

# HIGH-SPEED INTERNET ACCESS

A Core Amenity  
for the  
Hospitality  
Industry



## High-Speed Internet Access: A Core Amenity for the Hospitality Industry

*Abstract:* High-Speed Internet Access offers great potential for increased service amenities and revenues in the hospitality industry, but at the same time requires great care in the selection of service and business models, appropriate technology solutions, and ongoing customer and systems support. In this paper, Terry McGowan and Dan Carpino discuss the evolution and current state of HSIA as it applies to hospitality properties, and offer key guidelines in how to reach appropriate decisions for properties of any size. Appendices provide three sample real-world business models and additional technology information.

<u>Contents</u>	<u>Page</u>
I. The Current State of HSIA Use	2
II. The <i>Status Quo</i> is No Longer Acceptable	3
III. Emerging Solutions to HSIA Issues	4
IV. The Future State of HSIA	7
V. Conclusion	9
<hr/>	
Appendix 1: HSIA Financial Models for Hotels	11
Appendix 2: Technical Information about HSIA	15
Back Cover: Datanamics, Inc.	





## HIGH - SPEED INTERNET ACCESS

*A Core Amenity for the Hospitality Industry*

By Terry McGowan and Dan Carpino

In today's fast-paced business environment, business travelers and conference attendees throughout the country find themselves not just wishing for, but demanding high-speed Internet access. HSIA, as it is called, has become just as important on the road as it is in their homes or corporate offices.

Further, more travelers seek the same level of speed, reliability, security, and accessibility in their hotel and meeting rooms as they are accustomed to in the office. And, nearly 90 percent of business travelers carry their laptops and want them to be able to process large data files, presentations, and graphics quickly and without fuss.<sup>1</sup>

*"...an amenity  
second only  
to voicemail."*

What this means for the hospitality industry is increasingly clear: HSIA is a must-offer amenity for hospitality chains that want to remain competitive in the marketplace.<sup>2</sup> Properties that have already installed the improved, second-generation HSIA systems are also finding them to be a surprisingly effective marketing and promotional tool – and an amenity the business traveler desires second only to voicemail.<sup>3</sup> In addition, following the events of 11<sup>th</sup> September, hotels have reported business travel as decreasing, but at the same time, those who are traveling are showing a much higher HSIA request and usage rate.<sup>4</sup>

Furthermore, providing meeting and conference rooms with high-speed Internet access means increased use for enhanced conference presentations as well as sophisticated corporate group training sessions that are not possible without HSIA.

---

<sup>1</sup> "87% of business travelers take their laptops on the road. Nearly all use amenities like Internet access and e-mail while traveling." *American Express*, Survey, 2000.

<sup>2</sup> "A directory of hotels offering in-room high-speed internet access maintained by Centergate Research Group lists about 2,100 U.S. hotel rooms with HSIA." *Internet Week*, October 15, 2001.

<sup>3</sup> "Internet access is the top amenity (after voicemail) business travelers are seeking in their hotel rooms." *Hotel Interactive*, Survey, 2000.

<sup>4</sup> Teleconference with business development staff, *Datanamics, Inc.*, December 2001.



*“...increased bookings owing directly to the appeal of the HSIA offering....”*

For those properties already leading the way with HSIA installations, the results are higher overall revenues and profits; increased bookings owing directly to the appeal of the HSIA offering; and increased customer satisfaction.<sup>5</sup>

HSIA has thus become not the wave of the future; it is the wave of the present, and has been proclaimed as an economic priority for the Bush Administration in the wake of the events of 11<sup>th</sup> September.<sup>6</sup>

### I - The Current State of HSIA Use

The hospitality industry has made good progress towards integrating HSIA into its amenity offerings. Building on the knowledge that the original Internet standard – dial-up modem connections using regular telephone lines – has proved to be both too slow for the average business customer and too burdensome on hotels’ regular PBX telephone systems, properties began to respond to HSIA offerings from a variety of companies eager to create the new market. Significant resources were applied to establishing HSIA as a cutting-edge amenity, and a variety of pricing and revenue models emerged. Some involved revenue sharing; others were straight fee-for-service; while others were a mix of the two.

And the promise has held, because even the least sophisticated of the initial HSIA systems proved capable of speeds from 10 to 100 times faster than dial-up modems. At the same time, business travelers were finding HSIA installed in their corporate offices, and were coming to expect the same on the road.

*“...(early systems) suffered from lack of support.”*

While many of the original HSIA systems worked, and continue to work well – especially those using the most proven, and often more expensive technologies – others experienced difficulty in providing consistent and reliable service. They suffered from not being able to receive the kind of service support from vendors that allowed them to fix problems quickly and to maintain guest satisfaction.

---

<sup>5</sup> “Expanding on the limited HSIA service that most business-center hotels currently offer could give early adopters an edge on the competition, while giving travelers a better reason to come back than the bad oldies-group in the lounge.” *CRM Daily*, June 27, 2001.

<sup>6</sup> Bruce Mehlman, Assistant Secretary of Commerce for Technology Policy, quoted by Jonathon Krim, *The Washington Post*, Page A-1, January 15, 2002; includes similar statements by Senate Majority Leader Tom Daschle (D-S.D.).



*“...property managers know that HSIA is here to stay.”*

The microeconomics of HSIA have also proved to be a mixed bag. Some hotels charge a daily rate for access; others roll up access fees into their room rates; still others charge for actual usage. Some travelers found their HSIA expense reports rejected owing to company policy. Others remained doubtful and preferred to use the slower dial up connections hoping they would at least prove reliable.

Nonetheless, even with the fits and starts common to the emergence of a new technology, property managers knew that HSIA was here to stay. And soon, new clarity emerged about the various developmental issues surrounding it.

