Cloud vs. On-Premise PBX for Hotels: A Decision Framework

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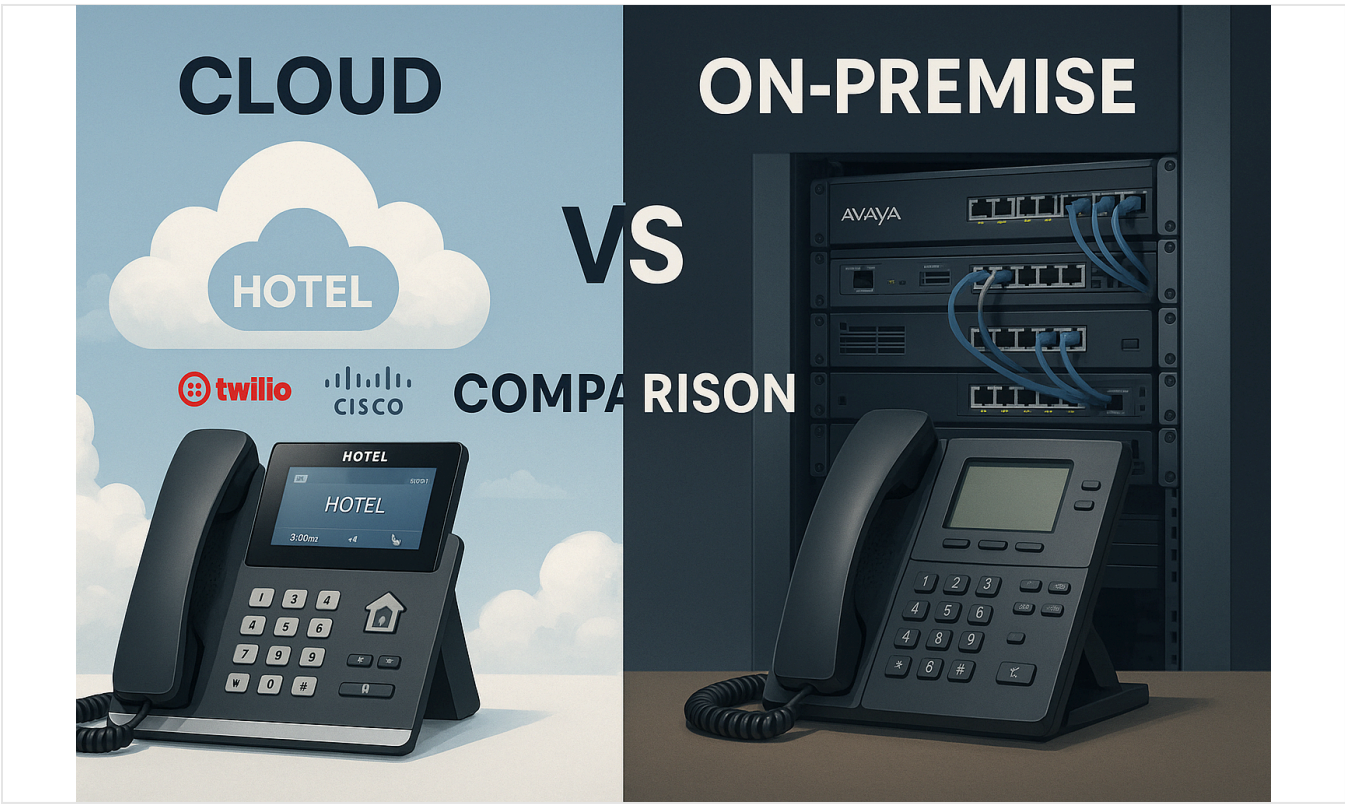

Cloud-Based vs On-Premise Phone Systems in the Hotel Industry

Introduction

! https://acropolium.com/blog/cloud-vs-on-premise-solutions-in-the-hospitality-industry-which-one-to-choose/

Figure: Illustration of cloud-hosted vs. on-premise phone infrastructure. In cloud solutions, the PBX is hosted off-site in data centers (cloud icon) whereas on-premise systems reside locally on hotel premises (server icon).

Hotel phone systems remain a critical component of hospitality operations, supporting front-desk communications, internal staff coordination, and guest safety (e.g. emergency calls) (Source: blog.hotelsigns.com). However, the role of in-room phones has evolved: guests today rely mostly on mobile devices, and the hotel phone is often used primarily for services and emergencies (Source: jethotelsolutions.com). Consequently, many hoteliers are re-evaluating their legacy Private Branch Exchange (PBX) systems and considering a move to modern solutions. A key decision is whether to deploy a **cloud-based (hosted)** phone system or an **on-premises system**. This report provides a comprehensive comparison of cloud vs. on-premise phone systems for hotels, examining their features, scalability, costs, technical considerations, and impact on operations. It also discusses security and compliance (e.g. GDPR, PCI-DSS, E911 laws) and presents real-world case studies. The goal is to equip hotel IT professionals with a detailed **decision framework** for selecting the right solution for their property or portfolio.

Hoteliers have historically been cautious in upgrading voice technology, but rising maintenance costs and diminishing usage of legacy PBXs are driving a search for more cost-effective alternatives (Source: jethotelsolutions.com). Many are seeking "above-property" or cloud communications to reduce Total Cost of Ownership (TCO) and improve flexibility (Source: jethotelsolutions.com). At the same time, any new system must meet the hospitality industry's unique requirements for reliability, integration with hotel systems, and guest service features. In the following sections, we compare cloud-hosted and on-premise phone systems across multiple dimensions and hotel sizes, providing a data-backed analysis with examples from industry leaders.

Features and Functionality Comparison

Modern hotel PBX systems – whether cloud-based or on-prem – are expected to provide a rich set of **hospitality-specific features**. Core functionalities include: room-to-room and external calling, call transfer and routing, voicemail, auto-attendant menus, wake-up call scheduling, do-not-disturb, and call accounting for billing guest calls (Source: cloud5.com)(Source: yeastar.com). Additionally, integration with Property Management Systems (PMS) is crucial to automate tasks like updating guest names on phones at check-in, enabling/disabling phone access on check-out, posting call

charges to guest folios, and triggering housekeeping status codes via phone (Source: web.vodia.com)(Source: yeastar.com). Both cloud and on-premise solutions **can deliver these essential features**, but there are some differences in how they are implemented and upgraded:

- **Hospitality Feature Set:** Established on-premise PBX vendors have long offered hotel modules (for PMS interfaces, wake-up calls, etc.), and cloud providers have developed equivalent capabilities. For example, a cloud hospitality PBX like Cloud5's includes *"fully-featured wake-up call management, voicemail, call accounting and auto-attendant services"* out of the box (Source: cloud5.com). On-premise systems can provide similar features but may require additional hardware or software add-ons (e.g. a call accounting server or PMS interface card). Hotels must ensure whichever solution they choose explicitly supports *hospitality-centric functions* (guest room phones, front-desk console, emergency alerting, etc.) – many modern cloud PBXs are **"hospitality-grade"** by design (Source: cloud5.com), and on-premise products often have specific hotel editions or firmware.

- **Unified Communications & Mobility:** Cloud-based phone systems are often part of Unified Communications as a Service (UCaaS) suites, offering advanced features like mobile softphone apps, SMS texting, video conferencing, and voicemail-to-email integration. These can enhance staff collaboration and guest service (for instance, enabling staff to receive hotel calls on a mobile app when off-site) (Source: jethotelsolutions.com). On-premise systems have been slower to integrate such features. While an on-prem PBX can support softphones and integrations, it usually requires additional configuration and may not be as seamless as cloud solutions that bundle multi-device support natively. **Example:** Telzio's cloud phone platform allows a hotel's front desk and back-office staff to use *"flexible call routing to mobile and desk phones"* and centralize communications across locations with no physical PBX hardware on-site (Source: telzio.com). This level of mobility and multi-site integration is inherently easier with cloud systems.

- **Customization and Specialized Functions:** On-premise systems give IT teams deep control to customize dialing plans, integrations, and even specialized analog integrations (e.g. interfacing with older emergency phones, elevators, etc.). In cases where a hotel has very specific telephony use cases or legacy integrations, an on-prem PBX can be *"tailored to meet very specific needs"* (Source: business.att.com). Cloud providers, by contrast, offer a standardized feature set that covers most needs but might limit highly specialized customizations. However, many cloud communications platforms provide open APIs and integration frameworks. In fact, on-prem PBXs *"lack the APIs included in cloud-based systems,"* making them *"less likely to integrate with business applications like CRM or ERP platforms"* without custom development

(Source: business.att.com). For a hotel, this could mean that a cloud system might more easily tie into a CRM-based guest profile system or a cloud-based property management suite, whereas a legacy on-prem system might not support such integrations without expensive upgrades.

Overall, **feature parity** between cloud and on-premises solutions is high for standard telephony and hotel operations needs. Most leading vendors in the hospitality telecom space ensure that whether their solution is hosted or on-site, it supports PMS integration, voicemail, emergency dialing, and other must-haves. The difference is often in **innovation pace** and **delivery**: cloud systems tend to receive continual feature updates (e.g. new reporting tools or messaging features) without the hotel having to perform upgrades (Source: nojitter.com). On-premise systems may require a hardware refresh or software update (often at additional cost) to gain new features, which hotels sometimes defer, leading to feature stagnation. A balanced evaluation should ensure the chosen solution meets all current requirements (see the "Security & Compliance" section for emergency dialing features) and has a roadmap for future capabilities like guest engagement via new channels.

Scalability and Growth

Scalability is a critical consideration, as hotels can range from small boutique properties to large resorts or international chains with thousands of rooms. This section compares how cloud and on-premise systems handle growth in terms of users, sites, and changing capacity needs:

- **Scaling Users and Lines:** Cloud-based phone systems are inherently designed to scale on-demand. Adding a new phone line or user is typically as simple as provisioning a new extension in a web portal and perhaps plugging in a new IP phone. The cloud provider's infrastructure handles the additional load, and hotels pay incrementally (usually per line or user per month). This elastic scaling is ideal for hotels with seasonal fluctuations (e.g. ski resorts or conference hotels) – they can increase or decrease active lines and only pay for what they use. On-premise systems, in contrast, have fixed capacity limits based on installed hardware (number of ports, channels, or software licenses). Reaching capacity might require purchasing additional expansion cards or licenses, which is a capital expense and can involve technical installation. Thus, scaling up an on-prem PBX is *less flexible and incurs lump costs*, whereas scaling a cloud PBX is *"highly adaptable and scalable, better equipped to grow with you as your communication needs evolve"* (Source: business.att.com). Conversely, scaling down an on-

prem system doesn't easily reduce cost – if a hotel closes a wing or downsizes, the PBX investment is already made. A cloud model lets hotels adjust their subscription downwards in such cases, aligning costs with actual usage.

- **Multi-Property and Global Scaling:** For hotel groups or chains, a cloud system can serve multiple sites from one unified platform. This can simplify dialing between hotels, centralize management, and reduce duplicate infrastructure. **Example:** Marriott International pursued a cloud solution to unify voice services across its thousands of properties; using Verizon's hosted hospitality UC platform, Marriott aimed to migrate from disparate PBXs to a centralized cloud voice system (Source: nojitter.com)(Source: nojitter.com). Early deployments at Marriott's hotels showed the cloud approach provided *"stability and failover capability that we don't have in our current premises-based world"* according to their IT leadership (Source: nojitter.com). Smaller hotel chains or ownership groups can likewise consolidate voice onto a cloud service to manage all their hotels under one umbrella, easing inter-property communication and reporting. On-premise systems, by nature, are siloed per location (though they can be networked via tie lines or SIP trunking between PBXs, it's more complex). If a chain uses on-prem PBXs, each hotel needs its own system (or a few regional systems), and scaling to new properties means installing new PBXs at each site or expanding a central PBX with remote gateways. This is not only hardware-intensive but also operationally complex.

