



Toshiba T1000

The Toshiba T1000 was a laptop computer manufactured by the Toshiba Corporation in 1987. It had a similar specification to the IBM PC Convertible, with an 80088MHz processor, 512kb of RAM, and a monochrome CGA-compatible LCD. Unlike the Convertible, it includes a standard serial port and parallel port, connectors for an external monitor, and a real-time clock. Unusually for an IBM compatible PC, the T1000 contained a 256 kB ROM with a copy of MS-DOS 2.11. This acted as a small, read-only hard drive. Alternative operating systems could still be loaded from the floppy drive, or (if present) the ramdisk.



TECHVIEW

The flu and the science of ultimate vaccine

NAHID AKHTER

THE Swine Flu virus is round and about, sporadically taking its toll in countries of the world. The number of cases in Bangladesh is also rising day by day. As if the world hasn't already had enough of plague from mice, the Mad Cow Disease and then the Bird Flu! So one can rightfully ask, "A flu is no big deal. Then why are people all of a sudden talking about a pandemic?" The answer ultimately comes down to evolution.

human population, some acquire small mutations in haemagglutinin and neuraminidase that alter their shape and prevent our existing antibodies from binding as strongly. If the differences are large enough, we can be infected by one of these new strains, although our symptoms will be milder than if we had no previous immunity to flu at all.

And so it goes on. By staying one step ahead of our immune systems, the flu virus can infect large numbers of people year after year. What's more, every few

contains three virus strains so the vaccine can also protect against the other two viruses. For these reasons, even during seasons when there is less than ideal match, influenza vaccination is recommended.

Researchers are working on an entirely new class of antiviral drugs that should do something seemingly impossible: work against a wide range of existing viruses and also be effective against viruses that have not even evolved yet. What's more, it should be extremely difficult for any virus to be-

host cells (our own organ cells) into making more copies of them, a process that can involve hundreds of host proteins. Therefore, disabling these proteins should block viral replication without killing healthy cells.

Another concept researchers are working on is to shift the target from the more vulnerable parts of the virus. There are conserved proteins that are almost identical in all flu, because they are delicate bits of machinery that do complex tasks and can't really change much. If we can shift the immune system to attack the conserved proteins instead, flu cannot mutate to escape without crippling its own machinery.

Whether these experiments will work out or not, only time will tell. However, ironically, full scale human trials of the new concepts have currently been stalled as the world is trying to deal with swine flu.

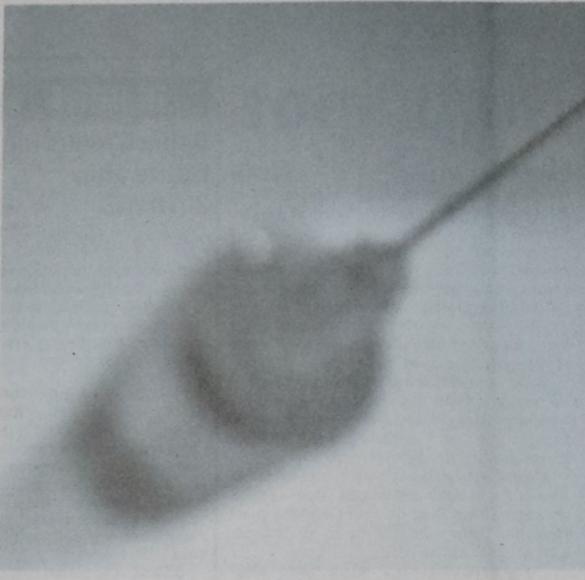
So what cures are available at this point? At this point, antiviral drugs that inhibit neuraminidase such as Tamiflu and Relenza do help to a certain extent by shortening the duration of symptoms. They do so by slowing viral replication, giving the immune system more time to kick in. That makes flu symptoms less severe, which could make the difference between life and death in a pandemic. However, there is some amount of controversy on the certain side effects of Tamiflu. In Bangladesh, officials believe there is a good stock of flu drugs and it is possible to make more within the country.