## II - The Status Quo is No Longer Acceptable

Hospitality industry professionals, especially general managers at properties, are now very aware – often through their own painful experience – of key HSIA issues, including:

- Dial-up is Dead: Dial-up modems are simply neither adequate nor acceptable to today's business travelers, except perhaps in smaller properties and markets – and even they will want and need to move to HSIA eventually.

- Better Hardware is Needed: HSIA must be made to work better at the property level in every way, especially through reliable installations, hardware, and software that does not result in customer dissatisfaction because of inadequacy or system failures.

- Improved Support is Paramount: Almost more important than reliable systems is access to a sophisticated 24/7 support capability that does not require hotel employees or customers to be computer scientists. Both property workers and guests must be able to “get it fixed” quickly without requiring special computer skills.

- Connectivity and Security is Critical: At the outset of HSIA service in many properties, there was a lack of “plug and play” capability, whereby a customer simply plugs in his laptop to the HSIA network and proceeds to log on and go to work, without having to understand the computer protocols that allow such a connection. Plug and play

*“... property workers and guests must be able to “get it fixed” quickly...”*





*“...there is serious confusion and concern about vendors revenue and pricing structures.”*

capability is a convenience amenity of immeasurable importance to the non-computer-literate executive. And in an age of increasingly sophisticated hacking, the business traveler also wants to know that his company's security software and systems will run flawlessly on any HSIA system being used.

- Industry-side and Vendor Economics must Work: From the hospitality viewpoint, there is serious – if not vast – confusion and concern about vendors' revenue and pricing structures. Vendors themselves have become unstable, and closed their doors because they were unable to foresee future pricing issues (especially in the service area). Again, while some of this can be attributed to the startup nature of the industry, it has until now resulted in frustration on both the property and vendor sides of the equation.

These and other issues are among those that must be addressed before HSIA can achieve maturity as an industry.


### III – Emerging Solutions to HSIA Issues

If the early days of HSIA in the hospitality industry could be characterized by the idea that “a clear picture of a fuzzy thing is still fuzzy,” that fuzziness has begun to resolve into much greater clarity, as outlined above. Through early 2002, the hospitality industry, its primary vendors, and industry analysts began to identify some important baseline requirements needed to make both the property manager and the guest increasingly satisfied with high-speed Internet access on an ongoing basis. They include:

- Vendor Reliability and Track Record: As in any industry, a successful track record over a period of years and with a variety of clients and systems is seen as a requirement for a successful client-vendor relationship. Now that the “teething period” is over, industry executives know they now have access to companies with substantial track records.

- Hospitality Industry Experience: Vendors who are familiar with the hospitality industry and with the specific hardware, software, installation, and applications issues – as well as being especially attentive to client service requirements – will have an advantage.





*“The best vendors  
will always be  
testing new  
equipment ...”*


- Research and Analysis: The best vendors will always be testing new equipment from the broad spectrum of manufacturers in the HSIA industry – using manufacturers’ specifications as a starting point and running their own tests in their own laboratory settings. Vendor’s own testing laboratories serve to protect clients’ investments in technology by assessing new equipment and software and providing timely advice from both cost and performance viewpoints. They will be neutral in their choice of manufacturers and will understand and place in the forefront their hotel clients’ needs.

- Plug and Play Capability: As noted above, all HSIA systems should provide this fundamental amenity. While the technology is complex, its service value is high because it assures connectivity without confusion or frustration to the user. In effect, the HSIA system should be able to imitate the user’s home system flawlessly and quickly while not requiring the customer to struggle with access problems.

- Turnkey Solutions: Appropriate hardware and software systems should be available ready to run for any type of property. Property managers should expect vendors to properly and quickly install new systems, as well as to advise which of a property’s existing systems can be carried over to an upgraded HSIA system or re-directed to other hotel use. The vendor is expected to indicate what new equipment is required to complete or upgrade an existing system – without duplication or needless replacement. Questions as to appropriate transmission technologies, such as Category 5 cable, Coaxial cable, DSL, or wireless, should be represented in a way that allows non-technical property managers and other decision-makers to choose what is best for their properties at any given time. In addition, competent vendors can advise properties on whether to begin with less-costly, partial wiring of a property – setting aside certain floors as HSIA-available – with a clear provision for expanding HSIA service to other floors as business experience indicates.

*“...effective support  
programs will enhance  
a property’s reputation...”*

- Strong Support Programs: Again, both property managers and customers know the value of being able to resolve an access problem quickly at any hour of the day or night, using terminology appropriate to non-specialists. Competent vendors will be able to show both track records and customer testimony and references to back up their support claims. Support desks must be staffed by Level 2 staff capable of



*“... support staff  
... have the chance  
to be heroes  
to users...”*

resolving queries from hotel staff. Because hotel staffs are customer facing, the vendor support staff should manifest their equal concern to serve all guests quickly and efficiently. As HSIA use expands to include children playing computer games and retirees wishing to send e-mail and pictures to grandchildren, support staff at both property and vendor sites have the chance to be heroes to users – an important differentiator when considering vendor selection. Effective support programs will enhance a property’s reputation as caring for its customers by being efficient and helpful with any HSIA problems.

*“...Be aware of  
meeting planners’  
needs.”*


- Attractiveness to Meeting Planners: Many property managers and staff deal frequently with meeting planning companies who represent an increasing share of on-site corporate activities. Being aware of meeting planners’ needs and preferences, which in turn derive from their corporate clients’ requirements, will enhance any property’s share of corporate business.

