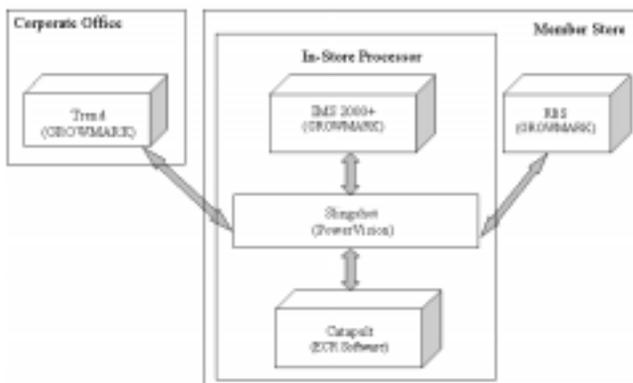


Slingshot Interfaces GROWMARK's Information Systems with off-the-shelf POS Application

GROWMARK, Inc., an agricultural supply and grain marketing cooperative, was preparing a point-of-sale and back office system to market to its member stores. PowerVision Corporation developed an interface application to migrate legacy data to the new in-store processor (ISP), and to facilitate the ongoing bi-directional exchange of information between the systems comprising the ISP, and between GROWMARK's corporate office and the member stores.

Exchange of Information between Disparate Systems Needed

The point-of-sale and back office system in use at GROWMARK's member stores was encumbered by flat-file storage and a character-based interface. While



researching options for addressing the system's Year 2000 issues, GROWMARK identified the opportunity to offer its member stores a more efficient system utilizing relational database management technology and a user-friendly interface. Coupling Catapult, a commercial point of sale and back office system, with IMS 2000+, a back office application developed by GROWMARK, resulted in a Y2K-compliant point of sale application that could be interfaced with Trend, GROWMARK's corporate merchandising system. Developed by ECR Software Corporation, Catapult runs on a Sybase SQL Anywhere database. IMS 2000+ runs on a Microsoft Access database. Both Catapult and IMS 2000+ offer user-

friendly Windows-based interfaces.

To complete the new ISP, GROWMARK needed an interface application to:

- ◇ migrate legacy data to Catapult,
- ◇ exchange information between Catapult and IMS 2000+, and
- ◇ exchange information between Catapult and Trend.

On a regular (i.e. daily, monthly) basis, IMS 2000+ and Trend generate COBOL-format data files containing inventory, pricing, shipment, and customer information for import into the Catapult databases running in GROWMARK member stores. Similarly, inventory, customer, ordering, and sales and payments information must be extracted from each store's Catapult database and uploaded to Trend and IMS 2000+ via data files compatible with these systems.

As GROWMARK member stores convert from the legacy system, separate COBOL-format data files containing inventory and customer information must be migrated to the Catapult database. Dynamic information, such as inventory on-hand counts and customer balances, must be migrated immediately prior to each store going live with Catapult.

Interfacing the four systems was challenging because each system uses different terminology to represent the same information, and the same information may be

Business Area:

- Retail Systems Automation

Key Technologies:

- Visual Basic
- RDO, ODBC
- Sybase SQL Anywhere
- Microsoft Access

PowerVision's Role:

- Analysis
- Design
- Implementation
- Testing

PowerVision Solution— Slingshot Interfaces GROWMARK's Information Systems with off-the-shelf POS Application

represented inconsistently among these different systems. For example, credit limits of \$0.00 in Catapult prohibit customers from making credit purchases, while credit limits of \$0.00 in IMS 2000+ give the customer unlimited purchasing power.

Further, there are many situations where a flat file field can not be directly mapped to a relational database field, and must be represented in the database only by the presence or absence of a particular record. For example, a tax field value of "Y" for a particular inventory item in a flat file is represented in the database by the existence of a record linking the inventory item with the tax type. When importing flat files into the database, records must be inserted or deleted according to the values in the flat files. Similarly, when setting the value of the tax field in an export file, the application must query the relational database to determine whether a record exists linking the inventory item and tax type.

Finally, the interface application would need to be capable of processing fourteen unique file layouts.

Analysis Proves Key to Mapping Flat File Systems to RDBMS-based POS System

Before beginning development on the interface application, PowerVision performed a comprehensive analysis of the flat file layouts and Catapult database schema to

gain a thorough understanding of their consistencies and discrepancies. Detailed attention was paid to the formatting of numerical data to ensure that it would be converted accurately from various COBOL formats to SQL-compatible formats, and vice versa. PowerVision identified situations that would require special handling to prevent loss of data due to truncation or formatting (e.g. taking the left-most characters of a right-justified text field). Conversion charts mapping correlating fields between systems were constructed.

After the analysis was completed, PowerVision used Visual Basic to develop Slingshot, which can be run on a Windows 95 or NT operating system. Slingshot communicates with Catapult's Sybase SQL Anywhere database via an ODBC connection.

Slingshot is available with a GUI interface, for debugging and interactive use, or command-line mode for use in automated scripts and unattended operation. Results of execution are written to a log file and displayed in the GUI interface.



Slingshot has been pivotal to the successful installation and operation of GROWMARK's new ISP in several Canadian member stores, allowing GROWMARK to use an off-the-shelf system to meet its POS needs while developing custom back office applications for its unique processing requirements.