- **Technical Scalability Limits:** With on-premise equipment, there are hard limits to how many extensions or concurrent calls a single system can handle (based on processor, memory, and port counts). Large resorts or casino hotels with thousands of guest rooms often required high-end PBXs or multiple networked systems. Cloud telephony can handle large scales by allocating more resources in the cloud, often transparently. Cloud providers also typically offer **volume pricing** for large deployments – e.g., net2phone notes that *"as the number of seats goes up, the monthly per-user cost for hosted PBX goes down"* for bigger installations (Source: net2phone.ca). Meanwhile, *"the cost of the premise-based PBX goes up substantially as you add users"* in their TCO model (Source: net2phone.ca). This suggests that for a **large hotel or multi-hotel deployment**, cloud solutions can offer economies of scale in pricing, whereas on-premise costs tend to scale in a more linear (or worse, exponential) fashion as more hardware, licenses, and maintenance are needed.

- **Future Growth and Upgrades:** Scalability isn't just about number of phones; it's also the ability to adapt to new technology. Here, cloud systems have an edge by allowing hotels to adopt new capabilities (like adding a call center, or integrating a new guest messaging service) without forklift upgrades. On-prem systems might require significant upgrades to support new functions (for instance, adding a call center module or new software version). If a hotel

anticipates growth in functional requirements, a cloud platform can often expand functionality via subscription additions, ensuring the system grows **vertically** (new features) as well as **horizontally** (more users).

In summary, cloud phone systems offer superior scalability for both **size and scope** of hotel communications. They can accommodate growth or contraction easily and link multiple properties under one system. On-premise systems may be sufficient for a single property that is relatively static in size, but they become cumbersome as one scales up. Hotels planning for expansion or needing flexibility should weigh this heavily.

Support and Maintenance Requirements

Deploying and maintaining a phone system involves ongoing support. The responsibilities and resources needed differ greatly between cloud and on-premise models:

- **On-Premise Support Needs:** With an on-premises PBX, the hotel (or its IT contractor) is responsible for all equipment on site. This means handling routine maintenance, software patches/upgrades, and hardware repairs or replacement. In practice, many hotels end up with aging PBXs that are increasingly hard to support. For example, The William Vale Hotel in New York found that their traditional on-site PBX came with *"yearly maintenance costs"* that kept increasing, required entering new support contracts for any changes, and *"spare parts for the system were becoming harder and harder to find"* (Source: web.vodia.com). Because no one on the hotel staff was a telephony expert, even minor changes required a technician visit (Source: web.vodia.com). This scenario is common – unless a hotel has a skilled telecom engineer on staff, they must rely on external vendors for support, which can be costly and slow. On-prem systems thus demand either an in-house PBX administrator or a maintenance agreement with a service provider. Hotels also have to plan for disaster recovery of the PBX (e.g. keeping backup configuration, possibly a spare unit or parts) as well as eventual replacement cycles (typical PBX lifespan might be 7-10 years). All these factors contribute to higher IT workload and risk on the hotel's side. The **talent issue** is also notable: as telephony technology evolves, *"it's becoming more challenging to find skilled on-premises technicians and the right parts"* for legacy PBXs (Source: business.att.com). This drives up support costs and can lead to extended downtime if something breaks and experts or parts aren't immediately available.

- **Cloud Provider Support:** In a cloud-based phone system, much of the maintenance burden shifts to the vendor. The communications servers are hosted and managed by the provider, who handles software updates, security patches, and infrastructure upkeep in their data centers.

Good cloud vendors offer **24/7 technical support** and monitoring. For instance, Cloud5 (a hospitality cloud PBX provider) advertises *"24/7/365 support"* with a single point of contact for all voice issues, and remote resolution capabilities (Source: cloud5.com). Because the provider manages the core system, hotels no longer need to worry about PBX hardware failures – if a server fails in the cloud, the redundancy there keeps service running (often unnoticed by the customer). The hotel's IT role changes to more of an administrator of the service: using a web portal to manage user settings, running reports, and coordinating with the vendor for any escalations. This can *"free your staff from the front desk so they can provide 5-star guest experiences — from anywhere"* as one hospitality cloud PBX description puts it (Source: phonesuite.com), emphasizing that staff are not tied up managing hardware. However, it's important to have clear Service Level Agreements (SLAs) with cloud providers – hotels should ensure the vendor guarantees a high uptime (often 99.9% or better) and responsive support in case of incidents. Essentially, with cloud, the **day-to-day maintenance (backups, patches, monitoring)** is the vendor's responsibility (Source: marconet.com)(Source: marconet.com), which can dramatically reduce the workload on a hotel's IT team (and associated labor costs). This was noted by industry experts who point out that maintaining an on-prem system *"might require time that your IT team no longer has to give,"* and when IT time is expensive, shifting to cloud support *"changes the math"* in favor of hosted solutions (Source: marconet.com).

- **Upgrades and Feature Updates:** Cloud systems usually receive regular updates seamlessly. New features or compliance updates are rolled out by the provider across all customers. This means a hotel stays up-to-date automatically, which is especially valuable for security and regulatory compliance (e.g., when new 911 requirements came out, cloud vendors could update their systems globally (Source: jethotelsolutions.com)). On-premise PBXs require manual upgrades – often a costly project involving purchasing new software versions or even hardware. Some hotels defer upgrades to avoid these costs, which can leave them running outdated, unsupported software. Marriott's IT team cited this as a challenge with their many on-prem systems: keeping *"thousands of properties with different systems at various stages in their lifecycles"* up to date with patches was *"very difficult,"* whereas moving to cloud let Verizon *"keep everything current"* centrally (Source: nojitter.com). This highlights how cloud simplifies lifecycle management by ensuring the system is continuously modernized.

- **Vendor Management:** With on-prem, a hotel might juggle multiple vendors – the PBX manufacturer (or installer) for support, a telecom carrier for trunk lines, possibly a third-party for PMS integration software, etc. Cloud solutions can streamline vendor management, as the provider often delivers an all-in-one service (including phone service via SIP trunking, the PBX functionality, and integrations). There is "one throat to choke" when issues arise. That said, choosing a cloud vendor means entrusting a critical service to a third party, so due diligence is

needed. Hotels should evaluate vendors' reliability track record in hospitality, their support responsiveness, and what references say. Some hoteliers worry about being *"locked in"* with a cloud provider, but numbers can usually be ported out if needed and modern cloud systems often use standard SIP phones that could be repurposed. By contrast, legacy on-prem PBXs often created strong vendor lock-in (proprietary phones and equipment that only work with that vendor). Industry trends show a move away from those proprietary systems; one benefit of newer solutions is *"departure from proprietary components that lock hoteliers to a specific manufacturer — standards-based components are used"*, enabling easier changes of carrier or provider (Source: jethotelsolutions.com). In summary, cloud simplifies support at the cost of relying on vendor performance, whereas on-prem gives more self-determination but at the cost of complexity and responsibility.

Cost Comparison (Initial and Ongoing Costs)

Cost is often the deciding factor in the cloud vs on-premise debate. Hotels must consider **initial capital expenditures (CapEx)**, ongoing **operational expenditures (OpEx)**, and the total cost of ownership over time for each approach. The optimal choice can depend on hotel size and financial strategy (CapEx vs OpEx preferences). Below is a comparison of cost elements, with examples:

- **Upfront Costs:** On-premise phone systems typically require a significant upfront investment. This includes the PBX hardware (servers, interface cards, power supplies, etc.), software licenses for features or users, and the labor to install and configure the system. For instance, a sample cost breakdown for a 20-user traditional PBX showed about **$6,500** for core hardware, plus **$4,000** in software licenses and **$1,000** in installation services (Source: pbxmechanic.com)(Source: pbxmechanic.com). Additionally, purchasing desk phones (if not reusing existing ones) can add several thousand dollars – e.g. ~$3,000 for 20 phones in that scenario (Source: pbxmechanic.com)(Source: pbxmechanic.com). Thus, even a small hotel or office might spend tens of thousands in upfront CapEx for an on-prem PBX. In contrast, cloud-based systems have minimal upfront cost. There is **no PBX hardware to buy** (the "brain" of the system resides in the provider's cloud). Hotels might only need to budget for IP phones or adapters for existing analog phones. In the 20-user example, the cloud PBX required *"None"* of the on-prem hardware costs and only about **$1,980** for one-time purchase of phones (Source: pbxmechanic.com)(Source: pbxmechanic.com). Setup and implementation fees are often low or waived by cloud providers (in that example, setup was *"Included FREE"* (Source: pbxmechanic.com)(Source: pbxmechanic.com)). This means a small property could move to a cloud phone system with negligible capital cost, which is attractive for owners with limited

budget for a PBX replacement. **For larger hotels**, the difference in upfront costs is even more pronounced – an on-prem PBX for a 300-room hotel, for example, might require multiple cabinets, redundant processors, and licensing for hundreds of extensions, easily running into six figures upfront. Cloud solutions avoid that by scaling costs per user per month.

- **Ongoing Operational Costs:** Cloud systems shift expenses to a subscription model (OpEx). Hotels pay a monthly or annual fee typically based on number of lines or users. This fee covers the software service, maintenance, and often domestic calling. For example, a cloud PBX plan for 20 users might be ~$600 per month for an *"all-inclusive"* package with unlimited calling and all features enabled (Source: pbxmechanic.com)(Source: pbxmechanic.com). Over a year that's $7,200, which is predictable and includes support. On-premise systems have different recurring costs: you may pay for support contracts (e.g. 10-15% of system cost per year for a maintenance agreement), plus telecom charges for trunk lines or SIP trunks, and power/cooling for equipment. In the earlier example, the on-prem 20-user PBX racked up about **$988 per month** in various ongoing costs when broken down (including telecom line charges, support, and feature add-ons) (Source: pbxmechanic.com)(Source: pbxmechanic.com). Notably, certain features that are bundled free in cloud plans were extra costs on-prem (for instance, $200/month for audio conferencing, $240 for 24/7 support, etc. in that model) (Source: pbxmechanic.com). This illustrates how feature licensing and support can make an on-prem solution expensive to operate, sometimes even more per month than a cloud service. Cloud proponents often highlight that there are **no surprise costs** – upgrades and new features are included, whereas on-prem may have "hidden" costs later (e.g. paying for software upgrades or replacing aging hardware) (Source: net2phone.ca).

- **Total Cost of Ownership (TCO):** When comparing TCO over a multi-year period, cloud often shows a lower aggregate cost for small-to-mid size deployments, whereas extremely large enterprises might find on-prem slightly more economical at scale (assuming they utilize the system fully and avoid many add-on costs). In hospitality, the trend is clearly towards cloud for cost reasons. A study cited by PBXMechanic found that switching to a hosted PBX can yield *"savings of well over 60% in the first two years"* for small businesses (Source: pbxmechanic.com). In their specific comparison, the **2-year cost** for 20 users came to about **$16,380** on cloud versus **$48,887** on-premise (Source: pbxmechanic.com)(Source: pbxmechanic.com) – the cloud option was roughly one-third the cost over that period. This stark contrast is partially because the on-prem scenario front-loads costs in Year 1; over a longer horizon (say 5-7 years), an owned PBX's annual costs might drop off once initial investment is depreciated. However, even then, one must factor periodic upgrades or replacements. Industry experts note that while an on-prem system's cost *"increases over time"* (especially when you include maintenance and eventual tech refresh), a cloud system's cost

"stays consistent" and avoids big spike expenditures (Source: marconet.com)(Source: marconet.com). For hotels, consistent budgeting with OpEx can be easier than justifying large CapEx projects. Additionally, many hotel owners and asset managers prefer not to own rapidly depreciating tech assets like PBXs if a service model is available.