- Expandability: As HSIA systems mature and become regular and reliable, property managers will face critical management decisions concerning system enhancements. Even faster speeds, more sophisticated access, multi-user systems for meeting and conference areas,<sup>7</sup> and simultaneous multi-tasking will make the HSIA amenity even more valuable. Vendors will be measured on their abilities to describe, install, and service all enhancements.

- Variable Pricing Options: Although industry analysts predict that HSIA services for individual hotel rooms and guests will ultimately be included in basic room charges, most properties will want to maintain separate charging capabilities for conferences, training sessions, and other public space activities. Equally, analysts indicate that most revenue sharing between vendors and properties will eventually give way to straight fee-for-service contracts, where a vendor will charge a fixed monthly or annual amount for each wired room or meeting area, including normal

---

<sup>7</sup> Leading hotels are “renovating conference centers, which traditionally have been wired by hand for each group using them, resulting in snaking lines of duct tape pinning cables to the carpet. Hotels now are planning conference rooms that include desks with integrated electrical outlets and network ports, and adding video-conferencing facilities and projection technology to match the facilities in modern office buildings.” *Computer World*, May 24, 2001.



*“...property managers  
will...know how  
to price in their markets.”*

maintenance of HSIA equipment. Most properties, however, will face a lease-or-buy decision concerning HSIA equipment. In all cases, best practice vendors will be able to offer both the decision-making information and the hardware and software to enable the client to achieve the desired result. Individual property managers will be in the best position to know how to price the HSIA amenity in their markets. For instance, hotels that function primarily as hosts to conventions and other large on-site gatherings may choose to retain fee-based use, while other properties that primarily serve individual business travelers (especially in high-traffic hotels near corporate sites) may find the inclusive charge more effective.

The solutions discussed above are, of course, the result of only a few years' experience in the HSIA world as applied to the hospitality industry, but along with improved, second-generation HSIA equipment, they represent a clearer way for property managers and hospitality industry executives to reach HSIA decisions that make the best sense for their properties and situations.

#### IV – The Future State of HSIA

For many hospitality industry executives and managers, a present statement of hope for the future state of HSIA might well be “just something that works all the time, is hassle free, makes the customers happy, and is as cost-effective as possible.”<sup>8</sup>

While those goals are close to realization today, there are some basic observations that can be made about the near-term future state. They would include:

- HSIA, as a hospitality industry amenity, will become as commonplace as today's electric light switch or telephone. It will be there, but it will be in the background of the hotel customer's daily experience.
- Virtually no hospitality property will be able to survive without a flawless and reliable HSIA amenity offering.

*“...no hospitality property  
will be able to survive  
without a flawless and reliable  
HSIA amenity offering.”*

---

<sup>8</sup> “HSIA is becoming more of a competitive advantage for us because what our customers are saying is that they need to have it.” Lou Paladeau, VP, Technology Business Development, Marriott International, quoted in *Internet Week*, October 15, 2001.



*“...properties will be able to enhance and upgrade service.”*

- HSIA performance will stabilize and then improve, with plug and play, secure communication (including encryption), and reliability being consistent throughout the industry. Secure systems such as VLANs (virtual local area networks) now in use by many major corporations will be provided as part of a property's HSIA amenity.

- As the demand occurs for faster and higher-capacity transmission capabilities, properties will be able to enhance and upgrade service with proven, reliable systems.<sup>9</sup> Many travelers accustomed to very high-speed service such as T-1 lines, will expect hotel connections to match.

- Wireless transmission of computer data will expand as such systems increase in reliability, security and cost. At present, business travelers in meeting rooms equipped with both plug-in and wireless capabilities will normally choose the plug-in option. However, as improvements occur, the attraction of being able to use a laptop at poolside, in a restaurant or coffee shop, or in a hotel lobby while awaiting transportation or business appointment arrivals, will increase in usage and popularity.<sup>10</sup>

- As with many computer products, the cost of acquisition, operation and maintenance will continue to be driven down as new generations of equipment are developed and brought to market.

- A variety of options for special-needs users will be available.

- HSIA service will be available at even the smaller and more remote properties in the hospitality industry, connecting them with the rest of the world.

- The physical requirements for HSIA service will be factored into all new construction in the hospitality industry – and not only the hospitality industry, but other multi-dwelling unit construction activities such as hospitals, dormitories, and military installations as well.

*“...service will be available at even the smaller and more remote properties.”*

---

<sup>9</sup> “66% of the 300 frequent business travelers polled said they would choose a hotel based on its in-room technology services. 73% said they wished that available services were better.” *Opinion Research Corp., Survey, 2001.*

<sup>10</sup> “The use of wireless technology for HSIA is a good solution for providing guests with Internet access in open areas of the hotel property and in meeting and conference rooms.” Tom Skibinski, Golden Tree Communications, *National Hotel Executive Newsletter*, January 2002.





*“... High-speed Internet access is here to stay and will only increase in popularity....”*

#### V – Conclusion

High-speed Internet access is here to stay and will only increase in popularity and use as time and technology move ahead.<sup>11</sup>

The demands of today's business travelers will only increase the need for Internet services as technologies such as voice-data mergers, streaming video, and graphics presentations mature and are seen as normative. High-speed Internet access will become part of the basic infrastructure of society.

The hospitality industry will need to stay abreast and even ahead of the new waves of development or face the possibility that companies and their busy executives will choose hotels by their ability to meet their HSIA needs flawlessly and reliably.

---

<sup>11</sup> “The number of hotel rooms with high-speed internet access will increase by 80% by the end of 2001.” *PricewaterhouseCoopers*, Report, 2000.



