(Press Release)

LSCM Logistics Summit 2015

Leaders Share Views on eCommerce, eLogistics and Latest Location-based Services (LBS) Technologies

LSCM R&D Centre Showcases eCommerce Robotics to Ride the Tide

The rapid development of internet and smart portable device brings about an evolution of eCommerce and eLogistics. In order to ride on the opportunities and growth of the eCommerce market, the entrepreneurs have to change their mindset and upgrade existing technology in order to overcome the tremendous challenges ahead.

The **"LSCM Logistics Summit 2015"** held by the LSCM R&D Centre at Hong Kong Science Park on 19 & 20 October showcased its latest research projects in relation to eCommerce and Location-based Services (LBS) technologies. A series of keynote speeches were delivered during the Summit to show how the local development of eCommence and our roles in international context. Among those who have given speeches in the Summit were **Miss Annie CHOI**, Commissioner for Innovation and Technology; **Mrs Jessie TING,** Postmaster General, Hongkong Post; **Hon Frankie YICK**, Legislative Councillor (Transport); **Mr Fred LAM**, Chief Executive Officer, Airport Authority Hong Kong; **Dr Kelvin LEUNG**, Chief Executive Officer, DHL Global Forwarding Asia Pacific; **Mr Alan WONG**, Group Vice President, SF Express; **Dr Sunny CHAI**, Chairman of Board of Directors, LSCM R&D Centre and **Mr Simon WONG**, Chief Executive Officer, LSCM R&D Centre.

Smart Robotics Technology spearheads the logistics supply chain automation

Advanced robotic technology has drawn considerable attention in recent years. Since the advancement of data collecting, transmitting and storage technologies, the development of smart robotic systems reach a new level. The LSCM R&D Centre is undertaking a number of industrial robotic research projects ranging from RFID-enabled robotic arm tagging luggage for airport security check to Autonomous Guided Vehicles (AGV) for warehousing and stock-taking, as well as low-cost exoskeleton for caregiving industry.

RFID Tags Affixing Device for Airport

The LSCM R&D Centre is researching to develop an RFID-enabled robotic arm tagging luggage for airport security check, which is a device to automatise the manual process of tagging RFID tags on luggage. Equipped with the capabilities of vision and

force sensing, the robotic arm will be able to identify available area to attach LSCM's developed RFID green tags on different sizes and shapes of luggage with gentle force.. A short range RFID reader will be installed to ensure all luggage are tagged with RFID tags before moving out to next phrase.

Autonomous Guided Vehicles for Warehouse Management

The current AGV on the market are easily affected by lighting of surrounding environment, but the latest technology will be able to navigate around the warehouse by following RFID tags embedded on the floor, and deployment of Ultra-wideband UWB radar, to ensure its navigation scope within 5-10 cm and enhance its collision avoidance capability. The robot navigates around on a predestinated route, and scans the goods on shelf. This technology can execute repetitive tasks with speed and accuracy, assist with heavy object manipulation and avoid human errors, saving a lot of manpower.

Simon Wong, Chief Executive Officer, LSCM R&D Centre, said, "With the aim of building a full-scale warehouse autonomous management system, we are developing RFID-enabled Autonomous Guided Vehicles (AGV) to manage dense warehouses in Hong Kong. Besides stock delivery and inventory, AGV can be extended with a robotic arm to handle stocking work. These devices can enhance the competiveness and flexibility of local warehouse for the eCommerce market.

Exoskeleton for Elderly Care

In order to develop a walking assistive device for the elderly and people with mobility impairment, the LSCM R&D Centre will carry out a research project to design a low-cost and lightweight robotic framework that can lift heavy objects with the deployment of air muscle and high torque motor. The research deliverable can also be applied for industrial use to increase productivity and prevent workplace injuries.

Technology applied in Logistics Industry: SMe-plug

Any shipping agency asking for freight commission from sizable air or ocean freight company has to make the voyage appointment and submit relevant eDocuments through the eLogistics Service Platforms. However, before access to the platform, the shipping agencies have to build up an electrified connection system to link with the eLogistics Service Platforms, which costs significantly.

The LSCM R&D Centre therefore has developed the "SMe-plug", which is a cost effective and highly flexible solution. In association with Hong Kong Productivity Council (HKPC) and funded by Transport and Housing Bureau and Hong Kong Logistics Development Council (LOGSCOUNCIL), the "SMe-Plug JumpStart Program" subsidises local SME logistics services providers to adopt eLogistics in data processing with the use of SMe-Plug, and thus improving their operation efficiency and increasing the competitiveness of the Hong Kong logistics sector.

Mass production of RFID chips leads to wide applications

RFID technique is one major research area of the LSCM R&D Centre. This technique relies on radio wave to store data into a tiny electronic label. Through collaboration with Echonix, the newly-produced UHF RFID Reader Chip has improved its power consumption, minimised its size and production cost. The cost of the new reader chip is 30-50% lesser than the existing products in the market. The technique can be put into wide applications such as logistics and supply chain management, product authenication and commuinty service.

Smart Safety technique protect workers safety

According to the data from Labour Department, the Industrial Accidents Caused by Fall from Height in Construction Industry still happened frequently. The LSCM R&D Centre has also developed a smart system placed at the arrester of safety belt to remind workers to lock the belt appropriately. The information of any worker not locking the safety belt will be sent to the contractor for further correction and eventually achieve zero accidient commitment.

RFID Guide Cane System lead the way for the visually impaired

Traditional tactile paving can only provide guidance for the visually impaired towards a specific route but they cannot determine the direction at a diversion point. The LSCM R&D Centre deploys RFID technologies in the development of "smart guiding cane" with the application of smartphone, which provides voice instructions once it contacts the RFID tags installed inside the tactile paving. This technology does not only help the visual impairing and elderly to recognise outdoor direction, it can be applied inside a large indoor facility, such as navigating the destination in the airport.

About LSCM R&D Centre

The Hong Kong R&D Centre for Logistics and Supply Chain Management Enabling Technologies (LSCM R&D Centre) was founded in 2006, with funding from the

Innovation and Technology Fund of the HKSAR Government, and co-hosted by The University of Hong Kong, the Chinese University of Hong Kong and the Hong Kong University of Science and Technology. It aims to strengthen the local Logistics Industry by providing a one-stop shop for technology transfer and commercialization, and reinforce the cooperation between the industry and research institutes, to bring about meaningful and significant benefits to the community.

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