Importance-Performance Analysis of Guest Technologies in the Lodging Industry

An assessment of how hotel guests view in-room technology compared the importance of those technologies to how they perform. Based on 265 responses, this importance -performance analysis indicates that important basic technologies like in-room temperature controls and alarm clocks fail to perform in the way guests want, while relatively new technologies like plasma screen TVs and in-room printers and faxes are less important but perform well when they are in place. In addition, the study finds that internet access is an integral part of the lodging product.

Guest-room technologies have become the focus of recent industry initiatives to replicate home-based technologies in hotel rooms and keep pace with the technologies used by U.S. consumers. Given that technology is integral to a hotel stay, the purpose of this study is to evaluate the importance and performance of key guest-room technologies, new and old. The study uses a combination of qualitative and quantitative approaches to assess customers' view of twenty-four technologies, ranging from toll-free phone numbers to plasma TVs.

Guest Technologies in the U.S. Lodging Industry
The hotel industry is often faulted for being slow to implement current technology,
an accusation that seems to apply to guest rooms more than to overall operations . To address this perception, an industry forum of technology experts started the In-Room Technology Workgroup aimed at developing the guest room of the future, which has been displayed, for instance, at HITEC 2006 ("The Guest of the Future" 2006; "Guestroom 2010" 2006).
The academic literature has often concluded that the lodging industry is late in implementing technology in guest rooms in favor of technologies that improve employee productivity and enhance revenue (Siguaw, Enz, and Namasivayam 2000). At the same time, the industry's own perception of the value of guest-oriented technology is mixed.

A study of South Korean hotel managers found that the managers believed that guest technologies have only a marginal impact on hotel performance (Ham, Kim, and Jeong
2005). Moreover, a 1996 study found that hotel managers thought that guests did not use guest-operated devices effectively (Van Hoof, Verbeeten, and Combrink 1996). At the same time, Singh and Kasavana (2005) contended that guests expect to find common technologies in hotel rooms. In sum, the combined effect of these findings suggests that the industry is slow to adopt guestroom technologies, perhaps because operators perceive that technology does not boost performance.

The issues that seem to haunt the industry's decision to adopt technology are the determination of when a potential new technology is sufficiently accepted that it should be implemented in guest rooms, and when guest-room

technologies should be upgraded. In the case of new technologies, the technology adoption life cycle serves as a valuable framework to determine the viability of a technology. As for monitoring the performance of existing technologies, novelty theory serves as a guideline for consumer evaluation. These frameworks are discussed in the next two sections.

Technology Adoption Life Cycle

The technology adoption life cycle is a framework for analyzing the extent to which technology has become integral to a product's definition. For the hotel industry, in-room television provides a classic example. In the 1960s, guests typically were charged extra if they wanted to have a television in their rooms, and properties would take pains to advertise the presence of TV (color TV, at that). Fast forward to the present, and television is merely an expected attribute of a hotel room in all but idiosyncratic operations. Instead, the "extra" technology seems to be internet access, for which hotels often charge extra. We expect that this situation is bound to change, and the study discussed in this article points to the likelihood that for most hotels internet access will become an integral part of the definition of a guest room. One framework that explains this phenomenon of technology evolution is the technology life cycle, which outlines the various stages in the progression that a technology may undergo in the marketplace.

The stages—namely, introduction, growth, maturity, and decline—may apply to a particular technology, or to a version or generation of a technology. Of interest to hoteliers is not the stage of the technology life cycle so much as who is adopting that technology, as characterized by the closely related technology adoption life cycle. This cycle distinguishes segments that adopt a technology at various stages of the technology life cycle. Rogers (1995), for instance, outlined the user categories as innovators, early adopters, early majority, late majority, and laggards. In the same vein, Parasuraman and Colby (2001) characterized five segments in the adoption process, namely, explorers, pioneers, skeptics, paranoids, and laggards. The attributes and attitudes of each of these segments vary based on a combination of optimism, innovativeness, discomfort, and insecurity toward the technology. Each segment typically develops over time to become a viable customer group. The process is not exactly sequential, although the categorization provides a strong set of guidelines for customer segmentation.

