INNOVATION

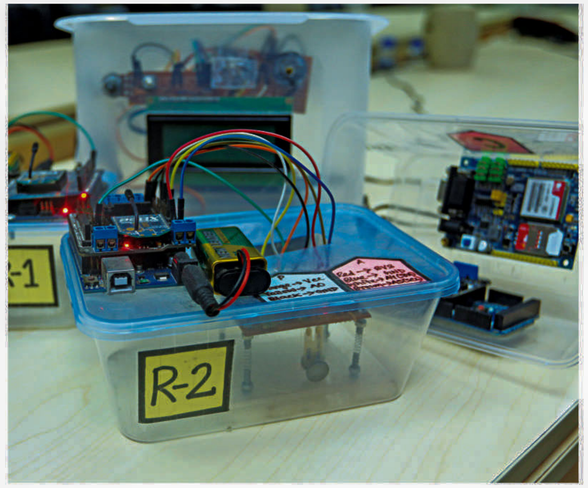
THE MUCH NEEDED ALERT

FAYEKA ZABEEN SIDDIQUA

PHOTOS: PRABIR DAS

We cannot predict earthquakes beforehand but the idea of a technology to detect earthquakes fast enough for an alert to reach susceptible areas is no doubt good news for us; and more so when it is being designed by our own countrymen.

Rahinul Hoque, Shoaib Hassan, Md Sadaf Akter and Asadullahil Galib, students from Department of EEE at American International University – Bangladesh have invented the prototype of a wireless networking system to detect earthquakes and deliver warnings to keep people and infrastructure from harm's way.



Recently this group has secured first place under the innovation category, in the 3-day ICT expo organised by Bangladesh Computer Samity (BCS), the apex trade association of the ICT industry, and the ICT division of post and telecommunication ministry at Bangabandhu International Conference Centre (BICC).

Using simple vibration sensors and accelerometers, they have developed a system that can send an alert to areas to take precaution before the strong shaking strikes.

"Long before the Nepal earthquake, as a part of our senior thesis, we decided to present the idea to our faculty, Tahia Fahrin Karim, who appreciated it very much", remembers Hoque. "We had worked for eight months and already submitted our final thesis."

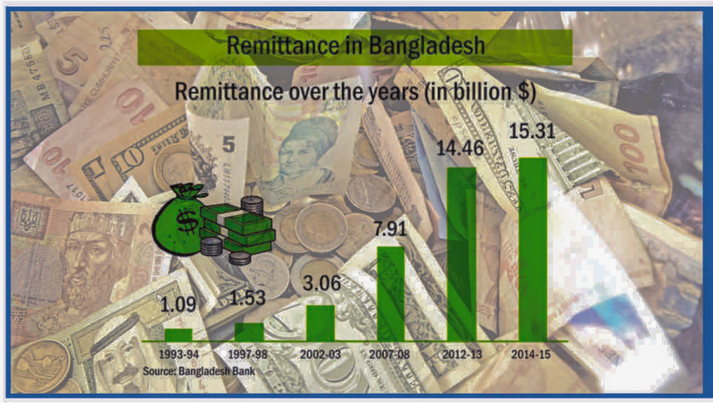
"Now that we have the prototype completed and it is working just the way we thought, we are thinking of improving it further by adding more sensitive sensors, and continuing our research with Department of Civil Engineering, BUET," adds Galib.

An earthquake mainly generates two kinds of seismic waves which are P and S waves. P waves travel faster than S waves and rarely causes any damage. P-wave information helps estimate the magnitude of the earthquake. The invented wireless system can provide warning to local populations before the S-wave arrives with the strong shaking that usually causes most of the damage. If the system is set in the fault zone, earthquakes can be detected earlier and people living far away from the fault zone can be warned so that they can evacuate buildings and move to safer places

"The system that we have developed consists of two sensor nodes and a coordinator," explains Hoque. "When an earthquake will occur, piezoelectric sensors will trigger each node to send ground acceleration to the coordinators. After receiving the data, the coordinator will pass it to the laptop via serial communication. Data acquired from both the nodes will be instantaneously processed and compared in the National instruments LabVIEW software."

Hassan adds, "The monitoring part ends at the warning part which is controlled by the GSM SMS Mode tab, where the user's mobile number is set. If there is a match, instantly an SMS will be sent to the receiving end, stating warning messages along with type and magnitude of the Earthquake."

