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Analysis Of VOIP: A Case Study In A Small Independent Hotel

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ANALYSIS OF VOIP: A CASE STUDY IN A SMALL INDEPENDENT HOTEL

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I. INTRODUCTION

As you enter a typical city there are numerous hotels on both sides of the street. Many of these hotels are part of larger parent chains such as the Holiday Inn, Hilton, and Marriott. The parent companies provide resources to the local business –reservations systems, advertisements, and employee training. Most strategic decisions are made at the parent level with some modifications made regionally for specific local needs. Hidden among the chains hotels are small, independent hotels. These hotels meet the needs of business and family travelers but don't always receive the resources that larger corporations provide.

A case study was developed for use in an IS classroom analyzing decisions made about implementing voice over internet protocols (VoIP) by a small, independent hotel. An outline of the case and questions that will be posed to students are presented.

The business is a family-owned, independent hotel with 110 rooms called The Inn. It has been in continuous operation since the 1970's with the current owners having owned the business for 14 years. Faced with increasing utility costs, management has decided to identify cost savings options for each of the utilities. One area in particular is the telephone costs. Since the hotel is independent, all hotel reservations are done directly with the business with toll-free calls coming directly to the front desk. The majority of telephone usage is related to guests making telephone reservations through an owned toll-free line. Management of existing reservations and day-to-day related operations also use the toll-free line but a notable decrease in usage of the telephone by hotel guests. Currently the business has 16 telephone lines for the business. A recent usage report indicated seven of the lines have minimal use, mostly related to the increase usage of personal cell phones by guests.

To save on telecommunications costs, elimination of traditional phone lines might be appropriate. In addition, separate lines for data and phones could be merged to help reduce costs. If the business expands and grows at The Inn, having a telecommunication system that can meet expansion is important. On the other hand, ease of setup is also important because of the lack of corporate resources available. A new system may require expertise that is not available in the local area and without corporate resources to provide experts and/or money a new system may not be feasible.

Costs, ease of setup, and expansion overshadow some of the other considerations for a new telecommunication system. Reliability of the system is also important since the main source of revenue relies on guests reserving hotel rooms. If the phone system is not available or the provider can't support the system this affects the revenue. Quality of the sound also affects guest's ability to complete reservations. If credit card numbers are being given over the phone, it is vital to secure the lines to reduce hackers and threats.

The Inn is considering going to voice over internet (VoIP) instead of using traditional phone lines hoping to reduce costs. It is important to identify the advantages and disadvantages of using VoIP for The Inn. A consideration for the types of applications that could be used in VoIP that would not be used in a traditional environment and the key decisions to consider to make the switch.

The goal of the case is to present students with alternative businesses for analysis. Often large corporations are used for case studies but many current issues affect small businesses in varying ways.

2. COMPANY BACKGROUND

After working as an engineer for a large corporation for 22 years, Ram retired in 1994. Early in retirement he was able to keep himself occupied with family and traveling, but he had a nagging feeling he could do more with his time. So he and his wife (Lakhi) began considering options for either starting or purchasing a small business. After evaluating a number of options, in 1995 they purchased a small hotel in the Pacific Northwest.

The property is located in a small university town and was built in 1978 by a nationally known franchise. The hotel has two stories with a total of 110 guest rooms, lobby area, a number of facilities and storage rooms, and a managers living quarters. There are a total of four buildings all interconnected with a common roof.

Because of its location, guests typically stay at the property for one of four reasons: university related events, needing a room for the night while traveling through town, visiting friends and family who live in the area, and working in the area. Most guests stay two to three nights at the hotel, while others are traveling through needing just one night and others need accommodations for an extended period of time. Occupancy varies widely and similar to many businesses within university towns, the hotel is dependent upon activities related to the university to help drive demand.

From construction, the property continued operating under the same franchise flag for 16 years using managers hired by the franchise. These property managers were given the discretion for staffing related issues and the general management of the property. Though the manager was involved in all major expenses for upkeep and upgrading the property, a majority of decisions were centralized at another location. Initially the property performed well, but a combination of unrealized growth, difficulty in managing the property from a considerable distance from the home office, and the inability to retain managers for an extended period of time led the franchise to put the property up for sale in 1994.

When Ram and Lakhi took over the hotel in 1995, they began a drastic revamping of the property. The prior franchise owners had realized they would eventually need to be putting the property up for sale, so while they ensured adequate upkeep of the property was performed, property upgrades were left to the new owners to decide. When taking ownership, Ram and Lakhi decided to not franchise the property as they wanted greater control on how to manage and operate the property. As most hotel operators realize, there is always some form of updating that needs to be done to modernize a property as well as meet the needs of guests.

