Merchandise and Price Optimization Will Justify ESLs

Electronic shelf labels haven't been employed strategically, which has made them difficult to cost-justify. However, the use of ESLs in strategic merchandising and pricing optimization will justify wider deployments.

The concept of electronic shelf labels (ESLs) has been around for years, but the costs involved have historically been hard to justify. This is primarily because the strengths of the technology have largely supported tactical reductions in the amount of store labor spent changing prices and complying with government price-marking regulations. The costs of early systems easily outweighed these tactical benefits, and ESLs were primarily adopted only to comply with price-marking laws in supermarkets.

However, users should reevaluate the use of ESLs in the context of supporting merchandising and pricing optimization initiatives as components of the real-time enterprise (RTE). Merchandise and price optimization (M&PO) is not going to be a "silver bullet" that justifies the mass adoption of ESLs, but it is an additional benefit that can be factored into an assessment, along with ESLs' decreasing costs.

ESLs Have Traditionally Provided Benefits

With ESLs, pricing is no longer a static, manual process that often has to be scheduled outside a store's operating hours, or worse, while the store is open. These processes can be replaced with electronic price update controls. This creates a more-dynamic environment in which price changes can be implemented quickly and the demands on store labor can be reduced. This can also increase pricing accuracy, because conventional vinyl shelf tags won't get lost.

Shelf prices get updated on time to match in-store price files, because there's often a direct link between the in-store point-of-sale (POS) processor and the ESL price file. Increased pricing accuracy helps retailers avoid branding issues around pricing integrity, decreases the number of legal issues and reduces lost revenue from mispriced items. (Underpriced products often go...
unnoticed longer than those that are overpriced, because customers tend to alert retailers to overpriced items, but not to underpriced items.)

The Traditional Challenges for ESLs Are Being Overcome

High costs and technological immaturity have traditionally plagued ESL systems and hampered their adoption. However, the cost of the tags (a primary cost inhibitor) has been steadily decreasing. One vendor claims it can justify a $5 per tag cost to the retailer in high-volume implementations. This cost will continue to decrease steadily as production volumes increase.

ESL systems have steadily matured technologically. Vendors are finding better ways to resolve host integration issues, and the tags are more durable than the earlier models. The tags also have substantially improved battery life. This is a significant improvement, because earlier models required users to regularly walk the store replacing batteries and defective units, offsetting many of the intended benefits of the system. The speed of the system has also been improved, enabling between 10,000 and 15,000 price changes per hour. Earlier systems were slower, which limited their use to large-format retail stores. The appearance of frozen food and produce-specific labels will also expand the applicability of ESLs across the retail environment.

The Adoption of ESL Is Increasing, but It's Still Early

There is not going to be a tidal wave of ESL adoption, because each retailer must find the price point at which installing the system makes sense. However, as prices continue to drop, more retailers are considering the use of ESL technology. In a recent RIS News/Gartner research survey, 44 percent of respondents indicated that they planned to consider ESL by 2004. The answer to the question, "What are your plans for electronic shelf labels?" yielded the following results:

- Have already updated technology: 14 percent
- Will update technology by 2002: 16 percent
- Will update technology by 2003: 11 percent
- Will update technology by 2004: 4 percent
- No plans to update technology: 56 percent

(n = 63)

Alternative-Technology Signage Enables Dynamic Pricing for Promotional Displays

Alternative technologies for in-store signage, such as those being developed by e-Ink and Gyricon Media, could also contribute to
in-store signage and pricing optimization programs. Although still technologically immature, these technologies could provide inexpensive large-format displays for end caps and other large display areas in stores. Some users are already experimenting with adding radio frequency support to these displays to enable dynamic pricing for promotional displays as well.

**M&PO Applications Give ESLs a More-Strategic Role**

Even though price optimization efforts are still few and far between in retail, a maturing ESL technology offering can reduce, without completely solving, some of the execution challenges with merchandising and pricing optimization in retail environments. M&PO initiatives help retailers optimize revenue, product sales and gross margin by calculating price levels and price points for individual products and entire categories. At one extreme, this can result in some minor price changes for several products. At the other extreme, it could result in hundreds of items needing re-pricing. M&PO does not result in wholesale changes of prices; it’s constrained and bounded. This means that prices cannot change to the "perfect" price to best optimize a seller's resources, but some prices will need to change and, in some cases, on a dynamic basis.

Regular pricing and promotion packs are a good example of an area in which dynamic pricing will be needed. When launching a new product, a retailer can take a broader view; hence, the original price is not so dynamically managed.

Markdown pricing is another area in which this technology might be useful. In a supermarket, drug or mass retail environment, seasonal and special-event-formatted-offerings (such as for Halloween or Christmas) are virtually worthless during the period immediately following the end of the season or cycle. Most of the activity in retail for markdown pricing has focused on seasonal or fashion products, such as apparel. Many stores have markdown policies, but these are cumbersome to implement and not as dynamic as they could be, resulting in inefficient sell-through and lower margins. Using ESLs in a limited section of the store, such as a seasonal aisle, might be a way to contain costs to those categories where maximum benefit can be obtained. However, users should be realistic about the degree to which costs will be contained with "limited" rollouts in a store such as a seasonal-only rollout. The costs of host integration and many of the infrastructure costs will still be incurred.

Thus far, price optimization initiatives have only talked about "planning" — the setting of the price. They have not focused on "execution" — the actual process through which the price will be changed at the store. With the advent of ESLs, users of M&PO
have a workable means with which to implement their pricing strategies, while reducing the impact on store labor. Storewide price changes for all items can now be managed more easily, because these price changes are automated at the shelf level.

Nonetheless, users must consider the performance limitations of the ESL system. There’s a ceiling on the number of price changes that can be executed in an hour with the current technology. Users should also be aware of customer concerns: Too many price changes during open hours could confuse and alienate the customers. Users should also consider equipping only certain sections of the store with ESLs — such as seasonal merchandise sections — until merchandise and pricing optimization has been proved in all categories.

M&PO Vendors

Vendors providing merchandising and pricing optimization technology focused on the retail environment include the following:

- 4R
- ACNielsen
- Churchill
- i2 Technologies
- DemandTec
- KhiMetrics
- KSS
- Manugistics
- Profit Logic
- Spotlight Solutions

**Bottom Line:** Electronic shelf label (ESL) systems are slowly maturing and overcoming many of the traditional challenges at the same time that retailers are experimenting with merchandise and price optimization (M&PO) solutions. Retailers should evaluate the two technologies to understand how they can mutually justify each other because there are potential benefits to using them together. However, retailers should rigorously evaluate each technology and the return on investment (ROI) associated with it because neither ESLs nor M&PO has been proved independently or jointly in retail environments.