*About the authors:*

- TERRY MCGOWAN, President and CEO of Datanamics, Inc., joined the firm after a career with the Hilton Hotels Corporation, where he was Senior Vice President and Chief Information Officer with a long experience in hotel financial operations. Recently designated as one of the Top 100 leaders in the sourcing/outsourcing field by the Outsourcing World Achievement Awards sponsored by PricewaterhouseCoopers and Michael F. Corbett Associates, Terry is also the network sourcing expert for the Sourcing Interests Group.

- DAN CARPINO, Vice President - Product Development and Head of Research at Datanamics has spent his career in the Information Technology industry, of which more than 13 years has been with Datanamics. Dan leads the award winning research team at Datanamics Labs. He has wide experience in both project and team management as well as in major business and information technology sectors.





## Appendix I:

### **Financial Models for Hotels Offering High-Speed Internet Access**

This appendix addresses the basic outlines of the most common financial models being used for high-speed Internet access in the hospitality industry. It includes actual models based on current experience in large, medium, and small properties and shows revenue differences for each of the two models in use today.

**The Two Basic Revenue Models:** The current financial models in use by hotel properties planning to offer high-speed Internet access as an amenity for guest rooms and meeting spaces are:

1. **Hotel shares revenue with vendor:** Many vendor companies in the HSIA marketplace offer business plans where the vendor pays the initial installation and ongoing maintenance and high-speed connection charges in exchange for sharing revenue with the hotel. The revenue sharing percentage for guest room service can be as high as 90% for the vendor and 10% for the hotel, and as high as 60%-40% for meeting space service. While this model remains attractive in principle to some properties because of its low expense rate and “hands off” maintenance and supply factors, the actual experience of many participants has not been rewarding.
2. **No revenue sharing by hotel:** Other vendors offer business plans where the property takes a more active role in both paying for and maintaining the HSIA service in return for claiming all profits after paying vendor fees for installation, maintenance, and help-desk services. This model is attractive to some properties because of higher profit margins, but also requires amortization of original installation costs.

### **Financial Results Models for Large, Medium, and Small hotels:**

Although each property’s experience will be different in each category, the models presented below are 12-month results from actual properties now offering the HSIA amenity.

[ charts begin on following page]



Large Hotel Model:

While percentage increase of retained revenue shown below is not as high as with smaller properties, it should be noted that the revenue sharing plan for this property is based on a fee per HSIA port per day, which differs from the flat fees shown as revenues in the Mid-Size and Small Hotel models. In the Large Hotel model shown here, the effective percentage rate of shared revenues going to the vendor is approximately 22% rather than the 60% shown in other models.

**Hotel Revenue Sharing Survey**  
**Property Profile: LARGE HOTEL**

Number of Guest Rooms Wired:	400
Number of Meeting Rooms Wired:	60

NOTE: Actual 12 Month Results

	Col. # 1	Col. # 2	Col. # 3	Col. # 4
	Actual	Actual	Difference (# 2 - # 1)	
	WITH Rev. Sharing	NO Rev. Sharing	\$\$	% Incr.
<b>GROSS REVENUE:</b>				
Guest	\$10,000	\$10,000	\$0	0%
Mtg. Room	\$1,000,000	\$1,000,000	\$0	0%
Total Revenue:	\$1,010,000	\$1,010,000	\$0	0%
<b>COST OF SALES:</b>				
Rev. Share \$\$ Paid: Gst: (1)	\$9,000	\$0	-\$9,000	-100%
Rev. Share \$\$ Paid: Mtg: (2)	\$219,000	\$0	-\$219,000	-100%
Total Cost of Sales:	\$228,000	\$0	-\$228,000	-100%
<b>GROSS PROFIT:</b>	<b>\$782,000</b>	<b>\$1,010,000</b>	<b>\$228,000</b>	<b>29%</b>
<b>EXPENSES:</b>				
ISP Charges (3)	\$0	\$9,600	\$9,600	n/a
Hardware Maintenance (4)	\$0	\$7,200	\$7,200	n/a
Guest & Technical Support	\$0	\$32,400	\$32,400	n/a
Other: (In-House Payroll)	\$15,000	\$15,000	\$0	0%
Total Expenses:	\$15,000	\$64,200	\$49,200	n/a
<b>NET PROFIT TO HOTEL:</b>	<b>\$767,000</b>	<b>\$945,800</b>	<b>\$178,800</b>	<b>23%</b>

NOTES:

- 1) Revenue Sharing: Vendor Portion = 90%; Hotel Portion = 10%
- 2) Revenue Sharing: Vendor Portion = \$75/port/day; Hotel Portion: Markup 100%
- 3) Vendor Pays all ISP Charges under Revenue Sharing
- 4) Vendor Pays all Hardware, Maintenance Charges under Revenue Sharing

**Mid-Size and Small Hotel Models:**

Both the Mid-Size and Small Hotel models below reflect much higher percentage increases in revenue under the non-sharing plan, owing to the elimination of higher vendor revenues under the revenue sharing plan. As in all three models, while hotels assume additional costs for ISP, hardware maintenance, and guest/technical support, the increased share of revenue more than offsets the assumption of expenses.

