDS15,000 and at USD 7,000 without exterior. PHOTO: AFP

TECHNEWS

Nat'l congress on ICT for development held

STAR TECH REPORT

THE national congress on ICT for Development 2009 "PrepCom" was held on Saturday at Agargaon in the city ahead of the World Congress on ICT for Development (WCID) to be held in Beijing, China.

Ministry of Science and Information and Communication Technology supported the event.

State Minister for Science and Information and Communication Technology Architect Yeafesh Osman was present at the programme as the chief guest.

Professor Dr M Abdus Sobhan of Independent University Bangladesh chaired the programme. Professor Dr MA Mottalib of Islamic University of Technology presented the keynote speech.

The state minister said the government would provide full support to flourish ICT in Bangladesh. The ICT policy will be approved after proper scrutiny, he added.

"Information and communication technology (ICT) is one of the most effective tools to turn our country into digital Bangladesh," the state minister added.

Dr Mottalib gave an overall idea of the recent condition of information technology in Bangladesh.

In the keynote speech, he put emphasis on introducing digital money transaction system and digital land recording process in Bangladesh immediately.

At the programme, which was divided into four sessions, ICT experts from different sectors presented papers. In the presentations, they depicted a picture of how information and communication technologies are being used to alleviate poverty, increase quality of education and reduce the socio-economic discrimination.

They showed how to make people aware of something using different communication devices in emergency such as a natural calamity.

Main purpose of the seminar was to get people from the industry and academia sitting together to share ideas and opportunities in the process of ICT for Development.

The PrepCom for WCID2009 was intended to showcase and demonstrate ICT for Development through concept paper presented at the National Congress. The successful cases will be put forward as the country position paper in the World Congress for ICT for Development (WCID) 2009 to be held in China in September.

Among others, Habibullah N Karim, president of Bangladesh Association of Software and Information Services (Basis), Dr. Hafiz Md Hasan Babu, professor of the department of Computer Science and Engineering (CSE) at Dhaka University, Golap Monir, editor of The Monthly Computer Jagat, Luna Doha, chairman of Doha Tech, and Abir Hasan, chief news editor of Radio Amar, were present.