At individual level, you are recommended to cover coughs and sneezes and wash your hands a lot. Don't run down your ability to fight infection eat plenty of fruit and vegetables, exercise and get enough sleep. Some scientists recommend going on statins. These drugs are for lowering cholesterol. But there is very preliminary evidence that they might protect against the general inflammatory reaction caused by flu, which can trigger heart attacks or strokes. A Dutch study of several thousand people aged 60 or more found there was no surge in deaths during the flu season among those on statins.

If the pandemic is far worse than feared, or if you plan to isolate yourself during a pandemic, you will need emergency supplies of food, water and fuel. Companies should prepare for many workers being absent and, where possible, set up systems that allow people to work from home.

Most countries in the world have pandemic plans, on paper at least. They can respond with vaccines, drugs, and measures called "social distancing", aimed at limiting human contacts that spread flu. Mexico has already done this, by banning public gatherings and closing schools in affected areas. Modelling suggests this can be effective. The Bangladesh government should consider doing the same should the matter seem to be going out of hand. Already, a few English medium schools in Bangladesh have been declared closed until further notice to avoid spread of the virus among students.

Bangladesh has already started screening inbound travelers for swine flu at the Zia International Airport as well as sea ports, etc. Doctors and the officials of the airport have been given training so that they can detect the virus. However, more awareness could be spread among the public regarding swine flu and preventive measures against it through television, rallies and other such forms of mass communication.



Flu is such a successful virus that each year almost everyone on Earth is exposed, and about a third of us get sick. It kills between 50 and 200 people per million every year, especially the elderly. Flu can kill in several ways. It can destroy your lungs or damage them so much that bacteria run riot and finish the job. Your immune response to the virus can trigger a crisis such as a heart attack or even spiral out of control and kill you. Of course, most flu strains, including (so far) the 2009 pandemic virus, cause only mild symptoms in the vast majority of people.

The reason flu keeps infecting us again and again is that the virus is constantly changing (or evolving). The first time you get infected, your immune system has to rely initially on innate, non-specific defences. But it also evolves specific defences, learning to make antibodies and immune cells that recognise that particular virus and destroy both it and any cells it has infected. This process can take a week or more, but once we have defences against a virus, we can respond to it much more quickly next time. This is why many viruses, such as measles, make us ill only once.

Flu viruses, however, evolve so fast that this "immune memory" provides only partial protection. Most of the antibodies we produce bind to the globular heads of a surface protein on the virus called haemagglutinin (H) and neuraminidase (N). That's why you will notice flu viruses have names with a combination of these two letters, eg. H5N1 for a bird flu virus and the latest H1N1 for swine flu virus.

As flu viruses circulate through the

decades a flu strain acquires a new haemagglutinin - by swapping genes with a pig or bird flu strain for example, that is very different from those most people have immunity to, so we have very little protection. This is when the flu goes pandemic.

The swine flu viruses are said to have acquired their genes from a combination of four kinds of influenza viruses one endemic in humans, one endemic in birds and two endemic in pigs. Transmission of the new strain is human to human. The virus typically spreads from coughs and sneezes or by touching contaminated surfaces and then touching the mouth or nose. Symptoms include fever, sneezes, sore throat, coughs, headaches and muscle or joint pains.

Existing flu vaccines all work by mimicking natural infections. Antibodies made in response to vaccination with one strain of influenza viruses can provide protection against different, but related strains.

Based on global monitoring of flu strains, virologists try to predict which haemagglutinin and neuraminidase will dominate during the next flu season. The annual vaccines contain inactivated flu viruses bearing these specific proteins. If the virologists guess right, the vaccine will protect you until the virus changes enough again. A less than ideal match may result in reduced vaccine effectiveness against the variant viruses, but it still can provide enough protection to prevent or lessen illness severity and prevent flu-related complications.

In addition, it is important to remember that the influenza vaccine

come resistant to these drugs.

This might sound too good to be true, but the first trials of these drugs are already producing encouraging early results. If just a few of them live up to their promise in full-scale human trials, they could be a medical breakthrough on a par with the discovery of penicillin. At last, doctors will be able to treat viral diseases as ably as they do bacterial ones.