"Because of the low frequency (about 1 to 3 Hz), it is hard to detect P-waves. The sensors used for detecting earthquakes are very expensive and unavailable in Bangladesh. The prototype cost us around 32000 tk, but funds can help us tweak the design to be mass produced more efficiently," Akter ends. ■

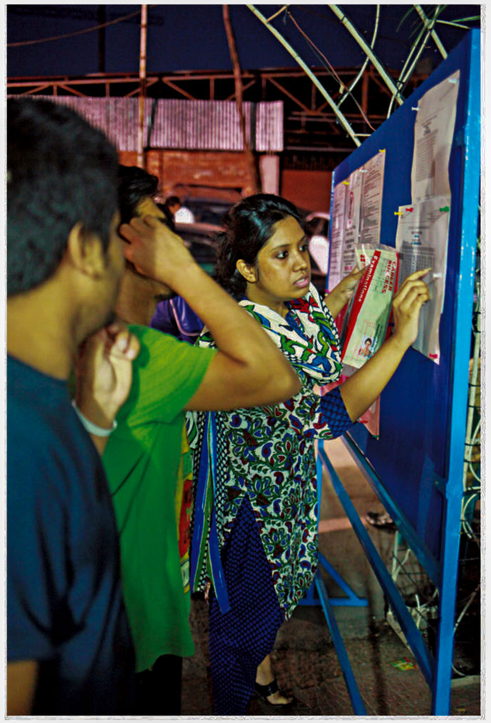


NUMBERS

15.31

Bangladesh receives a record $15.3bn in remittances from its migrant workers in the last fiscal year 2014-15. It's the highest in the country's history. Bangladesh received nearly $14.23bn in remittance in the 2013-14 fiscal yeas and this year by making $15.3bn, it records a 7.6 percent from the previous year. Experts believe that the rise in manpower export and central bank's efficient measures to ease the inflow using formal channels are the reasons behind this increased remittance growth.

EDUCATION



CAUGHT IN THE COLLEGE CONUNDRUM

DUE TO LACK OF A PROPER GROUND WORK, THE GOVERNMENT ONLINE COLLEGE ADMISSION SYSTEM HAS BECOME A NIGHTMARE FOR MORE THAN A MILLION STUDENTS.

MD SHAHNAWAZ KHAN CHANDAN

PHOTO: KAZI TAHSIN AGAZ APURBO

Azman Rahman passed his Secondary School Certificate (SSC) examination this year with 80 percent marks in all subjects. Instead of being overjoyed with his astounding academic performance, which is popularly known as the golden A+, Azman and his parents are passing days with great anxiety. Unfortunately, despite his outstanding performance, Azman's college admission has become uncertain even after months of result publication.

"I completed my SSC from Motijheel Ideal School. I applied to Notre Dame which is considered one of the best colleges in Dhaka and I am eligible for it," says Azman. "However, the government's online application system selected me to be enrolled at Pallabi College which is miles away from my home. It is not possible for me to study there from my home in Motijheel," adds a disappointed Azman.

This is just an example of thousands of bizarre steps taken by the Board of Secondary and Higher Secondary Education, Dhaka, in the name of online college admission process for the recent SSC graduates. Without any prior experiment and adequate preparation, the government decided to implement this admission system for 11,56,000 SSC graduates. Under this massive project, the government published a merit list of all SSC students and the list of colleges where these students are to be enrolled. They made this list according to result and choice of the students submitted through online portal and Teletalk SMS service.

However, 62,000 students were missing from the merit list and hundreds of thousands of students were enrolled in to colleges which have not even started their academic activities yet. For example, at least 52 students have been selected to be enrolled at UU Laboratory College, an institution in Uttara which never initiated its academic activity since its approval from the authority six years ago.

Again, more than 200 students from the commerce stream have been selected to be enrolled at the Government Science College which is well known for science education. Habibur Rahman, the principal of the college says, "For the last two or three years we have no specific teachers for the commerce faculty as students from commerce group do not take admission here. "

However, the situation for Rubab Islam a student of Adamjee Cantonment School and College and his thirteen friends is rather different. He says, "As our school also has a college / high school section, all of us decided to enrol here. However, our names have been registered at Zarina Sikder Girls' High School and College, which is actually a woman only institution. This is so embarrassing and on top of that our parents are very worried!" adds an unhappy Rubab.

The situation is even worse for the 62,000 students who went missing from the merit list published by the government. Their worried parents gather before the board office and college offices every day only to return with no solution.

On July 5, 2015 Education Minister Nurul Islam Nahid apologised for this severe crisis. The deadline for submitting applications for students has also been extended up to three weeks. However, this scenario shows how reckless our policy makers are in managing such an issue of mass importance. It has not only gridlocked academic activities of thousands of institutions all over the country but it has also thrown the fate of our students into a total uncertainty. ■