Larger operations, like hotels with many different food and beverage outlets, require greater BOH IS capabilities than do smaller, stand-alone operations. First of all, large operations generally warehouse their food items and issue them to their outlets from a central holding facility. This offers these large properties opportunities for greater control as the individual outlets can maintain lower inventories on a daily basis; the outlets do not incur costs until the items are requisitioned.

Running such a system, however, requires an extra layer of IS functionality. The warehouse itself must maintain an inventory system that tracks the contents of the warehouse in real time. This inventory/purchasing (I/P) system must maintain a running count of all items in all storerooms, adding and subtracting from inventory as deliveries and requisitions are received. Purchasing for the warehouse is a rather straightforward process; par levels are established for each item and purchase orders are generated automatically based on a predetermined reorder point. Purchase orders for other special order items can be generated manually on an as-needed basis.

The business intelligence and data analysis systems (including menu analysis) allow operators to monitor their sales and usage to levels unknown in the past. It is now possible to know not only food cost and beverage cost in real time; it is also possible to know waste factors in real time and to determine exactly where the waste is occurring. We begin by looking at purchasing systems.

PURCHASING SYSTEMS

Purchasing in many hotels is still often managed differently for F&B and "general" items, the latter covering retail outlet items, FF&E and all other hotel supplies. This is changing to some extent, especially in casinos where outlets offer both retail and F&B products, and many larger operations with enterprise accounting suites try to use these applications' general purchasing modules to cover both areas. However, F&B ordering does have special requirements. Restaurants buy an amazing mix of perishable and other products on a daily basis from multiple national and local vendors, with considerable variation in local and regional item specifications reflecting guest preferences and product availability. Apart from menu changes, individual item container and pack sizes in particular often change frequently.

Although good integration with accounting, especially accounts payable, is still essential, managing all these factors effectively requires a specialized application. In addition to the purchasing modules offered by POS vendors, modern systems are also available from independent vendors such as Adaco, Culinary Software Services, CBORD, Moreton Bay, Agilysys, RHR Systems and RedRock. All combine detailed and complex functionality with great flexibility and significantly improved ease of use compared to older systems. One advantage of using the systems is that many purveyors like Sysco and US Foods have purchasing systems that interface directly

with these inventory management systems, allowing invoices to be entered directly into the restaurant's inventory, eliminating the need for data entry while also eliminating the human error involved in manual data entry. Further, many of these systems will automatically survey purveyors' current prices and display the least expensive purchase option to the individual placing a purchase order (assuming, of course, a single source purchase agreement has not been made).

The use of anything other than electronic bid sheets is almost unknown. Very few purveyors who deal with operations of any consequence generate written bids any longer. Even small purveyors like local dairies and produce providers who change their price quotes frequently generate electronic bid sheets and e-mail them to customers using Excel or other spreadsheet applications. These bids can then be uploaded into the I/P system. Combined with the fact that I/P systems are capable of automatically determining which purveyor is offering the best price, the use of single-source contracts is in decline. As long as the I/P system is only offered the choice of food items that meet the operator's quality standards, it can automatically ensure that the best possible price is being obtained.

Efficiency is also being helped by a move toward more precise ordering, driven both by data analysis within the I/P systems themselves and by their integration with other hotel and catering systems. For example, instead of setting a single par stock level for each item and triggering a re-order when inventory falls below that figure, par levels can vary according to known business volume fluctuations by the day of week or season, or even according to the forecasted guestroom occupancy or catering function traffic. Greater precision means fewer lost orders through being out of stock, and less spoilage from being overstocked.

Smaller, stand-alone operations, however, do not enjoy these advantages. They do not have the luxury of purchasing from the multiple vendors that large operations have available to them. Purveyors are not willing to deliver to smaller accounts on a daily basis, nor are they willing to stock items that will not be ordered in quantity. Generally speaking these stand alone operations also generate purchase requisitions manually and then place orders via the internet. Therefore these operations should concentrate on making sure that their purveyors offer the capability to enter invoices directly into their inventory management systems and that prices are negotiated in the traditional fashion, by putting their business out to bid on an annual or semi-annual basis.

RECEIVING

The receiving process is a challenging area to automate, but modern I/P systems help manage it well. Goods are usually received against the electronic order so that only exceptions need to be entered. Items that are over-delivered, substituted with a different pack size or an alternative