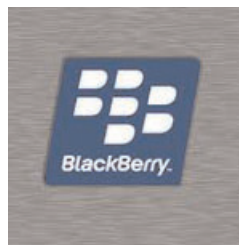




Facebook CEO
Zuckerberg meets
S. Korean President

BlackBerry plans to launch
more BlackBerry 10
phones in 2013



TECH TALK

PayPal will be the first non-domestic firm to get a payments license in China

— John Donahoe
ebay CEO

Briefs

NOW, CONTROL LIVE COCKROACH FROM YOUR SMARTPHONE

New York: Roboroach! Now, you can control the movements of a live cockroach from your own mobile device with the help of the world's first commercially available cyborg.

Called RoboRoach, the project currently on Kickstarter has been developed by a group of educational researchers called Backyard Brains from Ann Arbor, Michigan.

RoboRoach consists of three components: a cockroach with surgically implanted electrical stimulators, a cockroach-size "backpack" that transmits these signals to a smartphone and an app that allows users to send the cockroach directional commands.

Cockroaches are known to navigate by feeling their surroundings with their long antennae.

As antennae touch some object, the neurons within them send an electrical impulse to the cockroach's brain, letting the roach know that there's an obstacle in its way.

The latest project takes advantage of this natural mechanism to control the cockroach's direction.

Researchers surgically implant an electrical stimulator into the cockroach's antennae, a process which involves removing one of the cockroach's six legs.

Once the cockroach has recovered, they place a small "backpack" on the cockroach's back that connects these stimulators with a control interface — in this case, a smartphone app.

Users can then direct the cockroach's movements by opening the app and dragging their thumb left or right across the screen. The cockroach will then move in the indicated direction.

Touching the screen sends an electrical stimulus through the cockroach's antennae, which makes it think it's encountered an obstacle.

— PTI



WOMEN WANT YOUNGER MEN IN ONLINE DATING

New York: Women are likely to show five times more interest in a younger man than an older one, while dating online, a report has revealed.

According to the study published in *Time* magazine, the numbers from various dating sites consistently show that both men and women opt for younger partners, *New York Daily News* reported.

A website, AYI, examined data from its 68 million downloads and 20 million Facebook profiles, focusing on one million "approved" matches among a group of 35,942 users between the age group of 30 to 49.

The result revealed that women were five times more likely to show interest in a man five years younger than one who was five years older.

Among the 26,434 men aged 30 to 49, 42 per cent accepted that they wouldn't like to date an older woman but if contacted by an older woman, they might not turn her proposal down.

Men are only 22 per cent less likely to respond to an older woman than a younger woman if she initiates contact.

— ANI

Indian student devises e-voting system that detects coercion

SANGEETHA CHENGAPPA
BENGALURU, JUNE 18:

Gurchetan Grewal, a doctoral researcher at the University of Birmingham's School of Computer Science, has devised an Internet-based e-voting system that can identify and monitor votes cast under coercion. E-voting is still a nascent trend in which interest is growing in the world's advanced democracies but there are a number of issues of trust that need to be ironed out before it could potentially become the norm in elections. Grewal's software addresses one such issue.

Announced in late May at the IEEE Symposium on Security & Privacy in San Francisco, the e-voting system, called Caveat Coercitor, is designed to flag up coerced votes. "A coercer might change a legitimate vote by installing malware on the victim's computer, or steal their voting password and cast a vote on their behalf. Such votes will be flagged up to the authorities so that they can be discarded," Gurchetan told Decan Chronicle.

Explaining that voters can be intimidated or coerced by a family member, an employer, organised criminals or by illegal software installed on their

computer, he said, "the main point to note here is that existing voting systems (internet or e-polling station) are not designed to make coercion evident. Even if there was any coercion, it might have gone unnoticed. That's why the need for such software."

Could this solution work in India someday? Yes, says Gurchetan, who has come a long way from the heartland of Punjab, where he did his schooling and college. "While our solution is designed for home Internet-based voting in developed economies, we



Gurchetan Grewal

computer, he said, "the main point to note here is that existing voting systems (internet or e-polling station) are not designed to make coercion evident. Even if there was any coercion, it might have gone unnoticed. That's why the need for such software."

