# CENTRALIZED SYSTEMS
# THEIR TIME AT LAST?

*by Jon Inge and Matthew Dunn*

From mainframes to PCs to application service providers (ASPs), focus has swung from centralized operations to distributed computing and back again. The ASPs of a few years ago proved to be something of a false start, yet interest in centralized systems has never been higher. What's driving this sudden interest and what are the advantages?

Centralized systems, where users access a computer system situated somewhere other than in their work place, have had an up-and-down history. Because early computers were expensive it made sense to share the investment in mainframes among as many users as possible, and service bureaus sprang to life, mostly for general-purpose, limited-function applications such as accounting.

The PC liberated the users from the restrictions of the mainframe, off-loading computing power to the desktop and unleashing the blessings and curses of personal customization. Individuals could finally tweak their systems to make them do just what they wanted, more or less successfully, and could choose from an expanding list of specific applications to cover all their needs. In the process, however, system-to-system interface complexities grew and it became more difficult to share data between users, who were often working on different versions of the same application or even on computers with different operating systems.

Windows-based applications matured in functionality and flexibility at about the same time as the Internet exploded into universal use, and the combination promised cheap, widespread access to standard, centralized versions of the main systems. This promise was quickly confirmed for back-of-the-house systems such as accounting, payroll and purchasing. However, for the more response time-critical guest-facing systems such as PMS and POS the promise became tarnished with the early Internet's inconsistent performance and with the inexperience and middle-man costs of third-party hosting companies. Despite this, the concept has recently gathered strength and interest while commitment to it has never been higher.

Why now? Frustration at the complexity of operating and supporting the current mix of on-site systems is reaching a breaking point. Despite improvements in the breadth of systems functionality and system interaction, more systems with more functionality to handle more operating environments are required, with higher demands for data accuracy, analysis and up time. Fewer properties can afford the resources to support this complex mix on their own. A centralized approach allows resources to be concentrated providing a more supportable and reliable environment with better data and operational standardization.

## The Data Challenge

Hospitality shows no signs of becoming simpler. In common with the general public, hotel guests expect more personalized experiences. To provide this, hoteliers need a wider view of their guests' history and profile, and a more in-depth one, both to cater to repeat guests' preferences and to analyze the operation. Management systems are increasing in functionality and coverage to support this, but the sheer number of different systems required to cover everything has become the major challenge. At most properties there are simply too many systems to track, manage, interface and support cost effectively. And if different hotels within a chain are using different versions of the same system, or even completely different systems, data consolidation issues become a nightmare.

Data to build a complete guest profile comes from multiple inputs – POS, spa, golf, dining reservations, CRS, PMS – and can all be re-formatted, normalized and sent out for address verification, de-duplication and general

## A Word on Terminology

A number of different terms have been used to describe the centralized-systems approach. When the concept was revived a few years ago, the popular term was application service provider or ASP, meaning a third-party company that acquired a vendor's software, hosted it centrally and sold remote access to it to multiple clients on a monthly or transaction-fee basis.

This third-party approach never really took off in the hospitality world since the middle-man fees made it uneconomic, but lately the ASP label has often also been applied to systems hosted either by the vendor itself or by a hotel group or chain on behalf of its properties. In both cases, while the vendor or hotel company takes responsibility for loading and supporting the application software, the servers themselves are usually physically situated at an independent vendor's specialized "co-location" facility, which provides a fully-supported, highly-secure environment for hardware to multiple customers.

Other terms often used are centrally-hosted or vendor-hosted systems, and in the general business world the description software as a service or SaaS is becoming common. This article uses the generic term centralized systems label to cover all of these.

clean up to yield a usable database for frequent-guest recognition and database-driven marketing. Consolidated across multiple hotels for centralized guest profiles and operations reporting this helps management and marketing tremendously, but it's still a one-way process. There is currently no way that the clean data can be fed back into the systems that generated it, so the staff can provide more accurate guest service the next time they meet the same guest.