A key aspect of the technology adoption life cycle is that innovators (explorers) followed by early adopters (or pioneers) need to accept the technology before it can move into the next stage of dissemination among a broader market. These early adopter segments seek technology but also have high standards in its evaluation. Moore (1991) termed the transition of a technology into the general population as crossing the chasm. Crossing the chasm is critical for technology firms because it involves the transition of serving one set of needs (of early adopters) to another (of later adopters). Early adopters are more oriented to technological performance, while later adopting segments largely seek solutions and convenience (Norman 1998; Parasuraman and Colby 2001). Purveyors of technological items seek to cross the chasm because later adopters constitute a relatively larger segment

of the market than do early adopters.

The chasm for technology in hotel rooms involves the moment when a lodging technology becomes a part of the product. The core lodging product is accommodation, which is the hotel's key benefit or solution addressing a specific consumer need (Kotler, Bowen, and Makens 2003). The actual product comprises the features and attributes combined as a brand to help deliver the core product benefit. Technology involved in the actual product has generally crossed the chasm. On the early side of the chasm, the augmented product comprises services and benefits that are beyond the core and actual product. They are not automatically expected but are appreciated by numerous guests. As an example, high-speed internet has long been a part of the augmented lodging product. However, to the extent that it has become a mainstream technology, lodging operators should consider whether internet access in fact has crossed the chasm to become a part of their actual product. If so, the way hotels package high-speed internet access, including how they charge for it, will change. To what extent is the high-speed internet access of today analogous to television in an earlier era? We know that the cost of providing a TV has been integrated into room rates, while the status of high-speed internet on the technology chasm will tell us whether its cost is also part of room tariffs.

Novelty and Technology

Novelty theory suggests that some hotel guests will seek out technology due to curiosity (Hirschman 1980). Typically, the novelty effect diminishes with repeated use.

At the same time, as novelty wears off, the user is likely to become more proficient with the use of the technology. With this proficiency comes a tougher-minded evaluation
of the relatively old technology, especially when compared with evaluation of new technologies.

Results

All three groups agreed that express check-in and checkout (A), remote control TV (G), and high-speed internet access (O) have high importance and performance. This emphasizes the fact that high-speed internet access has crossed the divide to become an expected amenity in hotels.

Discussion and Implications

The study's findings provide an updated perspective of guest technologies based on a relative standing with one another. Based on the technology adoption life cycle, high-speed internet (wireless or cable based) is a mainstream technology and well integrated into the lodging product. Whether it is priced separately or included in the overall price of the room is a matter of market specifics. Nonetheless, lodging operators will be well advised to re-evaluate their prevailing strategies by examining the current needs of their customers.

The industry also needs to take into account that travelers bring with them mobile devices, such as laptops, cell phones, and mp3 players, all of which need to be powered or recharged in the room. The comfort and reliability of a