**Hotel Revenue Sharing Survey****Property Profile: MID-SIZE HOTEL**

Number of Guest Rooms Wired:	225
Number of Meeting Rooms Wired:	15

NOTE: Actual 12 Month Results

	Col. # 1	Col. # 2	Col. # 3	Col. # 4
	Actual	Actual	Difference (# 2 - # 1)	
	WITH Rev. Sharing	NO Rev. Sharing	\$\$	% Incr.
<b>GROSS REVENUE:</b>				
Guest	\$10,000	\$10,000	\$0	0%
Mtg. Room	\$250,000	\$250,000	\$0	0%
Total Revenue:	\$260,000	\$260,000	\$0	0%
<b>COST OF SALES:</b>				
Rev. Share \$\$ Paid: Gst: (1)	\$9,000	\$0	-\$9,000	-100%
Rev. Share \$\$ Paid: Mtg. (2)	\$150,000	\$0	-\$150,000	-100%
Total Cost of Sales:	\$159,000	\$0	-\$159,000	-100%
<b>GROSS PROFIT:</b>	<b>\$101,000</b>	<b>\$260,000</b>	<b>\$159,000</b>	<b>157%</b>
<b>EXPENSES:</b>				
ISP Charges (3)	\$0	\$9,600	\$9,600	n/a
Hardware Maintenance (4)	\$0	\$4,800	\$4,800	n/a
Guest & Technical Support	\$0	\$12,600	\$12,600	n/a
Other: (In-House Payroll)	\$15,000	\$15,000	\$0	0%
Total Expenses:	\$15,000	\$42,000	\$27,000	n/a
<b>NET PROFIT TO HOTEL:</b>	<b>\$86,000</b>	<b>\$218,000</b>	<b>\$132,000</b>	<b>153%</b>

## NOTES:

- 1) Revenue Sharing: Vendor Portion = 90%; Hotel Portion = 10%
- 2) Revenue Sharing: Vendor Portion = 60%; Hotel Portion = 40%
- 3) Vendor Pays all ISP Charges under Revenue Sharing
- 4) Vendor Pays all Hardware. Maintenance Charges under Revenue Sharing



**Small Hotel Model:**

**Hotel Revenue Sharing Survey  
Property Profile: SMALL HOTEL**

Number of Guest Rooms Wired:	100
Number of Meeting Rooms Wired:	6

NOTE: Actual 12 Month Results

	Col. # 1	Col. # 2	Col. # 3	Col. # 4
	Actual	Actual	Difference (# 2 - # 1)	
	WITH Rev. Sharing	NO Rev. Sharing	\$\$	% Incr.
<b>GROSS REVENUE:</b>				
Guest	\$10,000	\$10,000	\$0	0%
Mtg. Room	\$74,000	\$74,000	\$0	0%
Total Revenue:	\$84,000	\$84,000	\$0	0%
<b>COST OF SALES:</b>				
Rev. Share \$\$ Paid: Gst: (1)	\$9,000	\$0	-\$9,000	-100%
Rev. Share \$\$ Paid: Mtg: (2)	\$44,400	\$0	-\$44,400	-100%
Total Cost of Sales:	\$53,400	\$0	-\$53,400	-100%
<b>GROSS PROFIT:</b>				
	\$30,600	\$84,000	\$53,400	175%
<b>EXPENSES:</b>				
ISP Charges (3)	\$0	\$9,600	\$9,600	n/a
Hardware Maintenance (4)	\$0	\$2,400	\$2,400	n/a
Guest & Technical Support	\$0	\$5,400	\$5,400	n/a
Other: (In-House Payroll)	\$10,000	\$10,000	\$0	0%
Total Expenses:	\$10,000	\$27,400	\$17,400	n/a
<b>NET PROFIT TO HOTEL:</b>				
	\$20,600	\$56,600	\$36,000	175%

NOTES:

- 1) Revenue Sharing: Vendor Portion = 90%; Hotel Portion = 10%
- 2) Revenue Sharing: Vendor Portion = 60%; Hotel Portion = 40%
- 3) Vendor Pays all ISP Charges under Revenue Sharing
- 4) Vendor Pays all Hardware, Maintenance Charges under Revenue Sharing