- **Cost by Hotel Size:** Different scales of hotels may lean different ways:
    - **Boutique or Small Hotels (e.g. <100 rooms):** These properties typically have limited IT staff and small budgets. Cloud phone systems are usually ideal here due to the low upfront cost and simple management. The monthly fees for, say, 50 phones, would be modest and include support that the hotel otherwise couldn't afford internally. Small hotels also benefit from getting enterprise-grade features (auto-attendant, call routing, etc.) via cloud that they might not be able to afford as standalone systems. A small independent hotel can essentially outsource its phone system for a monthly fee and avoid any technical headaches.
    - **Mid-size Hotels (100-300 rooms):** Mid-size hotels can also benefit from cloud economics. They may have PBXs from a decade ago that would be costly to replace; moving to cloud avoids a large capital hit and often reduces ongoing costs. For instance, Think Simplicity (a cloud vendor) estimated that hotels can save *20–30% on upfront costs* by opting for a hosted PBX over a traditional replacement, and achieve operational savings as well (specific figures vary by case) (Source: thinksimplicity.com). Mid-size properties with multiple outlets (restaurants, spa, etc.) also appreciate the easier integration cloud offers for all their departments. On-prem could make sense if the hotel already has a fairly modern IP-PBX that's paid for – they might continue using it until end-of-life to maximize ROI, but new investments are trending cloud.
    - **Large Hotels and Chains:** For large upscale hotels (500+ rooms, convention centers) or chains with many properties, cost calculations become more complex. On one hand, a chain might get volume discounts on cloud subscriptions (negotiating a per-line rate for thousands of lines) and significantly reduce on-site equipment at each hotel (which also saves on power, cooling, floor space, and local support contracts). The Marriott case is illustrative: they determined that the cloud approach was financially viable across their portfolio, especially considering the savings in maintenance and the ability to consolidate services (Source: nojitter.com)(Source: nojitter.com). On the other hand, very large organizations sometimes find that if they already operate their own data centers, hosting a unified IP-PBX for all properties (a private cloud of sorts) could be cost-effective. In practice, few hotel companies have chosen that route because it requires significant in-

house telecom expertise. Most are partnering with cloud providers or managed services. It's worth noting that in any large deployment, telecom carrier costs are a factor too – cloud PBX subscriptions often include calling minutes or SIP trunking service, which eliminates separate telco bills. An on-prem PBX in a big hotel would still need trunks (SIP or PRI circuits), which are an additional monthly cost. Cloud solutions like **UCaaS bundle** the connectivity with the service, simplifying billing. Overall, large chains are increasingly moving to cloud or hybrid models to cut TCO, as maintaining dozens or hundreds of PBXs globally is not cost-efficient.

- **ROI Considerations:** Traditional hotel PBXs were sometimes seen as revenue centers (charging guests high rates for outside calls), but that revenue has largely evaporated in the mobile phone era (Source: jethotelsolutions.com). Now the phone system's "return on investment" is less about direct revenue and more about enabling operations and safety. Hotels often expect a *"neutral or negative ROI"* on phone systems (Source: jethotelsolutions.com), meaning it's an expense to minimize while still meeting needs. Cloud models align with this mindset by lowering upfront costs and providing ongoing savings that can be quantified. The ROI of a cloud migration can be measured in reduced support labor, eliminated maintenance contracts, and avoided capital refreshes. For example, if a cloud system saves a hotel $X per year in support and down-time, that can be seen as a return. Some hotels may find that after 5+ years, an on-prem system could, in theory, cost less cumulatively (since owning might be cheaper than leasing long-term *if* you exclude many intangibles). But the rapid pace of technology change and the heavy requirements of new regulations (which force upgrades) often tip the scales. A **case in point**: one hotel in the Dominican Republic replaced its aging PBX with a hosted solution and was able to reduce ongoing telephony costs sufficiently that they projected a positive ROI in just a couple of years, not to mention improved guest satisfaction (from modern features) that is harder to quantify (Source: audiocodes.com). Each hotel should perform a TCO analysis over a realistic period (say 5 years) including all costs (CapEx, annual support, telco fees, personnel, power, upgrade costs) to compare options. In many cases, cloud emerges as lower TCO, especially when intangible benefits (less downtime risk, more agility) are considered.

In summary, **cloud-based phone systems tend to offer a cost advantage** for most hotels by converting large upfront costs into manageable monthly fees and including many ancillary costs into one bill. On-premise systems involve heavy initial spending and unpredictable ongoing expenses (especially if something breaks or if upgrades are needed). Budget-conscious hoteliers and those without capital funding readily available will find cloud appealing. Those with existing investments or extremely large scale might analyze carefully, but even in those cases the trend is toward cloud or hybrid solutions to optimize costs and performance.

Reliability, Uptime, and Disaster Recovery

A phone system is mission-critical for a hotel – it must be reliable **24/7**, as guests and staff need to make calls at all hours, including emergency 911 calls that could be life-saving. Here we compare how cloud and on-premise solutions fare in terms of uptime and disaster recovery:

- **High Availability:** Cloud phone services are built on geographically redundant data centers to achieve high availability. A quality cloud provider will have multiple server clusters so that if one goes down, another picks up the call traffic. They often guarantee uptimes like 99.99%. In the hospitality context, this translates to a very resilient system that is unlikely to fully go offline. **However, the weak link is the hotel's internet connectivity.** A cloud PBX relies on IP connectivity for all calls (except perhaps local 911 – more on that later). If the hotel's internet or WAN link fails, the phones may lose connection to the cloud service. Mitigating this requires redundancy at the network level: hotels can use dual ISP connections, SD-WAN solutions, and even cellular LTE backups to ensure continuity (Source: cloud5.com)(Source: nojitter.com). Marriott's rollout of a cloud voice solution explicitly included using *"primary physical paths as well as secondary 4G LTE wireless links"* to achieve the *"resiliency it wants"*, ensuring continuous service *"especially for 911 purposes"* (Source: nojitter.com). This approach paid off with a stable system that had *"failover capability that we don't have in our current on-premises world"* (Source: nojitter.com). On-premise systems, by contrast, operate on the local network and often use traditional phone lines; if the internet is down, internal calls and any calls via analog or PRI trunks will still work. This can be an advantage for resilience – a hotel with an on-prem PBX and PSTN lines can still reach 911 and allow room calls even during an internet outage or if external networks are down. The ideal for cloud systems is to approximate that reliability by using diverse network paths and possibly keeping a *POTS line as a backup* for emergency calling.

- **Single Point of Failure vs. Distributed:** An on-premise PBX is typically a single piece of equipment (maybe with a backup power supply or a redundant server in high-end deployments). It sits on site, often in a telecommunications closet. If that PBX hardware fails (due to hardware fault, overheating, etc.), the entire phone system can be down until repairs are made. Many hotels have experienced PBX failures that disrupted operations for hours or days, waiting for a part or technician. Cloud systems avoid this single point of failure at the property – the "brains" are in the cloud with multiple redundancies. Even if one server fails, calls can route through another data center. From the hotel's perspective, the distributed nature of cloud means there's no single box whose failure would silence all phones. That said, the hotel still needs functioning local network infrastructure (Ethernet switches, Wi-Fi APs for cordless VoIP

phones maybe, etc.). Those remain points of failure for both cloud and IP-based on-prem systems equally. In practice, cloud providers have robust failover, and any issues tend to be either last-mile network problems or a major provider outage (which are rare but not impossible). On-prem systems can be made resilient (with clustering or a hot standby PBX server), but this doubles the hardware cost and complexity, and many hotels don't invest in full redundancy on site.

- **Disaster Recovery and Emergency Calling:** Disaster scenarios (like a fire, flood, or major power outage) pose different challenges. An on-prem PBX in a hotel that is hit by disaster could be knocked out entirely – if the hotel loses power (and does not have generator/UPS for the PBX), the phones won't function. If the building is evacuated, nobody is there to use the phones anyway. With a cloud phone system, disaster recovery can be more flexible: calls to the hotel's main number can be automatically rerouted to alternative numbers or mobile devices if the site is down. For example, if a hurricane forces a hotel to close temporarily, a cloud system could redirect reservations calls to another property or call-center instantly. Staff can take their softphone apps and work from another location. On-prem systems have limited DR options; one might set up call forwarding on the trunk lines manually to another number, but it's not as seamless. Moreover, cloud solutions often have built-in notification features – for instance, some can detect if a 911 call is made and automatically alert managers/security with the caller's extension and location, an important safety feature. Both cloud and modern on-prem systems comply with **Kari's Law** and **RAY BAUM's Act** (U.S. regulations) which require direct 911 dialing and transmitting a "dispatchable location" (like room number) to emergency dispatchers (Source: blog.hotelsigns.com)(Source: blog.hotelsigns.com). Ensuring compliance sometimes requires software updates – cloud providers rolled out those updates universally when the laws took effect, whereas some older PBXs had to be reprogrammed or even replaced to comply. In terms of emergency resilience, many cloud providers now offer **E911 services** that will route emergency calls even if the hotel network is down (for example, by detecting loss of connection and using a local gateway or forwarding emergency calls to the nearest PSAP via cellular). Hotels should inquire how a cloud vendor handles E911 during outages. On-prem systems using analog lines inherently provide 911 access as long as the line works, but they might not provide the precise location info unless configured with location databases (PS-ALI services) (Source: jethotelsolutions.com). Cloud providers that specialize in hospitality ensure they meet these requirements (for instance, hosted PBXs can be set up with each phone's location in a database so that emergency responders get the correct address and room).

- **Voice Quality and SLAs:** Reliability isn't just about uptime, but also call quality (no significant latency, jitter, or audio drops). On-premise calls within the hotel (room to room, or room to front desk) travel over the local network or PBX switch and are typically very clear with minimal

latency. Cloud calls have to traverse the internet to the provider and back, introducing some latency – however, with a decent broadband connection, VoIP calls can be engineered to be high quality (using techniques like QoS and prioritization on the network). Many hotels implement VLANs or separate networks for voice to ensure quality. SD-WAN solutions offered by providers can prioritize voice packets and even failover calls to backup links if the primary link degrades (Source: cloud5.com). A well-configured cloud setup can provide voice quality on par with traditional lines; numerous hotels have successfully operated cloud voice with guests not noticing any difference. For example, after migrating several of its Las Vegas hotels to Verizon's cloud solution, Marriott reported the transition went *"very smoothly"* with no service quality issues, validating the approach in a high-volume environment (Source: nojitter.com) (Source: nojitter.com). Cloud vendors often commit to quality metrics in their SLA. On-prem voice quality is largely under the hotel's control – if the internal network is good and the PBX is configured properly, quality is excellent; but if the PBX is older or the network is congested (for IP PBXs), issues can occur. Analog phones on old wiring can also have crackling or need maintenance. So both solutions require proper network infrastructure for optimal performance.

In conclusion, both cloud and on-premise phone systems **can be made highly reliable**, but the strategies differ. Cloud relies on network redundancy and provider failover, delivering strong continuity as long as connectivity is maintained. On-premise gives local autonomy and can operate independently of the internet, but the hardware itself is a potential single point of failure and requires local redundancy for high availability. Many hotels prioritize the hybrid approach: for example, using a cloud PBX but retaining one analog line for emergencies, or using local gateways so that if internet is down, certain calls (like 911 or internal calls) can be routed on-site. The Marriott example demonstrates that a well-implemented cloud solution can actually surpass the reliability of a patchwork of aging on-prem systems (Source: nojitter.com). Hotels should assess their infrastructure (internet reliability, power backup, etc.) when choosing – a remote resort with very poor internet might lean on-prem by necessity, whereas most urban or well-connected hotels can achieve excellent uptime with cloud by investing in redundant ISP connections.

Integration with PMS, CRM, and Other Systems

Integration capabilities are a crucial factor in the hospitality environment, where the phone system must work in concert with other hotel software. The primary integration is with the **Property Management System (PMS)**, but there are others like Customer Relationship Management (CRM) platforms, Point-of-Sale (POS) systems, and guest-facing applications. Here's how cloud and on-premise solutions compare:

- **Property Management System (PMS) Integration:** This is non-negotiable for most hotels. The PMS is the central system that manages check-in/check-out, room status, billing, and guest profiles. A phone system integration typically does the following:
    - When a guest checks in, the PMS sends the guest's name and room number to the PBX so that the in-room phone can display the guest name and allow outside calling. At check-out, the PBX may automatically disable long-distance dialing from that room and revert the caller ID to "Room 101" etc.
    - Wake-up call schedules entered in the PMS can be transmitted to the phone system to execute, and any wake-up call results (answered or not) can be reported back.
    - Call charges (e.g., if a guest makes an outbound call with a fee) are rated and sent to the PMS to post on the guest folio.
    - Housekeeping codes: room attendants may dial codes on the phone to mark a room as clean/inspected, which updates the PMS room status.