Could this solution work in India someday? Yes, says Gurchetan, who has come a long way from the heartland of Punjab, where he did his schooling and college. "While our solution is designed for home Internet-based voting in developed economies, we

could adapt it to work in polling station environments or even for mobile polling stations which have been used in rural India."

Inspired early on by his teachers in Punjab, Gurchetan made his way to the UK to pursue an MSc in Computer Security at the University of Birmingham in 2009-10. After that, he decided to do a PhD under Prof. Mark Ryan, head of Computer Security Group at the university.

"I was interested in electronic voting as that is something directly relevant to India and every other democratic country. And Prof. Ryan shares my enthusiasm and always has time for me, even if it means working after office hours," Gurchetan said.

How Caveat Coercitor works?

In this system, voters are instructed to vote multiple times for their chosen candidate but the vote is counted only once. But each vote must be for the same candidate and voters are instructed not to vote for different candidates. If a malware installed on the voter's computer tries to re-vote for a different candidate, it is flagged up as coercion and recorded as evidence of coercion. Clever cryptographic algo-

rithms are used that only reveal the number of voters who were coerced if malware re-votes for them or their password is leaked. The algorithms do not reveal the actual identity of those voters. If a voter's password is stolen, say while it is in transit by post, the system is designed such that even the thief who stole the password cannot vote on the legitimate voter's behalf without making it evident. Therefore, all a voter needs to do is to cast a vote to his or her preferred candidate and, rest assured, the Caveat Coercitor will take care if the vote is tampered with.

Prof. Ryan, who led the design, said, "Instead of building mechanisms that prevent coercion, the Caveat Coercitor system tolerates coercion so that a trail of evidence can be built up for authorities to see how much coercion is taking place."

Plans are on to conduct some university elections using the Caveat Coercitor in countries like Estonia, Norway and Switzerland that are already using or trying out Internet voting. "We have looked into their systems, and we believe that our proposed solution will really improve their systems, too" Prof. Ryan said.

US immigration bill worries Nasscom

Chennai, June 18:

Software services industry body Nasscom on Tuesday raised concerns over "discriminatory restrictions" in the draft US Immigration Bill. "Surely, we have got huge concerns on the restrictions that are being proposed in the Senate Bill. There is discrimination, because it is based on visa-dependent companies versus visa non-dependent companies," Nasscom president Som Mittal said. "It puts restrictions on our ability to service our customers and prevents us from having a level-playing field in the US."

Mittal cautioned the US that the restrictions would have a major impact on American corporations served by Indian IT companies, and therefore the first impact of the bill would be on the US economy itself. "So, it is the American corporations that are actually batting for us," Mittal added.

Called the Border Security, Economic Opportunity and Immigration Modernisation Act, 2013, the bill will require Indian companies to shell out a higher fee for H-1B visas, as well as require Indian companies to pay higher salaries to H-1B workers, thus seeking to remove the incentive to import workers into the US. Asked whether the Indian government had taken up



the issue with the US government, Mr. Mittal said, "Our customers (in the US), our government, Nasscom are all ensuring that we provide these perspectives to the decision-makers there. Our Ambassador to the US (Nirupama Rao) is actively working on (this issue). The Government of India at senior levels have written to their counterparts in the US. I don't think any country wants such discriminatory laws to be made. They do not want this to become a trade issue." Mittal said Indian IT workers in the US had contributed more than \$15 billion in taxes and social security in the last five years alone. "We are creating jobs there as well. We have to ensure during the negotiations (to pass the bill), negative provisions are not made. Our hope rests on the process of legislation in the US. That's the way democracy works."

He said the process would go on for about five more months. "We have enough opportunity to put across our viewpoint."