Many vendors are making major improvements in the way multiple systems exchange data, both under the HTNG initiative and on their own. But there still hasn't been any significant reduction in the overall number of systems themselves. There are still too many of them, and the local support requirements have become unsustainable. A major part of the HTNG solution was the encouragement of global Tier 1 companies to step up and provide a complete range of centralized systems software to hotels, on the grounds that their international presence and stability would give hoteliers the confidence to buy software service from them. There are encouraging signs of this beginning to happen as major PMS vendors implement or explore world-wide hosting relationships with companies such as MCI and EDS. But the continued fragmentation of the full systems set means that to offer a complete solution any hosting vendor has to offer and support a range of different components that work well together, and that's still a work in progress.

In the meantime, hoteliers are at a half-way house. The advantages of centralized systems are becoming more apparent, and the bolder operators are reaping some real-world benefits while proving the concept to the rest.

## Advantages

These advantages include greater reliability and availability, more consistent performance, better vendor support, better security, avoidance of CapEx battles, ease of new application introduction, and for multi-property operations huge improvements in data consolidation and reporting, simpler interfaces and the ability to bring a new property online faster, whether a new-build or a conversion from another flag.

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## Greater Reliability and Availability

Very few individual properties can afford to run their critical applications in the kind of access-secured, fully-protected environment available from professional hosting companies, with the software running on duplicated, redundant servers with duplicated power supplies, back-ups, 24/7 monitoring and full protection against viruses and spam, all designed to keep the systems available and performing efficiently. Sharing the costs of such an environment between many companies makes it affordable and practical to each.

A frequent concern over centralized systems is what happens if the communications link goes down? In the experience of many companies already using them, link reliability is the least of their problems, especially compared with the challenges of keeping site-based hardware and software running. Sadly, many hotels still leave a server under a desk somewhere, hope the office air conditioning unit will keep the system cool enough in the summer and hope that no one trips over the power cord or interface cables. And don't even ask about keeping all software updated to the current release level.

## Performance

Hosted environments also enhance performance stability. Since the hosting company has considerably more powerful servers than an individual property, they'll have more reserves of power, too, and will be better able to smooth out peaks in demand. Not every hotel will require peak performance at the same time. There will be some common high-demand periods such as night audit and end-of-day processing, but the lack of concurrency in the peak demands of check in and check out provides a performance cushion for everyone.

## Vendor Support

Technical support is more available and of higher quality at a central site since it's more feasible to spread the costs of 24/7 skilled technicians across multiple properties. Upgrades and patches are installed consistently by the vendor technicians at their own location, not by multiple IT coordinators at the properties when they have time and maybe not in complete accordance with the instructions. And if there are problems with a new release, a central system can be quickly rolled back to the previous release without drama.

The vendor has more incentive to perform high-quality testing before implementing any patch or upgrade, too, since any such change will immediately affect many more properties. Smaller properties should see a higher level of support responsiveness, since any problem they experience will likely also impact the biggest multi-property users, who will exert considerably more influence on the speed of identifying and resolving the issue.

## Security

Firewalls, anti-virus, anti-spam, user authentication, remote access management for the sales managers are all better managed on a skilled, professional level rather than left to overworked management and staff.

## Sarbanes-Oxley (SOX)

The jury is still out on just what audit trails SOX will require for changes to your revenue-

related systems (that would be all of them), but the current advice is that every change, including bug-fix patches, must be documented and certified according to documented procedures before it can be implemented. Would you rather do that yourself or have your vendor be responsible for certifying and logging all updates? At least the host of a centralized system can do this for multiple customers; site-hosted systems users may have to do it themselves for every system.

## No Capital Expenditure Battles

If you're paying for your systems with a monthly or transaction-based fee, the annual competition for capital funds with lobby or guestroom renovation projects simply goes away. The hosting fee should include regular updates to the servers to keep them current, and while you'll still need to budget for regular workstation upgrades or replacement, this can be covered in a lease program. Besides, since centralized systems only require a browser or thin-client application instead of a full PC software suite, the workstations can be simpler and less expensive. In many cases a simple thin-client appliance can be used instead of a PC reducing both purchase and support costs.