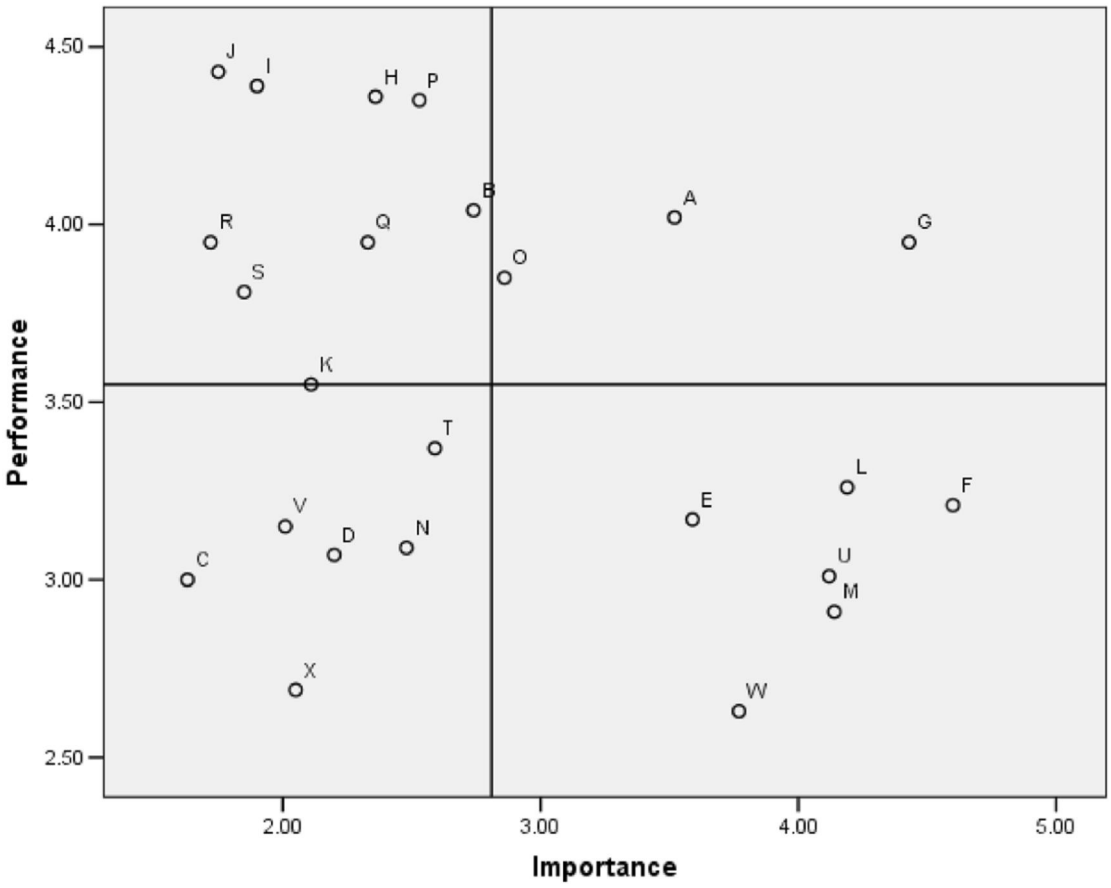
room will depend on easily accessible power outlets that do not require moving a bed or unplugging a lamp. Lodging operators would do well to focus on the provision of this important technology. It is worth looking into products that allow for simple relocation of most common audio and video connections and electrical ports to more convenient and accessible parts of the room.

Other baseline technologies that need re-evaluation are in-room temperature controls and, of all things, alarm clocks. The day of wake-up calls appears to be over. Instead, your guests want to be able to set a reliable alarm clock. Given this critical role, it is a contributing factor toward the reliability of the lodging product. Moreover, since alarm clocks are common items, their functionality is subject to considerable scrutiny. Guests will compare the clock offered in hotel rooms with contemporary models they use at home.

The increasing popularity and convenience of wireless internet access affects travelers' demand on reliable and convenient wireless internet access in public and private areas of the hotel. The study showed that wireless internet access falls in the "concentrate here" section of the importance-performance analysis quadrant for all of our respondent groups.