  Both cloud and on-prem systems can achieve this, but the mechanism differs. Traditional on-prem PBXs often use a **FIAS** interface or similar via a serial or IP connection to the PMS. Many older PBXs required middleware or a separate "PMS interface box" to translate PBX events to PMS updates. Cloud phone systems can integrate using modern APIs or middleware in the cloud. For example, the Vodia cloud PBX boasts integration with *"over 70 compliant PMS systems used in hotels,"* synchronizing *"the status of guests, rooms and other housekeeping functions between the PBX and the front desk"* in real time (Source: web.vodia.com)(Source: web.vodia.com). Cloud5's hosted PBX advertises *"certified PMS integration with all major PMS systems including Oracle (Opera), MSI, Galaxy, FOSSE, OnQ, Sabre and more"* (Source: cloud5.com) – essentially covering the big brand hotel systems. This indicates that cloud providers know PMS integration is a must and have built solutions to support it (either via direct API if the PMS is cloud-based or through connectors for on-prem PMS installations). On-prem PBXs from hospitality-focused vendors (e.g., Mitel, NEC, Avaya hospitality, etc.) also have PMS integration modules and have worked with PMS vendors for decades on this. The key difference may be ease and cost: a cloud vendor might include PMS integration in the service (it could be as simple as configuring an API key or installing a connector), whereas with an on-prem PBX, the hotel might have to purchase an extra license or module for PMS interfacing. Yeastar (a PBX vendor) notes that not all hotels need every feature, but *"features like PMS integration and automated phone system actions upon guest check-in/check-out"* are typically essential for smooth daily operations (Source: yeastar.com).

One consideration is if the PMS itself is moving to the cloud (as many are – e.g., Opera Cloud). In such cases, a cloud PBX might integrate more directly cloud-to-cloud. An on-prem PBX might still interface but could require reliable internet to talk to the cloud PMS, thus losing some of the independence advantage.

- **CRM and Guest Profile Integration:** Some hotels, especially high-end or those with loyalty programs, maintain CRM systems that track guest preferences and interactions. Imagine a VIP guest calls the hotel; with integration, the system could pop up the guest's profile to the agent or even route the call to the guest's personal concierge. Cloud communications platforms often have CRM integration capabilities (e.g., integration with Salesforce, or with a hotel's own CRM via API). On-prem systems historically did not integrate with CRM, or if they did, it was via complex CTI (computer-telephony integration) middleware. As AT&T's business division points out, on-prem systems are *"less likely to integrate with CRM or ERP platforms"* because they lack modern APIs (Source: business.att.com). Cloud systems (being software-centric and web-based) make integrations easier – e.g., a hotel call center using a cloud phone system can have screen pops in their CRM for incoming reservation calls. While this might be more relevant to call centers or central reservations offices than to front-desk phones, it is a factor for chain-wide guest service centers.

- **Other Hospitality Systems:** Modern hotels use various technology that could tie into communications:

  - **Guest Mobile Apps:** Many hotel brands have mobile apps that allow guests to request services or even communicate with the hotel via chat or voice. A cloud phone system with open APIs might allow the app to initiate a VoIP call to the hotel's service center or enable click-to-call from the app that rings into the PBX. If the phone system is cloud-based, it could be easier to interface with the app's cloud backend. An on-prem PBX might not easily link to an external mobile app without routing calls over traditional lines.

  - **Staff Workflow Systems:** Systems like task management (HotSOS, Quore, etc.) handle internal requests (housekeeping, maintenance). Integration could mean that a call from a guest to report an issue automatically creates a ticket, or that staff can call an automated number to update task status. These are advanced integrations that larger hotels or resorts might pursue. Cloud systems with their programmability (some offer serverless functions or integration hubs) can do clever things, like using voice recognition IVR to let staff update room status. On-prem systems can be integrated too, but often through third-party middleware or custom development.

- **Emergency and Security Systems:** Integration with security systems (for example, if a fire alarm rings, the phone system could broadcast a message or call a list of managers). Some on-prem PBXs have alarm interfaces. Cloud systems could do mass notifications via phone, SMS, etc., triggered by external systems. Again, via APIs this might be easier on cloud.

In general, **cloud phone systems have an edge in integration flexibility**, thanks to modern APIs and the fact that many other hotel systems are also moving to cloud-based offerings. But the gap is not huge for core PMS integration – any reputable hotel PBX, cloud or not, will handle PMS hooks reliably. The main difference a hotel might see is in the **effort and cost to set up integrations**. With a hosted solution, integration might be a configuration line item (the provider may have done many Opera or Infor HMS integrations before). With an on-prem PBX, the hotel may need a technician to set up a PMS link or even a separate interface PC. Another benefit of cloud in multi-property scenarios is the potential for **centralized integration**: if a hotel group uses one PMS for multiple properties and one cloud voice platform, integration can be done once at the group level. In contrast, separate PBXs at each hotel would each need to be integrated and maintained.

Finally, consider **future integrations**. Technology in hotels is evolving (IoT devices, voice assistants like Alexa for Hospitality, etc.). A cloud communications platform that's continually updated may more readily add support for, say, voice-activated guest services, whereas a static on-prem system might never interface with an Alexa or similar. When investing in a long-term solution, thinking about how it will plug into the broader digital ecosystem of a smart hotel is wise. Cloud solutions, by virtue of being part of an internet-connected ecosystem, are often prepared for this kind of expansion.

Security, Data Privacy, and Compliance

Security and privacy are paramount in any IT system, and telephony is no exception – especially when it carries not just voice calls but also guest data (e.g., call logs, recordings) and potentially payment information. Hotels must also adhere to various regulations. Below we examine security and compliance aspects for cloud vs on-prem:

- **System Security and Patching:** One of the often-cited benefits of cloud services is professional security management. The provider is responsible for securing the PBX software, hardening the servers, and applying patches promptly. In a hotel chain with many on-prem PBXs, keeping all of them on the latest security patches is a daunting task. Marriott's IT leaders noted that with thousands of PBXs in different lifecycle stages, *"it's very difficult to track patch levels and make sure everything is as current as possible"* across the estate (Source: nojitter.com). Moving to a cloud service *"boosts security"* because the vendor *"can keep*

everything current" automatically (Source: nojitter.com). In essence, cloud offloads the burden of regular updates and security fixes to experts who do it as their core business – reducing the risk of vulnerabilities being left unaddressed. By contrast, on-premise systems rely on either IT staff or vendor techs to come on-site and update, which might happen infrequently (if at all) once the system is installed. Unpatched PBXs can be targets for toll fraud (hackers exploit them to route international calls) or other exploits. That said, security also depends on network setup; a cloud PBX will typically use secure TLS/SRTP encryption for calls over the internet, and the provider will maintain firewalls and intrusion detection. An on-prem PBX might be on a closed network, but if it connects to the internet (for SIP trunks or remote phones) then the hotel must ensure firewalls and SBCs (Session Border Controllers) are in place to protect it. In terms of physical security, on-prem hardware sits at the hotel and needs protection from unauthorized access (someone could theoretically tamper with it). Cloud hardware is in secure data centers with strict access controls, which is generally more secure than a random telecom closet in a hotel basement.

- **Data Privacy (Guest Data and Call Records):** Under regulations like the European GDPR, any personal data needs careful handling. Phone systems process personal data such as internal call logs (which room called which number at what time), guest names associated with extensions, and potentially call recordings if calls are recorded (for example, reservations calls might be recorded for quality assurance). A cloud vendor must comply with data protection laws – hotels should ensure the provider has proper certifications (ISO 27001, etc.) and offers data processing agreements. It's important to know where the data is stored: GDPR might require that data on EU guests stays in the EU or is transferred lawfully. Many cloud providers have regional hosting options to address this. By contrast, an on-premise system keeps data *in-house*, which some see as beneficial for privacy control. The hotel's own servers would store the call logs and voicemails locally. However, being on-prem doesn't automatically mean compliance – the hotel then bears full responsibility to implement retention policies, secure backups, and handle data subject requests (e.g., a guest from the EU could ask for their personal data, which includes any call records with their name/room, to be deleted). A small hotel may not have the expertise to do this properly, whereas a large cloud provider likely has dedicated compliance teams. According to a 2025 compliance guide, VoIP and cloud phone systems *"process a wealth of personal data, including call logs, audio recordings, and metadata such as caller ID and geolocation,"* so mishandling that data can result in *"hefty fines up to |u00a317.5 million or 4% of annual turnover"* under GDPR (Source: qicsystems.com). This underscores that whichever system is used, it must be configured to follow privacy rules (for

example, not storing voice recordings longer than necessary, securing call detail records, etc.). Cloud providers often build in tools to scrub or anonymize data on request, whereas with on-prem the onus is on the hotel IT.

- **PCI-DSS (Payment Card Industry) Compliance:** If hotel staff take credit card information over the phone (e.g., a guest giving a card number to guarantee a booking or pay for an event), the phone system could inadvertently handle sensitive data. Call recordings, in particular, could contain credit card numbers. Whether cloud or on-prem, if calls are recorded, the system should support **pause-and-resume** functionality (so that when sensitive info is spoken, it isn't recorded) or other PCI compliance measures. Some cloud contact center solutions have this feature built-in. An on-prem system might require custom integration to mute recordings. Additionally, PCI compliance would dictate secure transmission of any such data; cloud communications can be encrypted end-to-end, and on-prem can be on a private network – both can be made PCI compliant, but it requires configuration. Hotels should also consider if their phone system integrates with payment systems (for example, some hotels have IVR systems for guests to enter credit card info for express check-out – those IVRs must be PCI compliant). In general, **cloud providers often undergo PCI compliance audits** for their platforms, which can simplify the hotel's compliance attestation (the provider can supply a compliance certificate). With on-prem, the hotel has to include the PBX in its own PCI scope and ensure it's hardened.

- **Emergency Calling Laws (Kari's Law & RAY BAUM's Act):** Compliance here is mandatory in the U.S. since 2020 for all multi-line telephone systems (which include hotel PBXs). Kari's Law requires that anyone must be able to dial 911 directly without any prefix, and that the system sends a notification to a designated staff (like front desk or security) whenever a 911 call is made (Source: blog.twinstate.com)(Source: blog.hotelsigns.com). RAY BAUM's Act requires that the dispatchable location (e.g., "123 Hotel St, 5th Floor, Room 502") is conveyed to the 911 operator. Both cloud and on-prem solutions now offer features to comply, but implementation may vary. Many older on-prem PBXs in hotels needed reprogramming to remove the need to dial "9" for an outside line when calling 911. A cloud system deployed recently would naturally not enforce a 9 for 911, as it's designed to comply by default. The notification aspect is something some cloud providers include (e.g., sending an email or text to managers on 911 call), whereas an older PBX might require adding on a notification module. If a hotel's current system is not compliant, that's a strong impetus to upgrade either to a newer on-prem software version or migrate to cloud – a study found *"30.9% of surveyed organizations are not compliant with Kari's Law or RAY BAUM'S Act,"* which poses a **liability risk** (Source: vertical.com). Cloud providers in hospitality often tout that they handle E911 elegantly (for example, some integrate

with services that provide precise location info to emergency services and maintain databases for hotel properties). From a liability standpoint, a hotel might sleep easier knowing a dedicated telecom provider is ensuring these critical safety features are up to spec.

- **Voice Security (Encryption and Call Fraud):** VoIP systems can encrypt calls (SIP-TLS and SRTP) to prevent eavesdropping. Cloud systems usually enforce encryption between the hotel and cloud servers. On-prem systems might allow unencrypted call traffic on the LAN (which is usually fine if the LAN is secure). For sensitive calls (like calls discussing guest personal info or corporate meetings on hotel conference phones), encryption is a plus. Additionally, toll fraud (hackers making fraudulent calls through the system) can impact any phone system connected to outside lines. Cloud systems are typically monitored for unusual patterns by the provider, and they might offer fraud detection as part of the service. With on-prem, the hotel's IT must monitor call logs or set up restrictions to avoid being hacked (e.g., disallowing international calls from certain phones, etc.).