## Ease of Introduction

Many of the companies who have become enthusiastic users of centralized systems will tell you that one of the main incentives was the ability to introduce a new system quickly without getting the IT department involved. Whether frustrated comments like this arise because the IT staff is overwhelmed trying to support current systems or because IT is more interested in controlling systems decisions for reasons of job security, there's no denying that adding a new system to a PC/browser environment is considerably simpler. Just type in the URL to the browser and there it is. There is still operational work to be done in defining the standard data parameters to be used in the new system, especially if it's to be implemented across a chain, but the technical issues become almost insignificant.

## Multi-Property Benefits
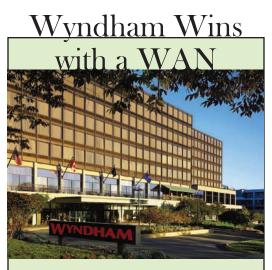## Data Consolidation and Reporting

All of these benefits accrue to a single hotel just as much as to a multi-property organization, but the latter also enjoy other advantages, whether they decide to host a system for their properties or rely on the vendor. Key benefits among these are having standardized data across all properties for consistency and accuracy, and far simpler consolidation of that data allowing for accurate, timely comparative reporting, data analysis and guest profile consolidation. Sharing operational data so all hotels in a group can see which are outperforming or underperforming in certain areas brings in peer pressure as a powerful driver of improved efficiencies and profitability.

## Simpler Interfaces

A multi-property chain using a centralized PMS can implement single interfaces to its CRS, to a centralized RMS or sales and catering system, to the Internet for Web bookings and possibly even to a centralized VoIP telephone and call accounting system, instead of having to implement and manage one of each at every property. Some interface links still need to remain onsite to non-centralized implementations of POS, PBX, PPV movies and so on, but the improvements in reliability and supportability by concentrating as many as possible centrally are obvious and enticing.

## New Hotel Integration

When a new property joins a group with an already-defined standard system configuration it is significantly more efficient and faster to produce a copy and tweak it for local variations than to build a new one from scratch. Since it is hosted it's already installed on the servers making one less major task to perform.

# Wyndham Wins with a WAN



One of the more visible centralized systems projects recently has been Wyndham Hotels & Resorts commitment five years ago to provide hosted service of **MICROS-Fidelio's** Opera PMS and CRS to all its hotels. How has this worked out? Has running front office operations remotely been a challenge?

"Not at all from the communications viewpoint," said Mark Hedley, Wyndham's executive VP and chief information officer. "We've had really good experiences with Sprint, our network carrier, with connection uptime coming in at nearly 99.998 percent."

So does the PMS require a lot of bandwidth? "Surprisingly, no," said Hedley. "We just expanded the existing frame relay network we were already using at each property to run SAP financials, payroll, purchasing, the company Intranet, e-mail and Internet access, all of which are centralized. We run a minimum of 512k bandwidth to each site to handle all of these, but even at our largest property the PMS doesn't need the full 1.5MB of a T-1 line. Actually, the biggest challenge was started before I joined Wyndham, which was to set data standards that would be followed by every property. This was triggered by the adoption of MICROS-Fidelio's pre-Opera systems (v6 for the PMS and FT/CRS for central reservations), and it took a full year to get all 200 properties using them."

So are all Wyndham properties now up on the centralized system? "Not yet," said Hedley. "We're gradually moving hotels over as their existing systems come up for replacement, and currently run 25 hotels on the centralized system. But every new property Wyndham has added to the brand has gone directly to it, by choice. At this point the PMS is just one of the systems on the network."

## Allows Spread of Systems to Smaller Properties

Centralization can make it feasible to implement systems in smaller properties where they were previously cost-prohibitive. The classic example is pay-per-view movies; few vendors have ever been keen to install their revenue sharing systems in properties of less than 150 rooms since there's seldom enough revenue to justify putting the central equipment onsite. But if the service is delivered over a network from a remote central site, the only cost is that of servicing the additional rooms, and is purely incremental. Other examples of potentially significant cost savings are VoIP telephone systems and the centralization of call accounting and voice messaging.

