SMU students (from left) Don Teo, Rodney Tan and Zoey Lee have developed a web-based monitoring system called SupplyWatch that will enable VWOs to tailor their food rations to the specific needs of their beneficiaries. PHOTO: JASON QUAH

Students tap Internet of Things to solve everyday problems

New IoT course at SMU teaches students how to realise apps for a Smart Nation

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SINGAPORE – In the future, when Wi-Fi access becomes more pervasive, society may stand to benefit from the increased interconnectivity, with volunteer welfare organisations, for example, being able to track food distribution to needy families, or the visually handicapped being able to use an app to navigate their indoor surroundings.

More than 40 students from the Singapore Management University (SMU), taking a new course on The Internet of Things (IoT), showcased on campus yesterday these and other hypothetical digital solutions to everyday real-world problems.

The course requires them to "conceive practical systems to realise Smart Nation-related applications", and the study of IoT is to imagine "an interconnecting network of millions of 'things', physical devices" communicating with one another and sharing information via the Internet with people.

One team of four students developed a web-based monitoring system called SupplyWatch, which will enable voluntary welfare organisations (VWOs) to tailor their food rations to the specific needs of their beneficiaries and to ensure that they supply the right amounts to households.

Don Teo Yuan Cheng, 26, a team member, said: "Our IoT solutions (allow) the VWOs to monitor and make informed decisions on their deliveries and procurement process, so that they can effectively deliver what the beneficiaries really need."

The team has been working closely with a VWO, Shan You Counselling Centre, since the start of the year.

The centre distributes six types of food rations to about 200 families and individuals in need, and should it adopt the system, it would be able to track the exact quantities of food consumed in the households though Internet-connected weighing scales in real time.

Mr Tong Kin Muon, the centre's manager, said that he sees potential in the group's prototype solution. "You can deliver (food to the needy), but don't know whether they are eating it," he said. "It is the first step — this is not the end of the project — I'm sure that somebody can take it further."

Another system showcased was a working prototype of an app called "eyeGuide", developed by a team of five students together with the Singapore Association of the Visually Handicapped.

It allows visually handicapped individuals to receive auditory messages broadcasted from wireless Bluetooth beacons placed around an indoor area. So when the person has a smartphone and enters, say, a shopping mall, he may be able to find his bearings and shop information through the audio prompts.

Real-world challenges remain, however, because IoT devices have to be backed by the necessary infrastructure, such as Internet access and sensors, for them to work.

Associate Professor Tan Hwee Pink, from SMU's School of Information Systems, said: "In a smart nation, we are talking about building infrastructure to make people smarter, to make societies better. So when we talk about smart infrastructures, one of the underlying key enablers would be the IoT."