- **Compliance with Hospitality Standards:** In some regions, there are hospitality-specific telecom standards or lawful intercept requirements. Generally, both types of systems can be made to comply. For example, hotels in some countries must allow law enforcement to monitor calls if presented with a warrant – an on-prem PBX might need a way to mirror call streams, while a cloud provider might have a process to comply with lawful requests. These are niche concerns but worth noting for global hotel operators.

In summary, **security and compliance require vigilance regardless of cloud or on-prem**, but the cloud model offers some advantages by centralizing and professionalizing the security management. Hotels leveraging cloud can benefit from the provider's investments in cybersecurity and compliance certifications, whereas on-prem means the hotel has more direct control but also all the responsibility. For data privacy-conscious organizations, cloud does introduce a third party handling guest data, so choosing a reputable vendor with strong privacy safeguards is key. On the other hand, if a hotel has extremely sensitive operations (say a government hospitality facility) and wants complete control of all data on-premises, that might favor an on-prem system. In the majority of cases, cloud vendors have proven capable of meeting hospitality security needs, and indeed many see it as an improvement – one hotel executive noted the move to cloud was *"a big stride in a positive direction from a security standpoint"* compared to their fragmented on-prem systems (Source: nojitter.com).

Case Studies and Examples in the Hotel Industry

Examining real-world hotel deployments can illustrate the considerations and outcomes of choosing cloud or on-premise solutions:

- **Marriott International's Cloud Transition:** *Marriott*, one of the world's largest hotel chains, began a multi-year project to migrate from on-premise PBXs to a cloud-hosted voice solution. After an extensive evaluation, Marriott selected Verizon's **Hospitality Communications Express** cloud service as a good fit (Source: nojitter.com). By 2015, they started transitioning properties, including large hotels in Las Vegas, to this cloud platform (Source: nojitter.com). The drivers for Marriott were to replace an aging patchwork of PBXs with a unified system that could be centrally managed and updated. Marriott's VP of IT at the time highlighted several benefits realized:
    - **Reliability Gains:** The cloud system provided *"stability and failover capability"* that their premises-based systems lacked (Source: nojitter.com). Using redundant connections (including 4G backup links) at hotels, they achieved continuous service, crucial for guest safety (911) and operations (Source: nojitter.com).
    - **Security and Compliance:** They found security improved because Verizon could keep all systems patched and current, solving the version control nightmare they had with thousands of independent PBXs (Source: nojitter.com). Also, any new regulations (like 911 dialing changes) could be implemented globally in the cloud solution, ensuring all properties comply immediately (Source: jethotelsolutions.com).
    - **Guest Experience Enhancements:** Being cloud-based opened up possibilities to integrate communications with guests' smartphones and other channels. Marriott envisaged enabling guests to connect with hotel staff seamlessly *"whether on site or not, from their smartphone, any phone throughout a property, or the web"*, making interactions more convenient (Source: nojitter.com). For example, a guest could use the Marriott app to request services via voice or chat, and the cloud system would route it appropriately.
    - **Economies of Scale:** While exact contract figures were not public, Marriott undoubtedly negotiated volume pricing. They had an "aggressive goal" to migrate many hotels, indicating confidence that the economics were favorable (Source: nojitter.com). By not having to maintain PBXs at each hotel, they projected long-term savings in support and capital refresh costs.

This case shows that even very large hotel enterprises see cloud telephony as the future, provided the solution can meet hospitality-specific needs (Verizon's service was tailored for hotels). It also highlights that a chain can leverage cloud to maintain consistency across global properties – though Marriott might use different providers in different regions (the article hinted that in Europe they might use a different vendor than Verizon) (Source: nojitter.com), the concept of moving off local PBXs remains.

- **William Vale Hotel (Brooklyn) – Cloud Migration from Aging PBX:** The William Vale is a luxury boutique hotel in New York City. They initially had an on-premises PBX that was giving them trouble: high maintenance costs, reliance on outside support for any changes, and lack of modern features (Source: web.vodia.com)(Source: web.vodia.com). The hotel engaged a vendor (Vodia Networks) to find a better solution. They considered some hosted (cloud) options on the market but found one *"hosted system was too expensive and required too much support"* for their liking (Source: web.vodia.com)(Source: web.vodia.com). Eventually, with Vodia's help, they moved to a **cloud PBX** that met all their needs while *"greatly reducing the cost of ownership"* (Source: web.vodia.com). Notably:
    - The new cloud system integrated with their PMS smoothly, something the old PBX struggled with. This eliminated manual work like double-entering guest info or call charges (Source: web.vodia.com). They achieved *"increased efficiency through one entry point – the PMS,"* meaning once data is in the PMS, the phone system automatically updates (Source: web.vodia.com).
    - By switching to SIP trunks (VoIP phone lines) via the cloud PBX instead of traditional phone lines, the hotel saved significantly on telecom costs (Source: web.vodia.com). Those savings could be passed to guests (for example, lowering or eliminating charges for calls) which can be a guest satisfaction point.
    - The new system provided features the staff and guests needed that the old one couldn't, like better voicemail management and possibly mobility features for staff. The case study implied the *outdated PBX couldn't offer the features required* by the hotel's high service standards (Source: web.vodia.com).
    - The cost model moved from unpredictable break/fix expenses to a stable service fee, which management appreciated. The case explicitly mentions the hotel reducing TCO and finding the sweet spot of not overpaying for a "hosted" solution by pairing with the right provider (Source: web.vodia.com). This is a reminder that not all cloud offerings are priced equally – the first one they looked at was pricey, but another approach (Vodia working with an ITSP) fit their budget.

The William Vale case underscores that even a single independent hotel can benefit from cloud telephony, as it frees them from the headaches of owning equipment and yields operational improvements. It also shows the importance of choosing the right cloud solution; hotels should compare offerings because things like included support, PMS integration, and pricing models can vary.

- **International Chain Example – Hybrid Approach:** While not explicitly detailed in our sources, it's worth noting anecdotally that some large hotel companies use a *hybrid model*. For instance, a big brand might use a cloud solution for most properties but keep an on-prem system in certain locations where connectivity is an issue (remote resorts, etc.), or they might have a corporate-owned data center hosting a multi-tenant PBX for all hotels in one region (a form of private cloud). This allows them to standardize features yet not rely on public internet for every call. A case study in Australia mentioned Marriott leveraging gateways to connect a legacy PBX to a cloud service provider, indicating transitional hybrid setups (Source: redstonesystems.com). Another example is **3CX's deployment** in some Holiday Inn hotels, where a software PBX (3CX) is hosted either on-prem or in the cloud for the hotel, providing VoIP with PMS integration (Source: 3cx.com). These illustrate that the path to cloud can be gradual – some hotels virtualize their PBX in a cloud data center (which is essentially an on-prem system relocated to a private cloud), gaining some benefits of centralization while still managing it themselves.

- **Staying On-Prem (Modern IP-PBX):** Are there hotels that evaluated cloud and chose to remain on-prem? Certainly, especially those that recently invested in a new IP-PBX. For example, a casino resort that installed a large Avaya or Cisco system with full redundancy five years ago might decide to keep it until end-of-life because it's currently meeting their needs and the costs are sunk. They might leverage SIP trunking and even connect that PBX to cloud services (like for voicemail transcription or for remote management) without replacing it entirely. We don't have a specific public case study, since vendors tend to publish success stories about new tech rather than someone deciding to "stick with on-prem." But anecdotally, many hotels, particularly in regions with unreliable internet or where corporate IT policies dictate on-prem for security, continue with on-prem solutions. These hotels often mitigate weaknesses by doing things like: ensuring they have a maintenance contract for quick repairs, keeping a supply of spare boards, and possibly using a hybrid cloud management tool if offered (some newer PBXs can be monitored via cloud portals even though the hardware is on-site).

- **Regulatory Environment Cases:** In certain countries, telecom regulations or privacy laws might influence choices. For instance, a hotel in a country with data sovereignty laws might use a local on-prem PBX to avoid sending call data to foreign cloud servers. Alternatively, a country

with outdated telecom infrastructure might make cloud less practical. These cases are fewer as cloud data centers expand globally, but they exist.

In summary, the case studies show a clear momentum toward cloud in the hotel industry, from the biggest international chains to independent hotels. The key motivations include reducing costs, improving reliability and security, and gaining modern capabilities. Those who have transitioned often report positive outcomes such as smoother operations and easier management. On the other hand, certain scenarios still justify on-prem or hybrid – usually temporarily or due to unique constraints. The trajectory, however, is that **cloud solutions are increasingly proven in hotels of all sizes**, handling the demands of hospitality when implemented well.

Long-Term ROI and Total Cost of Ownership Analysis

(Note: Much of the ROI/TCO discussion was covered under Cost Comparison, but this section will summarize long-term financial considerations and tie in other factors like flexibility and risk.)

When analyzing the **long-term Return on Investment (ROI)** and **Total Cost of Ownership (TCO)** for cloud vs on-premise phone systems, hotel decision-makers should account not only for direct costs, but also for the indirect benefits or drawbacks that accrue over time:

- **ROI on Guest Experience and Efficiency:** While a phone system itself doesn't generate revenue like a new restaurant or spa would, it can indirectly contribute to revenue protection and guest satisfaction. A modern cloud-based system can improve guest experience by ensuring calls are answered promptly (through features like call queueing, voicemail-to-email so staff respond faster, etc.) and by integrating with guest service systems to fulfill requests more efficiently. These can lead to better guest reviews and loyalty. It's hard to put a dollar value on that, but it's part of the ROI equation. A dated PBX that occasionally malfunctions (e.g., guest can't reach front desk, or wake-up call fails) can negatively impact guest experience. Thus, investing in a new system (cloud or on-prem) has an ROI in terms of service quality. Cloud systems, by enabling capabilities like mobility (staff taking calls on cellphones while roaming the property) or even remote call agents, can increase productivity and responsiveness. For example, if a hotel can handle more reservations calls (instead of losing them to busy signals or slow answers) by using a cloud call center that flexibly scales, that's real revenue saved. On-prem systems can also enable these things, but often with more manual effort or additional modules.

- **TCO Elements Over Time:** In TCO, one must include:

- Initial investment (CapEx) – which we've noted is high for on-prem, low for cloud.
- Recurring costs (OpEx) – likely higher per month for cloud, but inclusive of many items; lower for on-prem aside from support and telco.
- **Maintenance/Support escalation**: As systems age, on-prem costs can increase. After warranty, hardware maintenance contracts might go up in price, or finding techs gets harder. Cloud costs are relatively stable or even decrease if competitive pressures drive subscription prices down or if you renegotiate enterprise rates for a large group of hotels.
- **Upgrades**: A major version upgrade of an on-prem PBX (say after 5-7 years) is effectively a reinvestment – sometimes almost as expensive as a new system. Cloud systems avoid these large jumps because the platform is continually updated. This smooths out the TCO curve for cloud (predictable annual costs) versus a sawtooth pattern for on-prem (big expense upfront, modest annual costs, then another spike later for upgrade).
- **Resilience costs**: To get cloud-like high availability on-prem, a hotel might invest in duplicate hardware, backup power, etc. Those are extra costs that cloud includes inherently in the service fee. If a hotel didn't invest in redundancy, they carry a risk (which could be quantified as expected downtime cost).
- **Opportunity cost of IT focus**: If hotel IT staff are spending hours managing phone system issues or programming, that's time not spent on guest-facing tech improvements. Cloud frees up IT to do more value-added projects. While this is qualitative, some hotels have been able to reduce IT headcount or repurpose IT roles after moving systems like telephony to cloud. That labor saving should factor into ROI/TCO. As one source noted, *"IT time is expensive, and sometimes that changes the math"* towards cloud when calculating TCO (Source: marconet.com).

- **ROI Horizon and Flexibility:** Cloud's OpEx model means ROI can be seen as **immediate** in the sense that you start getting benefits (new features, less maintenance effort) right away with minimal initial cost. The "return" is the avoidance of a big CapEx and the improvements gained; one could say the ROI of cloud is realized in operational efficiency and cost avoidance. On-prem's ROI is more traditional – you invest money now, and hope the benefit (cost saved vs cloud subscription and any revenue protection) accumulates over years. If a hotel expects to own a PBX for, say, 10 years, they might calculate that it becomes cheaper than cloud after perhaps 6-7 years (cumulative). But that assumes the PBX doesn't need major additional investment and the comparison is static. Often, after 5+ years, new functionality is desired that the old PBX can't deliver without more spend, tipping the scale again.