## Vendor-Hosting vs. Self-Hosting
### Horses for Courses

If hoteliers decide that the centralized system concept makes sense for them, there's still the decision of whether to contract for their own hosting services or contract with the software vendor to use theirs. It's basically a trade off based on their degree of comfort with the vendor's ability to provide the service reliably, and the degree of control they want to have over the whole process.

Hosting it yourself lets you keep your data stored on your own servers, and allows you to test every new software release independently of the vendor before loading it. However, the trade off is that you must manage three separate support agreements and service level agreements (SLAs) with the software vendor, the hosting company and the communications provider.

The alternative is to contract directly with the vendor to take full responsibility for all three aspects of providing the service to the properties – software, hosting and communications. With only one SLA to deal with, it doesn't matter where a problem lies; it's the vendor's responsibility to fix it within tightly-defined time limits.

To those who might suggest that if they can't rely on their vendor to deliver bug-free releases, why should they trust them to host the whole delivery process, keep in mind that they'll be using outside hosting and communications vendors and facilities just as you would. The more hotels hosted on their servers the more incentive they have to improve the quality of their releases, since more clients will be immediately affected by any problems and the quicker they'll roll back to an earlier release if a bug surfaces.

Support should also see significant improvement since hosting multiple clients gives the vendor more direct feedback from more properties using the software under a variety of circumstances, and they'll be able to track what's happening directly on their servers without having to interpret third-party reports of circumstances from the users. Smaller hotels especially should see an improvement in support since they'll be sharing software with larger groups, who put more pressure on the system in daily use and more pressure on the vendor to fix problems when they arise.

It's not a simple choice. If you host the servers yourself the vendor can still have remote access to them to monitor unusual events and track down problems, though without the direct feedback from other hoteliers' usage. If the vendor hosts them, you can still access their test servers to verify the quality of new software releases before authorizing their introduction. Some hotel chains centralize many systems but still install PMS servers at the properties, often in secure rooms and monitored remotely by central support technicians. This complicates both support and the roll out of software updates, but it does remove concerns about data inaccessibility at the properties in case of communications failure. It all has to do with your comfort level and individual circumstances.

## A Word on SLAs

Service level agreements are essential to ensuring the effective delivery of services, but they need to be approached with a sense of reality from both sides. Vendors need to understand how critical their service is to the hoteliers and the true impact of downtime. Hoteliers also need to understand that achieving those last few percentage points toward 100 percent uptime can get fiendishly expensive. An uptime of 99.5 percent uptime might sound good, but it means that service is likely to be unavailable for 0.5 percent of a year, which is nearly two days. Fortunately it's relatively affordable to get to 99.95 percent uptime and most services offer this, though not perhaps in all parts of the globe. Each hotelier has to strike a balance between cost and the impact of occasional interruptions.

Clearly there must be financial penalties if the vendor fails to meet the guaranteed uptime, but these too must be kept in proportion.

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# Galt House Gets a Taste for HotSOS - Remotely

With 1,300 guestrooms, over 50 function rooms and six restaurants and lounges, the Galt House in Louisville, Ky., has some pretty demanding needs for its automated systems, as you might imagine. So far, all of its major systems are managed in house, but when the hotel needed a maintenance management system, they went online for **MTech's** Web-access hotSOS. Why the change?

"We definitely felt that this was the future," said Nils Lofgren, call center and project manager at the property. "We didn't want to buy into a system that could potentially be obsolete in five years, and with MTech always keeping the software up to date for us that's not a concern. The Web-based system also started out with more functionality than a client-based alternative, which definitely helped."

How was the implementation? "Very straightforward," said Lofgren. "Since there was no need for CapEx approval and we didn't need any new infrastructure. We just set it up and started using it with our existing PCs and network."

How about reliability? "The system itself has been excellent, and we haven't had any problems with the communications link at all. We had a couple of minor bugs early on, but the vendor took care of those quickly, and there have been some dead spots internally in the wireless coverage for the pagers, but we're gradually fixing those. Certainly our hard-worked IT support staff is grateful not to have to take on yet another system!"

So is this the way the Galt House will go for systems in general? "Not yet," responded Lofgren. "It's proving to be a valuable pilot to test the concept on a nonmission-critical area, but it will be a while before we'd consider more critical areas such as the PMS. But the concept definitely works."