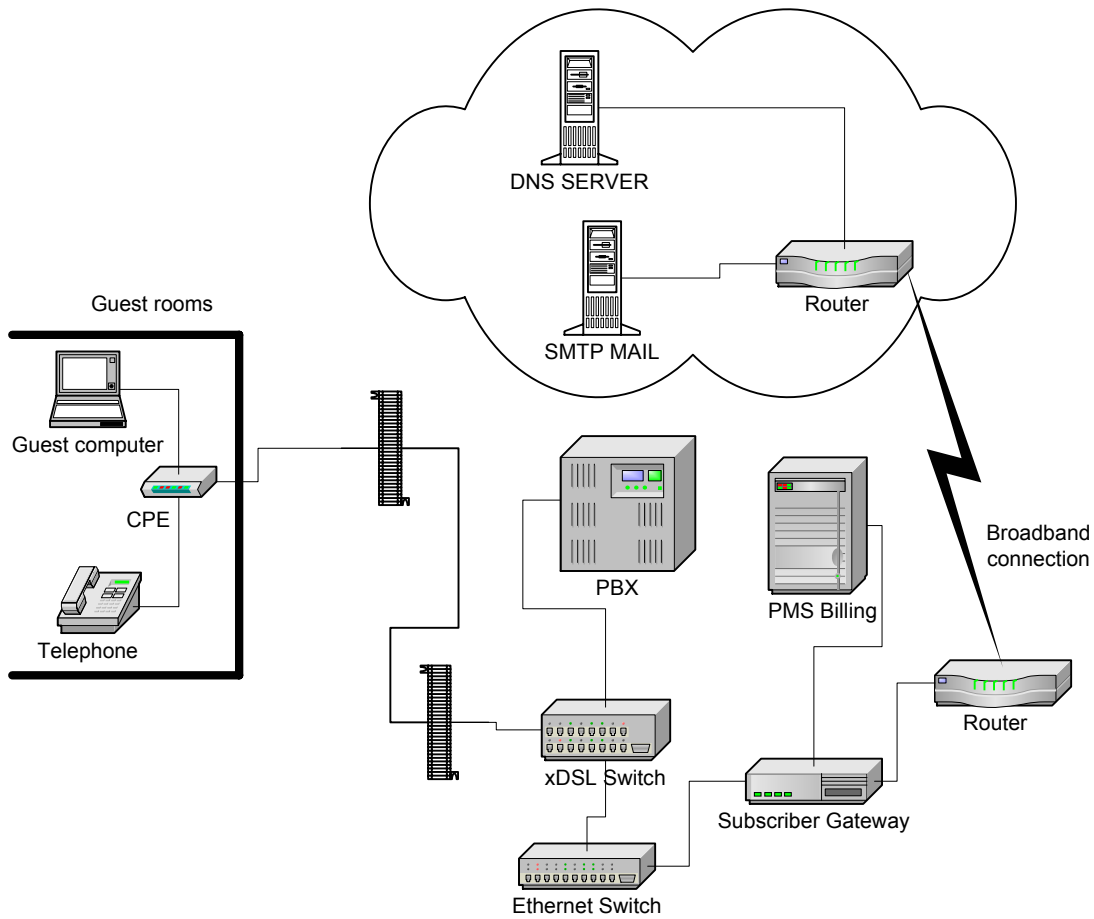


## Appendix 2: High-Speed Internet Access Technology

High-speed Internet access systems in multi-dwelling unit facilities, such as hotels, operate separately from the property's telephone system, although DSL systems make use of the hotel's existing telephone wiring. Nearly all high-speed systems use "Ethernet," which operates in individual computers through an installed Ethernet connection card, similar to the modem card used for regular telephone dial-up connections. The Ethernet connection socket is slightly larger than the telephone socket, which prevents confusion as to the connection being used.

The Digital, Intel, and Xerox companies originally developed Ethernet in the 1970s. Despite the normal obsolescence of many technologies, the Ethernet has withstood the test of time and versatility, and has emerged as the fastest, most reliable, and most popular network topology in use today. It is thus recommended as the preferred HSIA solution. There are three major methods to bring Ethernet access to guest and meeting rooms:

**I. Use existing telephone wiring with xDSL:** DSL is a technology for pushing a relatively large number of data bits through small gauge copper wire (telephone wire), normally at distances up to 18,000 feet. There are a number of different protocols that fall under the DSL umbrella: ADSL, RADSL, HDSL, VDSL – thus, the acronym xDSL is used to represent the technology in total, without regard to the specific protocol. In the xDSL solution, an xDSL switch is installed in the site's computer room. The xDSL switch uses the phone system's wiring without interrupting voice calls. Voice and data signals are sent through the same phone lines to the guest rooms. In the guest rooms, a small Customer Premise Equipment (CPE) device is installed that separates the voice and data, sending the voice signal to the telephone, and the data signal to the Ethernet card in the computer. A failure of any xDSL equipment will not cause interruption to the phone system, as the voice system continues to operate independently. This is important to property managers because voice systems are expected to maintain service 99.999% of the time.



- Step 1: The guest plugs their computer into the xDSL in-room network connection (CPE), using the Ethernet port on the computer and launches their browser.
- Step 2: The CPE carries both the phone and the Ethernet signals over a single pair of wires, allowing use of the existing wiring. The xDSL switch, located with the network equipment, splits off the data to the Ethernet switch and the phone to the PBX.
- Step 3: The Ethernet switch provides a room tag for the guest which is sent to the Subscriber Gateway.
- Step 4: The Subscriber Gateway detects Proxy settings, provides a DHCP address or translates the static IP address, provides DNS proxy, and SMTP redirect for POP mail. The user does not change any of his/her settings.
- Step 5: If charging for this service, the user selects the billing plan for different levels of service (if offered), and the room identification is used to bill the Internet charges directly to the PMS.
- Step 6: The user has now been granted Internet access and can access email and browse the Internet the same way as if in the home office.
- Step 7: The guest returns to their home office and connects normally, as if nothing was ever changed on his/her laptop.

