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gent Systems



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Tech Library



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System with Self-calibration
Mechanism



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Future Technology Now: Microsoft Talks About Intelligent Systems

By Kevin Lan



Students at Taipei Tech were excited to have Mr. Murray Vince Microsoft OEM General Manager, also Taipei Tech's International Chair Professor, back for another speech this year. This time, Murray wanted to inform us on one specific area of growth in the industry: intelligent systems.

Before the speech began, a short film on the imagination of future with intelligent systems impressed the audience with wonderful experiences shown in the film.

After a brief introduction of the intelligent systems, Murray gave useful statistics and the outlook of the market. The growth of Smartphones and embedded systems will make an impact on the market of intelligent systems, and by 2016 it will be two times larger than the current market size. Mr. Murray suggested that the numbers are significantly influential to the future of technology. To show its importance, he showed the audience how this area of industry has been progressing and is already being taken into consideration by Microsoft and its partners. A clip of experiences shared by various partners of Microsoft, like the Ford, expressed how the Microsoft Windows Embedded systems have facilitated their performance and production. In addition, to give us an idea on how this Microsoft intelligent system can be used on a personal level, Mr. Murray showed a clip on how a traveler could spend his vacation with the assistance of intelligent systems. For example, the traveler could check-in at his hotel with his Smartphone at the airport, all in the meanwhile the computer notifies the hotel manager to prepare the room according to the traveler's preset preferences. Third video clip gave us an example on how intelligent systems can be used to assist with manufacturing. Kuka, one of the companies that employ Microsoft Windows Embedded, uses their robots to manufacture Jeeps with the help of intelligent

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systems. Their increase in efficiency was achieved through the combination of 246 robots, 36 processors, and the instant data management within their office.

To develop a smooth intelligent system, Murray pointed out some elements: connectivity, security, identity, manageability, user experience, and analytics. Servers and data centers are thus important. Jesse Lin from Microsoft Taipei demonstrated how the speed of the Microsoft servers has been enhanced. Murray also informed the improvement of the data centers through the many different generations. With the concrete data centers and more than 200 online services, customers can easily obtain results in a fraction of a second through a secured-reliable service.

To prepare for the future, Murray reminded us to ask ourselves what aspect of intelligent system coincides with our specialty, and our versatility for cross-discipline will add to our resume. During Q&A, he encouraged the students who do not major in any IT course to keep an open mind and to study other disciplines. Companies like Microsoft employ talented people in all fields that excel at what they do. To the civil engineering students, he suggested, "If you are a civil engineer and learn a little bit about intelligent systems and connectivity, it will help you in your own job." He encouraged people from different fields to contribute and build the growing industry of intelligent systems together with Microsoft.

At the end of the speech, Murray took pictures with everyone. Lastly, Mr. Murray indicated that there are many partners of Microsoft already in Taiwan, including 7-Eleven, the Taipei Metro, and the ATM systems. This implied that the devices and the services illustrated in the speech have already been in use by Microsoft. "We do little things every day. We do the big thing to make sure the little thing works" said Mr. Murray. Microsoft doesn't manufacture, but they enable people to achieve.





The grand opening of "Siew's Study" witnessed by Director Lee Yen-Yi (2nd to left); Taipei Tech President Leehter Yao (3rd to left); Former VP Vincent Siew (3rd to right); and Mrs. Siew (2nd to right)

Mr. Vincent Siew, Former Vice President of Taiwan Unveils "Siew's Study" at Taipei Tech Library

By Prof. Kuang-Chen Che; Ching-Li Huang; Chuang-Chuang Hsu; Paven Yu
Original Article from *Gazette*, Issue 46

Former Vice President (VP) of Taiwan, Mr. Siew Wan-chang (Vincent C. Siew, 蕭萬長), the recipient of Taipei Tech's Honorary Doctorate Degree in philosophy, has selflessly donated to Taipei Tech more than 1000 folders containing his political career and more than 500 books ranging across both Eastern and Western literature prior to his retirement from public office in April 2012. To demonstrate the experiences and foot-prints of an assistant to the head of state for half a century, a secluded area in the library was renovated with "Siew's Study" as the main theme. Taipei Tech hopes that through the books and folders displayed at "Siew's Study", their students can emulate the experiences and achievements of former VP Siew.

Former VP Siew stated that he was very thankful and honored to be a Taipei Tech alumni. During his speech, he expressed his appreciation for his "alma mater's" thoughtfulness in establishing the "Siew's Study" in hopes of enriching Taipei Tech students with role models. He wishes that, through his donation of literature and sharing of his life experiences, this little corner can become the students' go-to place for reading and discussion. Vice President Siew also promises to continue to endow the contents of the study. Taipei Tech President Leehter Yao (姚立德) and Department of Director Technological and Vocation Education, Lee Yen-Yi (李彥儀) also have great prospects for this corner in the library. They expect that it

will stimulate students to learn, and that more talented individuals like Vice President Siew can be cultivated to contribute to the nation and society.

Siew's Study was unveiled by VP Siew along with his spouse (朱淑賢), Taipei Tech President Yao, Director Lee, and many other delegates. During the tour of "Siew's Study", Siew talked much about the literature displayed and some interesting anecdotes; the collection donated also includes the transcript showing the 100 percent he received in two of his subjects when he was in college, and the original certificate given to him after his examination for government positions. In addition, the seat that Siew had once used was placed in "Siew's Study" to embellish the atmosphere of literature.

After the showing of "Siew's Study," former VP Siew had an interactive session with Taipei Tech students. The students from the College of Humanities and Social Sciences eagerly participated in the Q&A session. Siew especially mentioned his support for the youths participating in public affairs, and his deep concern for the society and the development of the next generation.

