Association estimates that 1 percent of all invoices are incorrect, and in any high-volume operation this can amount to quite a financial shortfall.

We do know that POS systems create a return on investment by speeding table turns, eliminating unnecessary conversation between servers and cooks, and ensuring that all food and beverages served are actually paid for. Further, POS and other FOH applications help to create a positive guest experience, a benefit that is impossible to quantify, but of immense worth just the same.

Calculating a return on investment for I/P systems is a little less problematic. Electronic documents help by making it much easier to do a triple check, comparing items ordered with those received and those invoiced. Not surprisingly the latter two almost always agree, but over-delivery and vendor substitutions can be expensive. Highlighting differences from the order is the first step to effective cost control.

Other factors contributing to I/P systems' ROI include:

- Holding people accountable, by checking that major items ordered (e.g., 10 cases of T-bone steaks) were all tied to sales recorded in the POS system or to specifically-approved spoilage write-offs, and don't just disappear
- Lowest-price bids being kept in the system at all times, automatically
- More precise ordering through managed par levels
- Better communications with the primary vendors, to alert them to future demand peaks and to identify substitutions as soon as an order is shipped

The payoff for companies with high rates of "perfect orders"—those that are complete, in the right place, undamaged and on time—can be substantial. A recent AMR Research survey found that a 3 percent improvement in perfect order fulfillment translated to a 1 percent increase in profits. Companies that ranked high carried less inventory, had shorter cash-to-cash cycle times and were more profitable overall.

SYSTEM INTERFACES

As discussed previously, restaurant information systems perform better and provide management with higher quality information the more fully integrated they are. Although full integration is not absolutely necessary, certain systems must interface with others for them to be of any use whatsoever. In hotel environments, food and beverage POS systems must interface with hotel property management systems (PMS). Without such an interface it is impossible to place restaurant charges on guest portfolios in anything approaching a timely manner. Essential POS/PMS interface capabilities include:

- Sends requests to the PMS to display the names of all guests registered in a specific guestroom,
- Displays the returned list along with any credit restrictions,
- Allows selection of the correct guest, and (guest credit limit permitting) sends the POS charge for posting against the guest's folio.
- Sends some degree of POS check detail to the PMS along with the total charge, to reduce the number of POS charge disputes at checkout. Early systems sent only four sub-totals—food, beverage, tax, and tip—but now sixteen are more common.
- Send totals of all room charges to the PMS in real time to help balancing of all folio charges.

A few high-level PMS/POS interfaces have been developed between specific pairs of systems, which allow the PMS to:

- Retrieve all line item details of the POS check from the single total on the guest's PMS folio;
- Recognize when a POS check has been opened for a particular guest in an F&B outlet and set a corresponding location flag on the PBX operator's guest list;
- Alert the POS cashier that the guest settling his or her check has a message entered in the PMS; and even
- Let the guest check out of the PMS from a POS terminal, for example, after breakfast.

Some interfaces also pass revenue sub-totals for all POS settlement types (not just room charges) to the PMS at end of day, which can make it easier to prepare the nightly operational "flash" report for the complete operation.

POS systems should also interface with reservation systems, wait list systems, and table management systems as outlined previously. The POS system should also interface with the I/P system so that sales data can be integrated with inventory data. This will allow management to identify the ideal food cost, compare it to the actual food cost, and identify the source of waste. Further, such an interface will allow for the automatic reorder of items as they disappear from inventory.

POS systems should also interface with labor management systems so that employee hours can be matched against scheduled hours and management can be notified in real time if discrepancies arise. I/P systems should interface with accounting systems in order that vendor information can be transmitted to the accounting system as invoices arrive.

As in so many areas of hospitality technology, improving one system can make a measurable difference, but integrating several together raises efficiency to a much higher level by giving each a more complete and accurate picture of the whole. Fortunately, this has been made much easier with the

current move to more open architectures and XML-based interfacing. Modern systems that have embraced this approach have more flexibility in which systems they interact with, and to what degree of depth and detail.

Integration with property management and other guest-focused systems is better thanks both to client demands and to better interface technology, but can become still more seamless. Many PMSs can already look up the POS check detail for charges originating in an F&B outlet or spa, but it's still not as common as it could be to have dining reservations show up on the guest's complete stay itinerary in the PMS.

Again, the optimal solution is a complete enterprise management system, as this eliminates any compatibility issues. Such systems are readily available for restaurants, but are more difficult to find and often impractical for very large properties with their far greater number of departments. Integrating an I/P system with a restaurant POS system is not terribly difficult when all the I/P system has to do is manage the inventory of the restaurant. However, if the I/P system also has to manage an inventory of linens, shampoo, uniforms, and other sundry items, integrating this system seamlessly with a restaurant POS is far more difficult. Oftentimes large properties will maintain separate I/P systems for each of their divisions.

WIRING, INFRASTRUCTURE, AND IMPLEMENTATION

Implementing a POS system requires careful planning in the placement of the workstations, printers, video monitors and cabling. Work flows must be thoroughly reviewed to make sure that the right number of workstations are in the right places, and that kitchen video monitors (for example) can be viewed easily from the appropriate workstations. Some systems connect check or order printers to a cable from the nearest workstation; others drive them from the central server, requiring a very different cable run. When at all possible, cables should be run above ceiling panels, through walls, or inside conduit in order to protect their integrity. Hot liquids, corrosive cleaning chemicals, and grease can all eat away at a cable. Do not run cables along the floor unless they are inside metal conduit. Also, any cable inside a wall or in any other place that is extremely difficult to access should be inside conduit. Replacing a cable can be time consuming and expensive. Anything that can be done to protect cables—within reason—should be.

Space is always at a premium in any F&B outlet, and it can be hard to find appropriate room for workstations. Fortunately, many modern units are all-in-one self-contained devices, but some systems do use PC-based workstations, either full PCs or thin-client units with more compact processing units. Either way, it is essential for system reliability and maintainability that workstations and their processing units are incorporated into hostess kiosks, bar counters, server stations, etc. in such a way that they have