- **Financial Preferences:** Some companies prefer CapEx (to amortize investments, or if they have capital budgets but constrained operational budgets), while others prefer OpEx (for flexibility and because it can be easier to get approval for a monthly service than a big capital project). Hotels that are franchised sometimes have to make these decisions property by property. Owners might balk at a $50k phone system purchase but be fine with a $800/month service fee. Cloud definitely caters to the latter scenario. On-prem could be beneficial if an owner has money to invest now and wants lower monthly costs later (and is confident the system will remain useful long enough).

- **End-of-Life and Residual Value:** A phone system's value typically only decreases over time (technology obsolescence). After 10 years, an on-prem PBX might have little residual value, maybe some trade-in credit or none at all. Cloud services don't have residual value concerns since it's pay-as-you-go. In ROI terms, if you invest $100k in on-prem, you either need to depreciate it fully or hope to extend its life beyond the depreciation to get extra value. But keeping equipment beyond its supported life can backfire (outages, lack of compliance updates, etc.). Cloud keeps you always on a supported version. So in a way, cloud ROI is about continuous alignment with current tech, while on-prem ROI could turn negative if unexpected costs hit late in life (like a board failure with no replacement available, forcing an emergency upgrade – which has happened to hotels).

- **Case analysis:** In the earlier cost example (20 users), the breakeven for on-prem vs cloud was nowhere in sight even by year 5 (cloud was so much cheaper). In larger scales, say a 200-user scenario, on-prem might look a bit better relatively, but still when factoring personnel and upgrades, many studies find cloud either cheaper or roughly equal TCO over a typical lifecycle, with the added advantage of flexibility (Source: net2phone.ca)(Source: net2phone.ca). The cited net2phone model even suggests on-prem cost per user increases with size due to complexity, which might be counter-intuitive but can be true if you need more robust infrastructure as you grow. The **Jet Hotel Solutions** article pointed out that hotels are specifically looking to *"greatly reduce TCO for voice implementations and long-term service and support"*, which is why above-property (cloud) solutions are attractive (Source: jethotelsolutions.com). Essentially, the cloud option addresses exactly those TCO pain points by eliminating hardware and distributing support costs among many customers.

- **Risk Mitigation (Insurance Value):** One way to view cloud vs on-prem over the long term is through risk. With on-prem, the hotel is self-insuring its phone system – if something goes wrong, it bears the risk/cost. With cloud, the risk is transferred to the provider (through SLAs – if they fail, you might get credits or they have to fix it quickly). While this isn't "ROI" in the

classical sense, it's a value to consider. For instance, if a PBX fails during a peak weekend and disrupts operations, the cost could be lost business or guest dissatisfaction; cloud systems with their redundancy make that scenario far less likely, effectively providing an insurance against total system failure. Similarly, if a new compliance requirement comes (like those 911 rules), on-prem owners might have to invest to comply (negative ROI hit), whereas cloud customers get it as part of service.

In conclusion, the long-term financial analysis generally tilts in favor of cloud for most use cases in hospitality. The **ROI** of cloud is realized through immediate CapEx savings, ongoing lower support costs, and gains in agility (which can translate to better service and possibly improved revenue capture). The **TCO** of cloud is predictable and tends to be lower when all factors are included, particularly for small and mid-size operations and increasingly for large ones as well. On-premise can still be viable in specific scenarios (e.g., a hotel that already owns a new system – their ROI on that purchase means sticking with it a while, or a scenario where connectivity costs would make cloud unusually expensive), but those are more exceptions now. Hotels should perform a holistic cost analysis including intangible benefits; oftentimes, cloud's value will manifest not just in direct dollars saved but in softer ROI like more focus on guests and less on maintaining equipment.

Mobility, Flexibility, and Remote Work Considerations

The hospitality industry has traditionally been very on-site and hands-on, but even hotels have areas where **mobility and remote access** matter – for both staff and guests. Additionally, the COVID-19 pandemic accelerated the need for remote capabilities and flexible work arrangements (e.g. remote reservation agents, or management working from home). Here's how cloud vs on-premise systems compare on these aspects:

- **Staff Mobility On Property:** Hotel staff are frequently on the move – housekeeping, maintenance, managers – they aren't sitting at desks. A modern phone system can greatly assist by allowing staff to make/receive calls on mobile devices (smartphones or VoIP cordless phones) as if they were at their desk extension. Cloud systems excel here: they typically offer mobile apps and softphone clients as part of the service. A staff member can have the hotel's app on their phone and be reachable via their extension anywhere with Wi-Fi or cellular data. For example, a housekeeping manager can get a call from front desk on the mobile app while on the floors, or a general manager can take an after-hours call at home, seamlessly. On-premise systems can also provide mobility, but often require additional setup like VPNs or specialized DECT phone systems. By using *"softphone and mobile device capabilities"* that hosted

solutions provide (Source: jethotelsolutions.com), hotels can increase responsiveness and ensure no important call goes unanswered. Phonesuite's cloud solution advertises freeing staff from the front desk to *"answer phones away from the desk – from anywhere"*, emphasizing mobility as a benefit (Source: phonesuite.com). In contrast, a traditional PBX might have limited wireless handsets that only work on property. The flexibility for staff to use standard smartphones as extensions is a clear advantage of cloud/VoIP systems (although technically an on-prem IP-PBX can do this too, but again it may require more IT effort to support external connectivity securely).

- **Remote Work and Reservations:** Many hotels centralize their reservation offices or allow reservation agents to work remotely. With a cloud phone system, it's straightforward to have calls routed to agents anywhere – they just log in from a softphone at home. Marriott's vision of cloud included enabling staff to interact with guests from anywhere, not just on-site (Source: nojitter.com). This was prescient for the pandemic scenario where hotel sales or customer support staff had to work from home. Cloud systems inherently support this since they operate over the internet; any authorized user with the app or a provisioned phone can work from anywhere. On-prem systems can support remote extensions but often require a robust network setup (e.g., MPLS links to home, or forcing users to VPN in to register their phone). This is less scalable and more fragile. The cloud approach allowed many businesses to rapidly shift to remote work. In hospitality, we saw hotels keep their guest support lines running during lockdowns by using cloud phone solutions to route calls to remote staff. A concrete example is smaller scale: E&J Gallo Winery (not a hotel, but in the Telzio example) used the cloud phone system to have a phone network across locations without hardware (Source: telzio.com). Similarly, a hotel chain could have a distributed workforce on one cloud PBX – something much harder to achieve with isolated on-prem systems.

- **Flexibility in Call Routing and Features:** Cloud systems typically come with user-friendly portals to change call routing rules on the fly. If a front desk needs to forward calls to a manager's cell, it can be done in seconds through a web interface. If a sudden situation demands rerouting (for instance, the front desk is swamped and calls should go to a backup call center), cloud makes that easy. On-prem systems often need manual reprogramming by a technician or require someone on-site to make changes at a PBX console. Flexibility also shows in multi-channel communications: many cloud platforms integrate voice with SMS and chat. Some hotels use texting to communicate with guests; a cloud platform might allow texts to the hotel's main number, which staff can respond to via a web interface – enhancing guest communication options. This level of multi-modal flexibility is rarely present in older on-prem systems.

- **Guest Experience and Mobility:** Guests themselves are mobile, and they expect to use their smartphones. Cloud communications can improve guest experience by bridging the gap between the guest's device and the hotel's system. For example, a cloud PBX with an API could enable a feature where a guest presses a button in the hotel's mobile app to call the front desk (the call gets delivered via the cloud PBX to the front desk, and the agent sees which guest/app it is). Or the guest might prefer a text message conversation; cloud systems with SMS support make that possible. Some hotels have started offering a "virtual concierge" via SMS or chat – those messages often route through cloud communication APIs (like Twilio or others) rather than the PBX, but if the PBX is cloud-based, integration is easier. While these are peripheral to the main phone system, they underscore the overall shift to flexible communication channels facilitated by cloud architecture.

- **Scaling for Events and Peak Times:** Flexibility also means handling peaks. Imagine a large convention hotel that during events has a spike in calls (guest requests, calls to banquet team, etc.). A cloud system can handle a surge by scaling trunks and maybe adding temporary extensions or call paths on demand. An on-prem PBX has fixed trunks – if all 30 lines are busy, the 31st caller gets a busy signal, unless the hotel quickly calls the telco to add lines (not practical in real-time). Cloud capacity is generally much more elastic, the provider ensures high concurrency so guests are less likely to encounter busy lines. This elasticity in service is a form of flexibility that improves guest experience during critical moments.

- **Adapting to Change:** Hotel operations can change (e.g., new outlets, renovations, staff reorganization). Cloud systems, through their easy management portals, allow quick reconfiguration – for example, if a restaurant in the hotel changes its hours or is repurposed, the auto-attendant can be updated remotely by the corporate office. On-prem might require someone on-site to do it or calling the vendor.

- **Training and User Experience:** Cloud phone platforms often have more modern user interfaces (web dashboards for voicemail, etc.), which employees find easier to use than the old voice-mail systems on PBXs. This can slightly improve staff efficiency and satisfaction (less time fussing with phone system, more time serving guests). Also, cloud providers usually provide training resources online which staff can access anytime, whereas with an on-prem solution, training might be a one-time thing at install or require digging through manuals.

In essence, cloud-based phone systems are designed with modern work styles in mind: **location-independent, device-agnostic, and user-configurable**. This aligns well with where hospitality is going – while hotels are physical spaces, the coordination and service extend beyond the front desk and can benefit from mobile technology. On-premise systems, especially older ones, were designed

in an era of stationary work and voice-only communication. Upgrading to either a new on-prem IP-PBX or a cloud system will bring in mobility features; however, the cloud approach makes it inherently simpler to extend services outside the hotel's four walls. As hotels emphasize personalized and prompt guest service (sometimes delivered via remote concierge centers or through staff who are constantly on the go), the argument for a flexible cloud communication platform becomes strong.

Vendor Management and Support Considerations

Managing vendors is an integral part of IT strategy, and the choice between cloud and on-premise influences the nature of vendor relationships:

- **Cloud Vendor Management:** Choosing a cloud provider for your phone system essentially means entering a long-term partnership. The vendor will be delivering a critical service continuously. Hotels need to vet providers for reliability, support quality, and industry knowledge. Key aspects include:
    - **Service Level Agreements (SLAs):** Ensure the cloud vendor offers SLAs that meet the hotel's needs (e.g., 99.9% uptime, support response times within minutes for critical issues, etc.). These should be in the contract to hold the vendor accountable.
    - **Support Structure:** What level of support is included? Many cloud vendors include 24/7 support in their plans (Source: cloud5.com), but some lower-cost options might only have email support or longer response times. Hotels operate 24/7, so 24-hour support is essential. It's worth checking if the support team understands hotel operations (for example, do they know that a PBX issue is urgent because it affects guest services? Vendors specializing in hospitality, like those cited earlier, will).
    - **Vendor Stability and Roadmap:** Hotels should consider the vendor's track record and future plans. Is this a stable company likely to be around in 5-10 years? Do they invest in new features? One risk of cloud is if the provider goes out of business or discontinues the product – the hotel would have to scramble to migrate. Choosing reputable, established providers or those with backing can mitigate this risk.
    - **Contract Terms:** Cloud contracts might be flexible month-to-month or could be multi-year for better rates. Hotels should negotiate terms that allow some out if the service is not satisfactory (early termination clauses, etc.). Also, data ownership and portability are

important – ensure the hotel can get call data out if needed and that phone numbers can be ported to a new provider if switching.

- **Compliance & Certifications:** As part of vendor management, verify that the provider meets compliance needs (PCI-DSS certification if processing payments, GDPR compliance measures, etc.). This can often be done by reviewing their compliance attestations or reports.