— PTI

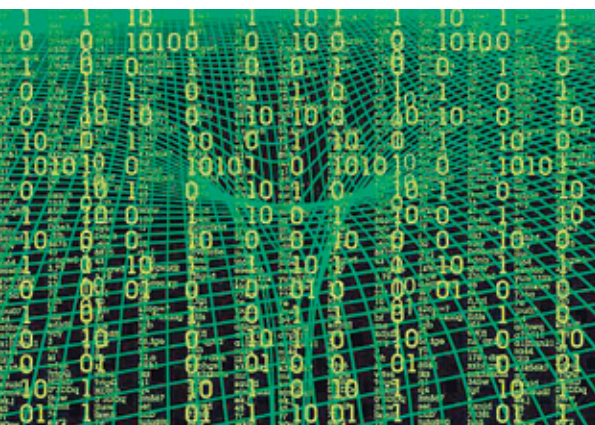
Oz to develop most powerful Net security

NATASHA CHAKU
MELBOURNE, JUNE 18

Australian scientists are working on Quantum mechanics which is being applied to computing in order to develop most powerful and impenetrable cyber security method ever conceived. The team behind the new technology has been tasked with creating an impenetrable network for the Australian government, according to a Australian Broadcasting Corporation report.

The technique pioneered by a team of scientists in Sydney, is called quantum cryptography. "One of the things you can do with the quantum computing is to expand the data security capabilities a country has," said Morello from University of New South Wales. Traditionally, cryptography involves three main parties — a sender, the recipient and the eavesdropper or hacker. Hackers at present are able to intercept communications without the sender or recipient knowing, Morello added. But quantum cryptography will be able to prevent access by detecting hackers and destroying or altering messages as hackers try to obtain them.

"Anyone who attempts to eavesdrop the connection and essentially tap the data would destroy the data on



The technique pioneered by a team of scientists is called quantum cryptography

the spot," he said. The problem however is actually in making the computer, he said adding that to make a quantum chip a single phosphorus atom is introduced into a regular silicon chip. The atom's magnetic core — its nucleus is completely isolated from the outside world because it so minute.

"What we have shown is that we can write and read quantum information in the magnetic orientation of the

nucleus," said Morello. To give an idea of scale, a computer with 300 quantum bits is thought to be able to contain a level of classical information equivalent to all the elementary particles of the universe.

"What we are reliant on at the moment is the fact that it's just too hard to decrypt," said Vikram Sharma, the chief of Quintessence Labs.

However he added that in future through things like quantum computers these codes could be broken. Cyber security is high on government's agenda following the last month reports on Chinese hackers allegedly gaining access to Australian government systems.

— PTI

Job's email hangs over Apple trial

New York, June 18: The late Steve Jobs has taken centre stage in the latest twist in the Apple antitrust trial on ebooks.

A federal court attempted to plumb the meaning of a series of unsent emails Jobs addressed to Eddy Cue, an Apple senior vice-president assigned with negotiating ebook contracts with major publishers in late 2009 and early 2010 before the launch of the iPad.

Even though the emails were never sent, government prosecutors argue that they help establish a pattern of Apple serving as a "ringleader" in a conspiracy with the publishers to force the retail book industry to adopt higher prices of ebooks.

The government contends that Apple forced publishers to change their pricing system with Amazon, resulting in higher ebook prices across the industry and costing consumers hundreds of millions of dollars.

Apple maintains that it was indifferent to Amazon's contracts with the publishers and that higher ebook prices were set by publishers, not Apple.

All of the draft emails responded to a message from Cue outlining the emerging price of Apple ebooks, which would be \$12.99 or \$14.99, up from the \$9.99 Amazon had sold for bestsellers.

In most of the drafts, dated January 14, 2010, Jobs is seen picking over the impact of the emerg-



Steve Jobs

ing deal between Apple and the publishers, according to testimony.

This included the effects of an Apple "most favoured nation" (MFN) provision requiring publishers to make available to Apple any ebook offered on another retailer for the same price.

The bombshell was a draft note to Cue in which Jobs said, "I can live with this as long as they move Amazon to the agent model too for new releases for the first year."

"If they don't, I'm not sure we can be competitive."

The Amazon note appears to be the last draft email in the series, said Cue. It is also the only one in the series signed by Jobs.

US justice department lawyer Lawrence Buterman depicted Jobs's draft Amazon email as part of a pattern of Apple demanding publishers to change their terms from a "wholesale" model in which retailers set price to an "agency" model in which publishers set price.

— AFP

Netflix signs deal with Dreamworks

Video streaming service Netflix Inc signed an exclusive multiyear deal for a slate of new TV series from Shrek creator DreamWorks Animation, deepening its push into original programming to stand apart from Internet competitors.

