End to End Infrastructure for Hospitality

Design Objective

To provide such a wide range of solutions and services we drill down and understand the requirements of the owners and operators of the property. Once this has been established, the full design of the passive infrastructure, data network, voice, convergence, intelligent and smart applications, property management software and services are incorporated to sustain the wide variety of systems, ensuring for future scalability.

Data LAN Network

Due to the latest trends in hospitality, guests and owners demand for more information and resources; this calls for a converged and a more mobile enterprise that has the ability to support new security methods, advanced applications, and new connection management solutions for their existing local area networks. This has become critical in the decision making process. Data volumes are increasing; technologies are becoming more complex, requiring varying levels of access and service. Hence, a fully integrated and adaptive network is necessary for hotels. For this reason, the design and choice of vendors is of paramount importance, especially if you wish to deliver the services required over a modern broadband network.

Your infrastructure needs to be designed and deployed as a converged, mobile and a highly secure network. These three forces are related, interactive and interdependent. The need for a dynamic, intelligent infrastructure, which is capable of fully integrating and leveraging all three, is of paramount importance. The choice of core & edge switching would determine how each further element could be integrated into ONE Local Area Network that can serve all the IP driven devices available today. This would save on having separate networks for CCTV, BMS, Door Access Control, HITV and many other applications.

Performance
When considering the design of this network, we have to evaluate the services to be delivered. This includes not only data for the PMS, servers, but also the voice and video on demand requirements and the potential increase in the use of these services.

Every client, user, server, application and edge device added to the network would intensify the traffic and decision-making burden on the core devices. Therefore when making a decision about the LAN Network that provides intelligence at the edge, leave the core to continue with its primary function. This allows the network to provide wire speed non-blocking connectivity even under the heaviest traffic conditions.

Scalability
Scalability needs to be considered when designing the network strategy. A powerful core and edge-switching device allows your network to grow and expand so that it can meet further demands that may be placed on the network. Further devices and applications are added through its life. The use of Stackable & Chassis based devices allows growth in the network very easily without the "ripping and replace" mentality, which has previously occurred with legacy networks.

Security

The owners, consultants and operators have to take into consideration the security of the network, especially when discussing the inclusion of wireless devices into the network, where the public has access to the system, as this is likely to raise many issues. With authentication at the edge, we are able to check all visitors to the network before they reach the core and request services.

Quality of Service (QoS)

In a hotel environment, all users have diverse networking and QoS needs. For example, some guests may decide to use Video on Demand (VoD) services, which require constant uninterrupted access to high-bandwidth, whereas other guests may only need Internet access or Voice over Internet Protocol (VoIP). These diverse applications must be able to coexist without interfering with one another or disrupting service. For example, if a user is on a VoIP phone call and at the same time needs to receive a large data file, the network must be able to prioritise between the two and limit the bandwidth for the file transfer to ensure the phone call is not disrupted.

Normally all access rights have traditionally been port-based because, in the past, users were tied to a single port. However, in this kind of environment with the proliferation of mobile functionality, users are able to connect to the network from anywhere. Therefore, it is important that the user's access and associated QoS rights be able to move with the user.

Business Efficiency

What we aim to provide is the ability for the property to offer a wide range of services to guests, staff and administrators, ensuring that all parties have access to the network and a high level of service delivery at all times. This will ensure the smooth running of the hotel, and that the management and staff focus on enhancing the guest experience.

Voice Network

The solution for the PABX is to ensure that all hospitality industry standards are met and they deliver advanced communications that enhance guest experience, improve customer service and optimise operational productivity and costs. Through investment protection, properties can buy IP or PBXs communications systems and know that this technology guarantees that they have a cost-effective way forward to next generation solutions. At the user level, the staff benefits from the transparent mobility anywhere on the premises, to serve guests better. Additionally, with intelligent speech recognition, the guests have the ability to access hotel services easily.

IP Telephony solutions for hospitality provide:

- Seamless integration with existing property management systems
- Hospitality-specific feature sets
- Enhanced workforce mobility through easy to deploy in-building wireless voice communications
- Intelligent speech recognition for simplified access to guest services

To deliver this level of flexibility and ease of use, we must design a solution that offers all the feature requirements of guests, administrators and managers. The solution should be based on providing IP handsets to all office and administrative staff to provide them with an enterprise class communications solution.

Design

The IP-PBX system has to be capable of providing an architecture delivering sophisticated call management, applications and desktop solutions for the hotel. The system is required to be a scalable robust call control platform that fully utilizes the power of IP.