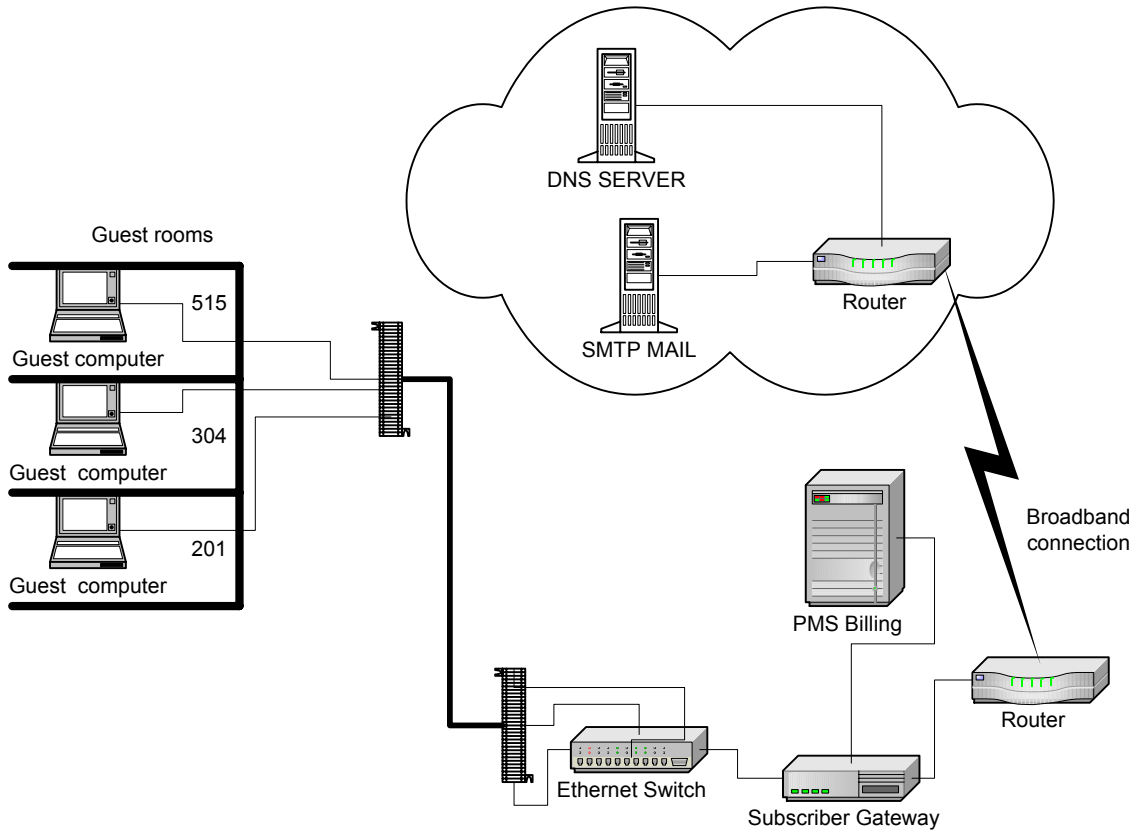


**2. Use cable wiring:** If installing new wiring, Category-5 ("Cat-5") cable is the most popular method of connecting Ethernet devices. If a hotel is already wired for Cat-5 or wishes to become so, this is the recommended way to provide HSIA services. In the Cat-5 cable solution, a cable from each guest room terminates at a patch panel in the computer room. Then each cable is plugged into a separate port on a network device called an Ethernet Switch. While Cat-5 can handle some of the highest transmission rates today, if a property is not pre-wired, conversion within older buildings is often cost-prohibitive.

The biggest advantage of Cat-5 is that it can handle higher rates of transmission than xDSL. (Cat-5 is currently being pushed to speeds of up to 2,000 Mbps [Megabits per second] over full duplex Gigabit-Ethernet, which is 10 times faster than a normal Fast-Ethernet network connection.) Thus unlike some flavors of xDSL, a Category-5 solution will allow for future expandability and scalability for high bandwidth applications such as streaming video.

The second advantage is the networking equipment in a Cat-5 solution is typically at least 50% less expensive than the equipment needed for a xDSL solution. These equipment cost factors can sometimes outweigh the costs of installing new Cat-5 cabling to the guest or meeting rooms.





- Step 1: The guest plugs their computer into the Ethernet connection on the CPE and launches their browser.
- Step 2: The Ethernet switch provides a room tag ID for the guest which is sent to the Subscriber Gateway.
- Step 3: The Subscriber Gateway automatically detects Proxy settings, provides a DHCP address or translates the static IP address, provides DNS proxy, and SMTP redirect for POP mail. The user does not change any of his/her settings.
- Step 4: The Subscriber Gateway intercepts the guest's home page and replaces it with the Hotel's web page.
- Step 5: If charging for this service, the user selects the billing plan for different levels of service (if offered), and the room identification is used to bill the Internet charges directly to the PMS.
- Step 6: The user has now been granted Internet access and can access email and browse the Internet the same way as if in the home office.
- Step 7: The guest returns to their home office and connects normally, as if nothing was ever changed on his/her laptop.



**3. Use wireless communications:** A building's physical structure or business requirements may dictate another solution – wireless. Locations where HSIA is desired only for the meeting rooms may find a wireless solution to be more economical. In other circumstances, a wireless implementation is typically more desirable where the buildings in which HSIA is needed are isolated from the main building. Wireless uses a spread spectrum signal to transmit data through the air and structure of the hotel. The disadvantages associated with a wireless solution are its limited distance capability, wall penetration, its inability to track individual rooms for billing purposes, and immature security features. However, this technology is continually improving and the disadvantages are becoming less of a factor in the basic “wired vs. wireless” selection process.

**Further Benefits:**

• **True Plug-and-Play Functionality**

A High-Speed Internet Access solution provides a true “plug-and-play” experience that works with all major computer systems. There is no reconfiguration needed on a hotel guest's computer. Plug-and-Play is made possible by a special device called a Universal Subscriber Gateway. When a network-enabled computer is plugged into a network, it searches for a gateway to access the Internet, called an Internet Gateway or Router. When a network computer is on its office network, it is easy for the computer to find its Internet Gateway using the settings that are configured specially for the office network. However, all office networks have a different addressing scheme, which prevents computers from dissimilar systems from being able to communicate without using a Universal Subscriber Gateway. Thus, when a guest's computer searches for its native Internet Gateway, the Universal Subscriber Gateway immediately recognizes the guest as a new user on the network and handles the task of determining the settings on the hotel guest's computer. The hotel's gateway then adjusts its own settings to match what the hotel guest's computer is looking for. The Universal Subscriber Gateway imitates all guests' native networks, and thus makes it possible for differing computer addressing schemes all to use the same Internet connection.

• **A Powerful Promotional Tool – and Easy Accounting**

Using HSIA, when a guest opens the web browsers, the subscriber gateway directs it to the hotel's custom “Welcome” page. This custom page is a powerful promotional tool for the hotel, providing the guests with products, services, local attractions, and links to strategic partners. If HSIA is a separate hotel room charge, the “Welcome” page will invite the guest to access the Internet through the HSIA network. When the guest agrees, the subscriber gateway opens a connection to the Internet and



the access charges are automatically billed to the Property Management System (PMS) through the Universal Subscriber Gateway. The system allows charges to be posted directly to the guest's folio. At present, per-day charges vary but are typically \$10.00 or less. Meeting room Internet access fees, however, vary greatly and are usually negotiated at the time the meeting room contract is completed. Revenue sharing is often used when equipment and service providers have installed HSIA equipment at little or no initial cost to the hotel. In these cases, the HSIA vendor receives a percentage of guest and meeting room gross revenues on an ongoing basis. At present, most hotels have developed a greater revenue stream from meeting room Internet access service than from the guest room use. HSIA in this environment has proved to be a profitable add-on, similar to electrical power, telephone line, and audio visual charges.