The conventional strategy for developing antiviral drugs is "one bug, one drug" - finding a drug that blocks viral replication by binding to part of a viral protein. The trouble is - any minor mutation that slightly changes the shape of the protein can render these drugs useless, as is happening with the Tamiflu drug.

Researchers are trying to make use of the fact that by themselves, viruses are more helpless than newborn babies. They can replicate only by tricking their

TECHNEWS

Nokia seizes social internet, amplifies music experience



REZAUL KARIM, from Stuttgart, Germany

MOBILE phone set manufacturer Nokia has unveiled a combo that can change how people connect with each other and offer new and exciting ways to give everyone, everywhere, the power to make the most of every moment.

Together with Nokia's recent announcements -- Nokia Money, the Nokia N900, Nokia Booklet 3G, Nokia 5230 and Nokia 5800 Navigation Edition- Nokia expands in new directions for changing the ways people go about their lives.

Opening up the next innovative chapter of personal and location-aware internet, Nokia announced lifecasting with Ovi, a partnership with the world's largest social network, Facebook.

Lifecasting will premiere on the new Nokia N97 mini, companion to the successful Nokia N97. Nokia N97 mini is a smaller mobile computer with stylish stainless steel cues, featuring a tilting 3.2" touch display, QWERTY keyboard and fully customizable homescreen, said a press release.

In addition to global pedestrian navigation, people can access premium con-

tent from Lonely Planet, Michelin and Wcities, turning the Nokia N97 mini into the world's smallest travel companion.

Users can personalise the homescreen of their device even further with thousands of different applications and services available from the Ovi Store. From games, videos and podcasts to productivity tools and web services, Ovi Store is the easiest way to fill the Nokia N97 mini's homescreen. The Nokia N97 mini is expected to retail for EUR 450 before taxes and subsidies.

Pioneering new ways for the world to experience music, Nokia announced the launch of the new Nokia X6. Capable of playing up to 35 hours of music, the Nokia X6 is a powerful entertainment device, combining 32GB of on-board memory with a slick 3.2" finger touch interface.

The ultimate device for music lovers and social butterflies, the Nokia X6 has a 16:9 widescreen optimised for photos, videos and browsing. With direct access to Ovi Store, the Nokia X6 is a hive of activity that brings 20 friends and virtual communities, like Facebook, to your homescreen.

The Nokia X6 has an estimated retail price of EUR 450.

TECHNEWS

Limo-Index business conclave held



STARTECH DESK

LIMO Electronics Ltd, one of the pioneers in Bangladesh in the consumer electronics and home appliances sector and Index IT Ltd, one of the major importers and distributors in the field of IT, has joined hands together and held Limo-Index business conclave 2009 on August 20 at the Carnival Hall of Bangabandhu International Conference Center, says press release.

With this tie up all the 52 retail outlets of Limo will gradually turn into a digital life style showroom where consumer electronics, home appliances and IT products will all be sold under one roof.

KH Lee, managing director of Samsung Electronics, Dhaka office was present at

the occasion and extended his support towards this venture.

He has also announced that very soon Samsung Netbook and Notebook will be launched in Bangladesh. Aftabul Islam, former president of AMCHAM, DCCI and BCS spoke on the occasion and termed this kind of venture as new and dynamic where both CE and IT players can share each others capacity and utilize affectively. Mostafa Jabbar president of Bangladesh Computer Samity (BCS) termed this to be a positive step towards a digital Bangladesh.

TP Biswas, chairman and managing director of Limo Electronics Ltd. and Ajeer ur Rahman, managing director of Index IT Limited also spoke on the occasion.

A glamorous product show was held for Samsung IT products.

TECHNEWS

Sony Ericsson W995 wins EISA Awards

STARTECH DESK

W995, one of the latest editions of the walkman family mobile handset of Sony Ericsson, has recently won the EISA Awards. The handset won the award for the Best Product on the category of "European Music Phone 2009-2010", says a press release.

This prestigious award is presented once a year and is regarded as a top honour for a recipient. Internationally known for the European EISA Awards, EISA started its journey in 1982. EISA (European Imaging and Sound Association) is an association of 50 special interest magazines from 19 European countries where the editors-in-chief of these magazines selects the winners of each category.