The system architecture was required to use the IP network for connecting IP telephony devices. The system is required to provide native call set-up, tear down, and signalling between Ethernet IP connected telephones.

The system may have to support both traditional analogue trunks (Loop Start) and digital trunks (DPNSS, Q.SIG, Euro ISDN and BRI) for connection to the PSTN or private network. To connect several sites or platforms together, the IP-PBX can use any conventional digital network, or employ protocols that deliver DPNSS over LAN or WAN.

Structured Cabling

Structured Cabling Solutions are the heart and soul of any building. When Cabling systems are designed and implemented correctly, for the next 20 years the operator will forget it is even there. Using the experience of our cabling team, Seven Seas has excelled in providing high-speed networks and cabling infrastructure solutions to the Hospitality industry. Positioning ourselves with the top industry brands Ortronics, Systimax and Brandrex, we can deliver cabling networks that are built not for today's LAN networks and applications but for the future expectations. This means when Seven Seas installs a network, it does not have to be touched for the next 20 years.

Audio Visual

Audio Visual systems are another growth area in Hospitality due to the need for in -oom entertainment systems, conference facilities for screens and projection facilities, background music and intelligent lighting. Seven Seas has partnered with SPL www.splis.com, the largest Systems Integrator of AV systems in North America, to be able to use local products and skills. With the backup of SPL on the design and the Project management front, we are able to deliver professional state-of-the-art AV solutions in the UAE Hospitality industry.

Security & Access Control

There are always Security Systems in a hotel; however, the guests never see the best designed systems such as CCTV cameras, security guards, door locking systems, back-of–the-house security and number-plate-recognition systems. The less imposing the security systems, the more the guests enjoy the experience of staying in your hotel. Seven Seas has the experience to provide robust security systems for hospitality projects with the ability to blend and not collide with guest experience, without compromising on the security of the property.

Value Proposition

Hotel communications changing dynamics

While traditionally, a hotel's business guests have been quite satisfied with the hotel facilities made available to them, today's business traveller has increased needs for Internet access, services and mobility.

Here are some interesting statistics about today's business traveller:

- 45 million mobile business professionals
- 75% travel with laptops
- 62% access the Internet and corporate networks through dial-up from hotels
- 75 minutes online per day

They need access to:

- e-mail
- High-speed Internet and Intranet services
- Mobility and flexibility
- Secure connections

Source: AAA Diamond Ratings Guide

On the other hand, hotel owners are beginning to realise that the current PBX and dial-up services are inadequate to meet such demands.

Here are some of the reasons why:

Problem area	Reasons
PBX systems viewed as a bottleneck	• Significant upgrades every 3-4 years • Stand-alone network • Systems were designed for 2 – 3 minute voice calls, not 45 minute modem calls • Many properties want two lines per room to enable voice and data calls simultaneously • Many existing PBX systems are "full" and can't be expanded without a fork-lift upgrade • Maximum access speeds limited to 56 Kbps
PBX products are monolithic and proprietary	• Large initial investment • Expensive to maintain / upgrade / add-on • Many current manufacturers exiting the business
Fragmented support	• Different suppliers for PBX, Voice mail, Call accounting, HSIA, PMS • Many PBX products sold through regional distributors • High failure rate, limited ability to support converged networks
Changing financial conditions	• Erosion of telecom revenue in properties – calling cards, 800 numbers, GSM phones • Hotel industry pays phone companies over $700 Million/year for telephony services

Therefore, property owners and hotel operators have voiced the following needs:

- Get business travellers off the dial-up phone lines and onto broadband connections
- Run services over existing wiring in properties
- Reduce the number of trunk lines they have to purchase from telcos
- Recapture some of the lost telephone revenue
- System integrators who can install and maintain complete systems
- Reduce the number of networks in the property (currently include analogue telephony, broadband Internet access, video on demand)
- Reduce operational expense

Therefore specific requirements for any IP Telephony solution are:

- Hospitality feature set functionality integrated with PMS & IP telephony network
- Change calling permissions on guest phones at check in/out
- Full integration to property management system
- Wake up calls – settable by attendant or by guest
- Failed wake up alert
- Housekeeping status capture
- Billing for IP telephony calls
- Hospitality voice mail solution
- Life line phone service in the event of a power outage
- Analog dial-up modem access from guest room
- Shared line appearance for multiple phones in guest room
- Full support for analog phones and/or IP phones
- Advanced guest services on the phones such as e-mail, flight information etc.
- Advertisement on the phones