- **On-Premise Vendor Management:** With on-prem, the hotel deals with a few types of vendors:

1. **PBX Manufacturer or Installer:** Often hotels buy through a VAR (value-added reseller) who installs and maintains the PBX. Managing this relationship involves maintenance contracts, SLAs for repairs (e.g., a 4-hour response for system-down emergencies), and possibly software upgrade agreements. The hotel needs to ensure support will be available for the lifetime of the PBX. If the PBX vendor decides to end support for that model, the hotel might be forced to upgrade – we saw this when some PBX makers announced end-of-life for certain systems, pushing hotels to find alternatives or extended support providers.

2. **Telecom Carrier:** The hotel will have a contract with a telephone company for trunk lines (SIP trunks or legacy PRI, analog lines). That's another vendor to manage for dial tone service. If something goes wrong (like outbound calling fails), the hotel might have to coordinate between the PBX vendor and carrier to troubleshoot, which can be frustrating ("it's the PBX" vs "no, it's the carrier" finger-pointing). With cloud, the provider typically *is* the carrier or manages the carrier, avoiding that scenario.

3. **PMS or Integration Vendor:** If the PBX needed a third-party middleware for PMS or other integrations, that's another relationship (though increasingly integration is handled by either the PBX vendor or PMS vendor directly).

Managing on-prem vendors can be more hands-on: scheduling maintenance visits, renewing support annually, etc. The hotel has to keep track of software licenses and possibly pay for upgrades. One also has to consider the vendor's viability – some hotels have had their PBX vendor go out of business or discontinue the product, leaving them scrambling for someone who can service an orphaned system.

- **Multivendor Complexity vs Single Throat to Choke:** Cloud solutions often provide a "one-stop shop." If the phones aren't working, you call one vendor and they handle it (even if the issue is underlying carrier, it's their job to resolve). With on-prem, if phones aren't working, is it the PBX hardware? The software? The trunk line carrier? The network? The hotel might have to

involve multiple parties. Having an integrated solution from the cloud provider simplifies accountability (Source: cloud5.com) – they typically offer a portal so you can open a ticket and they coordinate the rest. That said, reliance on one vendor means you need that vendor to be reliable; due diligence and references are key.

- **Customization and Vendor Dependency:** One subtle aspect: with on-prem and an in-house expert, a hotel could potentially handle minor changes or customizations without calling the vendor (if they have the expertise). With cloud, you often depend on the vendor to implement any deep custom changes (though many cloud systems allow lots of self-service configuration). Some hotels might worry about lack of control – if they want a new feature or an integration, they have to request it and hope the vendor adds it or pay for a custom solution. On-prem with a skilled telephony engineer could be tweaked more freely (this is more relevant to very large hotels with IT teams). But for most, the benefits of letting the vendor handle things outweigh that.

- **Cost Management:** With cloud, cost management is about monitoring usage (e.g., international calling or overage charges) and ensuring the hotel isn't paying for unused lines. A good vendor will provide usage reports. On-prem cost management involves budgeting for occasional big spends (repairs or upgrades). Some hotels ended up paying a lot for ad-hoc repairs because they didn't have a contract, which can be a nasty surprise. Jet Hotel Solutions pointed out that hoteliers seek "economical exit strategies" from legacy voice partly to avoid those unknown costs (Source: jethotelsolutions.com).

- **Vendor Examples:** Hospitality-focused vendors like Phonesuite, Cloud5, Mitel, etc., each have different models. Some, like Phonesuite, offer both on-prem and cloud options (Source: phonesuite.com)(Source: phonesuite.com), letting the hotel choose. They likely manage the relationship similarly (they either send hardware and support it, or host the service). A hotel chain might leverage one vendor for all properties to simplify management – e.g., they sign a master agreement with a cloud provider to roll out to all hotels over time, making vendor management centralized.

In conclusion, **vendor management in the cloud scenario is about managing a service contract and relationship**, ensuring the provider delivers on promises, whereas **on-prem vendor management is about managing support agreements and coordination among multiple parties**. Cloud can reduce the management overhead (one vendor, inclusive service), but it requires trust and verification of that vendor's capabilities. On-prem can give more sense of control (you physically have the equipment), but you may end up spending more time dealing with vendors for various components. Many IT leaders in hospitality prefer to have fewer vendors to manage; moving

to cloud often achieves that by eliminating separate telco carriers and disparate PBX vendors across properties. The final recommendation is to choose vendors (cloud or on-prem) with proven hospitality experience, and to establish clear expectations in writing (SLAs, responsibilities) to avoid any ambiguity when issues arise.

Decision Matrix and Recommendations for Hotel IT Professionals

Choosing between a cloud-based or on-premise phone system requires evaluating several factors in the context of your specific hotel or portfolio. Below is a **decision matrix** highlighting key considerations and which option tends to be favorable for each. Use this as a guide, along with the detailed analysis above, to make an informed decision:

DECISION FACTOR	CLOUD-BASED PHONE SYSTEM	ON-PREMISE PHONE SYSTEM
Hotel Size & Scale	**Best for small to mid-size hotels and multi-property groups.** Scaling up or down is easy and multi-site integration is seamless. A chain can centralize multiple hotels on one cloud platform (Source: telzio.com). Small hotels avoid having to maintain their own hardware.	**Viable for single large hotels or campuses.** A big resort with thousands of extensions can use on-prem if it has IT support, though it will face higher initial costs. Multi-property requires multiple PBXs or a complex networked PBX, which is less efficient than cloud.
Upfront vs Ongoing Budget	**OpEx model – ideal if CapEx is limited.** Little upfront cost; predictable monthly fees (Source: pbxmechanic.com). Good if you prefer spreading costs over time or have operational budget available. No expensive surprises – updates and maintenance are included (Source: net2phone.ca).	**CapEx model – requires upfront investment.** May suit owners who have capital and want to minimize recurring costs. Over years, on-prem monthly costs can be lower than cloud subscription, *but* remember to include maintenance, licenses, and eventual upgrades in budgeting.
IT Staff and Expertise	**Minimal IT involvement needed.** Vendor manages the system; hotel IT just handles user management via a web portal (Source: cloud5.com). Great for hotels with no dedicated telecom staff. Reduces burden on IT, freeing them for other tasks (Source: marconet.com)(Source: marconet.com).	**Requires on-site or on-call telecom expertise.** Suitable if you have a competent IT/engineering team or a reliable local vendor. The team must handle or coordinate repairs, updates, and configuration changes (Source: web.vodia.com). Without expertise, downtime or misconfigurations can occur.
Reliability & Uptime	**High uptime with proper network redundancy.** Vendor provides geographically redundant servers; design for dual ISP/LTE backup for internet (Source: nojitter.com). Cloud can reroute calls in disasters (e.g., to mobile phones) easily. No single	**High uptime with proper hardware redundancy.** PBX can run without internet (internal and PSTN calls unaffected by WAN issues). However, the hotel must invest in redundant PBX hardware and backup power for comparable resilience. A single PBX

DECISION FACTOR	CLOUD-BASED PHONE SYSTEM	ON-PREMISE PHONE SYSTEM
	hardware point of failure at hotel (Source: nojitter.com).	failure can take down service if no standby system (Source: nojitter.com).
Internet Connectivity	**Requires reliable internet.** If your hotel has stable, high-bandwidth internet (and ideally a secondary connection), cloud will perform well. SD-WAN or QoS recommended to prioritize voice (Source: cloud5.com). Cloud is not ideal if your connectivity is frequently down or very high latency.	**Operates independently of internet for voice.** If your location has poor internet or is remote (mountain lodge, cruise ship, etc.), an on-prem PBX with local trunks ensures phones work. You can still use internet-based SIP trunks if available, but you have the option of traditional lines as backup.
Feature Requirements	**Advanced and continually updated features.** Ideal if you want the latest in unified communications (mobile apps, web conferencing, SMS, AI integrations). New capabilities appear without new hardware (Source: nojitter.com). Strong support for APIs to PMS, CRM etc. (Source: business.att.com). Suits innovative hotels that regularly update tech.	**Proven standard features, customizable on-site.** On-prem can handle all core hotel features (PMS integration, wake-up calls (Source: web.vodia.com), etc.). Good if your needs are fully met by traditional telephony and you have specific custom setups that are already working. Upgrades for new features are infrequent and optional (you control when to upgrade, at a cost).
Integration Needs	**Great for cross-system integration.** If you plan to integrate telephony with cloud PMS, CRMs, or guest apps, a cloud PBX is often easier. Ex: Opera Cloud PMS integration readily provided (Source: cloud5.com). Chain-level integrations can be done once for all properties.	**Local integrations possible, but may require extra modules.** Works with on-prem PMS (via FIAS or middleware) (Source: yeastar.com). If you have a legacy PMS or custom system tightly coupled with an old PBX, keeping an on-prem PBX might avoid re-engineering that interface. Otherwise, new integrations might be harder unless your PBX supports modern APIs.

DECISION FACTOR	CLOUD-BASED PHONE SYSTEM	ON-PREMISE PHONE SYSTEM
Security & Compliance	**Vendor-managed security and compliance.** Suited for hotels that want a professionally secured system with up-to-date patches (Source: nojitter.com). Cloud providers typically ensure E911 compliance, PCI features, and help with GDPR by storing data securely (Source: qicsystems.com). Less internal effort needed to maintain compliance (but verify vendor certifications).	**Complete control over data and security (but also responsibility).** If your policy or preference is to keep all data in-house (e.g., for GDPR or company policy reasons) and you have the means to secure it, on-prem gives that control (Source: business.att.com). Good if you require strict data residency (though many clouds offer local hosting now). You'll need to handle 911 programming, PCI compliance (e.g., manage recordings), and apply patches yourself.
Cost Transparency & TCO	**Clarity and potential cost savings over time.** Known monthly cost includes maintenance – easier to predict TCO (Source: pbxmechanic.com). Often lower TCO for 5-10 year span, especially for smaller installations (Source: pbxmechanic.com)(Source: pbxmechanic.com). No worrying about hardware replacement costs or surprise repair bills (the vendor handles that risk).	**Possibly lower cost in very long term, but with caveats.** If you fully utilize an on-prem system for a long lifespan and avoid major upgrades, it could be cheaper in aggregate (no monthly fees). But factor in support contracts, power, and eventual replacement. TCO can spike if a major upgrade or failure occurs. This option is sensible if you're prepared to manage the asset intensively to maximize its life.
Timeline and Deployment	**Fast deployment, easy expansion.** New system can be set up relatively quickly (often remotely configured and then phones just plug in). Useful if you're opening a new hotel or need to replace a failing system in a hurry. Scaling to new sites is plug-and-play – just add phones and connect.	**Longer deployment, especially if new cabling/hardware needed.** Installation of PBX hardware, wiring, and testing can take more time (possibly weeks or months for large hotels) (Source: marconet.com). If you're planning a new build, on-prem requires early planning for telecom rooms, etc. Expanding to another site means a separate

DECISION FACTOR	CLOUD-BASED PHONE SYSTEM	ON-PREMISE PHONE SYSTEM
		installation or a complicated multi-site PBX network.
Vendor Reliance & Lock-In	**Reliance on vendor, but easier to switch if needed.** You entrust uptime and innovation to the provider. If issues arise, you depend on their support. However, if you decide to change vendors, you typically can port your numbers and swap out fairly easily (phones might even be reusable if standard SIP). Cloud market is competitive, giving you alternative options.	**Full ownership, but also tied to chosen technology.** You are locked into the PBX brand you purchase – switching means a new capital project. There's a risk of vendor end-of-life: if the PBX maker stops supporting your model, you might be forced to upgrade. You have more self-reliance day-to-day, but in the long run you're tied to that product's evolution cycle.

Recommendations:

- **For most hotels and small-to-medium chains, a cloud-based phone system is recommended** due to its lower maintenance burden, scalable cost structure, and rich feature set that can enhance guest service and staff efficiency. The advantages in TCO, especially avoiding large upfront costs and getting continuous upgrades, align well with the needs of hotels that must adapt quickly to new demands (like mobile guest engagement and remote work). Ensure you have or can get reliable internet with redundancy, as that is critical for success. Choose a cloud vendor experienced in hospitality to get the necessary integrations (PMS, E911, etc.) and support. Conduct a pilot if possible at one property to validate call quality and integration processes, then roll out to others. Many hotels have successfully migrated – e.g., Pacifica Hotels and Hilton properties reported *improved staff communication and guest satisfaction* after implementing a modern phone system (Source: phonesuite.com)(Source: phonesuite.com), outcomes likely tied to the capabilities of new cloud-based solutions they adopted.