Netflix shares rose 7% and DreamWorks Animation shares jumped 4% after the deal was announced on Monday.

The companies said the pact was Netflix's biggest deal for original first-run content and includes more than 300 hours of new programming. They did not disclose financial terms or the length of the contract.

For DreamWorks, the deal is part of an effort to expand beyond films into TV production and distribution. The company is the studio behind hit movies, including *Shrek*, *Madagascar*, *Kung Fu Panda* and *The Croods*. It also owns characters such as *Casper* the *Friendly Ghost* and *Lassie* through its acquisition of Classic Media last year.

The new programming for Netflix will feature

some of those characters, though the companies did not say which ones.

Online streaming competitors such as Amazon.com Inc and Hulu are spending heavily on content as they fight for a piece of the fast-growing market for movies and TV shows delivered over the Internet.

"The DreamWorks content 'should in part help to offset the gap in Netflix's children's content schedule created when it decided not to renew its agreement for certain content from Viacom's Nickelodeon network," Wedbush Securities analyst Michael Pachter said.

Netflix will premiere the new DreamWorks shows in all territories where it operates. The company has 29.2 million streaming customers in the United States and 7.1 million in Canada and parts of Europe and Latin America.

The first of the new series announced on Monday is expected to be available in 2014. In December, Netflix will debut a DreamWorks series called *Turbo Fast*.

— Reuters

SPOTLIGHT

Tablets thrust Thailand classrooms into digital era

APILAPORN VECHAKIJ
and AMELIE
BOTTOLLIER-DEPOIS
MAE CHAN (THAILAND),
JUNE 18

In a rural classroom in the Thai highlands, hill tribe children energetically slide their fingertips over tablet computer screens practising everything from English to mathematics and music.

The disadvantaged students are part of an ambitious scheme by the kingdom to distribute millions of the handheld devices in its schools in a move supporters hope will boost national education standards.

For opponents of the plan, however, it is an expensive gimmick designed to boost the popularity of the ruling party among parents — and the next generation of voters.

At Ban San Kong school in Mae Chan in the north-

ern province of Chiang Rai, 90 children received a tablet computer last year as part of the "One Tablet Per Child" policy that was part of the government's election campaign in 2011.

Previously the school had only a few desktop computers with limited Internet access.

Now, with headphones over their ears for one hour a day during class, the students use the devices for activities including singing English songs, watching cartoons about the life of Thailand's revered King Bhumibol and playing math games.

With the school year just beginning, and the new tablet content yet to arrive, they are left to revise their lessons of the previous year as their teacher Siriporn Wichaipanid sits and watches. She has received no specific training for using the tablets and seems at a bit of a loss.



A file picture shows a student using a tablet with a picture of King Bhumibol Adulyadej on its screen during a lesson at a school in Thailand's northern province of Chiang Rai.

"I have some knowledge. At home, I use an iPad," she said. But "if I don't understand, I don't know how to teach the children". For the students — most

according to the school. "The students cannot speak Thai very well but they can hear sounds more clearly from the tablets and repeat them," said their teacher from the previous year, Wannawadee Sordang.

"Some of them dare not ask questions. It's easier when they listen to the tablets."

For now only two of the 90 students are allowed to take the computers with them after class to use in their homes, which often lack electricity.

"They don't have Wi-Fi and it's not convenient for them to charge the batteries. And most importantly their parents have no knowledge about the tablets," said school principal Moonmueangkham.

But using devices that would normally be out of reach for the kingdom's poorest children is

progress, even if it is only just one hour a day, he said. "They have the same opportunities as those in the city," Uthai said.

Reducing the "education gap" between the urban rich and rural poor is one aim of the project, said Surapol Navamavadhana, an adviser to the minister of information and communication technology.

By the end of 2014, the government plans to distribute handheld computers to 13 million school children at a cost of about \$100 each — a total of \$1.3 billion — and then replace them every two years. About 850,000 Chinese-made devices have already been given out, and the government says it will soon launch a tender offer for another batch of about 1.7 million tablets, in what it has described as the world's largest handout of the devices for education. Experts warn that the