- **Meeting Rooms Scheduling and Billing Process**

Conference room connections are accomplished with the same quick and seamless connection process as for guest rooms. However, due to the pricing and availability differences, the billing process for the meeting rooms is usually different. Meeting rooms are usually billed a higher rate, for blocks of time that correspond to meeting room events. Meeting room scheduling is made possible with a Meeting Room Scheduler, which is an easy-to-use application that allows hotel associates to pre-configure information about when the meeting room will need to be active for a particular client or event. The scheduler then automatically enables the HSIA service and ensures that high-speed Internet access is available through the room's connectors or wireless systems.

- **Conclusion**

HSIA technology available today has advanced to meet the needs of nearly any business and building environment, regardless of age, architectural design, or infrastructure. Great strides have been made in the technology between first and second generations. The keys to a successful high-speed Internet access solution are 1) an understanding of a property's individual business requirements, and 2) the selection of the best underlying technology that will be cost-efficient and will leverage the location's existing infrastructure without risking short-term obsolescence or impaired performance. The best solutions will include quality guest, staff, and technical support to ensure the HSIA experience is satisfactory – all the while keeping it an economically viable amenity for the hotel to provide its guests.



## About the Company

### Leadership in Hospitality Technology

Established in 1977, Datanamics, Inc. is recognized as a leading networking firm serving the Hospitality Industry – providing networking services and user support on a 24x7 basis around the globe to ensure the availability of your hotel's mission-critical systems on a cost-effective basis.

Datanamics is in its 25<sup>th</sup> year of providing innovative networking solutions for hospitality clients worldwide. The firm has a thorough knowledge of the hospitality industry, its information technology infrastructure, and the best systems and practices for managing the business. Networking is our firm's specialty, our core competency, which gives us the breadth and depth of technical expertise to design, implement, and support the best network solution for you. Because we are independent and vendor-neutral, we can provide you with sound, objective, and unbiased advice that is in your best interest, unlike some vendors. Datanamics thinks from your side of the table, anticipating your current and future needs and customizing solutions to meet your specific requirements. Finally and most importantly, we have a proven track record of outstanding client service; Datanamics cares about helping people succeed, and making sure that your hotel staff and guests are fully satisfied.

### Datanamics - Non-Stop Networks

Datanamics means Non-Stop Networks – We strongly believe that your hotel's network has to be readily available to staff and guests everywhere, all the time, anytime. This is our commitment to our clients as we design, implement, and maintain local-area and enterprise-wide networks and workstations. Our professionals bring specialized expertise in all aspects of networking – including strategic planning, network requirements, architectural design, engineering specifications, systems analysis, software development, business process reengineering, project management, vendor integration, topology conversions, and legacy system support. Our professionals also bring solid credentials and experience as network engineers, hardware/software specialists, installers, trainers, and customer service representatives. Our staff includes highly trained Novell, Microsoft, and Cisco certified engineers, plus many hold advanced degrees in information technology, and have received additional training and education in specialized fields.

### High-Speed Internet Access

Datanamics is an expert in the design, implementation, and support for high-speed Internet access (HSIA) in the hospitality industry – hotels, resorts, and convention centers (as well as other multi-unit facilities such as condominiums, apartments, office buildings, and universities). Also, for those hotels and facilities that have experienced Internet service provider shutdowns or service interruptions, we have developed a highly innovative, cost-effective solution to restore HSIA services quickly, efficiently, and economically. The Datanamics solution makes the best use of existing systems and investments, by replacing only those components necessary to ensure immediate operability and future supportability. It delivers superior technology, turnkey installation, plug-and-play access, on-site training of hotel staff, and includes 24x7 guest and technical support.



### Customer Support Services 24x7

Datanamics takes great pride in providing highly responsive and personalized support services for hotel staff and guests. Our state-of-the-art, knowledge-based Customer Support Center has full-time, highly trained networking specialists who are dedicated to providing help-desk and technical support on a 24x7 basis. Through our "Total Call Ownership" program, we promise to own the problem from inception through resolution. Our specialists are excellent at handling the simplest or most complicated issues remotely. We know what it takes to meet the needs of the most novice or most demanding user, and we provide a personal comfort level that enhances customer service. Our services also include automated system monitoring and preventative system maintenance to insure maximum system uptime with minimal interruption to your business.

### Datanamics Labs

Datanamics Labs is the firm's Research & Development division. It monitors new and emerging technologies, best practices, and practical applications for the benefit of our clients. Working in teams, our certified network engineers, systems analysts, software developers, and other specialists provide independent evaluations and testing of different vendors' hardware, software, and related equipment. We are also able to test in a real world environment the reliability and supportability of the vendor's equipment and ensure that they can come together to create a seamless system. This unique service benefits our clients because it enables us to provide sound, objective, and unbiased advice that is in their best interests, and to develop the best networking solutions that meet the particular needs of each client organization.



4045 South Spencer Street

Suite B - 38

Las Vegas, Nevada 89119

[www.DatanamicsInc.com](http://www.DatanamicsInc.com)

Voice | 702-697-2263

Fax | 702-697-2299

E-Mail | [Info@DatanamicsInc.com](mailto:Info@DatanamicsInc.com)