- **For large luxury hotels or resorts with complex requirements**, evaluate whether a cloud solution can meet all needs at scale. In many cases it can (as seen with Marriott's cloud migration), but you might also consider a **hybrid approach**: for instance, a cloud system with an on-prem gateway for local analog devices or failover, or retaining an on-prem core for internal calling with a cloud overlay for external communications. If you have recently invested

in an on-prem PBX that still has a lot of life, it may be prudent to continue using it (with perhaps SIP trunks to reduce calling costs) and plan for a cloud transition at its end-of-life. Meanwhile, you could test cloud solutions for specific functions (like a reservations department) to become comfortable with them.

- **For hotels in areas with poor connectivity or unique security constraints**, an on-premise system might be the practical choice in the near term. Remote resorts, properties at sea, or hotels with strict data isolation rules would fall here. Even so, design the on-prem system with future integration in mind: use IP-based PBXs that can later tie into cloud services or be migrated to cloud hosting when connectivity improves. Also, ensure compliance updates (like Kari's Law) are applied to these systems – if the vendor is no longer updating, that's a red flag and you should budget for a replacement that meets current laws.

- **Decision Team Involvement:** It's advisable to involve both IT and operations leadership in the decision. IT can assess the technical fit (network readiness, integration feasibility) and TCO, while operations and finance can weigh the impact on guest experience and budgeting. Often, presenting a side-by-side cost and feature comparison (like the above matrix) to ownership will help make the case. If opting for cloud, highlight the reduction in "hidden" costs and improved resilience (Source: pbxmechanic.com)(Source: nojitter.com). If opting for on-prem, ensure there is a clear plan for support (internal or external) and a refresh strategy so the system doesn't fall behind or put the hotel out of compliance.

- **Vendor selection tips:** If cloud is chosen, solicit proposals from a few providers (including ones focused on hospitality). Compare not just price, but also feature comprehensiveness (do they support your PMS out-of-the-box? Do they provide the hotel-specific features like room status codes, etc.?), security certifications, and support guarantees. If on-prem is chosen, consider solutions that are known in hospitality and check references from similar hotels; also evaluate the local partner who will install/support it, as their expertise will be crucial.

In conclusion, the cloud vs on-prem decision for hotel phone systems should be driven by a combination of **hotel size, IT resource availability, budget strategy, infrastructure readiness, and strategic long-term vision** for guest service. The trend in the industry is clearly toward cloud-based communications for the many benefits outlined. As one hospitality tech source put it, *"hoteliers have been slow to embrace next-gen voice technology,"* but now cloud *"offers a myriad of benefits while meeting necessary requirements"* (Source: nomadix.com). By using this report and matrix to evaluate your circumstances, hotel IT professionals can make an informed choice that provides the best value and functionality for their specific needs.

Sources:

1. Jet Hotel Solutions – *"Top 10 Reasons for Choosing A Cloud-Based Phone System"* (Source: jethotelsolutions.com)(Source: jethotelsolutions.com) – discusses the decline of legacy PBX usage and lists advantages of cloud PBX (lower TCO, flexibility, etc.) in hospitality.

2. AT&T Business – *"Cloud-based (UCaaS) vs. On-Premises Phone Systems"* (Source: business.att.com)(Source: business.att.com) – provides a general comparison, noting cost responsibilities, integration capabilities, and difficulty of maintaining on-prem systems as technology evolves.

3. PBXMechanic – *"Cloud PBX vs Premise PBX Cost Comparison"* (Source: pbxmechanic.com) (Source: pbxmechanic.com) – offers a detailed cost analysis for a 20-user scenario, illustrating the high upfront and 2-year costs of on-premises vs the cloud, with cloud being significantly cheaper in that example.

4. No Jitter (Beth Schultz for Metrigy) – *"Marriott Calls on the Cloud for Enterprise Voice"* (Source: nojitter.com)(Source: nojitter.com) – case study of Marriott's migration to a cloud voice solution, highlighting improved reliability (failover, LTE backup) and security posture through centralized patching, as well as Marriott's focus on enhancing guest interaction via cloud.

5. Vodia Networks – *"Hospitality Case Study — William Vale Hotel"* (Source: web.vodia.com) (Source: web.vodia.com) – describes a boutique hotel's issues with an old PBX (maintenance, support, parts, lack of features) and their move to a cloud PBX, reducing cost of ownership and improving integration with hotel systems.

6. Cloud5 – *"Hosted PBX for Hotels — Features"* (Source: cloud5.com)(Source: cloud5.com) – outlines features of a hospitality-focused cloud phone service, including integrated wake-up calls, call accounting, high availability with SD-WAN/LTE, 24/7 support, and certified PMS integrations (Oracle, etc.).

7. QIC Systems – *"GDPR Compliance for VoIP and Cloud Phone Systems"* (Source: qicsystems.com) – emphasizes the personal data handled by phone systems (call logs, recordings) and the importance of GDPR compliance (with potential fines), relevant to hotels handling guest data in communications.

8. HotelSigns.com – *"Kari's Law: Hotel Safety & Compliance with Direct 911 Dialing"* (Source: blog.hotelsigns.com) – explains Kari's Law requirements (direct 911 dialing and no prefix) as it specifically impacts hotels, underlining why any new phone system must comply with emergency dialing rules.

9. Telzio – *"Hospitality Phone Systems in the Cloud"* (Source: telzio.com) – notes that companies like Marriott use cloud phone systems to achieve centralized communications across locations without on-site hardware, using auto-attendants and call routing to mobile to improve efficiency.
10. Yeastar – *"Hotel PBX Solution"* (Source: yeastar.com) – details hospitality features like PMS integration and automated check-in/check-out actions, stressing the need to align features with hotel operations; also implies support for both cloud-hosted and on-prem deployments with gateways for analog phones.

Tags: cloud computing, on-premise, phone systems, hotel technology, pbx, telecommunications, hospitality, e911, it infrastructure, compliance

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About ClearlyIP

ClearlyIP Inc. — Company Profile (June 2025)

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1. Who they are

ClearlyIP is a privately-held unified-communications (UC) vendor headquartered in Appleton, Wisconsin, with additional offices in Canada and a globally distributed workforce. Founded in 2019 by veteran FreePBX/Asterisk contributors, the firm follows a "build-and-buy" growth strategy, combining in-house R&D with targeted acquisitions (e.g., the 2023 purchase of Voneto's EPlatform UCaaS). Its mission is to "design and develop the world's most respected VoIP brand" by delivering secure, modern, cloud-first communications that reduce cost and boost collaboration, while its vision focuses on unlocking the full potential of open-source VoIP for organisations of every size. The leadership team collectively brings more than 300 years of telecom experience.

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2. Product portfolio

- **Cloud Solutions** – Including *Clearly Cloud* (flagship UCaaS), **SIP Trunking**, **SendFax.to** cloud fax, **ClusterPBX OEM**, **Business Connect** managed cloud PBX, and **EPlatform** multitenant UCaaS. These provide fully hosted voice, video, chat and collaboration with 100+ features, per-seat licensing, geo-redundant PoPs, built-in call-recording and mobile/desktop apps.

- **On-Site Phone Systems** – Including CIP PBX appliances (FreePBX pre-installed), ClusterPBX Enterprise, and Business Connect (on-prem variant). These offer local survivability for compliance-sensitive sites; appliances start at 25 extensions and scale into HA clusters.
- **IP Phones & Softphones** – Including CIP SIP Desk-phone Series (CIP-25x/27x/28x), fully white-label branding kit, and *Clearly Anywhere* softphone (iOS, Android, desktop). Features zero-touch provisioning via Cloud Device Manager or FreePBX "Clearly Devices" module; Opus, HD-voice, BLF-rich colour LCDs.
- **VoIP Gateways** – Including Analog FXS/FXO models, VoIP Fail-Over Gateway, POTS Replacement (for copper sun-set), and 2-port T1/E1 digital gateway. These bridge legacy endpoints or PSTN circuits to SIP; fail-over models keep 911 active during WAN outages.
- **Emergency Alert Systems** – Including **CodeX** room-status dashboard, **Panic Button**, and **Silent Intercom**. This K-12-focused mass-notification suite integrates with CIP PBX or third-party FreePBX for Alyssa's-Law compliance.
- **Hospitality** – Including **ComXchange** PBX plus PMS integrations, hardware & software assurance plans. Replaces aging Mitel/NEC hotel PBXs; supports guest-room phones, 911 localisation, check-in/out APIs.
- **Device & System Management** – Including **Cloud Device Manager** and **Update Control (Mirror)**. Provides multi-vendor auto-provisioning, firmware management, and secure FreePBX mirror updates.
- **XCast Suite** – Including Hosted PBX, SIP trunking, carrier/call-centre solutions, SOHO plans, and XCL mobile app. Delivers value-oriented, high-volume VoIP from ClearlyIP's carrier network.

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3. Services

- **Telecom Consulting & Custom Development** – FreePBX/Asterisk architecture reviews, mergers & acquisitions diligence, bespoke application builds and Tier-3 support.
- **Regulatory Compliance** – E911 planning plus **Kari's Law**, **Ray Baum's Act** and **Alyssa's Law** solutions; automated dispatchable location tagging.
- **STIR/SHAKEN Certificate Management** – Signing services for Originating Service Providers, helping customers combat robocalling and maintain full attestation.
- **Attestation Lookup Tool** – Free web utility to identify a telephone number's service-provider code and SHAKEN attestation rating.
- **FreePBX® Training** – Three-day administrator boot camps (remote or on-site) covering installation, security hardening and troubleshooting.
- **Partner & OEM Programs** – Wholesale SIP trunk bundles, white-label device programs, and ClusterPBX OEM licensing.

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4. Executive management (June 2025)

- **CEO & Co-Founder: Tony Lewis** – Former CEO of Schmooze Com (FreePBX sponsor); drives vision, acquisitions and channel network.
- **CFO & Co-Founder: Luke Duquaine** – Ex-Sangoma software engineer; oversees finance, international operations and supply-chain.
- **CTO & Co-Founder: Bryan Walters** – Long-time Asterisk contributor; leads product security and cloud architecture.
- **Chief Revenue Officer: Preston McNair** – 25+ years in channel development at Sangoma & Hargray; owns sales, marketing and partner success.
- **Chief Hospitality Strategist: Doug Schwartz** – Former 360 Networks CEO; guides hotel vertical strategy and PMS integrations.
- **Chief Business Development Officer: Bob Webb** – 30+ years telco experience (Nsight/Cellcom); cultivates ILEC/CLEC alliances for Clearly Cloud.
- **Chief Product Officer: Corey McFadden** – Founder of Voneto; architect of EPlatform UCaaS, now shapes ClearlyIP product roadmap.
- **VP Support Services: Lorne Gaetz** (appointed Jul 2024) – Former Sangoma FreePBX lead; builds 24×7 global support organisation.
- **VP Channel Sales: Tracy Liu** (appointed Jun 2024) – Channel-program veteran; expands MSP/VAR ecosystem worldwide.

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5. Differentiators

- **Open-Source DNA:** Deep roots in the FreePBX/Asterisk community allow rapid feature releases and robust interoperability.
- **White-Label Flexibility:** Brandable phones and ClusterPBX OEM let carriers and MSPs present a fully bespoke UCaaS stack.
- **End-to-End Stack:** From hardware endpoints to cloud, gateways and compliance services, ClearlyIP owns every layer, simplifying procurement and support.
- **Education & Safety Focus:** Panic Button, CodeX and e911 tool-sets position the firm strongly in K-12 and public-sector markets.

In summary

ClearlyIP delivers a comprehensive, modular UC ecosystem—cloud, on-prem and hybrid—backed by a management team with decades of open-source telephony pedigree. Its blend of carrier-grade infrastructure, white-label flexibility and vertical-specific solutions (hospitality, education, emergency-

compliance) makes it a compelling option for ITSPs, MSPs and multi-site enterprises seeking modern, secure and cost-effective communications.

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