

BWH News Letter

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The IT Trends in Retail

I have tried to think of the most significant technical and business opportunities that will drive retail computing over the next five years. These are capabilities I feel will be generally accepted, but not necessarily fully implemented by 2010.

Wireless Technology

The general expansion of wireless technology in the stores will make equipment movement much easier. The big concern here will be the need for improved security measures as the point of sale networks become vulnerable to hacker attacks and the hardware itself becomes more susceptible to theft.

For suppliers with DSD deliveries, most high traffic items can be delivered in one step. Instead of walking into the store to determine what is required, salesmen will determine the delivery requirements from the parking lot and making only one trip to the selling floor for shelf stocking, product rotation, and return collection.

For retailers, wireless networks can monitor movement of carts and equipment through the store. This allows monitoring of the various processes that must be carried out. Coordination with video surveillance allows quick indexing to customer accidents and equipment losses.

For consumers, shelf edge promotions become possible as displays attached to shopping carts can be used to inform them of new items, sales, and targeted promotions.

Messaging Interfaces

This may seem obvious, but the truth is many retailers have a long way to go before they can truly support a "messaging environment". Many of our back office processes are still batch oriented. In some instances this still makes sense, but there are many times when more up to date information would be helpful.

Messaging interfaces in the supply chain would allow last minute updates to warehouse and

store orders. Shipper applications could send a request for order adjustments as order selection begins. The truck size order may have been made days before, but now can be adjusted to reflect the interim activity. Shippers may require constraints on the size of the adjustments, but these last minute "tweaks" can improve the inventory position of the retailer. For store orders this is especially helpful on promotion merchandise, allowing last minute adjustments based on actual performance.

Messaging interfaces support remote collection of data like new item descriptions from the vendor or UCCnet. Messaging moves data collection farther away from the office and closer to the action, allowing flatter organization structures as the messages reveal what is going on at the "fringes of the organization" and management can dispatch resources to handle the unexpected.

Serialization / Traceability

I really believe the requirement to support serialization, tracking, and tracing will come before RFID is fully implemented. Country of Origin Labeling is not dead. The biggest impact on IT will be the additional data that must be captured and preserved.

Bar code scanners at the warehouse shipping dock and on the DSD vendor's truck will be used to capture the unique identifier on a particular shipping unit. Scale equipment in the store will be able to scan the case codes and label the retail units produced from primal cuts appropriately.

The information captured by all these processes must be archived and be accessible if recalls or verification becomes necessary.

RFID

Over the next 5 years, RFID will not get much beyond pallet, case, and possibly specialized product group (pharmaceuticals, meat, etc.) implementations. RFID will support the automatic capture of serialization information.

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RFID on cases in the freezer and backroom can be used to tell when the selling floor inventory is getting too low.

RFID may also be used for certain types of asset tracking such as shopping carts, calculators, portable electronic devices and other store equipment. Asset movement can be used to monitor store processes. Shopping carts can be monitored to make sure none are left outside. Store exits can be monitored and coordinated with video surveillance to make sure handheld devices and other portable equipment does not leave the store.

Distributed Applications vs Distributed Processing (Software Agents)

These are applications that are designed to be managed from different levels by controlling the "rules" which govern the application. This requires a special type of application structured on a set of **Rules** and **Objectives** that are applied to the **Facts** by an **Engine** that is at the heart of the application. The Facts are loaded into the application and the **Outcome** is monitored to provide **Feedback** so the Rules and Objectives can be adjusted to improve future results.

An excellent example is a Payroll Application. In this case, the Union Contract and Labor Rates provide the Rules. The hours worked, the type of work, and the employee seniority are the facts. The objective is to generate the pay amount on the last work day of the employee or the scheduled pay day. The outcome is the resultant paycheck or direct deposit. By designing the application so that the contract rules and labor rates are maintained from a central portion of the application, the same engine can perform the individual payroll calculations at each retail location. Employees who work multiple locations can have their hours forwarded to their home location. The results of all employees can be summarized and sent to the central host for producing company totals.

Historically, the retailer had bookkeepers, auditors, field merchandisers, etc. to support the local retail outlet. The development of "Agent Based Applications" brings this concept full circle by providing local processing that meets

the retail outlet's requirements. This also addresses some of the scalability issues that major chains face when they push the capacity limits of applications that were not designed to support large organizations.

Network Based Applications (GRID Computing)

Grid Computing is the term given to distributed applications that utilize multiple computing resources over a network to solve complex problems. Retail is the perfect environment for these types of solutions for forecasting, labor scheduling, promotion analysis, replenishment planning, etc. These types of applications involve large amounts of computation, traditionally done on centralized host systems. These host systems require significant infrastructure and are still vulnerable to local outages. With all the processing power either completely shut down or drastically underutilized overnight, GRID Computing utilizes distributed store systems to perform batch processing tasks related to forecasting and replenishment.

Application Service Providers

This may be the most significant change over the next five years as more and more people have good experiences with the internet as their source of financial advice, tax services, banking, etc. With more and more homes using high speed connections, it won't be long before business executives are asking "why can't I do that too?" This is complete opposite thinking of distributed applications unless the host implementation is merely a matter of centralizing the hardware.

Small distributors and retailers will be able to latch onto point solutions that allow them to achieve benefits in specific areas without investing in computers (except for internet access). This will be especially useful as they work to support new technologies that require real time computer access like RFID. Instead of having local applications running 24 hours a day, the central application will monitor the movement of RFID's in the warehouse and store.