Telephone System

One area in particular was the telephone system. The original system was still in service when Ram and Lakhi took ownership, and did not provide many of the convenience features which guests sought (automated desk attendant, call cost accounting, wake up calls, voice mail, etc.). In 1999, the phone system was replaced with a more robust private branch exchange (PBX) system, which provided the additional features for an installed cost of $34,000. The phone system manages a total of 16 lines: 14 telephone lines for guest use and two tied directly to the front desk (toll-free and fax lines). Guests can receive calls to their rooms for no charge and make local calls for free.

There are fixed costs associated with maintaining each of the lines, as well as usage costs when phone calls are made or received as in the case of the toll-free line. Including local and long distance phone calls, typical monthly telephone costs ranged from $2100-2800 per month with annual telephone costs exceeding $25,000. While there has been an increase in occupancy, there has been a decrease in guest telephone system use as many guests prefer to use their own cell phones. Similarly, the call cost accounting system is seldom used as guests often prefer to use their own cell phones or even chose to use calling cards.

Current Dilemma

While the installation of the PBX enhanced guest convenience and decreased phone traffic to the front desk (using the automated desk attendant), telephone expenses are still high. Since the hotel is independently owned and operated, front desk staff handle all reservations through the phone system so telephone traffic will likely continue. Historically there has been an even split on the number of calls potential guests make for reservations through the main number (were the potential guest is paying for the phone call) or through the toll-free line (which then is billed to the hotel), so there is still a need for managing phone lines. While there is not any contract in place requiring a specific number phones be maintained, a recent usage report found that seven of the general use lines (of the 14) had minimal to no use. Should the owners consider eliminating the seldom used lines? Are there any other options Ram and Lakhi should consider to help minimize telephone costs?

3. VOIP OVERVIEW

Understanding the needs and demands of the business influence future decisions, the first step in decision-making is to understand the telephone operations. The term telephony is applied to voice communication over distance. Traditional telephony included handheld devices-telephones-where receivers and transmitters broadcast the voice waves as analog signals, using a circuit-switched network. Lines used to transmit the signal are leased from the telephone companies.

The newest form of telephony transmits voice communication using the internet as digital signals, where the computer is the device. Voice over the internet uses the internet protocol (IP) creating internet telephony or VoIP. The encoding of the message into digital is sent over the internet in packets using a packet-switched network.

A primary motivation for choosing VoIP is economic. Packet transmission equipment costs less than traditional telephone switch equipment. In order to maintain voice quality, there may be a need to upgrade the packet-switched network. Using the computer as a receiver eliminates the need for handheld devices, also reducing costs.

Another important factor to consider in changing telephone systems is voice quality and availability. Telephone companies are converting from analog lines to digital, particularly over long distances which entail changing the type of network. In an analog voice system a synchronous network (or isochronous network) is designed to move data at a precise rate. Instead of the network slowing with an increase in traffic the data rate remains the same. Digital voice signals on an unsynchronized network could be delayed temporarily as the traffic increases causing the delays or interference in the communication. To aid the digital network additional receiving equipment is needed to synchronize the data more precisely and eliminate delays and interference.

Investing in VoIP, or maintaining the current telecommunication system is both an economic and quality decision. Industry analysts expect 90% of traffic on communication service providers will use IP technology. Shifting from the traditional communication methods to internet-based methods provide an opportunity for data networking companies to compete with traditional voice network equipment providers. More “players” in the industry create an opportunity for more competitive pricing, helping to reduce costs for the user.

4. THE DECISION

Cable and broadband providers are offering a variety of packages which include voice and data. Competition creates options for small business in terms of variety and costs; aggressive pricing plans help to build new customer bases. The pricing plans by cable operators are noticing a much lower churn rate for VoIP service. Telecommunication services are regulated by the Federal Communication Commission except VoIP as it is classified as an information service. VoIP providers do not have certification and regulatory requirements like a traditional carrier. Without regulations reliability comes into question. The Inn is dependent on telephone calls for reservations, particularly since they are an independent hotel. If the telephone lines are not in service, reservations cannot be made. This issue was a key for Ram and Lakhi. They determined that switching to VoIP at this time may be cost effective in the long run but could be a liability until reliability can be addressed.

5. TEACHING SUGGESTIONS

The case is used to illustrate telecommunication issues in a small business. Students will be able to analyze the key issues, the decision made, and suggest alternative solutions. The teaching objectives related to this case include:

- Illustrate problems that face a small business which are different than a large corporation
- Highlight the need for making a decision and the importance of re-evaluating other possible solutions

In order for the students to determine if the decision The Inn made was suitable, students were asked to investigate the following questions:

1. Determine the total telecommunication costs for The Inn (hand-held devices, cabling, implementation, etc.).
2. Mobility and flexibility are important considerations with VoIP. Consider the issues of both as they relate to The Inn.
3. What are the security issues that a hotel should be prepared for and protect themselves and their customers?
4. If the telephone system goes down then there is a direct affect on revenue. How can reliability be implemented in a traditional and VoIP telephone system.
5. Did The Inn make the right decision? What are some other solutions they could consider?