The integrated supply chain lab (iSAIL) from the School of Engineering aims to achieve the following objectives:

- To train students in distribution centre, inventory management and product packaging applications through students Creative Engagement (CE) activities, Final Year Project (FYP) and support of curriculum.

- To value add to Supply Chain industry through specialized trainings, seminars and workshops as well as project collaborations.
iSAIL is used to demonstrate and facilitate the learning of the activities inside a distribution centre with its range of storage, picking, inventory control, location and warehouse management systems and to showcase how Radio Frequency Identification (RFID) and other Automatic Identification and Data Capture (AIDCs) can be effectively employed to assist in the visibility and integrity of goods flow in the facility.

Besides handling of general goods, iSAIL is also used to demonstrate some of the best practices in cold chain management of perishable and temperature-sensitive products, including different types of temperature-controlled packaging with refrigerants, mobile temperature and humidity loggers as well as preparation of qualification reports for different shipping cases.

In addition, there is a reliability and package testing area to simulate and investigate how temperature, humidity, drop impact, and vibration can affect the integrity of products within their packaging, particularly during transportation along the supply chain.
Major Equipment at i-SAIL

- Push-back pallet rack
- Shelving for cartons
- Cantilever
- Mobile Storage

- Carton gravity flow rack
Major Equipment at i-SAIL

- Miniload ASRS
- RFID
- Barcode Scanning
- Mezzanine

Pick to Light
Pick to Voice
Vertical Leanlift
Packaging Testing Equipment in i-SAIL

- Vibration Tester
- Drop Tester
- Environmental Chamber
iSAIL Helping SMEs

i-SAIL - Integrated Supply Chain Lab

The Business Times, 19 May 2009
Polytechnic lab saves logistics firms money

By NISHA RAMCHANDANI

FOR companies both big and small, cutting costs is ranking high on the list of priorities right now.

An initiative by Republic Polytechnic (RP) aims to help local logistics companies both trim the fat as well as improve operational efficiencies.

In June last year, RP set up the $500,000 i-SAIL integrated supply chain laboratory to offer R&D services to the logistics sector. The sector accounts for close to 10 per cent of Singapore’s GDP and employs about 180,000 workers.

Companies are able to test the technology before investing in it, while the lab also serves as a learning ground for the polytechnic’s students, points out Edmund Chan, manager of the technology development centre at RP.

Improving logistics capabilities among SMEs here may also help Singapore strengthen its position as a logistics hub. Ten companies have used the lab so far, including land transport company Evermarch.

Dual purpose facility: Companies are able to test the technology before investing in it while the lab is also a learning ground for the polytechnic’s students.

Generally, there are instances where cargo contents are damaged from the journey, although they may not appear damaged at first glance, said CEO James Peh.

In conjunction with i-SAIL, Evermarch put sensors on its trucks to profile vibration levels during the journey. The levels are then replicated in the laboratory’s vibration test system to ascertain the durability of the packaged product.

As such, ‘we can offer value-add in terms of packaging so it will withstand the journey. In times like this, customers look out for little details’, Mr Peh said.

Ensuring that the cargo arrives in mint condition also helps the company build a strong reputation as well as long-term relationships with its clients.

Companies may also be able to downgrade to a cheaper form of packaging without compromising on quality, if the testing proves as much.
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