Mobile Computing

Enabling Mobile Business Transactions for operational employees in the Reverse Logistics and Recycling Industry

'Point of Activity' Computing

- Logistics Employees
- Deliveries & Pick-ups
- Operations & Warehousing
- Retail & Distribution

'Encorp Product Stewardship'

- Over 700 Million containers
- Approx 60% growth since '98
- 200 Product Companies
- Over 7000 Products
- Over 650 Generators

Streamcore Technologies Assists a Product Steward to manage its Used Beverage Container Recycling Program through handheld mobile computing technology.

ENCORP PACIFIC (CANADA) is a federally incorporated 'Product Stewardship' corporation, with a mandate to develop and manage a consumer-friendly and cost-effective recycling system to recover non-alcohol beverage containers from consumers. In addition, Encorp also manages by contract a major portion of the B.C. Liquor Distribution Branch product stewardship.

In 2002 approximately 700 million used beverage containers were put through the Encorp recycling system, nearly 60% more than in 1998. The number of represented stakeholder companies rapidly increased from just 22 to over 200 with individual product types ballooning to over 7,000.

At the core of this system are product movement transactions and the subsequent generation of financial transactions that manage payments to/from the operational participants.

- Generators (Depots, Grocery Retailers, Liquor stores)
- Transporters & Drivers
- Product Aggregators & Processors

These 'product movement' transactions were tracked on a paper form referred to as 'Moving Authorization'.

Upon product pickup, Transporters would complete the Moving Authorizations, leaving a copy with the product generator. When the product was delivered and weighed at the Processor, more copies were left behind. An eventual copy was then forwarded to Encorp for entry into their management system and subsequently, to their financial system.

As the Encorp system grew in participants, products and volume, so did the problematic administration of the operational transactions, such as;

- data entry completed by transport partners was subject to errors,
- redundant data entry required by administration staff,
- payment cycles were adversely effected,
- increased administration costs to solve errors.

The paper-based system seriously impacted Encorp's ability to effectively manage its recycling system and consequently its mandate performance.

To gain tighter control and efficiency of the data administration within it's recycling system, Encorp reached out to StreamCore Technologies Inc., a solution provider recognized for its deep expertise in both Supply Chain and Mobile Computing development.

Solution Objectives

- Reduce payment cycle times
- Reduce data entry & administration
- Reduce manual errors
- Provide audit capabilites

Solution Challenges

- Provide Intuitive, concise user-interface to allow transport participants to easily and comfortably complete their daily tasks.
- Provide rugged mobile computing tools that would stand up to daily use in harsh logistics environment.
- Provide for a configurable, flexible solution that would be responsible to deliver solution to many different participants.
- Implement transaction data in a secure XML format to allow for best integration to enterprise management and financial systems.
- Deliver custom business rules built on standard application framework to allow for subsequent development.

Partnership & Analysis

As a starting point, Streamcore project management team members worked with Encorp to document a workflow that both described regular and exception-based operations. This provided the knowledge base used to complete a transaction scheme within the Streamcore configurable, mobile framework.
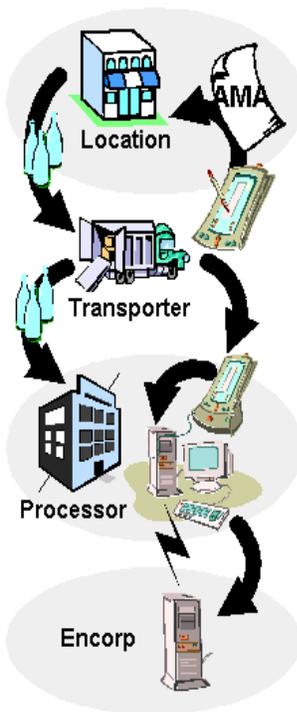
Application Response

Streamcore's mobile application, targeted for MS Pocket PC O/S, enabled drivers to enter Generator Locations, Processors & SKU numbers. This operational activity on the mobile device seamlessly builds both Pickup and Scale Manifest transactions, while delivering pickup manifests, load reports and XML data files for the Encorp enterprise system.

Generator Pickups

Processor Deliveries

At the Location, the Transporter records SKUs in the Pocket PC, and prints an AMA "receipt" for the Location with a portable printer.

The Transporter scales in and out, and records the weights on the Pocket PC.

At the Processor, the Transporter puts the Pocket PC in a cradle, and data is transferred automatically to the Processor's computer.

Data is transferred automatically from the Processor's computer to Encorp via the Internet.

Hardware

Streamcore implemented a solution based on the Symbol PDT 8100 series mobile computer, which has a bright VGA reflective color screen that can be read clearly both indoors and outdoors, and a rugged form factor built to endure rough treatment by truck drivers.

Future Plans

- Symbol PDT 8000 rollout
- Attachment enabling
- EDI /XML, ebXML data transactions
- Web Service communication and data syncing

Symbol & Microsoft Partnership

Symbol and Microsoft have joined on two fronts: wireless communication and mobile computing. Symbol offers a line of rugged, pocket-sized products based on Microsoft's new Pocket PC platform — the latest innovation for the Windows CE operating system. Designed for small devices, the Pocket PC platform features a simple, fast user interface, extensive Internet browsing capabilities and powerful overall performance. The Symbol PPT 2800, PDT 8100 and PDT 8000 families combine the strengths of the Pocket PC platform with productivity-enhancing features including bar code scanning and wireless LAN technology.

Products used in this case study

Streamcore Results

✓ Mobile app well received and used daily by 40 drivers at 20 transporters

✓ Replaced paper-based pickup manifests

✓ Created single point of data entry

✓ Reduced administration and data entry costs

✓ Decreased payment cycle time

Software & Technologies:

- MS Windows Pocket PC 2002
- MS SQL MSDE / CE SQL
- MS Embedded Visual Tools
- Crystal Reports
- XML

Hardware Platform:

- Symbol PDT 8000 Series
- Symbol PDT 8100 Series
- O'Neil Mobile Printers