In the humanities and social science seminar that followed, Siew addressed the faculty and students on "Soft Power and Competitive Power." He started with the concept of "an island of humanity, social science, and technology" advocated by former Acer CEO Stan Shih (施振榮). Siew

believes that technology without liberal arts is a tree without roots, and only with the spirit of humanity can technology be rooted and cultivated. The era of manufacturing and manual labor has passed; it is now an era for innovation and for people to compete with soft power.

Siew then talked about the spirit of innovation originating from education. Education enhances the overall quality and strength of soft power. Also, education is the most trustworthy investment for a nation. The investment in education, the improvement of quality the openness in society, and the efficiency of the government are all keys to the development of an innovative country.

Siew ended with a wish that Taipei Tech would be the leader of Taiwan in its becoming an island of humanity and technology. He hoped that the spirit of humanity can be rooted, so that Taipei Tech will be rewarded for its efforts in technological development, and that it can continue to contribute to the Taiwanese society.



Lively interactive Q&A session in the brand new "Siew's Study"

Taipei Tech Collaborates with Tzu Chi in International Humanitarian Aid

By Yu-Ju Shih

Original Article from *Gazette* Issue 46

On November 19, 2012, Taipei Tech signed an agreement with Tzu Chi Foundation and Tzu Chi University for the collaboration on international humanitarian aid, energy regeneration, and sustainability engineering research and development.

In the ceremony, Dharma Master Cheng Yen, founder of Tzu Chi Foundation and University, stated that the Tzu Chi Foundation often faces problems in their international humanitarian efforts; problems include water source, shelters, and the follow-up conservation of water and soil. Fortunately, Taipei Tech's professional technological development can help them with these problems. In addition, President Yao of Taipei Tech promised Tzu Chi with regards to the development of portable water purification equipment and well-structured prefabricated houses. In addition, Taipei Tech will provide consultation on the hardware and software required for water and soil conservation, and disaster prevention.

Apart from humanitarian aid, Taipei Tech will also work with Tzu Chi University at their Hualien main campus and Miaoli branch campus in medical engineering, environmental engineering, sustainable development, and energy recycling technology. Both schools will invest in research and development projects to encourage participation from faculty and researchers.



Master Cheng Yen stressed that she looked forward to obtaining technical support from Taipei Tech to assist Tzu Chi's charitable works in electronics, electric machinery, chemical engineering, civil engineering, architecture, and energy. Taipei Tech President Yao said that it was an honor for the school to work with Tzu Chi University and Foundation. He also expects to collaborate with Tzu Chi's overseas branch in South Africa to set up a Taiwan Education Center there. It will not only introduce our quality education but also benefit the people of South Africa and other African countries.

Intelligent Earthquake Alarm System with Self-calibration Mechanism

By Prof. To-Po Wang; Cheng Hung Valentine Hsin

Original Article from *Gazette* Issue 46

Situated on the Pacific Ring of Fire, Taiwan is prone to frequent and strong earthquakes. According to the data from the Central Weather Bureau, during the 16 years from 1991 to 2006, there have been an average of 18,500 earthquakes per year in Taiwan, of which approximately 1,000 were felt earthquakes.

1999 was the year that earthquakes happened most frequently. Out of the 49,919 earthquakes that happened, 3,228 were felt earthquakes. According to the statistical analysis on disastrous earthquakes, there have been 97 disastrous earthquakes since 1901 in Taiwan. Hence, an earthquake alarm system is of great importance in Taiwan.

Currently, the disaster prevention products available on the market are mostly fire alarm systems and gas detectors. The traditional earthquake alarm system for domestic use can only sense shaking and activate its siren for warning. However, it cannot read earthquake intensity and is not equipped with lighting and radio. Therefore, the traditional earthquake alarm system fails to provide effective assistance for people under emergency situations.

A patent application on The Intelligent Earthquake Alarm System with Self-

calibration Mechanism has been sent to the Intellectual Property Office, Ministry of Economic Affairs. Using an accelerometer as the sensor, the System samples the output from the sensor and analyzes acceleration so that the System can read the seismic waves caused by an earthquake. The sampled data is first stored in the register through a micro-controller, and then converted to show acceleration. Based on the final result calculated according to the acceleration, the System can read the intensity of an earthquake, in conformity with the seismic intensity scale issued by the Central Weather Bureau. The System categorizes earthquakes into three levels: light, moderate, and strong. The alarm will be activated if the intensity of the detected waves exceeds the preconfigured critical point. According to the magnitude of an earthquake, different record circuits will be activated, and the corresponding content and level of volume of the warning alarm will be adjusted and played accordingly; and the LED lighting device of high luminance will also be switched on. In addition, the built-in counter will be activated, too. fifteen seconds after sensing an earthquake, the system will switch to Radio Mode. The system will receive on FM radio signal and news on the earthquake, offering information and secu-



rity for people stricken by the disaster. A power model is also built in the system. The system is fully functional when the strike of an earthquake causes outage. The system was fully developed in the lab at Taipei Tech. The cost for all materials is only 1/20 the price of existing products available on the market. The system is commercially competitive.

Taiwan is situated on the Ring of Fire, and earthquakes are inevitable. This Intelligent Earthquake Alarm System with Self-calibration Mechanism is not only commercially competitive, but also precise in computing earthquake intensity. With its comprehensive functions for post disaster needs, it is expected that the System will become the standard disaster prevention equipment in every family in the future. Its high commercial value will create countless business opportunities.

Wish you have a great day ahead,

A handwritten signature in black ink, reading "Wenlung Li". The signature is written in a cursive, flowing style.

President

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