They have to be significant enough to get the vendor's attention, but you can't impose consequential damages on the vendor even if downtime causes you to lose a major piece of business.

## Communications
### Internet vs. Dedicated Lines

With the rapid expansion of broadband coverage, encryption and the adoption of virtual private networks (VPNs), many centralized hotel systems work very well over the Internet. Once a property has a reliable broadband connection from a trusted ISP, it can be used for access to many remote applications as well as for general Internet usage by guests and staff, though a back-up link (dial up or ISDN) with automatic failover is always a good idea.

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For systems such as PMS and POS, where response time and dependability are critical, the Internet is really only viable for smaller properties. While it's remarkably resilient, being designed from the start to automatically re-route around broken links, its performance can vary with general traffic demands. Going with a dedicated communications network for these systems pays dividends in predictability and reliable performance for most properties, and such networks have become surprisingly affordable as their usage spreads.

### Web Native vs. Web Enabled

The vendors are likely to describe their centralized systems as either Web native or Web enabled. Web enabled systems, usually the more established ones, provide remote access over the Internet or other IP-based network by using Citrix or Microsoft's Terminal Services on the workstations. These offload the actual software application processing work from the workstation to the central server and just use the workstation as a display device to show the changed screens, but they don't change the way the underlying application works.

In contrast, Web native systems are usually newer, have been written using more modern languages and approaches, and are inherently designed for use by browser-equipped PCs via any IP-based network. The browser is used to reach the central site, but the application then usually loads a small client application on the workstation to handle screen displays and whatever minor local processing might be required.

Since they tend to be more recently developed, Web native systems don't always have the rich functionality or established reliability of the Web enabled ones. However, they're likely to be better positioned for future development, especially for integrating with other systems. Either approach means that simpler and less powerful thin-client workstations can be used at the property level than are required for traditional client-server software architecture, a major advantage for the centralized approach.

## The "C" Word
### Commitment

One objection raised to the concept of buying software as a service is that the payments never end; you sign up for a minimum commitment (usually three years) but continue to pay as long as you use the software. With the more traditional practice of buying and installing a system, of course, even if the hardware is leased the payments stop eventually. But those are only for the most visible costs. The hidden operational costs of running on under-supported, poorly integrated systems on hardware that's not kept up to date and running efficiently will keep increasing whether accounted for or not. Paying a monthly fee for reliable, well managed, perpetually up-to-date systems allows you to concentrate on using those tools to run the operation more effectively and imaginatively. The payback in terms of time and focus is well worth the investment.

Better inter-system and inter-vendor cooperation is still needed to reduce the number of hosting contracts to single source nirvana. In the meantime, implementing central systems wherever practical can simplify hoteliers' lives greatly, allowing them to focus on running the hotel – and get out from under the crushing rock of day-to-day software and systems management.

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## Vendor List

While the use of centralized systems in hospitality is still relatively low, this has more to do with caution on the part of hotel owners and managers than with the availability of suitable products. These systems are more widespread than you might realize; you can actually run almost every aspect of your hotel technology on a centrally hosted basis, although it still takes multiple vendors.

Consider the following list; every one of these systems is available in centrally hosted form, from the vendors listed and from others:

**PMS**: MICROS-Fidelio, HIS, Northwind, PAR Springer-Miller, MSI, Visual One, Ramesys, RDP, RSI

**S&C:** Newmarket, Daylight, Kx, NFS Hospitality

**RMS:** Optims, IDeaS, maxim, EzRMS

**POS:** InfoGenesis

**Back Office:** Data Plus, M3, NetSuite

**Guestroom Locks:** VingCard, Kaba

**VoIP PBX:** Cisco, Avaya, Mitel, NEC, Nortel

**Call Accounting:** SDD, Tel-Soft

**Voice Mail**: Cisco, Avaya, Mitel, NEC, Nortel

**Inventory/Purchasing:** Adaco, Eatec, Moreton Bay

**Engineering/Guest Service:** M-Tech, GuestWare, Mintek

**Pay-Per-View/Digital Entertainment:** NXTV, KoolConnect