

# CompanyFile

A parcel can potentially go through a lot of hoops before it reaches its destination and before it finally arrives it may have very well been tampered with along the way. For the receiver there is no way to find out if this happened at one of the many terminals the parcels has passed through, or if it was the fault of the delivery company or done at customs clearance.

Enter SecurePak, a packaging system that comes with digital information about the sender, the contents, the designated receiver and any possible tampering incidents during transportation. There is even an integrated temperature sensor to ensure that sensitive items are not compromised by temperature extremes.

The SecurePak was developed by the Swedish Post and Cypak, a Swedish technology innovator. SecurePak is, in reality, a disposable 32 kb computer that can communicate thanks to advanced radio-frequency identification (RFID) technology. Cypak's very small microprocessor is mounted together with sensors, switches and short-range antenna on the packaging material.

The same mini-computer can be mounted on adhesives or inside a credit card, using special conductive inks. Cypak's reader costs about \$10 and the imprinted technology costs from one dollar per unit, which is cheap for a computer, but still too expensive to be used on everyday products.

"Sounds like sci-fi," wrote *Fortune* "but that's what Cypak, a Swedish company founded by Stina Ehrensward and her husband, Jakob, is working to make real." The

*Cypak "mini computer" pharmaceutical packaging with questionnaire and Cypak smart card*

top American business magazine named Cypak as one of the world's 25 "coolest companies". The Swedish company was one of only four companies from outside the US on the list. Cypak has also been named the "European champion in IT", made it to the Red Herring list of Europe's 100 hottest technology companies, and Stina Ehrensward has received Sweden's highest "Guldmusen" hi-tech award.



*Inventors and founders Jakob and Stina Ehrensward*

Intelligent packaging and smart cards are Cypak's basic products. When placed on a contact-less reader, a Cypak-powered object can automatically connect to the Internet, identify and authenticate itself and transfer data with the highest level of security. Cypak has also developed a smart card with an integrated numerical key pad. Customers can use the "PIN-on-Card" feature to log on without touching the computer's keyboard, thereby preventing the log-in code from being stolen by a keystroke-detecting virus on the Internet. Cypak says that the card's encryption can't be copied or broken, enabling it to deliver "military-class security".

## CYPAK

Drug-testing companies have also started using Cypak's technology that works out less expensive than the one presently in use. For drug trials, data about how and when the subjects consume the drugs being tested are vital. With the Cypak technology, the exact time when an individual pill is popped out of its plastic bubble is recorded. The package can also ask the subject a question like "Are you feeling better today? Press yes or no."

The answer buttons are on the package itself and when the patient visits the doctor, all the data collected by the package can be downloaded to the physician's computer after the package is placed on a Cypak reader. The data is more reliable than the logs that the patient may keep. The "Intelligent Pharmaceutical Packaging" can also be fitted with sound signal reminders and electronic patient diaries.

Cypak's technology platform can also be combined with external sensors such as shock and blood bio sensors. Smart Sensor Telemed is developing the world's first disposable electronic diabetes screening device using Cypak's system. The data and the answers to a patient's questionnaire are stored in a secure part of the packaging that is detached and sent to the hospital for analysis. The product enables diabetes to be self-diagnosed at an early stage while there is still time to take preventive measures, and it is so inexpensive that it is suitable in emerging markets such as India and China. The same company is soon to develop a similar device for high cholesterol.

Cypak's technology has also been licensed to the North American packaging company MedWestvaco for medical packages.

Cypak was formed in 1999 by the inventors Stina and Jakob Ehrensward. With 15 employees and investments from, among others, the Swedish Industrial Development Fund, the privately-held Cypak AB now concentrates on licensing its technology, selling components and providing design services.

"Today, in pharmaceutical and courier packaging as a data-collection device," says Cypak's marketing director Stina Ehrensward of the company's mini computer. "Tomorrow maybe for interactive books, lotteries, passports, and voting cards."