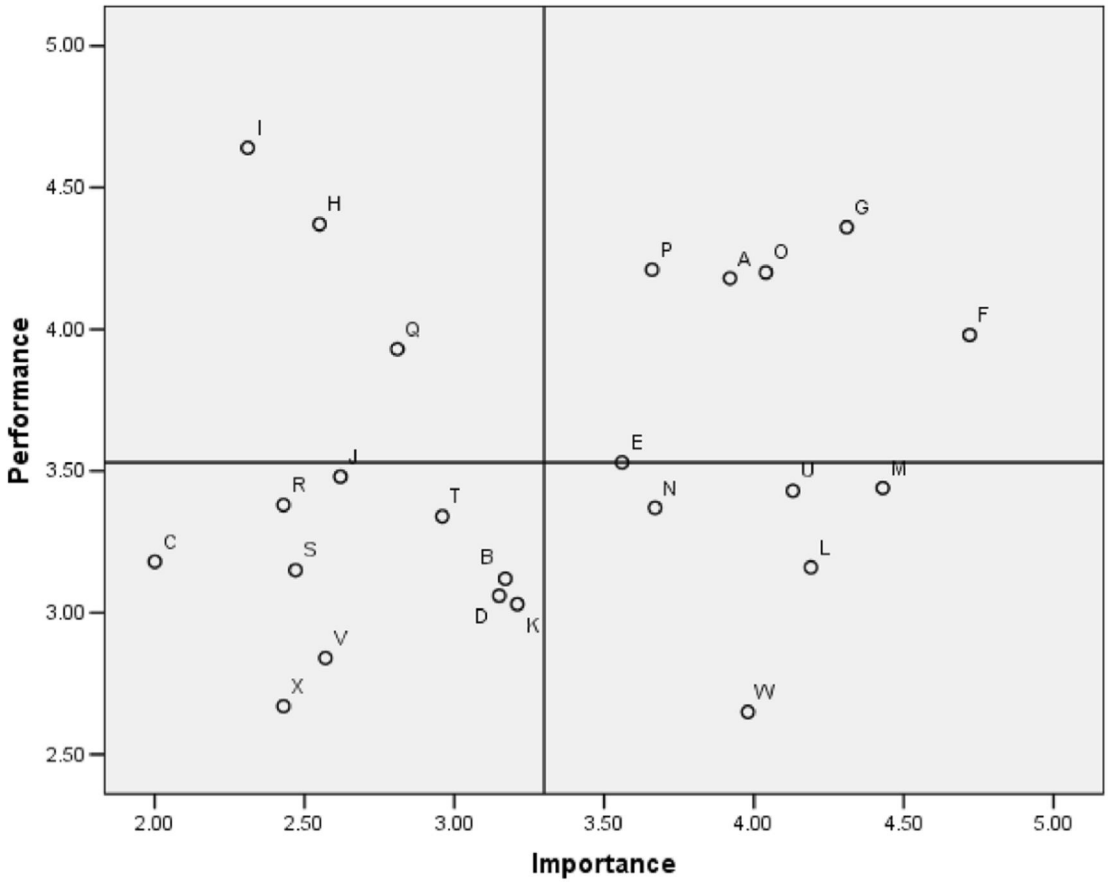
The findings provide insights pertinent to the role of technology in the lodging product. Lodging operators can tailor their product development strategies based on the relative positioning of guest technologies for their individual properties or market segments.

Importance-Performance Matrix for Infrequent Travelers (Five or Fewer Room-Nights per Year)



Express check-in/checkout A
Free long-distance telephone calls B
(voice over internet protocol [VoIP])
Videoconferencing capabilities C
Business centers (computers, fax, D
copiers)
Central 800 reservation number E
In-room temperature control F
Remote control TV G
Pay-per-view H
Web TV I
Portable/speaker phone in room J
Voice mail K
Alarm clock L
Easily accessible electrical outlets M
Additional data line accessible to desk N
High-speed internet access O
Electronic key cards W
In-room personal computer Q
In-room fax machine R
In-room printer S
In-room electronic safety boxes T
Online reservation capability U
Wireless access to hotel web site V
(i.e., Palm)
Wireless internet access in hotel P
Plasma screen TV X

Importance-Performance Matrix for Frequent Travellers (Sixteen or More Room-Nights per Year)



Express check-in/checkout A
Free long-distance telephone calls (voice B
over internet protocol [VoIP])
Videoconferencing capabilities C
Business centers (computers, fax, copiers) D
Central 800 reservation number E
In-room temperature control F
Remote control TV G
Pay-per-view H
Web TV I
Portable/speaker phone in room J
Voice mail K
Alarm clock L
Easily accessible electrical outlets M
Additional data line accessible to desk N
High-speed internet access O
Electronic key cards W
In-room personal computer Q
In-room fax machine R
In-room printer S
In-room electronic safety boxes T
Online reservation capability U
Wireless access to hotel web site V
(i.e., Palm)
Wireless internet access in hotel P
Plasma screen TV X