The W995 targets the multimedia enthusiasts by making it easy to access and playback audio and video media. The W995 is featur-

ing a 2.6 inch display of 240x320 pixels resolution - enough to give the user a sufficient viewing experience. The phone includes a music player, Walkman v4.0 with shake control, mini jack input for favorite earphones and Wi-Fi.

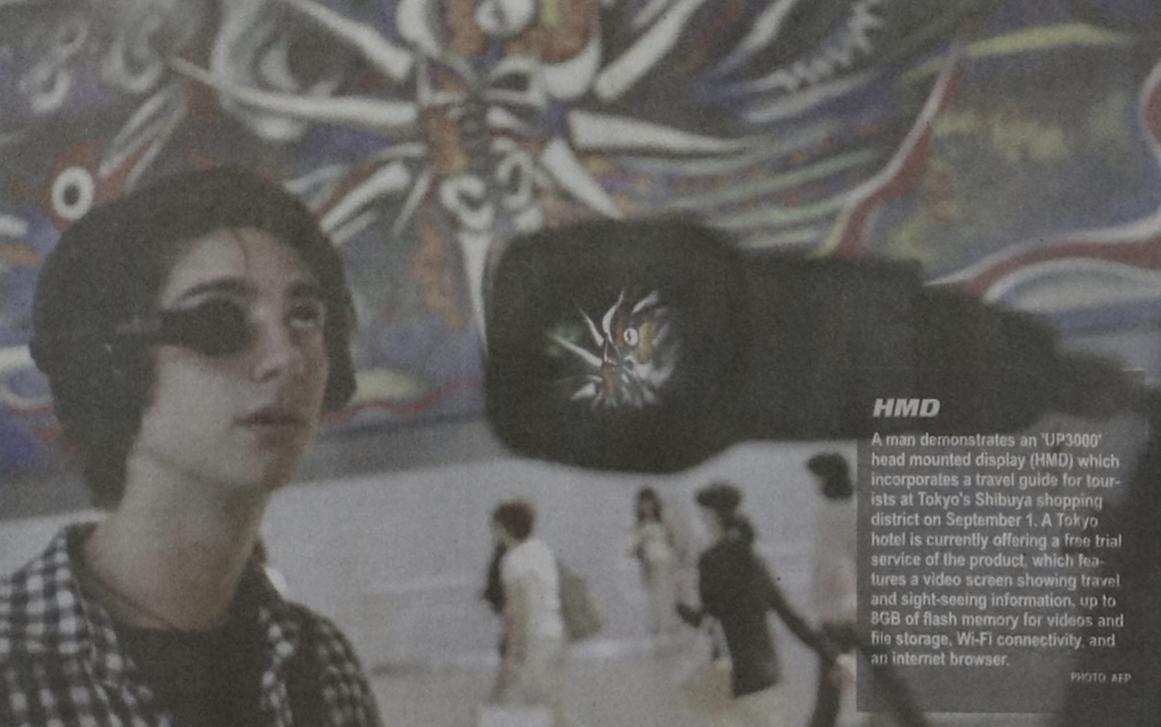
It is easy to drag and drop video clips, tracks, audio books and photos from the computer to the phone thanks to the Media Go Experience transfer tool. Media Go Experience automatically converts films to provide the best possible quality and play videos at 30 frames per second that will makes movies look great.

The sound quality is at its best with clear stereo, bass and the premium headphones (HPM 77) that makes music on the move and gives the feeling of sitting in the recording studio. Thanks to its powerful battery, listen up to 20hrs of music playback.

Anyone can get the perfect picture, all the time with the 8.1 megapixel auto focus, photo flash and Face Detection that guarantees to make subjects look as good as they can.

This phone is now available in Bangladesh and has a price tag of BDT 45,500.

TECHPHOTO



HMD

A man demonstrates an 'UP3000' head mounted display (HMD) which incorporates a travel guide for tourists at Tokyo's Shibuya shopping district on September 1. A Tokyo hotel is currently offering a free trial service of the product, which features a video screen showing travel and sight-seeing information, up to 8GB of flash memory for videos and file storage, Wi-Fi connectivity, and an internet browser.